

COUNTY OF TULARE RESOURCE MANAGEMENT AGENCY



5961 South Mooney Boulevard
Visalia, CA 93277

Initial Study and Mitigated Negative Declaration

Matheny Tract Wastewater Collection System and Pipeline Inter-tie Project

January 2023

Prepared by
County of Tulare Resource Management Agency
Economic Development and Planning Branch
Environmental Planning Division

INITIAL STUDY CHECKLIST

- 1. Project Title:** Matheny Tract Wastewater Collection System and Pipeline Inter-tie Project
- 2. Lead Agency:** County of Tulare
Resource Management Agency
5961 S. Mooney Blvd.
Visalia, CA 93277
- 3. Contact Persons:** Aaron Bock, Planning Director – 559-624-7000
Hector Guerra, Chief, Environmental Planning Division – 559-624-7121
- 4. Project Location:** Generally, within all of Matheny Tract (including south Matheny Tract) southwest of Tulare, CA), along Pratt Street/Road 96, along Avenue 216/Paige Avenue, to the City of Tulare Wastewater Treatment Plant (WWTP) along South West Street north of Paige Avenue (east of the WWTP).
- 5. Applicant:** County of Tulare c/o Resource Management Agency
5961 S. Mooney Blvd.
Visalia, CA 93277
- 6. Owner(s)**

City of Tulare 411 E. Kern Avenue Tulare, CA 93274	County of Tulare c/o Resource Management Agency 5961 So. Mooney Blvd. Visalia, CA, 93277
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- 7. General Plan Designation:** For Matheny Tract the entire area is classified as “Mixed Use” in the adopted Matheny Tract Legacy Plan (a component of the Tulare County General Plan).¹ City of Tulare General Plan Land Use (only within areas where the Project will occur) is Public/Quasi-Public.²
- 8. Zoning:** AE-20 (Exclusive Agriculture – 20 Acre Minimum) Zone, C-2-MU (Service Commercial Mixed Use) Zone, M-1 (Light Industrial) Zone, R-2 () Zone, and R-A () Zone.³ City of Tulare zoning is Public Lands (P-L District)⁴
- 9. Description of Project (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.):** The selected alternative includes the construction of a wastewater collection system within Matheny Tract, one lift station located in proximity to Matheny Tract along Pratt Street, and a 4-inch sanitary sewer force main from Matheny

¹ County of Tulare. Matheny Tract Legacy Plan 2017. Pages 71 and 73. Accessed December 2022 at: <http://generalplan.co.tulare.ca.us/documents/GP/001Adopted%20Tulare%20County%20General%20Plan%20Materials/180Part%20III%20Legacy%20Plans%207%20of%207/004Matheny/GPA%2017-29%20MATHENY%20TRACT%20LEGACY%20PLAN.pdf>. f

² City of Tulare. 2035 General Plan Map. Accessed December 2022 at: <https://www.tulare.ca.gov/home/showpublisheddocument/604/635702261116100000>. 0

³ County of Tulare. Matheny Tract Legacy Plan 2017. Figure 21. Pages 71 and 75. Accessed December 2022 at: <http://generalplan.co.tulare.ca.us/documents/GP/001Adopted%20Tulare%20County%20General%20Plan%20Materials/180Part%20III%20Legacy%20Plans%207%20of%207/004Matheny/GPA%2017-29%20MATHENY%20TRACT%20LEGACY%20PLAN.pdf>. f

⁴ City of Tulare. Zoning and Land Use Viewer. Accessed December 2022 at: <https://cot-ca.maps.arcgis.com/apps/webappviewer/index.html?id=3b022c855b4843d7ae831a71e53feab1>.

Tract to the DWWTP. Furthermore, the preferred alternative includes the following major components:

- *New gravity wastewater collection system composed of a combination of 8-inch and 10-inch polyethylene vinyl chloride (PVC) sewer mains within the Matheny Tract Community, including new 4-inch PVC sewer lateral service connections to each existing residence*
- *New lift station in proximity to Matheny Tract along Pratt Street*
- *Construction of approximately 10,700 feet of 4-inch HDPE sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP*
- *In-place abandonment of existing septic systems and leach fields*
- *Connection and consolidation of Matheny Tract wastewater system to the City of Tulare*

10. **Surrounding land uses and setting (Brief description):** The land uses surrounding the project sites are primarily agricultural. Adjacent properties to the north, west, and south of the project sites are farmland including field and row crops and nut trees. Industrial uses are located east of and adjacent to the Matheny North site and 0.7 miles east of the Matheny South site, and lie within the city limits of the City of Tulare.
11. **Other public agencies whose approval is (or may) required (e.g., permits, financing approval, or participation agreement):** San Joaquin Valley Unified Air Pollution Control District, City of Tulare; Regional Water Quality Control Board, Tulare Irrigation District, County of Tulare Health and Human Services/Environmental Health Services; other to be determined.
12. **Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that include, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?** Pursuant to AB 52, a Sacred Land File (SLF) search request was submitted to the Native American Heritage Commission on December 22, 2022 and was returned with “positive” results. On December 1, 2022, tribal consultation notices were sent to six (6) tribal contacts representing four (4) Native American tribes. Upon receipt of the SLF results from the NAHC, an additional seven (7) tribal consultation notices representing six (6) Native American Tribes were mailed on January 20, 2023. To date, two (2) responses have been received from the tribes that were notified in compliance with AB 52 requirements through a list of potentially affected tribes provided by the NAHC. In the event that any tribal cultural resources are unearthed during construction-related activities, mitigation measures have been included in the Project to reduce potential impacts on these resources.

It is noted that discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, and the Tulare County General Plan 2030 Update EIR are incorporated herein by reference in their entirety. Also, where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion. Further, the Draft EIR and Recirculated EIR for Matheny Tract Wastewater System Project (SCH# 20017011028) certified by the Board of Supervisor (Board) on December 19, 2017 (including CEQA Findings of Fact, Statement of Overriding Considerations, Mitigation Monitoring and Reporting Program, and technical studies), via Resolution No. 2017-1032, are incorporated herein by reference in their entirety.

Figure 1
State/Regional/Vicinity Map

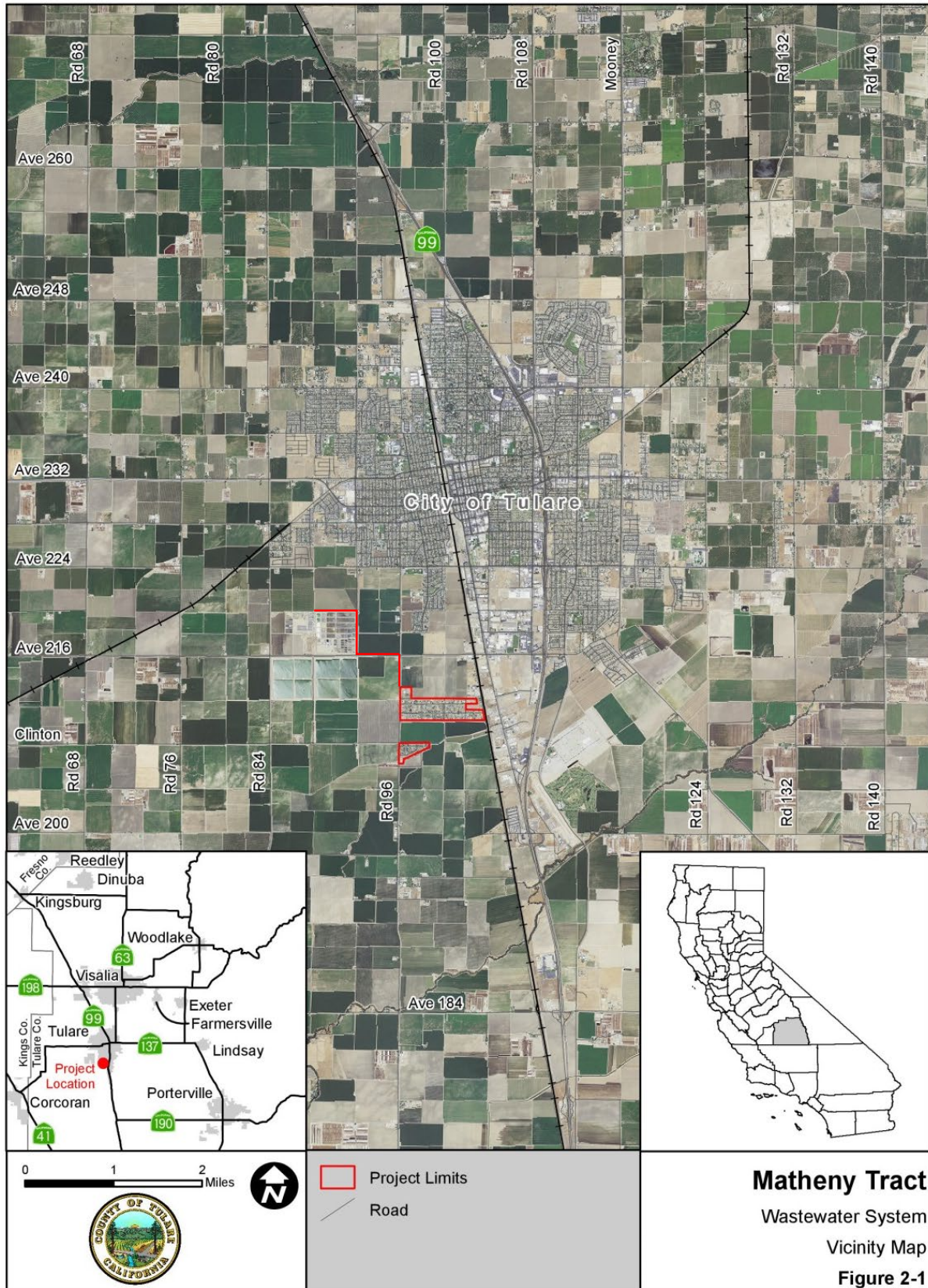
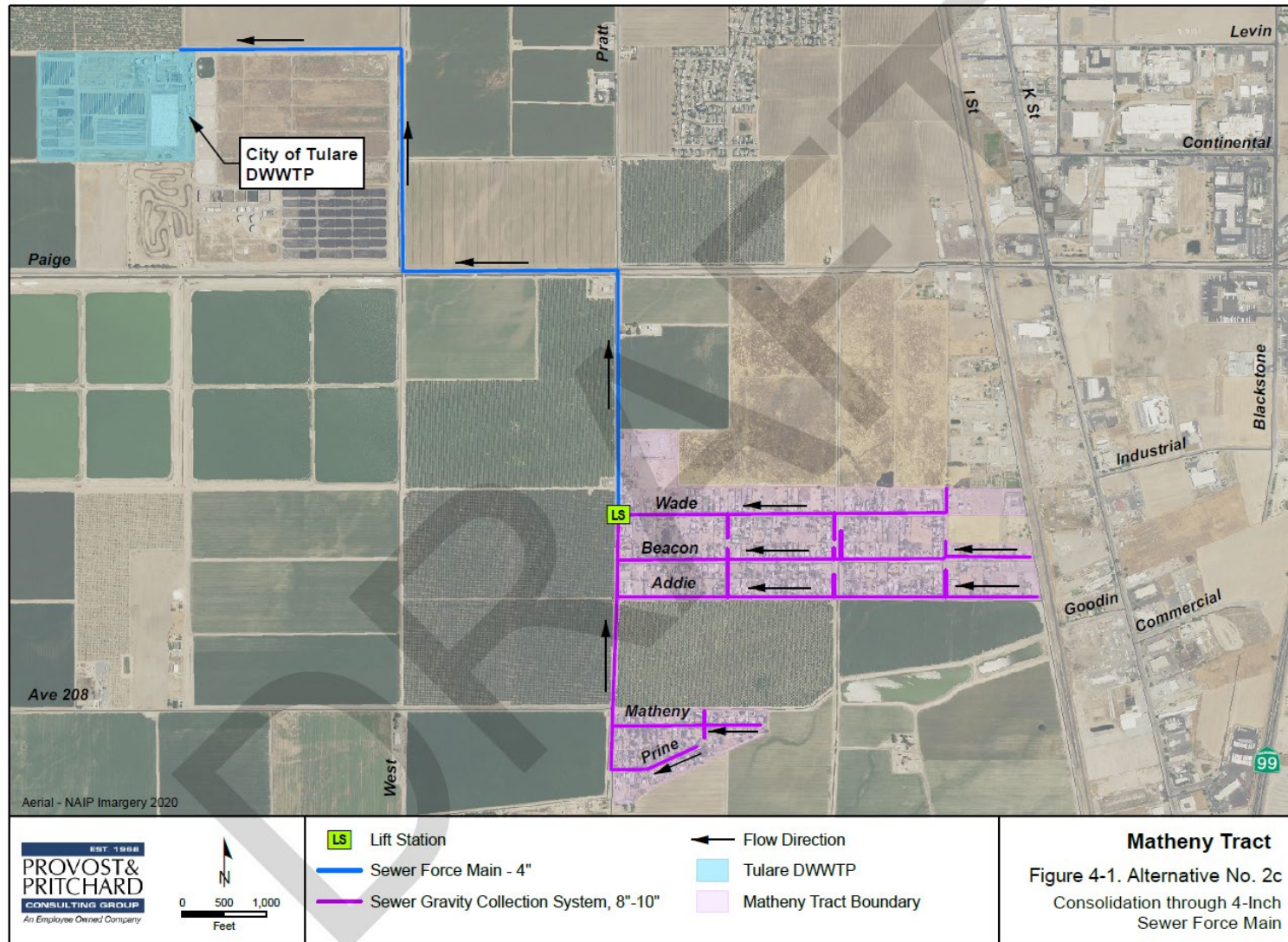


Figure 2
Matheny Tract Wastewater Collection System and Pipeline Inter-tie
Project Location Map



A. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- | | | |
|---|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture / Forestry Resources | <input type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Energy |
| <input type="checkbox"/> Geology / Soils | <input type="checkbox"/> Greenhouse Gas Emissions | <input checked="" type="checkbox"/> Hazards and Hazardous Materials |
| <input type="checkbox"/> Hydrology / Water Quality | <input type="checkbox"/> Land Use / Planning | <input type="checkbox"/> Mineral Resources |
| <input type="checkbox"/> Noise | <input type="checkbox"/> Population / Housing | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation | <input checked="" type="checkbox"/> Tribal Cultural Resources |
| <input checked="" type="checkbox"/> Utilities / Service Systems | <input type="checkbox"/> Wildfire | <input type="checkbox"/> Mandatory Findings of Significance |

B. DETERMINATION

On the basis of this initial evaluation:

- ☐ I find that the proposed project **COULD NOT** have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there **WILL NOT** be a significant effect in this case because revisions in the project have been made or agreed to by the project proponent. A **MITIGATED NEGATIVE DECLARATION** will be prepared.
- ☐ I find that the proposed project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required.
- ☐ I find that the proposed project **MAY** have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier **EIR** or **NEGATIVE DECLARATION** pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier **EIR** or **NEGATIVE DECLARATION**, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature: _____

Hector Guerra
Printed Name

Date: _____

Chief Environmental Planner
Title

Signature: _____

Reed Schenke, P.E.
Printed Name

Date: _____

Environmental Assessment Officer
Title

C. EVALUATION OF ENVIRONMENTAL IMPACTS

- 1) A brief explanation is required for all answers except “No Impact” answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A “No Impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact” answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
- 2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
- 3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. “Potentially Significant Impact” is appropriate if there is substantial evidence that an effect may be significant. If there are one or more “Potentially Significant Impact” entries when the determination is made, an EIR is required.
- 4) “Negative Declaration: Less Than Significant With Mitigation Incorporated” applies where the incorporation of mitigation measures has reduced an effect from “Potentially Significant Impact” to a “Less Than Significant Impact.” The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from “Earlier Analyses,” as described in (5) below, may be cross-referenced).
- 5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
 - a) Earlier Analysis Used. Identify and state where they are available for review.
 - b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c) Mitigation Measures. For effects that are “Less than Significant with Mitigation Measures Incorporated,” describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
- 6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
- 7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
- 8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project’s environmental effects in whatever format is selected.
- 9) The explanation of each issue should identify:
 - a) the significance criteria or threshold, if any, used to evaluate each question; and
 - b) the mitigation measure identified, if any, to reduce the impact to less than significance.

I. AESTHETICS

Would the project:		SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT IMPACT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a)	Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c)	In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Aesthetics, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, the Tulare County General Plan 2030 Update EIR, Matheny Tract Wastewater Collection System Draft, Recirculated, and Final EIRs are incorporated herein by reference in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Environmental Setting

Tulare County is located in a predominately agricultural region of central California. The terrain in the County varies. The western portion of the County includes a portion of the San Joaquin Valley (Valley), and is generally flat, with large agricultural areas with generally compact towns interspersed. In the eastern portion of the County are foothills and the Sierra Nevada mountain range. The project site is located on the Valley floor, which is very fertile and has been intensively cultivated for many decades. Agriculture and related industries such as agricultural packing and shipping operations and small and medium sized manufacturing plants make up the economic base of the Valley region. Many communities are small and rural, surrounded by agricultural uses such as row crops, orchards, and dairies. From several locations on major roads and highways throughout the County, electric towers and telephone poles are noticeable. Mature trees, residential, commercial, and industrial development, utility structures, and other vertical forms are highly visible in the region because of the flat terrain. Where such vertical elements are absent, views are expansive. Most structures are small; usually one story in height, through occasionally two-story structures can be seen commercial or industrial agricultural complexes. The County provides a wide range of views from both mobile and stationary locations...⁵

The proposed Project is located on the San Joaquin Valley floor in the unincorporated community of Matheny Tract; a predominantly single-family residential community located south of the City of Tulare. The land uses surrounding the project sites are primarily agricultural. Adjacent properties to the north, west, and south of the project sites are farmland including field and row crops and nut trees. Industrial uses are located east of and adjacent to the Matheny North site and 0.7 miles east of the Matheny South site, and lie within the city limits of the City of Tulare.

The comprehensive Project Description can be found on pages 2 and 3 of this document. In summary, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the

⁵ Tulare County 2030 General Plan: Recirculated Draft EIR (RDEIR). Page 3.1-11. Accessed in January 2023 at: <http://generalplan.co.tulare.ca.us/documents/generalplan2010/RecirculatedDraftEIR.pdf>

DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary referred to as the wastewater collection system and pipeline inter-tie Project).

Regulatory Setting

Federal

Aesthetic resources are protected by several federal regulations, none of which are relevant to this Project because it will not be located on lands administered by a federal agency nor is the Project applicant requesting federal funding or any federal permits.

State

Title 24 Outdoor Lighting Standards

“The 2019 Building Energy Efficiency Standards improve upon the 2016 Energy Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. Buildings whose permit applications are dated on or after January 1, 2020, must comply with the 2019 Standards. The California Energy Commission updates the standards every three years.”⁶ Title 24 Outdoor Lighting Standards were adopted by the State of California Energy Commission (Commission) (Title 24, Parts 1 and 6, Building Energy Efficiency Standards (Standards) went into effect on January 1, 2020. The changes focus on “four key areas: smart residential photovoltaic systems, updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa), residential and nonresidential ventilation requirements, and nonresidential lighting requirements.”⁷ “The significant changes for outdoor lighting systems in the 2019 update to the Energy Standards include:

- Changes to outdoor lighting power allowances with the allowance values based on LED lighting technologies. Revisions to the general hardscape lighting values in Tables 140.7-A and the specific lighting application values in Table 140.7-B for all Lighting Zones (LZ) – Lighting Zone 1 thru Lighting Zone 4.
- Add separate lighting power allowance values for concrete-surfaced and for asphalt-surfaced hardscape lighting application in Table 140.7-A.
- Add new lighting power allowances for narrow band spectrum light sources used in applications for minimizing outdoor lighting impacts on professional astronomy and nocturnal habitat. (Table 140.7-A)
- Revision and streamlining outdoor lighting control requirements. (§130.2(c))
- Healthcare facilities overseen by the California Office of Statewide Health Planning and Development (OSHPD) have to comply with the Energy Standards including the outdoor lighting requirements for all outdoor areas of healthcare facilities.”⁸

Outdoor Lighting Zones

“The basic premise of the Energy Standards is to base allowable outdoor lighting power on the brightness of the surrounding conditions. The Energy Standards contain lighting power allowances for new lighting installations and specific alterations that are dependent on the lighting zone in which the project is located.

Five categories of outdoor lighting zones are defined, and they are LZ0, LZ1, LZ2, LZ3 and LZ4. Lighting zones with lower numbers are darker from LZ0 which is in national parks and other areas intended to be very dark at night to LZ4 for high intensity nighttime use, such as entertainment or commercial districts or areas with special security considerations requiring very high light levels. The eyes adapt to darker surrounding conditions and less light is required to properly see; when the surrounding conditions get brighter, more light is needed to see.”⁹

“The least power is allowed in Lighting Zone 1 and increasingly more power is allowed in Lighting Zones 2, 3, and 4. Lighting Zone 0 is intended for undeveloped spaces in parks and wildlife preserves and is very low ambient illumination.

⁶ California Energy Commission (CEC). Accessed August 2022 at: <https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2019-building-energy-efficiency>

⁷ CEC. Energy Commission Adopts Standards Requiring Solar Systems for New Homes, First in Nation. Accessed August 2022 at: <https://www.energy.ca.gov/news/2018-05/energy-commission-adopts-standards-requiring-solar-systems-new-homes-first>

⁸ CEC. Outdoor Lighting – Overview. 6.1. Overview. What’s new for the 2019 California Energy Code. Page 6-1 Accessed August 2022 at: https://www.energy.ca.gov/sites/default/files/2020-05/06_OutdoorLighting.pdf

⁹ Ibid. Outdoor Lighting Zones. 6-4.

The following summarizes the default locations for outdoor lighting zones as specified in §10-114:

- Lighting Zone 0 areas are undeveloped areas of government designated parks, recreation areas, and wildlife preserves;
- Lighting Zone 1 areas are developed portions of government designated parks, recreation areas and wildlife preserves;
- Rural areas are Lighting Zone 2;
- Urban areas are Lighting Zone 3;
- Lighting Zone 4 is a special use district that may be created by a local government through application to the Energy Commission.”¹⁰

California Scenic Highway Program

The California Scenic Highway Program was established by the state Legislature in 1963 for the purpose of protecting and enhancing the natural scenic beauty of California highways and adjacent corridors through special conservation treatment. The State Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been officially designated. The state laws governing the scenic highways program are found in The Streets and Highways Code Sections 260-263.¹¹ In Tulare County, portions of State Routes 180, 190, and 198 are designated as state scenic highways.¹²

Local

Tulare County General Plan 2030 Update

The Tulare County General Plan Update 2030 Part 1: Goals and Policies Report (GPR) (August 2012) includes a number of goals and policies relating to scenic protection of County resources. The Goals and Policies Report Framework Concept No. 3 addresses Scenic Landscapes:

“The scenic landscapes in Tulare County will continue to be one of the County’s most visible assets. The Tulare County General Plan emphasizes the enhancement and preservation of these resources as critical to the future of the County. The County will continue to assess the recreational, tourism, quality of life, and economic benefits that scenic landscapes provide and implement programs that preserve and use this resource to the fullest extent.”¹³

The Tulare County General Plan 2030 Update: Chapter 7 – Scenic Landscapes, contains the following goals and policies that relate to aesthetics, preservation of scenic vistas and daytime lighting/nighttime glare and which have potential relevance to the Project’s CEQA review: *SL-1.2 Working Landscapes* which requires that new non-agricultural structures and infrastructure located in or adjacent to croplands, orchards, vineyards, and open rangelands be sited so as to not obstruct important viewsheds and to be designed to reflect unique relationships with the landscape; *ERM-5.19 Night Sky Protection* where Upon demonstrated interest by a community, mountain service center, or hamlet, the County will determine the best means by which to protect the visibility of the night sky; and *ERM-1.15 Minimize Lighting Impacts* where in the County shall ensure that lighting associated with new development or facilities (including street lighting, recreational facilities, and parking) shall be designed to prevent artificial lighting from illuminating adjacent natural areas at a level greater than one foot candle above ambient conditions.

“Tulare County’s existing General Plan identifies State designated scenic highways and County designated eligible highways. There are three highway segments designated as eligible by the State. These include State Route 198 from Visalia to Three Rivers, State Route 190 from Porterville to Ponderosa, and State Route 180 extending through Federal land in the northern portion of Tulare County. State Route 198 closely follows around Lake Kaweah and the Kaweah River, while State Route 190 follows around Lake Success and the Tule River. Both Scenic Highways travel through agricultural areas of the valley floor to the foothills and the Sierra Nevada Range. Additionally, the General Plan Update identifies preserving the rural agricultural

¹⁰ Op. Cit.

¹¹ California Department of Transportation (Caltrans). Scenic Highway Program. Frequently Asked Questions. Accessed January 2023 at: <https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways/lap-liv-i-scenic-highways-faq2>.

¹² County of Tulare. Tulare County General Plan 2030 Update. Goals and Policies Report. Designated Candidate Scenic and County Scenic Routes Figure 7-1. Page 7-5. Accessed January 2023 at: <http://generalplan.co.tulare.ca.us/documents/GP/001Adopted%20Tulare%20County%20General%20Plan%20Materials/000General%20Plan%202030%20Part%20I%20and%20Part%20II/GENERAL%20PLAN%202012.pdf>

¹³ Ibid. C. Environment. Environmental Landscapes. Concept 1: Scenic Landscapes. C-1.

character of SR 99 and SR 63 as valuable to the County and communities.”¹⁴ The proposed Project is not near or in proximity of these State Route locations.

Project Impact Analysis:

- a) **No Impact:** As noted earlier, the comprehensive Project Description can be found on pages 2 and 3 of this document. In summary, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary referred to as the wastewater collection system and pipeline inter-tie Project). For the purposes of this proposed Project, a scenic vista is defined as an area that is designated, signed, and accessible to the public for the purpose of viewing and sightseeing. The Project site is located on the floor of the San Joaquin Valley in south-east Tulare County. The site is adjacent to agricultural (production and/or commercial) uses in all directions. The Project would be low-profile (that is, no structure will be greater than 35’ feet in height). No parts of the Project would obstruct local scenic views or be visually intrusive or incompatible with the surrounding area. There are no scenic vistas within the vicinity of the Project area. The construction-related activities and operation of underground pipelines would not result in a potential impact to the visual character of the area. At least one lift station (or other appurtenant structures) may be constructed above ground. However, these structures are visually consistent with the existing agricultural infrastructure in the area and would not impact any scenic vistas. Therefore, the proposed Project would have a no impact on a scenic vista.
- b) **Less Than Significant Impact:** There are no rock outcroppings, historic buildings, or other designated scenic resources within or near the proposed wastewater collection system and pipeline inter-tie Project. Portions of SRs 190, 198, and 180 are eligible for state scenic highway designation. However, they are not designated as such at this time. Additionally, the Tulare County 2030 General Plan lists a series of Scenic County Routes, several of which are located in agricultural areas. Road 96, the roadway where the pipeline connection to Tulare’s wastewater collection pipeline would occur, is not designated as a Scenic County Route. During construction-related activities, the visual character of the Project would be impacted as a result of trenching and other construction-related activities. However, these impacts would be short-term, temporary, and are typical of these types of construction projects. The long-term operation of the underground pipelines would not present the potential to impact the visual character of the Road 96 view-shed. While the lift station (and other appurtenant structures) may be constructed above ground, these structures are visually consistent with the existing agricultural infrastructure along Road 96 and would not result in a significant impact on scenic resources such as trees, rock outcroppings, and historic buildings within a state scenic highway. The Project would result in less than significant impact to an eligible or designated state scenic highway or other scenic resources.
- c) **No Impact:** As noted earlier, the proposed wastewater collection system and pipeline inter-tie Project is located in a predominantly agricultural area with existing agricultural uses to the north, west, south, and east. On clear days, the Sierra Nevada Mountains’ highest peaks are visible despite being located more than 35 miles east of the proposed Project site. During construction-related activities, the visual character of the Project area would be impacted as a result of trenching and other construction-related activities. However, these impacts would be short-term, temporary, and intermittent which is typical for these types of construction projects. The long-term operation of the underground pipelines would not impact the visual character of the site or area. While up more than one lift stations and other appurtenant structures may be constructed above ground, these structures are visually consistent with the existing agricultural infrastructure in the area and would not substantially degrade the existing visual character or quality of the site and its surroundings. Therefore, the proposed Project would not conflict with applicable zoning and other regulations regarding scenic quality resulting in a less than significant impact to this resource.
- d) **No Impact:** Lighting impacts are often associated with the use of artificial light during the evening and nighttime hours. Impacts could potentially include light emanating from building interiors (seen through windows) and light from exterior sources, such as security lighting, street lighting, etc. Glare is typically a daytime occurrence caused by light reflecting off highly polished surfaces such as window glass or polished metallic surfaces. Construction of the Project would occur on weekdays during daylight hours, and would not require any lighting. Additionally, there would be no lighting sources associated with the operation of the Project. Therefore, the proposed Project would result in no impact to this Checklist Item.

¹⁴ Tulare County General Plan 2030 Update. August 2012. Recirculated Draft EIR. Page 3.1-11. Accessed in January 2023 at: <http://generalplan.co.tulare.ca.us/documents/generalplan2010/RecirculatedDraftEIR.pdf>

Cumulative Impact Analysis: **No Impact** – The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, the Tulare County General Plan 2030 Update EIR, and the Matheny Tract Wastewater Collection System Draft, Recirculated, and Final EIRs. As the proposed Project would not create any project specific visual impacts, no cumulative impact on visual character will occur.

II. AGRICULTURAL AND FOREST RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the Rural Valley Lands Plan point evaluation system prepared by the County of Tulare as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Would the project:	SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT IMPACT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agriculture use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources code 12220(g), timberland (as defined in Public Resource Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Agriculture and Forest Resources, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, Tulare County General Plan 2030 Update EIR and, Matheny Tract Wastewater Collection System DEIR and REIR, are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Environmental Setting

As noted earlier, the comprehensive Project Description can be found on pages 2 and 3 of this document. In summary, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields; and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary referred to as the wastewater collection system and pipeline inter-tie Project).

As the proposed Project site is located in the San Joaquin Valley portion of Tulare County, this area is characterized by rich, highly productive farmland. Agriculture is the most important sector in Tulare County's economy, and agriculture and related

industries make Tulare County one of the two most productive agricultural counties in the United States, according to Tulare County Farm Bureau statistics.¹⁵ “Agricultural lands (crop and commodity production and grazing) also provide the County’s most visible source of open space lands. As such, the protection of agricultural lands and continued growth and production of agriculture industries is essential to all County residents.”¹⁶

The 2021 Tulare County Annual Crop and Livestock Report stated “Tulare County’s total gross production value for 2021 as \$8,089,621,300. This represents an increase of \$949,544,800 or 13.3% above 2020’s value of \$7,140,076,500. Milk continues to be the leading agricultural commodity in Tulare County; with a gross value of \$1,943,043,000, an increase of \$76,347,000 or 4%. Milk represents 23% of the total crop and livestock value for 2021. Total milk production increased by 1%. Livestock and Poultry’s gross value of \$732,406,000 represents an increase of 9% above that of 2020, mostly due to the higher per unit value for both cattle and poultry. The total value of all Field Crop production in 2021 was \$571,436,000, an increase of 13% from the previous year. This increase is mostly attributed to better yields and prices for several field crops. Fruit and Nut commodities were valued at \$4,607,905,000 an increase of 20%. This increase can be partially attributed to the increase in Almond, Pistachio, and Tangerine acreage. Nursery Products increased by 9% compared to 2020 with an overall value of \$118,779,000. Vegetable crops were valued at \$20,544,000, representing a 22% decrease. This can be attributed to a decrease in acreage for Sweet Corn compared to 2020.

Tulare County’s agricultural strength is based on the diversity of the crops produced. The 2021 crop report covers more than 150 different commodities, 42 of which have a gross value in excess of \$1,000,000. Although individual commodities may experience difficulties from year to year, Tulare County continues to produce high-quality crops that provide food and fiber to more than 90 countries throughout the world.”¹⁷

The most recent statewide California Farmland Conversion Report (CFCR) from the California Department of Conservation Farmland Mapping and Monitoring Program (FMMP) assesses statewide farmlands from the period 2014-2016. However, Tulare County specific data from the period 2014-2016 indicates that agricultural lands in Tulare County in 2014 included 859,171 acres of important farmland (designated as FMMP Prime, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance) and 439,961 acres of grazing land, for a total of 1,299,132 acres of agricultural land.¹⁸

Table 2-1 ¹⁹	
2014 Tulare County Lands under Williamson Act or Farmland Security Zone Contracts	
Acres	Category
565,190	Total prime = Prime active + NR Prime
505,645	Total Nonprime = Nonprime active + NR Prime
11,101	Farmland Security Zone
1,081,936	TOTAL ACRES in Williamson Act and Farmland Security Zone contracts

Farmlands of Statewide Importance are defined as “lands similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.”²⁰

Important Farmland Trends

Using data collected by the FMMP, farmland acreage has been consistently decreasing for each two-year period since 1998²¹. In the 2010 FMMP analysis, Tulare County lost 17,502 acres of important farmland, and 17,748 acres of total farmland between 2008 and 2010; 13,815 acres of important farmland, and 14,216 acres of total farmland between 2010 and 2012; and

¹⁵ Tulare County Farm Bureau, “Agricultural Facts,” Accessed January 2023 at: <http://www.tulcofb.org/index.php?page=agfacts>

¹⁶ Tulare County General Plan 2030 Update. August 2012. Page 3-4.

¹⁷ 2021 Tulare County Annual Crop and Livestock Report. September 2021. Cover letter from Tom Tucker, Agricultural Commissioner. Accessed January 2023 at: <https://agcomm.co.tulare.ca.us/pest-exclusion-standardization/crop-reports1/crop-reports-2021-2030/crop-and-livestock-report-2021/>.

¹⁸ California Department of Conservation (CA DOC). Division of Land Resource Protection. Farmland Mapping and Monitoring Program, Table 2014-2016. Table A-44, Part I. Accessed August 2022 at: <http://www.conservation.ca.gov/dlrp/fmmp/Pages/Tulare.aspx>. The California Farmland Conversion Report 2014-2016 Accessed January 2023 at: https://www.conservation.ca.gov/dlrp/fmmp/Pages/2014-2016_Farmland_Conversion_Report.aspx.

¹⁹ Ibid.

²⁰ Ibid.

²¹ CA DOC. Division of Land Resource Protection. “Williamson Act Status Report (2010)”. Page 14. Accessed January 2023 at: https://www.conservation.ca.gov/dlrp/wa/Pages/stats_reports.aspx.

17,441 acres of important farmland, and 17,678 acres of total farmland between 2012 and 2014.²² However, as recent as 2014-2016, Tulare County gained 1,469 acres of important farmland, but also lost 2,513 acres of total farmland.²³ Between 2016 and 2018, the county lost 109 acres of important farmland while overall gaining 171 acres across all agricultural land.²⁴

Table 2-2 Tulare County FMMP-Designated Land (1998-2016)									
Farmland Category	Total Acres Inventoried								
	1998²⁵	2000²⁶	2002²⁷	2004²⁸	2006²⁹	2010³⁰	2012³¹	2014³²	2016³³
Prime Farmland	396,130	393,030	387,620	384,340	379,760	370,249	368,527	366,414	366,136
Farmland of Statewide Importance	357,220	351,720	345,760	339,580	332,160	323,599	321,296	320,886	322,355
Unique Farmland	11,790	11,720	12,750	12,530	12,220	11,593	11,474	11,421	11,691
Important Farmland Subtotal	765,140	756,470	746,130	736,450	724,140	705,441	701,297	859,171	858,119
Farmland of Local Importance	110,040	124,140	126,820	137,440	143,830	154,550	158,823	160,450	157,937
Grazing Land	439,960	434,050	440,550	440,620	440,140	440,042	439,940	439,961	439,934
Total	1,315,140	1,314,660	1,313,500	1,314,560	1,308,110	1,300,033	1,300,060	1,299,132	1,298,053

Table 2-3 shows soil information for the proposed Project site.

TABLE 2-3 SOIL INFORMATION FOR PROJECT SITE				
Map Unit Symbol	Map Unit Name	Non-Irrigated Capability Class	Rating Grade	Acreage/Site Percentage
130	Nord fine sandy loam, 0 to 2% slopes	4	1 Excellent (81-100)	100%
<i>Source: USDA/NRCS 2020 accessed at: https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx</i>				

Forest Lands

“Timberlands that are available for harvesting are located in the eastern portion of Tulare County in the Sequoia National Forest. Hardwoods found in the Sequoia National Forest are occasionally harvested for fuel wood, in addition to use for timber

²² CA DOC. Tulare County Land Use Conversion Tables 2008-2010, 2010-2012, 2012-2014, and 2014-2016. Table A-44, Part III. Accessed January 2023 at: <http://www.conservation.ca.gov/dlrp/fmmp/Pages/Tulare.aspx>.

²³ CA DOC. Tulare County Land Use Conversion Tables 2014-2016. Table A-44, Part I. Accessed January 2023 at: <https://www.conservation.ca.gov/dlrp/fmmp/Pages/Tulare.aspx>.

²⁴ CA DOC. Tulare County Land Use Conversion Tables 2016-2018. Accessed January 2023 at: <https://www.conservation.ca.gov/dlrp/fmmp/Pages/Tulare.aspx>.

²⁵ Tulare County General Plan 2030 Update Recirculated Draft EIR Sch#2006041162. Table 3.10-4.

²⁶ Ibid.

²⁷ Op. Cit.

²⁸ Op. Cit.

²⁹ Op. Cit.

³⁰ Tulare County Resource Management Agency. Tulare County Subvention Report for Fiscal Year 2012-2013 (submitted to Department of Conservation, November 2012).

³¹ Ibid.

³² California Department of Conservation, Division of Land Resource Protection. Farmland Mapping and Monitoring Program, Table 2014-2016. Table A-44, Part I. Accessed January 2023 at: <https://www.conservation.ca.gov/dlrp/fmmp/Pages/Tulare.aspx>.

³³ Ibid.

production. Since most of the timberlands are located in Sequoia National Forest, the U.S. Forest Service has principal jurisdiction, which encompasses over 3 million acres. The U.S. Forest Service leases these federal lands for timber harvests.”³⁴

As the proposed Project is located on the Valley floor, there is no timberland or forest in the Project vicinity.

Regulatory Setting

Federal

Federal regulations for agriculture and forest resources are not relevant to this project because it is not a federal undertaking (the Project site is not located on lands administered by a federal agency, and the Project applicant is not requesting federal funding or any federal permits).

State

California Environmental Quality Act (CEQA) Definition of Agricultural Lands

Public Resources Code Section 21060.1 defines “agricultural land” for the purposes of assessing environmental impacts using the FMMP. The FMMP was established in 1982 to assess the location, quality, and quantity of agricultural lands and the conversion of these lands. The FMMP serves as a tool to analyze agricultural land use and land use changes throughout California. As such, this Project is being evaluated using the FMMP pursuant to CEQA.

California Department of Conservation, Division of Land Resource Protection Farmland Mapping and Monitoring Program

The California Department of Conservation (DOC) applies the Natural Resources Conservation Service (NRCS) soil classifications to identify agricultural lands. These agricultural designations are used in planning for the present and future of California’s agricultural land resources. Pursuant to the DOC’s FMMP, these designated agricultural lands are included in the Important Farmland Maps (IFM). As noted earlier the FMMP was established in 1982 to assess the location, quality and quantity of agricultural lands, and the conversion of these lands. The FMMP serves as tool to analyze agricultural land use and land use changes throughout California. The DOC has a minimum mapping unit of 10 acres, with parcels that are smaller than 10 acres being absorbed into the surrounding classifications.

The following list provides a comprehensive description of all the categories mapped by the DOC. Collectively, lands classified as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland are referred to as Farmland.³⁵

- Prime Farmland. Farmland that has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- Farmland of Statewide Importance. Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- Unique Farmland. Farmland of lesser quality soils used for the production of the State’s leading agricultural crops. This land is usually irrigated, but may include non-irrigated groves or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.
- Farmland of Local Importance. Land of importance to the local agricultural economy as determined by each county’s board of supervisors and a local advisory committee.
- Grazing Land. Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen’s Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities. The minimum mapping unit for Grazing Land is 40 acres.
- Urban and Builtup Land. Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, institutional, public administrative purposes, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

³⁴ Ibid. 4-20.

³⁵ California Department of Conservation. FMMP – Important Farmland Map Categories. Accessed January 2023 at: <https://www.conservation.ca.gov/dlrp/fmmp/Pages/Important-Farmland-Categories.aspx>

- Other Land. Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines and borrow pits; and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

California Land Conservation Act (Williamson Act)

The Williamson Act, also known as the California Land Conservation Act of 1965, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments which are much lower than normal because they are based upon farming and open space uses as opposed to full market value. The Department of Conservation assists all levels of government, and landowners in the interpretation of the Williamson Act related government code. The Department also researches, publishes and disseminates information regarding the policies, purposes, procedures, and administration of the Williamson Act according to government code. Participating counties and cities are required to establish their own rules and regulations regarding implementation of the Act within their jurisdiction. These rules include but are not limited to: enrollment guidelines, acreage minimums, enforcement procedures, allowable uses, and compatible uses.³⁶

Williamson Act Contracts are formed between a county or city and a landowner for the purpose of restricting specific parcels of land to agricultural or related open space use. Private land within locally-designated agricultural preserve areas are eligible for enrollment under a contract. The minimum term for contracts is ten years. However, since the contract term automatically renews on each anniversary date of the contract, the actual term is essentially indefinite. Landowners receive substantially reduced property tax assessments in return for enrollment under a Williamson Act contract. Property tax assessments of Williamson Act contracted land are based upon generated income as opposed to potential market value of the property.³⁷

Forestry Resources

State regulations regarding forestry resources are not relevant to the proposed project because no forestry resources exist at the Project site.

Local

Tulare County General Plan 2030 Update

The Tulare County General Plan has a number of policies that apply to projects within the County of Tulare.³⁸ The following General Plan policies apply to the proposed Project: Policies designed to promote future development patterns that focus growth within established community areas and to mitigate loss of agricultural lands include the following: *AG-1.1 Primary Land Use* - The County shall maintain agriculture as the primary land use in the valley region of the County, not only in recognition of the economic importance of agriculture, but also in terms of agriculture's real contribution to the conservation of open space and natural resources; *AG-1.3 Williamson Act* - The County should promote the use of the California Land Conservation Act (Williamson Act) on all agricultural lands throughout the County located outside established UDBs. However, this policy carries with it a caveat that support for the Williamson Act as a tax reduction component is premised on continued funding of the State subvention program that offsets the loss of property taxes; *AG-1.5 Substandard Williamson Act Parcels* - The County may work to remove parcels that are less than 10 acres in Prime Farmland and less than 40 Acres in Non-Prime Farmland from Williamson Act Contracts (Williamson Act key term for Prime/Non-Prime); *AG-1.6 Conservation Easements* wherein the County shall consider developing an Agricultural Conservation Easement Program (ACEP) to help protect and preserve agricultural lands (including "Important Farmlands"), as defined in this Element; *AG-1.7 Preservation of Agricultural Lands* - The County shall promote the preservation of its agricultural economic base and open space resources through the implementation of resource management programs such as the Williamson Act, Rural Valley Lands Plan, Foothill Growth Management Plan or similar types of strategies and the identification of growth boundaries for all urban areas located in the County; and *AG-1.10 Extension of Infrastructure into Agricultural Areas* - The County shall oppose extension of urban services, such as sewer lines, water lines, or other urban infrastructure, into areas designated for agriculture use unless necessary to resolve a public health situation. Where necessary to address a public health issue, services should be located in public rights-of-way in order to prevent interference with agricultural operations and to provide ease of access for operation

³⁶ California Department of Conservation (DOC). Williamson Act Program. Accessed January 2023 at: <https://www.conservation.ca.gov/dlrp/wa>.

³⁷ California DOC. Williamson Act Contracts. Accessed January 2023 at: <https://www.conservation.ca.gov/dlrp/wa/Pages/contracts.aspx>.

³⁸ Tulare County General Plan 2030 Update, Part 1 – Goals and Policies Report.

and maintenance. Service capacity and length of lines should be designed to prevent the conversion of agricultural lands into urban/suburban uses.

Project Impact Analysis:

- a) No Impact:** As noted earlier, the comprehensive Project Description can be found on pages 2 and 3 of this document. In summary, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields; and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary referred to as the wastewater collection system and pipeline inter-tie Project).

The Project site consists of the developed areas within Matheny Tract, and within existing rural and semi-rural County and possibly City of Tulare rights-of-way consisting of paved roadways and dirt/gravel shoulders; as such, agricultural land would not be impacted. Also, short-term, temporary equipment or materials staging areas on lands which are already devoid of agricultural uses would also be used. As such, agricultural land would not be impacted by this phase of construction-related activities. Construction of the pipelines would not result in the conversion of agriculturally productive lands to non-agricultural uses. Therefore, no impacts would occur.

- b) No Impact:** While some of the surrounding properties are under Williamson Act Contracts, the Project would be constructed within existing road rights-of-way. Therefore, the Project would not result in conflicts with existing agricultural zones or Williamson Act contracted lands; as such, no impact would occur.
- c) No Impact:** The proposed Project will not occur on land zoned as forest land or timberland, or result in a loss of forest land. As such, the Project would not conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources code 12220(g)), timberland (as defined in Public Resource Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)). There is no impact.
- d) No Impact:** As noted above, the proposed Project will not occur on land zoned as forest land or timberland, or result in a loss of forest land. As such, the proposed Project would not conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources code 12220(g)), timberland (as defined in Public Resource Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)). There is no impact.
- e) No Impact:** the proposed Project would not involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use. There would be no impact.

Cumulative Impact Analysis: **No Impact** – The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, Tulare County General Plan 2030 Update EIR, and the Matheny Tract Wastewater Collection System Draft, Recirculated, and Final EIRs. As noted earlier, the comprehensive Project Description can be found on pages 2 and 3 of this document. In summary, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields; and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary referred to as the wastewater collection system and pipeline inter-tie Project). As such, the proposed wastewater collection system and pipeline inter-tie Project would result in no impacts on this resource.

III. AIR QUALITY

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.

	SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT IMPACT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Air Quality Resource, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, Tulare County General Plan 2030 Update EIR, Matheny Wastewater Collection System DEIR and REIR, are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Environmental Setting

The proposed Project is located in the San Joaquin Valley Air Basin (SJVAB), a continuous inter-mountain air basin. The Sierra Nevada Range forms the eastern boundary; the Coast Range forms the western boundary; and the Tehachapi Mountains form the southern boundary. These topographic features restrict air movement through and beyond the SJVAB. The SJVAB is comprised of San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, and Tulare Counties and the valley portion of Kern County; it is approximately 25,000 square miles in area. Tulare County lies within the southern portion of the SJVAB. Air resources in the SJVAB is managed by the San Joaquin Valley Air Pollution Control District (Air District, District, or SJVAPCD).

As noted earlier, the comprehensive Project Description can be found on pages 2 and 3 of this document. In summary, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields; and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary referred to as the Wastewater Collection System and Pipeline Inter-tie Project).

Ambient Air Quality Standards

Both the federal government (through the United State Environmental Protection Agency (EPA)) and the State of California (through the California Air Resources Board (CARB or ARB)) have established health-based ambient air quality standards (AAQS) for six air pollutants, commonly referred to as “criteria pollutants.” The six criteria pollutants are: carbon monoxide (CO), ozone (O₃), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), particulate matter (PM₁₀ and PM_{2.5}), and lead (Pb).

Criteria Pollutants Assessed

The following criteria air pollutants were assessed in the Technical Memo (included in Attachment A of this document): reactive organic gases (ROG), oxides of nitrogen (NO_x), carbon monoxide (CO), sulfur dioxide (SO₂), particulate matter less than 10 microns in diameter (PM₁₀), and particulate matter less than 2.5 microns in diameter (PM_{2.5}). Note that the proposed Project would emit ozone precursors ROG and NO_x. However, the proposed project would not directly emit ozone since it is formed in the atmosphere during the photochemical reaction of ozone precursors. General descriptions and most relevant effects from pollutant exposure of the criteria pollutants of concern are listed in **Table 3-1**.

Table 3-1
Descriptions of Criteria Pollutants of Concern³⁹

Criteria Pollutant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
Ozone	Ozone is a photochemical pollutant as it is not emitted directly into the atmosphere, but is formed by a complex series of chemical reactions between volatile organic compounds (VOC), nitrous oxides (NO _x), and sunlight. Ozone is a regional pollutant that is generated over a large area and is transported and spread by the wind.	Ozone is a secondary pollutant; thus, it is not emitted directly into the lower level of the atmosphere. The primary sources of ozone precursors (VOC and NO _x) are mobile sources (on-road and off-road vehicle exhaust).	Irritate respiratory system; reduce lung function; breathing pattern changes; reduction of breathing capacity; inflame and damage cells that line the lungs; make lungs more susceptible to infection; aggravate asthma; aggravate other chronic lung diseases; cause permanent lung damage; some immunological changes; increased mortality risk; vegetation and property damage.
Particulate matter (PM ₁₀)	Suspended particulate matter is a mixture of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM ₁₀ refers to particulate matter that is between 2.5 and 10 microns in diameter, (one micron is one-millionth of a meter). PM _{2.5} refers to particulate matter that is 2.5 microns or less in diameter, about one-thirtieth the size of the average human hair.	Stationary sources include fuel or wood combustion for electrical utilities, residential space heating, and industrial processes; construction and demolition; metals, minerals, and petrochemicals; wood products processing; mills and elevators used in agriculture; erosion from tilled lands; waste disposal, and recycling. Mobile or transportation related sources are from vehicle exhaust and road dust. Secondary particles form from reactions in the atmosphere.	<ul style="list-style-type: none"> • Short-term exposure (hours/days): irritation of the eyes, nose, throat; coughing; phlegm; chest tightness; shortness of breath; aggravate existing lung disease, causing asthma attacks and acute bronchitis; those with heart disease can suffer heart attacks and arrhythmias. • Long-term exposure: reduced lung function; chronic bronchitis; changes in lung morphology; death.
Particulate matter (PM _{2.5})			
Nitrogen dioxide (NO ₂)	During combustion of fossil fuels, oxygen reacts with nitrogen to produce nitrogen oxides—NO _x (NO, NO ₂ , NO ₃ , N ₂ O, N ₂ O ₃ , N ₂ O ₄ , and N ₂ O ₅). NO _x is a precursor to ozone, PM ₁₀ , and PM _{2.5} formation. NO _x can react with compounds to form nitric acid and related small particles and result in particulate matter (PM) related health effects.	NO _x is produced in motor vehicle internal combustion engines and fossil fuel-fired electric utility and industrial boilers. Nitrogen dioxide forms quickly from NO _x emissions. NO ₂ concentrations near major roads can be 30 to 100 percent higher than those at monitoring stations.	Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; contributions to atmospheric discoloration; increased visits to hospital for respiratory illnesses.
Carbon monoxide (CO)	CO is a colorless, odorless, toxic gas. CO is somewhat soluble in water; therefore, rainfall and fog can suppress CO conditions. CO enters the body through the lungs, dissolves in the blood, replaces oxygen as an attachment to hemoglobin, and reduces available oxygen in the blood.	CO is produced by incomplete combustion of carbon-containing fuels (e.g., gasoline, diesel fuel, and biomass). Sources include motor vehicle exhaust, industrial processes (metals processing and chemical manufacturing), residential wood burning, and natural sources.	Ranges depending on exposure: slight headaches; nausea; aggravation of angina pectoris (chest pain) and other aspects of coronary heart disease; decreased exercise tolerance in persons with peripheral vascular disease and lung disease; impairment of central nervous system functions; possible increased risk to fetuses; death.
Sulfur dioxide (SO ₂)	Sulfur dioxide is a colorless, pungent gas. At levels greater than 0.5 parts per million (ppm), the gas has a strong odor, similar to rotten eggs. Sulfur oxides (SO _x) include sulfur dioxide and sulfur trioxide. Sulfuric acid is formed from sulfur dioxide, which can lead to acid deposition and can harm natural resources and materials. Although sulfur dioxide concentrations have been reduced to levels well below state and federal standards, further reductions are desirable because sulfur dioxide is a precursor to sulfate and PM ₁₀ .	Human caused sources include fossil-fuel combustion, mineral ore processing, and chemical manufacturing. Volcanic emissions are a natural source of sulfur dioxide. The gas can also be produced in the air by dimethyl sulfide and hydrogen sulfide. Sulfur dioxide is removed from the air by dissolution in water, chemical reactions, and transfer to soils and ice caps. The sulfur dioxide levels in the State are well below the maximum standards.	Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient sulfur dioxide levels. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.

³⁹ U.S. Environmental Protection Agency (EPA). Criteria Air Pollutants. Accessed January 2023 at: <https://www.epa.gov/criteria-air-pollutants>.

National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) have been established for each criteria pollutant to protect the public health and welfare. The federal and state standards were developed independently with differing purposes and methods, although both processes are intended to avoid health-related effects. As a result, the federal and state standards differ in some cases. In general, the California state standards are more stringent. NAAQS and CAAQS are provided in **Table 3-2**.

Table 3-2 State and Federal Ambient Air Quality Standards ⁴⁰				
Pollutant	Averaging Time	California Standards	National Standards	
			Primary	Secondary
Ozone (O ₃)	1-hour	0.09 ppm (180 µg/m ³)	---	Same as Primary
	8-hour	0.070 ppm (137 µg/m ³)	0.070 ppm (137 µg/m ³)	
Respirable Particulate Matter (PM ₁₀)	24-hour	50 µg/m ³	150 µg/m ³	Same as Primary
	Annual Arithmetic Mean	20 µg/m ³	---	
Fine Particulate Matter (PM _{2.5})	24-hour	---	35 µg/m ³	Same as Primary
	Annual Arithmetic Mean	12 µg/m ³	12 µg/m ³	15 µg/m ³
Carbon Monoxide (CO)	1-hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	---
	8-hour	9.0 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)	---
Nitrogen Dioxide (NO ₂)	1-hour	0.18 ppm (339 µg/m ³)	100 ppb (188 µg/m ³)	Same as Primary
	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	0.053 ppm (100 µg/m ³)	
Sulfur Dioxide (SO ₂)	1-hour	0.25 ppm (655 µg/m ³)	75 ppb (196 µg/m ³)	---
	3-hour	---	---	0.5 ppm (1300 µg/m ³)
	24-hour	0.04 ppm (105 µg/m ³)	0.14 ppm (certain areas)	---
	Annual Arithmetic Mean	---	0.030 ppm (certain areas)	---
Lead (Pb)	30-day Average	1.5 µg/m ³	---	---
	Calendar Quarter	---	1.5 µg/m ³ (certain areas)	Same as Primary
	Rolling 3-month Average	---	0.15 µg/m ³	
Visibility Reducing Particles	8-hour	instrumental equivalents “extinction of 0.23 per kilometer”	No National Standards	
Sulfates	24-hour	25 µg/m ³		
Hydrogen Sulfide (H ₂ S)	1-hour	0.03 ppm (42 µg/m ³)		
Vinyl Chloride	24-hour	0.01 ppm (26 µg/m ³)		

Toxic Air Contaminants

A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

⁴⁰ California Air Resources Board. Ambient Air Quality Standards. Accessed January 2023 at: <https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf>.

The California Almanac of Emissions and Air Quality—2009 Edition presents the relevant concentration and cancer risk data for the ten TACs that pose the most substantial health risk in California based on available data. The ten TACs are acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter (DPM).

Some studies indicate that DPM poses the greatest health risk among the TACs listed above. A 10-year research program demonstrated that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic health risk. In addition to increasing the risk of lung cancer, exposure to diesel exhaust can have other health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. Diesel exhaust is a major source of fine particulate pollution as well, and studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems.

DPM

For purposes of this analysis, DPM exhaust emissions are represented as PM10.

The proposed Project would generate passenger vehicle and truck trips from employees, visitors, deliveries, and service vehicles traveling to and from the project site. The main source of DPM from the long-term operations of the proposed project would be from combustion of diesel fuel in diesel-powered engines in on-road trucks, while additional DPM would be emitted from on-site equipment. On-site motor vehicle emissions refer to DPM exhaust emissions from the motor vehicle traffic that would travel and idle within the project site each day.

Asbestos

Asbestos is the name given to a number of naturally occurring fibrous silicate minerals that have been mined for their useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. The three most common types of asbestos are chrysotile, amosite, and crocidolite. Chrysotile, also known as white asbestos, is the most common type of asbestos found in buildings.

Chrysotile makes up approximately 90 to 95 percent of all asbestos contained in buildings in the United States. Exposure to asbestos is a health threat; exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest, and abdominal cavity), and asbestosis (a non-cancerous lung disease that causes scarring of the lungs). Exposure to asbestos can occur during demolition or remodeling of buildings that were constructed prior to the 1977 ban on asbestos for use in buildings. Exposure to naturally occurring asbestos can occur during soil-disturbing activities in areas with deposits present.

Attainment Status

Air basins are designated as attainment or nonattainment for both federal and state AAQS. Attainment is achieved when monitored ambient air quality data is in compliance with the standards for a specified pollutant. Non-compliance with an established standard will result in a nonattainment designation and an unclassified designation indicates insufficient data is available to determine compliance for that pollutant.

The SJVAB is considered to be in attainment for federal and state air quality standards for carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂); attainment for federal and non-attainment for state air quality standards for respirable particulate matter (PM₁₀); and non-attainment of state and federal air quality standards for ozone (O₃) and fine particulate matter (PM_{2.5}). Attainment status for listed federal and state criteria pollutant standards in the SJVAB can be found in **Table 3-3**.

Table 3-3 SJVAB Attainment Status ⁴¹		
Pollutant	Designation/Classification	
	Federal Standards	State Standards
Ozone – one hour	No Federal Standard ¹	Nonattainment/Severe
Ozone – eight hour	Nonattainment/Extreme ²	Nonattainment
PM ₁₀	Attainment ³	Nonattainment
PM _{2.5}	Nonattainment ⁴	Nonattainment
CO	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Lead	No Designation/Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Vinyl Chloride	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified
<p><i>1 Effective June 15, 2005, the U.S. EPA revoked the federal 1-hour ozone standard, including associated designations and classifications. However, EPA had previously classified the SJVAB as extreme nonattainment for this standard. Many applicable requirements for extreme 1-hour ozone nonattainment areas continue to apply to the SJVAB.</i></p> <p><i>2 Though the Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard, EPA approved Valley reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010)</i></p> <p><i>3 On September 25, 2008, EPA redesignated the San Joaquin Valley to attainment for the PM₁₀ National Ambient Air Quality Standard (NAAQS) and approved the PM₁₀ Maintenance Plan.</i></p> <p><i>4 The Valley is designated nonattainment for the 1997 PM_{2.5} NAAQS. EPA designated the Valley as nonattainment for the 2006 PM_{2.5} NAAQS on November 13, 2009 (effective December 14, 2009).</i></p>		

Regulatory Setting

As noted previously, both the federal government (through the United State Environmental Protection Agency (EPA)) and the State of California (through the California Air Resources Board (ARB)) have established health-based ambient air quality standards (AAQS) for six air pollutants, commonly referred to as “criteria pollutants.” The six criteria pollutants are: carbon monoxide (CO), ozone (O₃), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), particulate matter (PM₁₀ and PM_{2.5}), and lead (Pb).

Federal

Federal Clean Air Act

“The Federal Clean Air Act (CAA), adopted in 1970 and amended twice thereafter (including the 1990 amendments), establishes the framework for modern air pollution control. The act directs the Environmental Protection Agency (EPA) to establish ambient air standards, the National Ambient Air Quality Standards (NAAQS)... for six pollutants: ozone, carbon monoxide, lead, nitrogen dioxide, particulate matter (less than 10 microns in diameter [PM₁₀] and less than 2.5 microns in diameter [PM_{2.5}]), and sulfur dioxide. The standards are divided into primary and secondary standards; the former are set to protect human health with an adequate margin of safety and the latter to protect environmental values, such as plant and animal life.

Areas that do not meet the ambient air quality standards are called “non-attainment areas”. The Federal CAA requires each state to submit a State Implementation Plan (SIP) for non-attainment areas. The SIP, which is reviewed and approved by the EPA, must demonstrate how the federal standards will be achieved. Failing to submit a plan or secure approval could lead to

⁴¹ San Joaquin Valley Unified Air Pollution Control District. Ambient Air Quality Standards & Valley Attainment Status. Accessed January 2023 at: <http://www.valleyair.org/aqinfo/attainment.htm>.

the denial of federal funding and permits for such improvements as highway construction and sewage treatment plants. For cases in which the SIP is submitted by the State but fails to demonstrate achievement of the standards, the EPA is directed to prepare a federal implementation plan or EPA can “bump up” the air basin in question to a classification with a later attainment date that allows time for additional reductions needed to demonstrate attainment, as is the case for the San Joaquin Valley.

SIPs are not single documents. They are a compilation of new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, state regulations and federal controls. The California SIP relies on the same core set of control strategies, including emission standards for cars and heavy trucks, fuel regulations and limits on emissions from consumer products. California State law makes the California Air Resources Board (CARB) the lead agency for all purposes related to the SIP. Local Air Districts and other agencies, such as the Bureau of Automotive Repair and the Department of Pesticide Regulation, prepare SIP elements and submit them to CARB for review and approval. The CARB forwards SIP revisions to the EPA for approval and publication in the Federal Register.”⁴²

The Federal CAA classifies nonattainment areas based on the severity of the nonattainment problem, with marginal, moderate, serious, severe, and extreme nonattainment classifications for ozone. Nonattainment classifications for PM range from marginal to serious. The Federal CAA requires areas with air quality violating the NAAQS to prepare an air quality control plan referred to as the State Implementation Plan (SIP). The SIP contains the strategies and control measures that states will use to attain the NAAQS. The Federal CAA amendments of 1990 require states containing areas that violate the NAAQS to revise their SIP to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, rules, and regulations of Air Basins as reported by the agencies with jurisdiction over them. The EPA reviews SIPs to determine if they conform to the mandates of the Federal CAA amendments and will achieve air quality goals when implemented. If the EPA determines a SIP to be inadequate, it may prepare a Federal Implementation Plan (FIP) for the nonattainment area and impose additional control measures.

State

The California Clean Air Act

“The California CAA of 1988 establishes an air quality management process that generally parallels the federal process. The California CAA, however, focuses on attainment of the State ambient air quality standards (see Table 3.3-1 [of the General Plan RDEIR]), which, for certain pollutants and averaging periods, are more stringent than the comparable federal standards. Responsibility for meeting California’s standards is addressed by the CARB and local air pollution control districts (such as the eight county SJVAPCD, which administers air quality regulations for Tulare County). Compliance strategies are presented in district-level air quality attainment plans.

The California CAA requires that Air Districts prepare an air quality attainment plan if the district violates State air quality standards for criteria pollutants including carbon monoxide, sulfur dioxide, nitrogen dioxide, PM_{2.5}, or ozone. Locally prepared attainment plans are not required for areas that violate the State PM₁₀ standards. The California CAA requires that the State air quality standards be met as expeditiously as practicable but does not set precise attainment deadlines. Instead, the act established increasingly stringent requirements for areas that will require more time to achieve the standards.”⁴³

“The air quality attainment plan requirements established by the California CAA are based on the severity of air pollution caused by locally generated emissions. Upwind air pollution control districts are required to establish and implement emission control programs commensurate with the extent of pollutant transport to downwind districts.”⁴⁴

The California Air Resources Board

The ARB is the state agency responsible for implementing the federal and state Clean Air Acts. ARB established CAAQS, which include all criteria pollutants established by the NAAQS, but with additional regulations for visibility reducing particles, sulfates, hydrogen sulfide (H₂S), and vinyl chloride.

“The CARB is responsible for establishing and reviewing the State ambient air quality standards, compiling the California State Implementation Plan (SIP) and securing approval of that plan from the U.S. EPA. As noted previously, federal clean air laws require areas with unhealthy levels of ozone, inhalable particulate matter, carbon monoxide, nitrogen dioxide, and sulfur

⁴² Tulare County General Plan 2030 Update REIR. Pages 3.3-1 to 3.3-2.

⁴³ Ibid. 3.3-2 to 3.3-3.

⁴⁴ Op. Cit. 3.3-5.

dioxide to develop SIPs. SIPs are comprehensive plans that describe how an area will attain NAAQS. The 1990 amendments to the Federal CAA set deadlines for attainment based on the severity of an area's air pollution problem. State law makes CARB the lead agency for all purposes related to the SIP. The California SIP is periodically modified by the CARB to reflect the latest emission inventories, planning documents, and rules and regulations of various air basins. The CARB produces a major part of the SIP for pollution sources that are statewide in scope; however, it relies on the local Air Districts to provide emissions inventory data and additional strategies for sources under their jurisdiction. The SIP consists of the emission standards for vehicular sources and consumer products set by the CARB, and attainment plans adopted by the local air agencies as approved by CARB. The EPA reviews the air quality SIPs to verify conformity with CAA mandates and to ensure that they will achieve air quality goals when implemented. If EPA determines that a SIP is inadequate, it may prepare a Federal Implementation Plan for the nonattainment area, and may impose additional control measures.

In addition to preparation of the SIP, the CARB also regulates mobile emission sources in California, such as construction equipment, trucks, automobiles, and oversees the activities of air quality management districts and air pollution control districts, which are organized at the county or regional level. The local or regional Air Districts are primarily responsible for regulating stationary emission sources at industrial and commercial facilities within their jurisdiction and for preparing the air quality plans that are required under the Federal CAA and California CAA.”⁴⁵

Regional and Local

San Joaquin Valley Unified Air Pollution Control District (Air District)

The Air District is the local agency charged with preparing, adopting, and implementing mobile, stationary, and area air emission control measures and standards. The Air District has several rules and regulations that may apply to the Project, following is an example of those rules/regulations which likely apply to this Project:

- Rule 3135 (Dust Control Plan Fees) – This rule requires the project applicant to submit a fee in addition to a Dust Control Plan. The purpose of this rule is to recover the Air District's cost for reviewing these plans and conducting compliance inspections.
- Rule 4002 (National Emission Standards for Hazardous Air Pollutants) – Also known as NESHAPs, this rule applies to all sources of hazardous air pollution and requires developers to comply with federal requirements for handling and usage of hazardous air pollutants (HAPs) to protect the health and safety of the public from HAPs such as asbestos.
- Rule 4101 (Visible Emissions) – This rule applies to any source of air contaminants and prohibits the visible emissions of air contaminants.
- Rule 4102 (Nuisance) – This rule applies to any source of air contaminants and prohibits any activity which creates a public nuisance.
- Rule 4625 (Wastewater Separator) – The purpose of this rule is to limit VOC emissions from wastewater separators by requiring vapor loss control devices, recordkeeping, inspections, and test methods.
- Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations) – This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations.
- Rule 4701 (Internal Combustion Engines – Phase 1) – The purpose of this rule is to limit the emissions of nitrogen oxides (NOx), carbon monoxide (CO), and volatile organic compounds (VOC) from internal combustion engines. This rule applies to any internal combustion engine rated at 50 brake horsepower or greater that requires a Permit to Operate.
- Regulation VIII (Fugitive PM₁₀ Prohibitions) – This regulation is a series of eight rules designed to reduce PM₁₀ emissions by reducing fugitive dust emissions. Regulation VIII requires implementation of control measures to ensure that visible dust emissions are substantially reduced.

The Air District has limited authority to regulate transportation sources and indirect sources that attract motor vehicle trips.

- Rule 9510 (Indirect Source Review) – Also known as ISR, this rule requires developers to mitigate project emissions through 1) on-site design features that reduce trips and vehicle miles traveled, 2) controls on other emission sources, and 3) with reductions obtained through the payment of a mitigation fee used to fund off-site air quality mitigation

⁴⁵ Op. Cit. 3.3-6 to 3.3-7.

projects. Rule 9510 requires construction-related NOx emission reductions of 20 percent and PM10 exhaust reductions of 45 percent and operation-related NOx reductions of 33 percent and PM10 exhaust reductions of 50 percent. Projects whose primary functions are subject to Rule 2201 are exempted from the requirements of Rule 9510.

Tulare County General Plan 2030 Update

The following Tulare County General Plan 2030 Update policies for this resource apply to this Project: *AQ-1.1 Cooperation with Other Agencies* requiring the County to cooperate with other local, regional, Federal, and State agencies (e.g., Air District) in developing and implementing air quality plans to achieve State and federal Ambient Air Quality Standards to achieve better air quality conditions locally and regionally; *AQ-1.2 Cooperation with Local Jurisdictions* requiring the County to coordinate with regional agencies, such as the Air District, to address cross-jurisdictional air quality issues; *AQ-1.3 Cumulative Air Quality Impacts* requiring development to be located, designed, and construction in a manner that minimizes cumulative air quality impacts; *AQ-1.4 Air Quality Land Use Compatibility* requiring the County to evaluate compatibility of proposed land uses; *AQ-1.5 California Environmental Quality Act (CEQA) Compliance* where the County will ensure that air quality impacts identified during the CEQA review process are consistently and reasonably mitigated when feasible; *AQ-1.7 Support Statewide Climate Change Solutions* - The County shall monitor and support the efforts of Cal/EPA, CARB, and the AIR DISTRICT, under AB 32 (Health and Safety Code Section 38501 et seq.), to develop a recommended list of emission reduction strategies. As appropriate, the County will evaluate each new project under the updated General Plan to determine its consistency with the emission reduction strategies; *AQ-2.2 Indirect Source Review* regarding mitigating major development projects, as defined by the SJVAPCD, to reasonably mitigate air quality impacts associated with the project. The County shall notify developers of SJVAPCD Rule 9510 – Indirect Source Review requirements and work with SJVAPCD to determine mitigations, as feasible, that may include, but are not limited to the following:

1. Providing bicycle access and parking facilities,
2. Increasing density,
3. Encouraging mixed use developments,
4. Providing walkable and pedestrian-oriented neighborhoods,
5. Providing increased access to public transportation,
6. Providing preferential parking for high-occupancy vehicles, carpools, or alternative fuels vehicles, and
7. Establishing telecommuting programs or satellite work centers.; and

AQ-4.2 Dust Suppression Measures regarding implementation of dust suppression measures during excavation, grading, and site preparation activities consistent with Air District Regulation VIII – Fugitive Dust Prohibitions. Techniques may include, but are not limited to, the following:

1. Site watering or application of dust suppressants,
2. Phasing or extension of grading operations,
3. Covering of stockpiles,
4. Suspension of grading activities during high wind periods (typically winds greater than 25 miles per hour), and
5. Re-vegetation of graded areas.

Emission Modeling Assumptions

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from on-site and off-site activities. On-site emissions principally consist of exhaust emissions from the activity levels of heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM10) from disturbed soil. Additionally, paving operations and application of architectural coatings would release VOC emissions. Off-site emissions are caused by motor vehicle exhaust from delivery vehicles, worker traffic, and road dust (PM10 and PM2.5). Operational emissions are those emissions that would occur during long-term operations of the proposed project.

Project related construction emissions were quantified using the California Air Pollution Control Officers Association (CAPCOA) California Emissions Estimator Model (CalEEMod) version 2020.4.0. The following assumptions were used in the emissions modeling (see Attachments B and C) and represent a conservative estimate as the linear feet of pipeline and the lift station modeled are greater than that provided in the Project description:

- 10,700 linear feet (2.03 miles) of pipeline for Sewer Main Line to City's DWWTP
- 22,584 linear feet (4.28 miles) of 8-10" pipeline for Gravity Collection System
- 7,100 linear feet (1.34 mile) of pipeline for lateral connection to 284 parcels (approximately 325 residences)
- 7.0 acres of total construction area
- 6.4 acres of permanent resurfacing (asphalt replacement)

To determine the potential significance of Project related criteria pollutant emissions, the Project emissions were compared to the Air District's thresholds of significance.

Project Impact Analysis:

In addition to the air quality information contained in the DEIR for the Matheny Tract Wastewater Project, which is incorporated by reference herein, additional information is provided in the Air Quality and Greenhouse Gas Assessment Technical Memo (AQ-GHG Memo) prepared for the Matheny Tract Wastewater Collection System and Pipeline Inter-tie Project. The AQ-GHG memo (see attachment "A" of this document) analyzes potential impacts on air quality using project specific information for the proposed Project,

- a) **No Impact:** Air Quality Plans (AQPs) are plans for reaching attainment of air quality standards. The assumptions, inputs, and control measures are analyzed to determine if the Air Basin can reach attainment for the ambient air quality standards. The proposed Project site is located within the jurisdictional boundaries of the SJVAPCD. To show attainment of the standards, the SJVAPCD analyzes the growth projections in the Valley, contributing factors in air pollutant emissions and formations, and existing and adopted emissions controls. The SJVAPCD then formulates a control strategy to reach attainment that includes both State and SJVAPCD regulations and other local programs and measures. For projects that include stationary sources of emissions, the SJVAPCD relies on project compliance with Rule 2201—New and Modified Stationary Source Review to ensure that growth in stationary source emissions would not interfere with the applicable AQP. Projects exceeding the offset thresholds included in the rule are required to purchase offsets in the form of Emission Reduction Credits (ERCs).

The CEQA Guidelines indicate that a significant impact would occur if the project would conflict with or obstruct implementation of the applicable air quality plan. The GAMAQI indicates that projects that do not exceed SJVAPCD regional criteria pollutant emissions quantitative thresholds would not conflict with or obstruct the applicable AQP. An additional criterion regarding the project's implementation of control measures was assessed to provide further evidence of the project's consistency with current AQPs. This document proposes the following criteria for determining project consistency with the current AQPs:

1. Will the project result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQPs? This measure is determined by comparison to the regional and localized thresholds identified by the District for Regional and Local Air Pollutants.
2. Will the project conform to the assumptions in the AQPs?
3. Will the project comply with applicable control measures in the AQPs?

The use of the criteria listed above is a standard approach for CEQA analysis of projects in the SJVAPCD's jurisdiction, as well as within other air districts, for the following reasons:

- Significant contribution to existing or new exceedances of the air quality standards would be inconsistent with the goal of attaining the air quality standards.
- AQP emissions inventories and attainment modeling are based on growth assumptions for the area within the air district's jurisdiction.
- AQPs rely on a set of air district-initiated control measures as well as implementation of federal and state measures to reduce emissions within their jurisdictions, with the goal of attaining the air quality standards.

Contribution to Air Quality Violations

The Air District has determined that projects with emissions below their thresholds of significance for criteria pollutants would not conflict with or obstruct implementation of the Air District's AQP.^{46, 47} The Air District has determined that if project specific emissions would not exceed State or Federal ambient air quality standard (AAQS) at the project boundary, the

⁴⁶ Air District. GAMAQI, Section 7.12, Page 65.

⁴⁷ Air District. Air Quality Thresholds of Significance – Criteria Pollutants. <http://www.valleyair.org/transportation/0714-GAMAQI-Criteria-Pollutant-Thresholds-of-Significance.pdf>. Accessed December 2022.

project would not violate any AAQS or contribute substantially to an existing or projected air quality violation.⁴⁸

The Project would generate criteria pollutant emissions through construction activities and operational (maintenance) activities. Construction activities would be short-term, temporary, and intermittent and emissions would occur directly from the off-road heavy-duty equipment and the on-road motor vehicles needed to mobilize crew, equipment, and materials, and to construct the pipelines. Operational activities would be limited to the operation and maintenance of the gravity lift station and repair of pipelines on an as-needed basis. Operational emissions would occur directly from the on-road motor vehicles needed to transport maintenance workers to the lift station site and maintenance/repair sites.

The Air District evaluates the significance of impacts of the emissions from construction, operational non-permitted equipment (primarily mobile sources) and activities, and operational permitted equipment (stationary sources) and activities separately.⁴⁹ Project construction related emissions were quantified using CalEEMod and are provided in **Table 3-1**. Operational activities are likely to be limited to maintenance of the lift station and segments of the force main or inter-tie pipelines on an as-needed basis. Operational related emissions have not been quantified as the vehicle trips necessary for maintenance/repairs will be on an as-needed basis and will fall below the Air District's Small Project Analysis Level (SPAL) for industrial uses of 140 vehicle trips and 15 heavy-heavy duty truck trips per day and residential uses of 800 vehicle trips and 15 heavy-heavy duty truck trips per day.^{50, 51}

As shown in **Table 3-1**, construction related criteria pollutant emissions fall below the Air District's thresholds of significance. Therefore, the Project will not conflict with or obstruct implementation of the applicable AQP. The Project will have No Impact related to this Checklist Item.

Table 3-1. Project Construct Emissions (mitigated)							
	ROG	NOx	CO	SO₂	PM₁₀ Total	PM_{2.5} Total	CO₂e metric tons per year
Annual Emissions (tons per year)							
Construction Total	0.3561	3.4462	3.2797	6.99e-003	0.6315	0.3828	624.8624
Threshold	10	10	100	27	15	15	N/A
Exceeds Threshold?	No	No	No	No	No	No	N/A
Daily Emissions (pounds per day)							
Construction	0.0011	0.0111	0.0102	2.21e-005	0.0021	0.0013	1.9756
Threshold	100	100	100	100	100	100	N/A
Exceeds Threshold?	No	No	No	No	No	No	N/A
Source: CalEEMod Report (included as Attachment C to this memo)							

Air Quality Plan Assumptions

The Air District estimates future emissions in the air basin and develops strategies required to reduce emissions through new regulations. Emissions are calculated based on population, vehicle, and development trends. A project may be inconsistent with an air quality plan if it results in population or employment growth greater than estimates in the air quality plans. Projects that propose growth greater than anticipated projections would conflict with air quality plans and may result in potentially significant impacts as a result of emissions levels in excess of established thresholds.

As the Project consists solely of installation of a wastewater collection system and pipeline inter-tie for the existing unincorporated community of Matheny Tract, the proposed Project would neither increase population nor employment within the Project vicinity or the air basin. As such, the proposed Project conforms to the assumptions in the applicable AQPs. Therefore, the proposed Project will have No Impact related to this Checklist Item.

⁴⁸ Air District. GAMAQI, Section 7.13, Page 65.

⁴⁹ Air District. GAMAQI, Section 8.3, Page 80.

⁵⁰ Air District. Small Project Analysis Levels (SPAL), November 2020. Accessed December 2022.
<https://www.valleyair.org/transportation/CEQA%20Rules/GAMAQI-SPAL.PDF>.

⁵¹ The Air District does not have a SPAL for linear construction projects. The collection system (force main and inter-tie pipelines) would occupy approximately 190,000 sf. The community has approximately 325 dwelling units. As operational activities are likely to be limited to maintenance of the lift station and segments of the force main or inter-tie pipelines on an as-needed basis, maintenance activities would not exceed the industrial or residential SPAL size limits.

Air Quality Plan Control Measures

The AQP contains a number of control measures that are enforceable requirements through the adoption of rules and regulations. The proposed Project is subject to all applicable Air District rules and regulations for construction and operational related activities. A Dust Control Plan will be submitted to the Air District in compliance with Regulation VIII (Fugitive PM10 Prohibitions) requirements prior to the initiation of construction. Authority to Construct and Permits to Operate for regulated operational related equipment, such as emergency backup engines, will be obtained as deemed necessary by the Air District. Therefore, the proposed Project will have No Impact related to this Checklist Item.

- b) Less Than Significant Impact:** The Air District has determined that a Lead Agency may determine that project specific contributions to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program, including, but not limited to an air quality attainment or maintenance plan. Therefore, if project specific criteria pollutant emissions exceed Air District thresholds of significance, then the project would result in a cumulatively considerable net increase in emissions.⁵²

The San Joaquin Valley is designated as nonattainment of federal and state AAQS for ozone (specifically ozone precursor NOx emissions) and respirable particulate matter (PM2.5) and nonattainment of state AAQS for coarse particulate matter (PM10). As previously noted, the proposed Project consists entirely of a wastewater collection system and pipeline inter-tie and does not include a land development component. Project related criteria pollutant emissions will not exceed the Air District's thresholds of significance during the short-term construction activities or ongoing operational activities. Furthermore, the Project will implement standard measures, such as Construction Best Management Practices, and will be required to comply with the applicable regulations and permitting requirements of local, regional, state, and federal agencies including but not limited to, County of Tulare, Tulare Irrigation District, San Joaquin Valley Air Pollution Control District, Regional Water Quality Control Board, and California Department of Transportation. As project specific impacts are less than significant, the cumulative impacts would also be less than significant. Therefore, the proposed Project would not result in a cumulatively considerable net increase of any criteria pollutants and will have a Less Than Significant Impact related to this Checklist Item.

- c) Less Than Significant Impact:** Emissions occurring at or near the proposed Project have the potential to create a localized impact that could expose sensitive receptors to substantial pollutant concentrations. Sensitive receptors are considered land uses or other types of population groups that are more sensitive to air pollution than others due to their exposure. Sensitive population groups include children, the elderly, the acutely and chronically ill, and those with cardio-respiratory diseases. The Air District considers a sensitive receptor to be a location that houses or attracts children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants.⁵³ Examples of sensitive receptors include hospitals, residences, convalescent facilities, and schools.

Localized Impacts

There are approximately 325 sensitive receptors (i.e., residences) located within Matheny Tract and along the proposed pipeline alignments. The nearest schools, Cypress Elementary School and Countryside High School, are located approximately 1.3 miles northeast and north, respectively, of North Matheny. Existing businesses within the community and immediately east of the community are considered worker receptors.

The Air District has provided a screening threshold for localized impacts of 100 pounds per day of any criteria pollutant. If a project exceeds 100 pounds per day of any criteria pollutant, then ambient air quality modeling would be necessary. If the project does not exceed 100 pounds per day of any criteria pollutant, then it can be assumed that it would not cause a violation of an AAQS.⁵⁴ As AAQS were established to protect public health, projects not resulting in any violations of AAQS would be considered to have no significant health impact to nearby receptors.

Project related average daily construction emissions were calculated and are provided in **Table 3-1**. Construction of the Project would take place over the course of approximately 300 working days. As shown in **Table 3-1**, the average daily emissions are all below the Air District's 100 pounds per day screening threshold.

⁵² Air District. GAMAQI, Section 7.14, Pages 65-66.

⁵³ Air District. GAMAQI, Glossary, Page 10.

⁵⁴ Air District. GAMAQI, Section 8.4.2, Page 93.

As Project construction related emissions do not require an ambient air quality analysis and operations are likely to be limited to maintenance of the lift station and pipelines (which do not require quantification of emissions), the Project does not warrant a health risk assessment. Also, as noted earlier, the Project would result in short-term, temporary, and intermittent construction related criteria air pollutant emissions. As such, significant health risk impacts are not anticipated; therefore, there would be a Less Than Significant Impact related to this Checklist Item.

Toxic Air Contaminants

The GAMAQI does not currently include recommendations for analysis of toxic air contaminant (TAC) emissions from project construction activities. The Air District's significance thresholds for TACs have been established for permitted and non-permitted source operation related emissions.

Diesel particulate matter (DPM) represents the primary (TAC) of concern associated with the proposed Project. Project construction related DPM emissions would be the result of the operation of internal combustion engines in equipment (e.g., loaders, backhoes and resurfacing equipment, as well as haul trucks) commonly associated with construction-related activities. Construction related DPM emissions would occur over a short period of time and would cease upon completion of the Project. As such, Project construction related activities would not expose nearby sensitive receptors to substantial DPM emissions that would result in a health risk; therefore, there would be a Less Than Significant Impact related to this Checklist Item.

Project operational related activities consist of maintenance activities associated with the lift station and pipelines. Operational related maintenance activities would result in short-term, temporary, and intermittent use of mobile sources (e.g., maintenance workers driving to and from the Project site) or stationary sources (e.g., emergency generators) of DPM. Maintenance vehicles would be subject to California Air Resources Board (CARB) on- and off-road emissions standards. Stationary source emissions would be subject to Air District permitting requirements. As such, Project operation related activities would not expose nearby sensitive receptors to substantial DPM emissions that would result in a health risk. There would be a Less Than Significant Impact related to this Checklist Item.

Valley Fever

Valley fever, or coccidioidomycosis, is an infection caused by inhalation of the spores of the fungus, *Coccidioides immitis* (*C. immitis*). The spores live in soil and can live for an extended time in harsh environmental conditions. Activities or conditions that increase the amount of fugitive dust contribute to greater exposure, and they include dust storms, grading and other earthmoving activities, and use of recreational off-road vehicles.

The San Joaquin Valley is considered an endemic area for Valley fever. Construction related activities could generate fugitive dust that contain *C. immitis* spores. The Air District's Regulation VIII (Fugitive PM₁₀ Prohibition) places limits on the amount of fugitive dust generated at a construction site. The proposed Project will minimize the generation of fugitive dust during construction related activities by complying with the requirements of the Regulation VIII. Furthermore, construction related earthmoving activities are short-term and will cease upon completion of the Project. Therefore, health risks related to exposure of Valley fever during construction are considered Less Than Significant.

Project operational related activities consist of maintenance activities associated with the lift station and pipelines. During operational related activities, fugitive dust emissions are anticipated to be relatively small because the areas where maintenance would be required would be covered with compacted soil and/or pavement. Furthermore, maintenance activities would be limited to the area of the lift station or individual segments of the pipeline requiring maintenance. Maintenance activities would be short-term, temporary, and intermittent. Therefore, health risks related to exposure of Valley fever during operational related activities are considered Less Than Significant.

Naturally Occurring Asbestos

A review of maps of areas where naturally occurring asbestos in California are likely to occur does not indicate that the proposed Project area would contain naturally occurring asbestos. Therefore, construction of the proposed Project is not anticipated to expose receptors to naturally occurring asbestos. The Project will have a Less Than Significant Impact related to this Checklist Item.⁵⁵

⁵⁵ United States Geologic Survey (USGS). Asbestos mines, prospects, and occurrences. Accessed January 2023. https://mrdata.usgs.gov/asbestos/map-us.html#home_and

- d) **Less Than Significant Impact:** Due to the subjective nature of odor impacts, the Air District recommends odor analyses strive to fully disclose all pertinent information.⁵⁶ The Air District recommends a qualitative assessment of a project's potential to adversely affect area receptors based on the distances of common odor-producing land uses identified in Table 6 of the GAMAQI.⁵⁷ The Air District has determined that if a project is a potential odor source, then additional evaluation would be required.⁵⁸

It is anticipated that Project construction related activities would result in diesel exhaust emissions from use of construction equipment which may release odors into the atmosphere. However, construction related emissions would be short-term, temporary, and intermittent and are not anticipated to affect a substantial number of receptors at any given time. Following construction related activities, the Project would not emit odors; rather, the Project will result in a benefit to the residents of the community as failing septic system and leach fields would be abandoned and wastewater and sewage will be transported to the City's DWTTP. Therefore, the Project will result in a Less Than Significant Impact related to this Checklist Item.

Cumulative Impact Analysis: Less Than Significant Impact – The geographic area of this cumulative analysis is the San Joaquin Valley Air Basin. The proposed Project's emissions would be less than significant for all criteria pollutants and would be consistent with the AQP for this criterion. The proposed Project would comply with all applicable rules and regulations as specified in the applicable air quality plan(s). The proposed Project's less-than-significant contribution to air quality violations and its adherence to applicable rules and regulations would allow the proposed Project to remain consistent with the AQP; therefore, the cumulative impact would be less than significant. As shown in Table 1, the proposed Project's regional emissions would not exceed the applicable regional criteria pollutant emissions quantitative thresholds. In addition, any permitted sources will be required to comply with SJVAPCD rules, regulations permit conditions, thresholds, (requirements), as applicable. Therefore, the proposed Project would not result in significant cumulative health impacts, it would not exceed Air District localized emission daily screening levels for any criteria pollutant, and it would not be a significant source of TAC emissions during construction- or operation-related activities. The proposed Project would implement dust-reducing measures that would reduce the potential exposure to Valley fever spores, is not in area known to have naturally occurring asbestos, and would not generate a significant source of odors. Therefore, cumulative impacts of the proposed Project are less than significant.

California Department of Conservation, California Geological Survey (CGS). A General Location Guide for Ultramafic Rocks in California - Areas More Likely to Contain Naturally Occurring Asbestos (USGS, 2000). Accessed January 2023.
https://www.conservation.ca.gov/cgs/minerals/hazardous_minerals/asbestos..

⁵⁶ Air District. GAMAQI, Section 7-16, Pages 66-67.

⁵⁷ Air District. GAMAQI, Section 8.6, Table 6, Page 103, or online at: <https://www.valleyair.org/transportation/GAMAQI-2015/GAMAQI-Criteria-Pollutant-Thresholds-of-Odors.pdf>. Accessed December 2022.

⁵⁸ The Air District provides guidance for detailed odor analysis online at <https://www.valleyair.org/transportation/GAMAQI-Detailed-Analysis-for-Assessing-Odor-Impacts-to-Sensitive-Receptors.pdf>. Accessed December 2022.

IV. BIOLOGICAL RESOURCES

Would the project:	SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT IMPACT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Biological Resources, etc. contained in the Tulare County General Plan 2030 Update, Tulare County General Plan 2030 Update Environmental Impact Report, and Matheny Tract Wastewater Collection System DEIR and REIR are incorporated herein in their entirety. In addition to the biological information contained in the DEIR for the Matheny Tract Wastewater Project, additional information is provided in the Biological Evaluation (BE) for the Matheny Tract Wastewater Pipeline Project. The BE (see attachment “B” of this document) analyzes biological resources generally west of Pratt Street (Road 96), along Paige Avenue (Avenue 276), along South West Street, and along an unnamed road on the north side of the City of Tulare’s existing Domestic Wastewater Treatment Plan (DWWTP) then connecting to the DWWTP. Simply stated, the BE provides supplemental analysis of biological resources beyond the project limits of the DEIR/REIR for the Matheny Tract Wastewater Project’s for the proposed Project’s pipeline component leading to connection with the DWWTP. As both projects are inherently and necessarily associated with one another, they are collectively referred to as the “Matheny Tract Wastewater Collection System and Pipeline Inter-tie Project” Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Environmental Setting

Tulare County contains more than 4,840 square miles (3,097,600 acres) within its borders. It is located in a geographically diverse region, which can be divided into three general topographic zones: the San Joaquin Valley region on the west side of the County; the Sierra Nevada foothills region east of the valley area; and the Sierra Nevada mountain region to the east of the foothills. Elevations range from 200 to 14,000 feet above sea level. The proposed Project is located in the San Joaquin Valley floor portion of the County, which is very fertile and has been intensively cultivated for many decades. Agriculture and related

industries such as agricultural packing and shipping operations and small and medium sized manufacturing plants make up the economic base of the Valley region.⁵⁹

This area has a Mediterranean climate, with dry, hot summers with daytime temperatures commonly exceeding 90° Fahrenheit. Winters are rainy and cool with daytime temperatures rarely exceeding 65° Fahrenheit. Annual precipitation in the general vicinity of the project site is highly variable from year to year with a mean annual rainfall of approximately 12 inches, most of which falls between the months of October and March. Virtually all precipitation falls in the form of rain.

The native vegetation of the Valley is predominately characterized by the purple needlegrass series, valley oak series, vernal pools and wetland communities, and blue oak series. Fauna associated with this section include mule deer (*Odocoileus hemionus*), black-tailed deer (*Odocoileus hemionus columbianus*), coyotes (*Canis latrans*), white-tailed jackrabbits (*Lepus townsendii*), kangaroo rats (*Dipodomys ingens*), kit fox (*Vulpes macrotis*), and muskrats (*Ondatra zibethicus*). Birds include waterfowl, hawks, golden eagles (*Aquila chrysaetos*), owls, white-tailed kites (*Elanus leucurus*), herons, western meadowlark (*Sturnella neglecta*) and California quail (*Callipepla californica*).⁶⁰

This area is located in the Great Valley geomorphic province. The Great Valley province is an alluvial plain in the central portion of California, where sediments have been deposited almost continuously since the Jurassic Period (California Geological Survey [CGS] 2002)⁶¹.

A California Natural Diversity Data Base (CNDDDB) search was conducted for the initial Matheny Tract Wastewater System DEIR (see Appendix “B” of that document) and another more recent CNDDDB was conducted for the Matheny Tract Wastewater Pipeline Project (see Appendix “B” of this document). The CNDDDB searches identified potential special status species related to plants and animals which might occur onsite or in the project vicinity (see Appendix “B”).

Based on both CNDDDB searches, four (4) Special Status Species are historically known to occur in the vicinity of the proposed Matheny Tract Wastewater System and Pipeline inter-tie (the action area). Field surveys were not conducted during the Matheny Tract Waster Collection System biological evaluation component because all areas that will be disturbed are located on actively used public rights-of-way (i.e., existing roadways and/or shoulders). As such, the Project would not involve any habitat of any special species.

As noted earlier, the comprehensive Project Description can be found on pages 2 and 3 of this document. In summary, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields; and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary referred to as the wastewater collection system and pipeline inter-tie Project).

Regulatory Setting

Federal

Federal Endangered Species Act

“The U.S. Fish and Wildlife Service (USFWS) administers the Federal Endangered Species Act (16 USC Section 153 et seq.) and thereby has jurisdiction over federally listed threatened, endangered, and proposed species. Projects that may result in a “take” of a listed species or critical habitat must consult with the USFWS. “Take” is broadly defined as harassment, harm, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collection; any attempt to engage in such conduct; or destruction of habitat that prevents an endangered species from recovering (16 USC 1532, 50 CFR 17.3). Federal agencies that propose, fund, or must issue a permit for a project that may affect a listed species or critical habitat are required to consult with the USFWS under Section 7 of the Federal Endangered Species Act. If it is determined that a federally listed species or critical habitat may be adversely affected by the federal action, the USFWS will issue a “Biological Opinion” to the federal agency that describes minimization and avoidance measures that must be implemented as part of the federal action. Projects that do not

⁵⁹ Tulare County General Plan 2030 Update, Background Report, February 2010. Pages 1-4.

⁶⁰ Ibid. Pages 9-10.

⁶¹ Ibid.

have a federal nexus must apply for a take permit under Section 10 of the Act. Section 10 of the Act requires that the project applicant prepare a habitat conservation plan as part of the permit application (16 USC 1539).”⁶²

“Under Section 4 of the Federal Endangered Species Act, a species can be removed, or delisted, from the list of threatened and endangered species. Delisting is a formal action made by the USFWS and is the result of a determined successful recovery of a species. This action requires posts in the federal registry and a public comment period before a final determination is made by the USFWS.”⁶³

Habitat Conservation Plans

“Habitat Conservation Plans (HCPs) are required for a non-federal entity that has requested a take permit of a federal listed species or critical habitat under Section 10 of the Endangered Species Act. HCPs are designed to offset harmful effects of a proposed project on federally listed species. These plans are utilized to achieve long-term biological and regulatory goals. Implementation of HCPs allows development and projects to occur while providing conservation measures that protect federally listed species or their critical habitat and offset the incidental take of a proposed project. HCPs substantially reduce the burden of the Endangered Species Act on small landowners by providing efficient mechanisms for compliance with the ESA, thereby distributing the economic and logistic effects of compliance. A broad range of landowner activities can be legally protected under these plans (County of Tulare, 2010 Background Report, pages 9-6 and 9-7, 2010a). There are generally two types of HCPs, project-specific HCPs which typically protect a few species and have a short duration and multi-species HCPs which typically cover the development of a larger area and have a longer duration.”⁶⁴

As noted earlier, there are two habitat conservation plans that apply in Tulare County: The Kern Water Habitat Conservation Plan, which applies to an area in Allensworth; and the U.S. Fish and Wildlife’s “The Recovery Plan for Upland Species in the San Joaquin Valley,” which includes sensitive species in the San Joaquin Valley, several of which may be found in Tulare County. Also as noted earlier, the proposed Project is approximately 27 miles northwest of Allensworth, thus the Kern Water Habitat Conservation Plan would not apply to this Project.

Migratory Bird Treaty Act

“The Migratory Bird Treaty Act (MBTA, 16 USC Section 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668) protect certain species of birds from direct “take”. The MBTA protects migrant bird species from take by setting hunting limits and seasons and protecting occupied nests and eggs. The Bald and Golden Eagle Protection Act (16 USC Sections 668-668d) prohibits the take or commerce of any part of Bald and Golden Eagles. The USFWS administers both acts, and reviews federal agency actions that may affect species protected by the acts.”⁶⁵ The MBTA implements international treaties devised to protect migratory birds and any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits are in 50 CFR part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits. The State of California has incorporated the protection of birds of prey in Sections 3800, 3513, and 3503.5 of the CDFG Code.

Federal Clean Water Act (CWA)

“Wetlands and other waters of the U.S. are subject to the jurisdiction of the U.S. Army Corp of Engineers (USACE) and U.S. Environmental Protection Agency (U.S. EPA) under Section 404 of the Clean Water Act (33 U.S.C. 1251 et seq., 1972). Together, the EPA and the USACE determine whether they have jurisdiction over the non-navigable tributaries that are not relatively permanent based on a fact-specific analysis to determine if there is a significant nexus. These non-navigable tributaries include wetlands adjacent to non-navigable tributaries that are not relatively permanent and wetlands adjacent to but that does not directly abut a relatively permanent non-navigable tributary.”⁶⁶ The definition of waters of the United States includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas “that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal

⁶² Tulare County 2030 General Plan RDEIR. Page 3.11-1.

⁶³ Ibid.

⁶⁴ Op. Cit. 3.11-2.

⁶⁵ Tulare County 2030 General Plan RDEIR. Page 3.11-2.

⁶⁶ Ibid. 3.11-1 and 3.11-2.

circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR 328.3 7b).” The U.S. EPA also has authority over wetlands and may override an USACE permit. Substantial impacts to wetlands may require an individual permit. Projects that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or Waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions; this certification or waiver is issued by the Regional Water Quality Control Board.

State of California

California Department of Fish and Wildlife (formerly Dept. of Fish and Game)

The California Department of Fish and Wildlife (DFW) regulates the modification of the bed, bank, or channel of a waterway under Sections 1601-1607 of the California Fish and Game Code. Also included are modifications that divert, obstruct, or change the natural flow of a waterway. Any party who proposes an activity that may modify a feature regulated by the Fish and Game Code must notify DFW before project construction. DFW will then decide whether to enter into a Streambed Alteration Agreement with the project applicant either under Section 1601 (for public entities) or Section 1603 (for private entities) of the Fish and Game Code.

California Endangered Species Act

The California Department of Fish and Wildlife (CDFE or DFW) administers the California Endangered Species Act 9 (CESA OR ESA) of 1984 (Fish and Game Code Section 2080), which regulates the listing and “take” of endangered and threatened State-listed species. A “take” may be permitted by California Department of Fish and Game [Wildlife] through implementing a management agreement. “Take” is defined by the California Endangered Species Act as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill” a State-listed species (Fish and Game Code Sec. 86). Under State laws, DFW is empowered to review projects for their potential impacts to State-listed species and their habitats.

The DFW maintains lists for Candidate-Endangered Species (SCE) and Candidate-Threatened Species (SCT). California candidate species are afforded the same level of protection as State-listed species. California also designates Species of Special Concern (CSC) that are species of limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. These species do not have the same legal protection as listed species, but may be added to official lists in the future. The CSC list is intended by DFW as a management tool for consideration in future land use decisions (Fish and Game Code Section 2080).⁶⁷

All State lead agencies must consult with DFW under the California Endangered Species Act when a proposed project may affect State-listed species. DFW would determine if a project under review would jeopardize or result in taking of a State-listed species, or destroy or adversely modify its essential habitat, also known as a “jeopardy finding” (Fish and Game Code Sec. 2090). For projects where DFW has made a jeopardy finding, DFW must specify reasonable and prudent alternatives to the proposed project to the State lead agency (Fish and Game Code Sec. 2090 et seq.).⁶⁸

Fully Protected Species

The State of California first began to designate species as fully protected prior to the creation of the CESA and FESA. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction, and included fish, amphibians, reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered pursuant to the CESA and/or FESA. The regulations that implement the Fully Protected Species Statute (CDFG Code Section 4700) provide that fully protected species may not be taken or possessed at any time. Furthermore, the CDFG prohibits any state agency from issuing incidental take permits for fully protected species, except for necessary scientific research.

Native Plant Protection Act

Regarding listed rare and endangered plant species, the CESA defers to the California Native Plant Protection Act (NPPA) of 1977 (CDFG Code Sections 1900 to 1913), which prohibits importing of rare and endangered plants into California, and the taking and selling of rare and endangered plants. The CESA includes an additional listing category for threatened plants that are not protected pursuant to NPPA. In this case, plants listed as rare or endangered pursuant to the NPPA are not protected

⁶⁷ General Plan Background Report. Pages 9-7 and 9-8.

⁶⁸ Ibid. 9-8.

pursuant to CESA, but can be protected pursuant to the CEQA. In addition, plants that are not state listed, but that meet the standards for listing, are also protected pursuant to CEQA (Guidelines, Section 15380). In practice, this is generally interpreted to mean that all species on lists 1B and 2 of the CNPS Inventory potentially qualify for protection pursuant to CEQA, and some species on lists 3 and 4 of the CNPS Inventory may qualify for protection pursuant to CEQA. List 3 includes plants for which more information is needed on taxonomy or distribution. Some of these are rare and endangered enough to qualify for protection pursuant to CEQA. List 4 includes plants of limited distribution that may qualify for protection if their abundance and distribution characteristics are found to meet the standards for listing.

Natural Communities Conservation Planning Act

The Natural Communities Conservation Planning Act allows a process for developing natural community conservation plans (NCCPs) under DFW direction. NCCPs allow for regional protection of wildlife diversity, while allowing compatible development. DFW may permit takings of State-listed species whose conservation and management are provided in a NCCP, once a NCCP is prepared (Fish and Game Code Secs. 2800 et seq.).⁶⁹

Federally and State-Protected Lands

Ownership of California's wildlands is divided primarily between federal, state, and private entities. State-owned land is managed under the leadership of the Departments of Fish and Game (DFW), Parks and Recreation, and Forestry and Fire Protection (CDF). Tulare County has protected lands in the form of wildlife refuges, national parks, and other lands that have large limitations on appropriate land uses. Some areas are created to protect special status species and their ecosystems.⁷⁰

California Wetlands Conservation Policy

The California Wetlands Conservation Policy's goal is to establish a policy framework and strategy that will ensure no overall net loss and achieve a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California. Additionally, the policy aims to reduce procedural complexity in the administration of State and federal wetlands conservation programs and to encourage partnerships with a primary focus on landowner incentive programs and cooperative planning efforts. These objectives are achieved through three policy means: statewide policy initiatives, three geographically based regional strategies in which wetland programs can be implemented, and creation of interagency wetlands task force to direct and coordinate administration and implementation of the policy. Leading agencies include the Resources Agency and the California Environmental Protection Agency (Cal/EPA) in cooperation with Business, Transportation and Housing Agency, Department of Food and Agriculture, Trade and Commerce Agency, Governor's Office of Planning and Research, Department of Fish and Game, Department of Water Resources, and the State Water Resources Control Board.⁷¹

Porter-Cologne Water Quality Control Act

"The Porter-Cologne Water Quality Control Act regulates the discharge of waste into waters of the State. The Regional Water Quality Control Board (RWQCB) administers this regulation. Water Code Section 13260 requires "any person discharging, or proposing to discharge waste, within any region that could affect the waters of the State to file a report of discharge." A report of waste discharge ("RWD") is essentially an application for waste discharge requirements ("WDRs"). WDRs contain conditions imposed on a given discharge by the appropriate RWQCBs for the purpose of protecting the beneficial uses of the waters of the State. Upon receipt of a RWD, the RWQCB may issue WDRs imposing conditions on the proposed discharge, or it may waive the requirement for WDRs."⁷²

California Native Plant Society

"Originally formed in 1965 in the east bay region, the California Native Plant Society (CNPS) is a statewide non-profit organization of amateurs and professionals with a common interest in California's native plants." "The mission of the CNPS Rare Plant Program (The Program) is to develop current, accurate information on the distribution, ecology, and conservation status of California's rare and endangered plants, and to use this information to promote science-based plant conservation in California. The Program, since its inception in 1968, has developed a reputation for scientific accuracy and integrity. The Program's data are widely accepted as the standard for information on the rarity and endangerment status of the California

⁶⁹ Op. Cit.

⁷⁰ Op. Cit. 9-9.

⁷¹ Op. Cit.

⁷² Op. Cit.

flora. For this reason, The Program's primary responsibility is the maintenance of the CNPS Inventory of Rare and Endangered Plants of California (the CNPS Inventory), which tracks the conservation status of hundreds of plant species.

The Program operates under a Memorandum of Understanding (MOU) with the CDFW. The MOU outlines broad cooperation in rare plant assessment and protection, and formalizes cooperative ventures such as data sharing and production of complementary information sources for rare plants. To facilitate this cooperation, the Rare Plant Botanist is housed at the Sacramento office of the CDFW's Biogeographic Data Branch. CNPS and the CDFW Natural Diversity Data Base (CNDDDB) share all data files and rare plant information and work together on a daily basis to provide current, accurate information on the distribution, endangerment status, and ecology of California's rare flora. Once a species has undergone the CNPS Review Process and has been added to a CNPS List, CNDDDB uses the information gathered to map the rarest plant species to their precise locations. CNDDDB makes this information available through RareFind or custom Geographic Information Systems (GIS) maps and digital information. While CNPS updates data more continuously, location information is reported more precisely by CNDDDB.⁷³

Birds of Prey

Birds of prey are also protected in California under provisions of the State Fish and Game Code Section 3503.5 (1992) which states that it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulations adopted pursuant thereto. Construction disturbances during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the Department of Fish and Wildlife.

Sensitive Species Significance Criteria

Whenever possible, public agencies are required to avoid or minimize environmental impacts by implementing practical alternatives or mitigation measures. As noted in the Biological Evaluation (see Appendix "B" of this DEIR), Section 15382 of the CEQA Guidelines defines a significant effect on the environment means as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest. Specific project impacts to biological resources may be considered "significant" if they would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan."⁷⁴

Furthermore, CEQA Guidelines Section 15065(a)(1) MANDATORY FINDINGS OF SIGNIFICANCE states that a project may trigger the requirement to prepare an EIR if "The project has the potential to: substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare or threatened species, or eliminate important examples of the major periods of California history or prehistory."⁷⁵

⁷³ California Native Plant Society, Preserving and Protecting California Native Plants and Their Habitats. Accessed January 2023 at: <http://www.cnps.org/cnps/about/>.

⁷⁴ Tulare County. Matheny Tract Wastewater System Project Feasibility Report. DEIR. June 2017. Pages 3.4-11 through 3.4-12.

⁷⁵ CEQA Guidelines Section 15065(a)(1)

CEQA and Oak Woodland Protection

CEQA Statute Section 21083.4, “Counties; Conversion of Oak Woodlands; Mitigation Alternatives,” requires that counties determine whether a development will have potential impacts on oak woodlands:

21083.4(a): “For purposes of this section, “oak” means a native tree species in the genus *Quercus*, not designated as Group A or Group B commercial species pursuant to regulations adopted by the State Board of Forestry and Fire Protection pursuant to Section 4526, and that is 5 inches or more in diameter at breast height.”

21083.4(b): “...If a county shall determine whether a project within its jurisdiction may result in a conversion of oak woodlands that will have a significant effect on the environment. If a county determines that there may be a significant effect to oak woodlands, the county shall require or more of the...[listed] oak woodlands mitigation alternatives.”

Local

The following Tulare County General Plan 2030 Update policies for this resource apply to this Project such as:

ERM-1.1 Protection of Rare and Endangered Species which protects environmentally sensitive wildlife and plant life, including those species designated as rare, threatened, and/or endangered by State and/or Federal government, through compatible land use development; *ERM-1.2 Development in Environmentally Sensitive Areas* where the County shall limit or modify proposed development within areas that contain sensitive habitat for special status species and direct development into less significant habitat areas. Development in natural habitats shall be controlled so as to minimize erosion and maximize beneficial vegetative growth; *ERM-1.4 Protect Riparian Areas* where the County shall protect riparian areas through habitat preservation, designation as open space or recreational land uses, bank stabilization, and development controls; *ERM-1.6 Management of Wetlands* where the County shall support the preservation and management of wetland and riparian plant communities for passive recreation, groundwater recharge, and wildlife habitats; *ERM-1.7 Planting of Native Vegetation* where the County shall encourage the planting of native trees, shrubs, and grasslands in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for native vegetation and wildlife, and ensure that a maximum number and variety of well-adapted plants are maintained; *ERM-1.16 Cooperate with Wildlife Agencies* which states that the County shall cooperate with State and federal wildlife agencies to address linkages between habitat areas; and *ERM-2.7 Minimize Adverse Impacts* where the County will minimize the adverse effects on environmental features such as water quality and quantity, air quality, flood plains, geophysical characteristics, biotic, archaeological, and aesthetic factors.

Project Impact Analysis:

In addition to the biological information contained in the DEIR for the Matheny Tract Wastewater Project, additional information is provided in the Biological Evaluation (BE) for the Matheny Tract Wastewater Pipeline Project. The BE (see attachment “B” of this document) analyzes biological resources generally west of Pratt Street (Road 96), along Paige Avenue (Avenue 276), along South West Street, and along an unnamed road on the north side of the City of Tulare’s existing Domestic Wastewater Treatment Plan (DWWTP) then connecting to the DWWTP. Simply stated, the BE provides supplemental analysis of biological resources beyond the project limits of the DEIR for the Matheny Tract Wastewater Project’s for the proposed Project’s pipeline component leading to connection with the DWWTP. As previously noted, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields; and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary referred to as the wastewater collection system and pipeline inter-tie Project).

a) Less Than Significant Impact With Mitigation: As noted previously,

According to the CNDDDB searches and as described in the Biological Evaluation (BE) included in Attachment “B” of this MND, no Special Status plant species, Special Status animal species, or special habitats are known to occur in the general proposed Project vicinity.

As noted earlier, no Special Status animal species are known to occur in the general vicinity of the proposed Project site location. However, also as noted earlier, the intensive active agricultural uses, roadways, residential and commercial uses have permanently changed any habitat suitable for special status animal species within the Matheny Tract Wastewater

Collection System project area.⁷⁶ Also, as indicated in the BE prepared for the Matheny Tract Pipeline Project, it was concluded that special status animal or plant species are not likely to occur, thus, there would be a less than significant impact and mitigation measures would not be warranted.⁷⁷ As such, it is highly unlikely that a special status animal would use the proposed Project site other than transiting the site and possibly for foraging. Areas where the wastewater collection system and pipeline inter-tie Project will be located are currently active and highly disturbed by vehicular traffic (e.g., cars, trucks, agricultural-related equipment (such as tractors, harvesters, etc.)) which renders these areas non-conducive to special status animals' habitat, nests, dens, burrows, etc.

However, it is possible that significant impacts to Special Status species could occur because of proposed Project's temporary, short-term, and intermittent construction-related activities. As such, incorporation of **Mitigation Measures 4-1 through 4-7** would reduce potential Project-specific impacts related to this Checklist Item to less than significant with mitigation

- b) – f) No Impact:** As indicated earlier, the Project will be developed within existing, utilized area (e.g., roads and shoulders) which are in a continuously disturbed state. There is no habitat whatsoever where any special status species may occur within or adjacent to the Project. Areas immediately adjacent to the Project area consist mostly of agriculturally productive farmland in all directions. Scattered rural residences are also present as well as two irrigation ditches/canals. The nearest waterways are two Tulare Irrigation District canals, Oakland Colony Ditch (which runs north to south along Canal Street in North Matheny Tract) and West Oakland Colony Canal (which is a diversion of Oakland Colony Ditch that runs along the northern boundary of South Matheny Tract then continues south, west of Pratt Avenue); neither of these facilities are naturally occurring and both are primarily used to convey seasonal water flows for agricultural irrigation. As such, there is no habitat of value for common or special status species. As indicated in the DEIR for the Matheny Tract Wastewater Collection Project Feasibility Report, it is not the County's intent to pursue Alternative 3 (a standalone Matheny Tract Wastewater Collection and Treatment System), therefore, adjacent agriculturally productive lands or irrigation canals which could be used for foraging or as transit corridors by special status species near the community would not be impacted. The BE for the Matheny Tract Pipeline Project also concluded that coupled with regular disturbance by humans and traffic (i.e., anthropogenic disturbance), the absence of preferred habitat, natural communities, or other features that would be likely to function as wildlife movement corridors would result in no impact to these resources. As such, the proposed Project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service; would not result in an adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means; and it would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. Other than the above-noted ditches/canals, the nearest body of water is Elk Bayou located approximately 2.1 miles southeast of the southern-most extent of the proposed Project area. Further, as noted in the DEIR for the Matheny Tract Wastewater Collection Project Feasibility Report and the BE for the Matheny Tract Pipeline Project, the overall wastewater collection system and pipeline inter-tie Project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance nor conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, the proposed Project would result in no impact to these resources within or in the vicinity of the proposed Project site.

Cumulative Impact Analysis: Less Than Significant Impact – The geographic area of this cumulative analysis is the San Joaquin Valley. While the study area is limited to Tulare County, sensitive species with similar habitat requirements may exist in other portions of the San Joaquin Valley, and therefore cumulative impacts would extend beyond Tulare County's jurisdictional boundaries. As noted previously, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields; and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary referred to as the wastewater collection system and pipeline inter-tie Project). The proposed Project would only contribute to cumulative impacts related to this Checklist Item if Project-specific impacts were to occur. As the proposed Project

⁷⁶ See Biological Resources discussion of the DEIR for the Tract Wastewater Collection System Matheny Tract at pages 3.4-14 through 3.3-17. Available at: <https://tularecounty.ca.gov/rma/planning-building/environmental-planning/environmental-planning-archive/>

⁷⁷ Biological Evaluation (BE) for the Matheny Tract Wastewater Pipeline Project. Page 25. October 2022. Prepared by Provost & Pritchard Consulting Group and included in Attachment "B" of this document.

does not result in significant loss of habitat or direct impact to these special status species, a less than significant cumulative impact with mitigation will occur.

Mitigation Measure(s): **Mitigation Measure 4-1 through 4-7**

The Mitigation Measures contained in the DEIR for the Matheny Tract Wastewater Collection Project Feasibility Report, are incorporated herein in their entirety. Following is a summarized version of the mitigation measures; the full text is available in Attachment “E” Mitigation Monitoring and Reporting Program (MMRP) of this document.

Plant Species:

- 4-1 Avoidance.
- 4-2 Minimization.
- 4-3. Compensation
- 4-4. Monitoring.

Animal Species:

- 4-5 Avoidance.
- 4-6 Minimization.
- 4-7 Monitoring.

Therefore, implementation of **Mitigation Measure 4-1** through **4-7**, as applicable, would reduce impacts to less than significant.

V. CULTURAL RESOURCES

Would the project:		SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT IMPACT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a)	Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c)	Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Cultural Resources, etc. contained in the Tulare County General Plan 2030 Update, Tulare County Environmental Impact Report, Matheny Tract Wastewater Collection System DEIR and REIR, and the “Phase I Survey/Class III Inventory, PNP Matheny Pipeline Inter-tie Project, Tulare County, California” are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Environmental Setting

The comprehensive Project Description can be found on pages 2 and 3 of this document. In summary, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary referred to as the wastewater collection system and pipeline inter-tie Project).

“Tulare County lies within a culturally rich province of the San Joaquin Valley. Studies of the prehistory of the area show inhabitants of the San Joaquin Valley maintained fairly dense populations situated along the banks of major waterways, wetlands, and streams. Tulare County was inhabited by aboriginal California Native American groups consisting of the Southern Valley Yokuts, Foothill Yokuts, Monache, and Tubatulabal. Of the main groups inhabiting the Tulare County area, the Southern Valley Yokuts occupied the largest territory.”⁷⁸

“California’s coast was initially explored by Spanish (and a few Russian) military expeditions during the late 1500s. However, European settlement did not occur until the arrival into southern California of land-based expeditions originating from Spanish Mexico starting in the 1760s. Early settlement in the Tulare County area focused on ranching. In 1872, the Southern Pacific Railroad entered Tulare County, connecting the San Joaquin Valley with markets in the north and east. About the same time, valley settlers constructed a series of water conveyance systems (canals, dams, and ditches) across the valley. With ample water supplies and the assurance of rail transport for commodities such as grain, row crops, and fruit, a number of farming colonies soon appeared throughout the region.”⁷⁹

“The colonies grew to become cities such as Tulare, Visalia, Porterville, and Hanford [in Kings County]. Visalia, the [Tulare] County seat, became the service, processing, and distribution center for the growing number of farms, dairies, and cattle ranches. By 1900, Tulare County boasted a population of about 18,000. New transportation links such as SR 99 (completed during the 1950s), affordable housing, light industry, and agricultural commerce brought steady growth to the valley. The California Department of Finance estimated the 2007 Tulare County population to be 430,167.”⁸⁰

Existing Cultural and Historic Resources

⁷⁸ Tulare County General Plan Update 2030. Page 8-5.

⁷⁹ Ibid.

⁸⁰ Op. Cit. 8-6.

“Tulare County’s known and recorded cultural resources were identified through historical records, such as those found in the National Register of Historic Places, the Historic American Building Survey/Historic American Engineering Record (HABS/HAER), the California Register of Historic Resources, California Historical Landmarks, and the Tulare County Historical Society list of historic resources.”⁸¹

Due to the sensitivity of many prehistoric, ethnohistoric, and historic archaeological sites, locations of these resources are not available to the general public. The Information Center at California State University, Bakersfield houses records associated with reported cultural resources surveys, including the records pertinent to sensitive sites, such as burial grounds, important village sites, and other buried historical resources protected under state and federal laws.

In addition to the Cultural resources discussion contained in the Matheny Tract Wastewater Collection Project Feasibility Report DEIR, the Matheny Tract Wastewater Pipeline Project, “Phase I Survey/Class III Inventory, PNP Matheny Pipeline Project, Tulare County, California” (Phase I Survey) prepared for the pipeline project to the City of Tulare DWWTP supplements the information in the Wastewater Collection Project’s EIR. The Phase I Survey includes information regarding environmental background and geoarchaeological sensitivity; ethnographic background; pre-contact archaeological background; historical background; etc.⁸² In summary, the Center’s search response letter indicated that there are no recorded cultural resources within the project area and three recorded resources within a one-half mile radius (P-54-000042 Prehistoric, habitation site [Collected materials in Kern County Historical Museum, Latta Collection and Munger Collection]; (P-54-003608, the Tulare Irrigation Canal); and P-54-005358, Hooper Ditch). There are no recorded cultural resources within the project area or radius that are listed in the National Register of Historic Places, the California Register of Historical Resources, the California Points of Historical Interest, California Inventory of Historic Resources, or the California State Historic Landmarks.⁸³ The Center also recommended that the NAHC be contacted regarding cultural resources that may not be included in the CHRIS inventory (see Attachment “C”). It is noted that the Phase I report is limited in area to where the alignment to the pipeline inter-tie (i.e., the 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP) will occur. Tulare County RMA also requested an updated Sacred Lands File (SLF) search from the California Native American Heritage Commission (NAHC) on December 22, 2022, for the proposed Project areas including the entirety of Matheny Tract and the alignment of the pipeline inter-tie to the DWWTP. The NAHC provided a letter dated January 19, 2023, showing “positive” results which indicates there is a documented Sacred Lands within the Project area (also in Attachment “C”) and that RMA contact the tribes included on the list provided by NAHC.

Regulatory Setting

Federal

Cultural resources are protected by several federal regulations, none of which are relevant to this project because it will not be located on lands administered by a federal agency and the proposed Project applicant is not requesting federal funding and does not require any permits from any federal agencies.

State

California State Office of Historic Preservation (OHP)

“The California State Office of Historic Preservation (OHP) is responsible for administering federally and state mandated historic preservation programs to further the identification, evaluation, registration and protection of California’s irreplaceable archaeological and historical resources under the direction of the State Historic Preservation Officer (SHPO), a gubernatorial appointee, and the State Historical Resources Commission.

OHP’s responsibilities include:

- Identifying, evaluating, and registering historic properties;
- Ensuring compliance with federal and state regulatory obligations;
- Encouraging the adoption of economic incentives programs designed to benefit property owners;

⁸¹ Tulare County General Plan 2030 Update *Background Report*. Page 9-56.

⁸² See “Phase I Survey/Class III Inventory, PNP Matheny Pipeline Project, Tulare County, California” Pages 7-13. Prepared by ASM Affiliates, Inc. as included in Attachment “C”

⁸³ DEIR for the Tract Wastewater Collection System Matheny Tract. Chapter 3.5 Cultural Resources. Page 3.5-11. Available at: <https://tularecounty.ca.gov/rma/planning-building/environmental-planning/environmental-planning-archive/> California Historical Resources Information System (CHRIS). Southern San Joaquin Valley Information Center. California State University, Bakersfield. Record Search 22-319. See Attachment “C” of this MND.

- Encouraging economic revitalization by promoting a historic preservation ethic through preservation education and public awareness and, most significantly, by demonstrating leadership and stewardship for historic preservation in California.

Architectural Review and Incentives

OHP administers the Federal Historic Preservation Tax Incentives Program and provides architectural review and technical assistance to other government agencies and the general public in the following areas:

- Interpretation and application of the Secretary of the Interior’s Standards and Guidelines for the Treatment of Historic Properties;
- General assistance with and interpretation of the California Historical Building Code and provisions for qualified historic properties under the Americans with Disabilities Act;
- Developing and implementing design guidelines;
- Preservation incentives available for historic properties;
- Sustainability and adaptive reuse of historic properties.”⁸⁴

Information Management

The California Historical Resources Information System (CHRIS) consists of the California Office of Historic Preservation (OHP), nine Information Centers (Ics), and the State Historical Resources Commission (SHRC). The OHP administers and coordinates the CHRIS and presents proposed CHRIS policies to the SHRC, which approves these policies in public meetings. The CHRIS Inventory includes the State Historic Resources Inventory maintained by the OHP as defined in California Public Resources Code § 5020.1(p), and the larger number of resource records and research reports managed under contract by the nine Ics.”⁸⁵ “The CHRIS Information Centers (Ics) are located on California State University and University of California campuses in regions throughout the state. The nine Ics provide historical resources information, generally on a fee-for-service basis, to local governments, state and federal agencies, Native American tribes, and individuals with responsibilities under the National Environmental Policy Act, the National Historic Preservation Act, and the California Environmental Quality Act (CEQA), as well as to the general public.”⁸⁶ Tulare, Fresno, Kern, Kings and Madera counties are served by the Southern San Joaquin Valley Historical Resources Information Center (Center), located at California State University, Bakersfield in Bakersfield, CA. The Center provides information on known historic and cultural resources to governments, institutions, and individuals.

“Local Government Assistance

OHP works with California’s city and county governments to aid them in integrating historic preservation into the broader context of overall community planning and development activities by adopting a comprehensive approach to preservation planning which combines identification, evaluation, and registration of historical resources with strong local planning powers, economic incentives, and informed public participation.

OHP provides guidance and technical assistance to city and county governments in the following areas:

- Drafting or updating preservation plans and ordinances;
- Planning for and conducting architectural, historical, and archeological surveys;
- Developing criteria for local designation programs, historic districts, historic preservation overlay zones (HPOZs), and conservation districts;
- Developing design guidelines using the Secretary of the Interior’s Standards;
- Developing economic incentives for historic preservation;
- Training local commissions and review boards;
- Meeting CEQA responsibilities with regard to historical resources.

OHP also administers the Certified Local Government (CLG) Program and distributes at least 10% of its annual federal Historic Preservation Fund allocation to CLGs through a competitive grant program to them in achieving their historic preservation goals.

⁸⁴ California State Parks. Office of Historic Preservation. Mission and Responsibilities. Accessed August 2022 at: [Mission and Responsibilities \(ca.gov\)](https://ohp.parks.ca.gov/?page_id=1068)

⁸⁵ California State Parks. Office of Historic Preservation August 2022 at: http://ohp.parks.ca.gov/?page_id=1068.

⁸⁶ California State Parks. Office of Historic Preservation. About the CHRIS Information Centers. Accessed August 2022 at: http://ohp.parks.ca.gov/?page_id=28730.

Environmental Compliance: Section 106, PRC 5024, and CEQA

OHP reviews and comments on thousands of federally sponsored projects annually pursuant to Section 106 of the National Historic Preservation Act and state programs and projects pursuant to Sections 5024 and 5024.5 of the Public Resources Code. OHP also reviews and comments on local government and state projects pursuant to the California Environmental Quality Act (CEQA).

The purpose of OHP's project review program is to promote the preservation of California's heritage resources by ensuring that projects and programs carried out or sponsored by federal and state agencies comply with federal and state historic preservation laws and that projects are planned in ways that avoid any adverse effects to heritage resources. If adverse effects cannot be avoided, the OHP assists project sponsors in developing measures to minimize or mitigate such effects.

State and Federal Registration Programs

OHP administers the National Register of Historic Places, the California Register of Historical Resources, the California Historical Landmarks, and the California Points of Historical Interest programs. Each program has different eligibility criteria and procedural requirements; all register nominations must be submitted to the Commission for review and approval.

Eligible and listed resources may be eligible for tax benefits and are recognized as part of the environment under the California Environmental Quality Act (CEQA).⁸⁷

A historical resource may be eligible for inclusion in the California Register of Historical Resources (CRHR) if it meets the following Criteria for Designation:

- Associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States (Criterion 1).
- Associated with the lives of persons important to local, California or national history (Criterion 2).
- Embodies the distinctive characteristics of a type, period, region or method of construction or represents the work of a master or possesses high artistic values (Criterion 3).
- Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation (Criterion 4).⁸⁸

Native American Heritage Commission (NAHC)

"In 1976, the California State Government passed AB 4239, establishing the Native American Heritage Commission (NAHC) as the primary government agency responsible for identifying and cataloging Native American cultural resources. Up until this point, there had been little government participation in the protection of California's cultural resources. As such, one of the NAHC's primary duties, as stated in AB 4239, was to prevent irreparable damage to designated sacred sites, as well as to prevent interference with the expression of Native American religion in California. Furthermore, the bill authorized the Commission to act in order to prevent damage to and insure Native American access to sacred sites. Moreover, the Commission could request that the court issue an injunction for the site, unless it found evidence that public interest and necessity required otherwise. In addition, the bill authorized the commission to prepare an inventory of Native American sacred sites located on public lands and required the commission to review current administrative and statutory protections accorded to such sites. In 1982, legislation was passed authorizing the Commission to identify a Most Likely Descendant (MLD) when Native American human remains were discovered any place other than a dedicated cemetery. MLDs were granted the legal authority to make recommendations regarding the treatment and disposition of the discovered remains. These recommendations, although they cannot halt work on the project site, give MLDs a means by which to ensure that the Native American human remains are treated in the appropriate manner. Today, the NAHC provides protection to Native American human burials and skeletal remains from vandalism and inadvertent destruction. It also provides a legal means by which Native American descendants can make known their concerns regarding the need for sensitive treatment and disposition of Native American burials, skeletal remains, and items associated with Native American burials."⁸⁹

As noted in their website, "The California Native American Heritage Commission (NAHC or Commission), created in statute in 1976 (Chapter 1332, Statutes of 1976), is a nine-member body whose members are appointed by the Governor. The NAHC

⁸⁷ Ibid.

⁸⁸ California Register: Criteria for Designation. August 2022 at: https://ohp.parks.ca.gov/?page_id=21238

⁸⁹ California Native American Heritage Commission. About The Native American Heritage Commission. Accessed January 2023 at: <http://nahc.ca.gov/about/>.

identifies, catalogs, and protects Native American cultural resources – ancient places of special religious or social significance to Native Americans and known ancient graves and cemeteries of Native Americans on private and public lands in California. The NAHC is also charged with ensuring California Native American tribes’ accessibility to ancient Native American cultural resources on public lands, overseeing the treatment and disposition of inadvertently discovered Native American human remains and burial items, and administering the California Native American Graves Protection and Repatriation Act (CalNAGPRA), among many other powers and duties.”⁹⁰

Additional State regulatory requirements regarding tribal cultural resources (such as AB 52 and SB 18 Tribal Consultation Guidelines) can be found at Item 18 Tribal Cultural Resources.

CEQA Guidelines: Historical Resources Definition

CEQA Guidelines Section 15064.5(a) defines a historical resource as:

- “(1) A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (Pub. Res. Code §5024.1, Title 14 CCR, Section 4850 et seq.).
- (2) A resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- (3) Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency’s determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be “historically significant” if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code §5024.1, Title 14 CCR, Section 4852) including the following:
 - (A) Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
 - (B) Is associated with the lives of persons important in our past;
 - (C) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
 - (D) Has yielded, or may be likely to yield, information important in prehistory or history.
- (4) The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code sections 5020.1(j) or 5024.1.”⁹¹

CEQA Guidelines: Archaeological Resources

Section 15064.5(c) of CEQA Guidelines provides specific guidance on the treatment of archaeological resources as noted below.

- “(1) When a Project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource, as defined in subdivision (a).
- (2) If a lead agency determines that the archaeological site is an historical resource, it shall refer to the provisions of Section 21084.1 of the Public Resources Code, and this section, Section 15126.4 of the Guidelines, and the limits contained in Section 21083.2 of the Public Resources Code do not apply.
- (3) If an archaeological site does not meet the criteria defined in subdivision (a), but does meet the definition of a unique archeological resource in Section 21083.2 of the Public Resources Code, the site shall be treated in accordance with the provisions of section 21083.2. The time and cost limitations described in Public Resources Code Section 21083.2 (c–f) do not apply to surveys and site evaluation activities intended to determine whether the Project location contains unique archaeological resources.

⁹⁰ Ibid. Welcome. Accessed January 2023 at: <http://nahc.ca.gov/>.

⁹¹ California Natural Resources Agency. California Environmental Quality Act (CEQA) Guidelines. Section 15064.5(a). Statute and Guidelines - California Association of Environmental Professionals. Accessed January 2023 at: https://www.califaep.org/statute_and_guidelines.php

- (4) If an archaeological resource is neither a unique archaeological nor an historical resource, the effects of the Project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study or EIR, if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process.”⁹²

CEQA Guidelines: Human Remains

Public Resources Code Sections 5097.94 and 5097.98 provide guidance on the disposition of Native American burials (human remains), and fall within the jurisdiction of the Native American Heritage Commission:

- “(d) When an initial study identifies the existence of, or the probable likelihood, of Native American human remains within the Project, a lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission as provided in Public Resources Code Section 5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any Items associated with Native American burials with the appropriate Native Americans as identified by the Native American Heritage Commission. Action implementing such an agreement is exempt from:
- (1) The general prohibition on disinterring, disturbing, or removing human remains from any location other than a dedicated cemetery (Health and Safety Code Section 7050.5).
 - (2) The requirements of CEQA and the Coastal Act.⁹³
- “(e) In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken:
- (1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:
 - (A) The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and
 - (B) If the coroner determines the remains to be Native American:
 1. The coroner shall contact the Native American Heritage Commission within 24 hours.
 2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American.
 3. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98, or
 - (2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.
 - (A) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.
 - (B) The descendant identified fails to make a recommendation;
 - (C) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.⁹⁴
- “(f) As part of the objectives, criteria, and procedures required by Section 21082 of the Public Resources Code, a lead agency should make provisions for historical or unique archaeological resources accidentally discovered during construction. These provisions should include an immediate evaluation of the find by a qualified archaeologist. If the find is determined to be an historical or unique archaeological resource, contingency funding and a time allotment sufficient to allow for implementation of avoidance measures or appropriate mitigation should be available. Work could continue on other parts of the building site while historical or unique archaeological resource mitigation takes place.”⁹⁵

CEQA Guidelines: Paleontological Resources

⁹² Ibid. Section 15064.5(c).

⁹³ Op. Cit. Section 15064.5(d).

⁹⁴ Op. Cit. Section 15064.5 (e).

⁹⁵ Op. Cit. Section 15064.5(f).

Public Resources Code Section 5097.5 prohibits excavation or removal of any “vertebrate paleontological site... or any other archaeological, paleontological or historical feature, situated on public lands, except with express permission of the public agency having jurisdiction over such lands.”

CEQA Guidelines Section 15126.4(b)

“(b) Mitigation Measures Related to Impacts on Historical Resources.

- (1) Where maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation or reconstruction of the historical resource will be conducted in a manner consistent with the Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (1995), Weeks and Grimmer, the project’s impact on the historical resource shall generally be considered mitigated below a level of significance and thus is not significant.
- (2) In some circumstances, documentation of an historical resource, by way of historic narrative, photographs or architectural drawings, as mitigation for the effects of demolition of the resource will not mitigate the effects to a point where clearly no significant effect on the environment would occur.
- (3) Public agencies should, whenever feasible, seek to avoid damaging effects on any historical resource of an archaeological nature. The following factors shall be considered and discussed in an EIR for a project involving such an archaeological site:
 - (A) Preservation in place is the preferred manner of mitigating impacts to archaeological sites. Preservation in place maintains the relationship between artifacts and the archaeological context. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.
 - (B) Preservation in place may be accomplished by, but is not limited to, the following:
 1. Planning construction to avoid archaeological sites;
 2. Incorporation of sites within parks, greenspace, or other open space;
 3. Covering the archaeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site.
 4. Deeding the site into a permanent conservation easement.
 - (C) When data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provisions for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared and adopted prior to any excavation being undertaken. Such studies shall be deposited with the California Historical Resources Regional Information Center. Archeological sites known to contain human remains shall be treated in accordance with the provisions of Section 7050.5 Health and Safety Code. If an artifact must be removed during project excavation or testing, curation may be an appropriate mitigation.
 - (D) Data recovery shall not be required for an historical resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historical resource, provided that the determination is documented in the EIR and that the studies are deposited with the California Historical Resources Regional Information Center.”⁹⁶

Public Resources Code §5097.5

California Public Resources Code §5097.5 prohibits excavation or removal of any “vertebrate paleontological site...or any other archaeological, paleontological or historical feature, situated on public lands, except with express permission of the public agency having jurisdiction over such lands.” Public lands are defined to include lands owned by or under the jurisdiction of the state or any city, county, district, authority or public corporation, or any agency thereof. Section 5097.5 states that any unauthorized disturbance or removal of archaeological, historical, or paleontological materials or sites located on public lands is a misdemeanor.

Human Remains

Section 7050.5 of the California Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner’s authority. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within 24 hours of this identification. The

⁹⁶ Op. Cit. Section 15126.4(b).

Native American Heritage Commission will identify a Native American Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

Local

The following Tulare County General Plan 2030 Update policies for this resource apply to this Project: *ERM-6.1 Evaluation of Cultural and Archaeological Resources* which states that the County shall participate in and support efforts to identify its significant cultural and archaeological resources using appropriate State and Federal standards; *ERM-6.2 Protection of Resources with Potential State or Federal Designations* wherein the County shall protect cultural and archaeological sites with demonstrated potential for placement on the National Register of Historic Places and/or inclusion in the California State Office of Historic Preservation's California Points of Interest and California Inventory of Historic Resources. Such sites may be of Statewide or local significance and have anthropological, cultural, military, political, architectural, economic, scientific, religious, or other values as determined by a qualified archaeological professional; *ERM-6.3 Alteration of Sites with Identified Cultural Resources* which states that when planning any development or alteration of a site with identified cultural or archaeological resources, consideration should be given to ways of protecting the resources. Development can be permitted in these areas only after a site specific investigation has been conducted pursuant to CEQA to define the extent and value of resource, and mitigation measures proposed for any impacts the development may have on the resource; *ERM-6.4 Mitigation* – which states that if preservation of cultural resources is not feasible, every effort shall be made to mitigate impacts, including relocation of structures, adaptive reuse, preservation of facades, and thorough documentation and archival of records; *ERM-6.8 Solicit Input from Local Native Americans* (which is consistent with AB 52 in regards to Tribal Consultation) wherein the County shall continue to solicit input from the local Native American communities in cases where development may result in disturbance to sites containing evidence of Native American activity and/or to sites of cultural importance; *ERM-6.9 Confidentiality of Archaeological Sites* which is also consistent with AB 52) where the County shall, within its power, maintain confidentiality regarding the locations of archaeological sites in order to preserve and protect these resources from vandalism and the unauthorized removal of artifacts; and *ERM-6.10 Grading Cultural Resources Sites* wherein the County shall ensure all grading activities conform to the County's Grading Ordinance and California Code of Regulations, Title 20, § 2501 et. seq.

Project Impact Analysis:

a) and b) Less Than Significant Impact With Mitigation: The Project activity would be located within existing road rights-of-way. As noted in Chapter 3.5 Cultural Resources of the DEIR for the Tract Wastewater Collection System Matheny Tract, a search conducted by the Southern San Valley Historical Resources Information Center, at California State University, Bakersfield (Center) in the California Historic Resources Information System (CHRIS) indicated that there are no recorded cultural resources within the project area and one recorded resource within a one-half mile radius (P-54-003608, the Tulare Irrigation Canal). There are no recorded cultural resources within the project area or radius that are listed in the National Register of Historic Places, the California Register of Historical Resources, the California Points of Historical Interest, California Inventory of Historic Resources, or the California State Historic Landmarks (see Attachment "C" of this document).⁹⁷ In addition to the CHRIS search, Chapter 3.5 Cultural Resources of the DEIR for the Tract Wastewater Collection System Matheny Tract also a Sacred Lands File (SLF) search was conducted by the Native American Heritage Commission (NAHC) which resulted in "negative results" and Tribal consultation was complete with no notification by Tribes of any traditional cultural resources in the vicinity of the Project area. Additional Tribal consultation was initiated by RMA staff on December 2, 2022 resulting in one response recommending monitoring (see Attachment "C").

As noted in the Phase I Survey prepared for the Matheny Pipeline Inter-tie component of the Project, there are no documented cultural resources within the area of potential effect (APE). The Phase I Study indicated, "According to the records search conducted by the Southern San Joaquin Valley Information Center, California State University, Bakersfield, one previous linear study included a portion of the Project APE (Table 1[of the Phase I Survey]), and no cultural resources of any kind have been previously documented within it. An additional four previous studies have been conducted within 0.5 mi. of the Project (Table 2[of the Phase I Survey]), which resulted in the recordation of three previous resources within the search radius (Table 3[of the Phase I Survey])"⁹⁸

As noted earlier, the CHRIS and NAHC/SLF searches, and the Phase I Survey, did not identify any archaeological (or cultural) resources. Additionally, the Project site has no natural streams, rivers, or geologic features on or near the site

⁹⁷ DEIR for the Tract Wastewater Collection System Matheny Tract. Chapter 3.5 Cultural Resources. Page 3.5-11

⁹⁸ "Phase I Survey/Class III Inventory, PNP Matheny Pipeline Project, Tulare County, California" Pages 23-24. Prepared by ASM Affiliates, Inc. and included in Attachment "C".

which may suggest the presence of archaeological resources. However unlikely, as the pipeline, lift station(s), and lateral connections will be located within existing rights-of-way, there is a possibility that subsurface resources could be uncovered during construction-related activities. In such an event, potentially significant impacts to previously unknown subsurface resources may occur. With the implementation of Mitigation Measure 3.5-1 through 3.5-2 (summarized below and shown in their entirety in Attachment “E”), Project-specific impacts would be less than significant.

- c) **Less Than Significant Impact With Mitigation:** The Project’s construction-related activities would be located within existing road rights-of-way. As noted in Items a) and b), CHRIS, NAHC, SLF searches, and consultation with Native American tribes did not identify any known remains or formal cemeteries. However unlikely, there is a possibility that subsurface resources could be uncovered during construction-related activities. In such an unlikely event, potentially significant impacts to previously unknown subsurface resources may occur. With the implementation of Mitigation Measure 5-2, inadvertent disturbance of any human remains (including those interred outside of formal cemeteries) resulting in the discovery of human remains would require work to halt in the vicinity of a find until the County coroner determines whether the remains are Native American in origin and, if they are, contacting the Native American Heritage Commission.

Cumulative Impact Analysis: Less Than Significant Impact With Mitigation - The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan Background Report, the Tulare County 2030 General Plan EIR, Matheny Tract Wastewater Collection System DEIR and REIR, and the “Phase I Survey/Class III Inventory, PNP Matheny Pipeline Project, Tulare County, California”.

It is not anticipated that cultural resources or Native American remains will be found at the proposed Project site. However, consistent with CEQA requirements, Mitigation Measures 5-1 through 5-2 are included in the unlikely event that if cultural resources or Native American remains are unearthed/discovered during any ground disturbance activities, such finds will be mitigated to less than significant Project-specific and Cumulative Impacts.

Mitigation Measure(s): See **Mitigation Measures 5-1** through **5-2** in their entirety in Attachment “E”

5-1 Discovery.

5-2 Implementation of Health and Safety Code section 7050.5, CEQA Guidelines Section 15064.5, PRC 5097.98

Therefore, implementation of **Mitigation Measure 5-1** through **5-2**, as applicable, would reduce impacts to less than significant.

VI. ENERGY

Would the project:	SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT IMPACT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Cultural Resources, etc. contained in the Tulare County General Plan 2030 Update, Tulare County General Plan 2030 Environmental Impact Report, and Matheny Tract Wastewater Collection System DEIR and REIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Environmental Setting

The proposed Project is located on the San Joaquin Valley floor within and near the unincorporated community of Matheny Tract; a predominantly single-family residential community located south of the City of Tulare. The land uses surrounding the project sites are primarily agricultural. Adjacent properties to the north, west, and south of the project sites are farmland including field and row crops and nut trees. Industrial uses are located east of and adjacent to the Matheny North site and 0.7 miles east of the Matheny South site, and lie within the city limits of the City of Tulare.

The proposed Project would be served with electricity provided by SCE. SCE's 2021 Green Rate 50 percent option includes 65.7 percent eligible renewable resources, including wind, geothermal, solar, eligible hydroelectric, and biomass and biowaste; 2.3 percent large hydroelectric; 22.3 percent natural gas; 9.2 percent nuclear; 0.2 percent other; and 34.6 percent unspecified sources of power⁹⁹ SCE's 2021 Green Rate 100 percent option includes 100 percent eligible renewable resources, composed entirely of solar. Approximately 43 percent of the electricity that SCE delivered in 2020 was a combination of renewable and GHG-emissions-free resources.¹⁰⁰ SCE was ahead of schedule in meeting the California's RPS 2020 mandate of serving their load with at least 33 percent RPS-eligible resources. SCE would be required to meet California's RPS standards of 60 percent by 2030 and carbon-free sourced-electricity by 2045.¹⁰¹

As noted previously, the comprehensive Project Description can be found on pages 2 and 3 of this document. In summary, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary referred to as the wastewater collection system and pipeline inter-tie Project).

Regulatory Setting

Federal

Energy Policy Act of 2005

The Energy Policy Act of 2005 seeks to reduce reliance on non-renewable energy resources and provide incentives to reduce current demand on these resources. For example, under the Act, consumers and businesses can obtain federal tax credits for

⁹⁹ "Unspecified sources of power" means electricity from transactions that are not traceable to specific generation sources.

¹⁰⁰ Renewable sources included solar, wind, geothermal, biomass, and small hydroelectric sources. GHG-emissions-free sources of energy included nuclear and large hydroelectric. "GHG-emissions-free resources" refers to energy sources other than renewable energy resources that also do not result in GHG emissions, such as non-emitting nuclear and hydroelectric.

¹⁰¹ Southern California Edison (SCE). 2021. 2021 Power Content Label. Accessed January 2023 at: <https://www.energy.ca.gov/filebrowser/download/4676> or [2021 Power Content Label submitted by Southern California Edison.](#)

purchasing fuel-efficient appliances and products, including buying hybrid vehicles, building energy-efficient buildings, and improving the energy efficiency of commercial buildings. Additionally, tax credits are available for the installation of qualified fuel cells, stationary microturbine power plants, and solar power equipment.

State

California Energy Commission

The California Energy Commission (CEC) was created in 1974 to serve as the state's primary energy policy and planning agency. The CEC is tasked with reducing energy costs and environmental impacts of energy use - such as greenhouse gas emissions - while ensuring a safe, resilient, and reliable supply of energy.

State of California Integrated Energy Policy (SB 1389)

In 2002, the Legislature passed Senate Bill 1389, which required the CEC to develop an integrated energy plan every two years for electricity, natural gas, and transportation fuels, for the California Energy Policy Report. The plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for Zero Emission Vehicles and their infrastructure needs, and encouragement of urban designs that reduce vehicles miles traveled and accommodate pedestrian and bicycle access. The CEC adopted the 2013 Integrated Energy Policy Report on February 20, 2014. The 2013 Integrated Energy Policy Report provides the results of the CEC's assessment of a variety of issues, including:

- Ensuring that the state has sufficient, reliable, and sage energy infrastructure to meet current and future energy demands;
- Monitoring publicly-owned utilities' progress towards achieving 10-year energy efficiency targets; defining and including zero-net-energy goals in state building standards;
- Overcoming challenges to increased use of geothermal heat pump/ground loop technologies and procurement of biomethane;
- Using demand response to meet California's energy needs and integrate renewable technologies;
- Removing barriers to bioenergy development; planning for California's electricity infrastructure needs given potential retirement of power plants and the closure of the San Onofre Nuclear Generating Station;
- Estimating new generation costs for utility-scale renewable and fossil-fueled generation;
- Planning for new or upgraded transmission infrastructure;
- Monitoring utilities' progress in implementing past recommendations related to nuclear power plants;
- Tracking natural gas market trends;
- Implementing the Alternative and Renewable Fuel and Vehicle Technology Program;
- Addressing the vulnerability of California's energy supply and demand infrastructure to the effects of climate change; and
- Planning for potential electricity system needs in 2030.

Renewable Portfolio Standard (SB 1078 and SB 107)

Established in 2002 under SB 1078, the State's Renewables Portfolio Standard (RPS) was amended under SB 107 to require accelerated energy reduction goals by requiring that by the year 2010, 20 percent of electricity sales in the state be served by renewable energy resources. In years following its adoption, Executive Order S-14-08 was signed, requiring electricity retail sellers to provide 33 percent of their service loads with renewable energy by the year 2020. In 2011, SB X1-2 was signed, aligning the RPS target with the 33 percent requirement by the year 2020. This new RPS applied to all state electricity retailers, including publicly owned utilities, investor-owned utilities, electrical service providers, and community choice aggregators. All entities included under the RPS were required to adopt the RPS 20 percent by year 2020 reduction goal by the end of 2013, adopt a reduction goal of 25 percent by the end of 2016, and meet the 33 percent reduction goal by the end of 2020. In addition, the Air Resources Board (ARB), under Executive Order S-21-09, was required to adopt regulations consistent with these 33 percent renewable energy targets.

California Energy Code (Title 24, Part 6, Building Energy Efficiency Standards)

California Code of Regulations Title 24, Part 6 comprises the California Energy Code, which was adopted to ensure that building construction, system design and installation achieve energy efficiency. The California Energy Code was first established in 1978 by the CEC in response to a legislative mandate to reduce California's energy consumption, and apply to energy consumed for heating, cooling, ventilation, water heating, and lighting in new residential and non-residential buildings. The standards are

updated periodically to increase the baseline energy efficiency requirements. The 2013 Building Energy Efficiency Standards focus on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings and include requirements to enable both demand reductions during critical peak periods and future solar electric and thermal system installations. Although it was not originally intended to reduce greenhouse gas (GHG) emissions, electricity production by fossil fuels results in GHG emissions and energy efficient buildings require less electricity. Therefore, increased energy efficiency results in decreased GHG emissions.

California Green Building Standards Code (Title 24, Part II, CALGreen)

The California Building Standards Commission adopted the California Green Buildings Standards Code (CALGreen in Part 11 of the Title 24 Building Standards Code) for all new construction statewide on July 17, 2008. Originally, a volunteer measure, the code became mandatory in 2010 and the most recent update (2013) went into effect on January 1, 2014. CALGreen sets targets for energy efficiency, water consumption, dual plumbing systems for potable and recyclable water, diversion of construction waste from landfills, and use of environmentally sensitive materials in construction and design, including eco-friendly flooring, carpeting, paint, coatings, thermal insulation, and acoustical wall and ceiling panels. The 2013 CALGreen Code includes mandatory measures for non-residential development related to site development; water use; weather resistance and moisture management; construction waste reduction, disposal, and recycling; building maintenance and operation; pollutant control; indoor air quality; environmental comfort; and outdoor air quality. Mandatory measures for residential development pertain to green building; planning and design; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; environmental quality; and installer and special inspector qualifications.

California Global Warming Solutions Act of 2006 (Assembly Bill 32)

Assembly Bill 32 (Health and Safety Code Sections 38500–38599; AB 32), also known as the California Global Warming Solutions Act of 2006, commits the state to achieving year 2000 GHG emission levels by 2010 and year 1990 levels by 2020. To achieve these goals, AB 32 tasked the CPUC and CEC with providing information, analysis, and recommendations to the ARB regarding ways to reduce GHG emissions in the electricity and natural gas utility sectors.

“In 2006, the Legislature passed the California Global Warming Solutions Act of 2006 [Assembly Bill 32 (AB 32)], which created a comprehensive, multi-year program to reduce greenhouse gas (GHG) emissions in California. AB 32 required the California Air Resources Board (ARB or Board) to develop a Scoping Plan that describes the approach California will take to reduce GHGs to achieve the goal of reducing emissions to 1990 levels by 2020. The Scoping Plan was first approved by the Board in 2008 and must be updated every five years. The First Update to the Climate Change Scoping Plan was approved by the Board on May 22, 2014. In 2016, the Legislature passed SB 32, which codifies a 2030 GHG emissions reduction target of 40 percent below 1990 levels. With SB 32, the Legislature passed companion legislation AB 197, which provides additional direction for developing the Scoping Plan.”¹⁰² California’s 2017 Climate Change Scoping Plan was adopted in December 2018. The plan identifies the State’s strategy for achieving the 2030 emission reduction targets.

Clean Energy and Pollution Reduction Act (SB 350)

The Clean Energy and Pollution Reduction Act (SB 350) was passed by California Governor Brown on October 7, 2015, and establishes new clean energy, clean air, and GHG reduction goals for the year 2030 and beyond. SB 350 establishes a GHG target of 40 percent below 1990 levels for the State of California, further enhancing the ability for the state to meet the goal of reducing GHG emissions by 80 percent below 1990 levels by the year 2050.

Environmental Quality Act (CEQA) Requirements

“In 1974, the Legislature adopted the Warren-Alquist State Energy Resources Conservation and Development Act. (Pub. Resources Code, § 25000 et seq.) That act created what is now known as the California Energy Commission, and enabled it to adopt building energy standards. (See, e.g., id. at § 25402.) At that time, the Legislature found the “rapid rate of growth in demand for electric energy is in part due to wasteful, uneconomic, inefficient, and unnecessary uses of power and a continuation of this trend will result in serious depletion or irreversible commitment of energy, land and water resources, and potential threats to the state’s environmental quality.” (Id. at § 25002; see also § 25007 (“It is further the policy of the state and the intent of the Legislature to employ a range of measures to reduce wasteful, uneconomical, and unnecessary uses of energy, thereby reducing the rate of growth of energy consumption, prudently conserve energy resources, and assure statewide environmental, public safety, and land use goals”))

¹⁰² Air Resources Board. AB 32 Scoping Plan. Accessed January 2023 at: <https://ww3.arb.ca.gov/cc/scopingplan/scopingplan.htm>.

The same year that the Legislature adopted Warren-Alquist, it also added section 21100(b)(3) to CEQA, requiring environmental impact reports to include “measures to reduce the wasteful, inefficient, and unnecessary consumption of energy.” As explained by a court shortly after it was enacted, the “energy mitigation amendment is substantive and not procedural in nature and was enacted for the purpose of requiring the lead agencies to focus upon the energy problem in the preparation of the final EIR.” (People v. County of Kern (1976) 62 Cal.App.3d 761, 774 (emphasis added)). It compels an affirmative investigation of the project’s potential energy use and feasible ways to reduce that use.

Though Appendix F of the CEQA Guidelines has contained guidance on energy analysis for decades, implementation among lead agencies has not been consistent. (See, e.g., California Clean Energy Committee v. City of Woodland, supra, 225 Cal.App.4th 173, 209.) While California is a leader in energy conservation, the importance of addressing energy impacts has not diminished since 1974. On the contrary, given the need to avoid the effects of climate change, energy use is an issue that we cannot afford to ignore. As the California Energy Commission’s Integrated Energy Policy Report (2016) explains:

Energy fuels the economy, but it is also the biggest source of greenhouse gas emissions that lead to climate change. Despite California’s leadership, Californians are experiencing the impacts of climate change including higher temperatures, prolonged drought, and more wildfires. There is an urgent need to reduce greenhouse gas emissions and increase the state’s resiliency to climate change. With transportation accounting for about 37 percent of California’s greenhouse gas emissions in 2014, transforming California’s transportation system away from gasoline to zero emission and near-zero-emission vehicles is a fundamental part of the state’s efforts to meet its climate goals. Energy efficiency and demand response are also key components of the state’s strategy to reduce greenhouse gas emissions. (Id. at pp. 5, 8, 10.) Appendix F was revised in 2009 to clarify that analysis of energy impacts is mandatory. OPR today proposes to add a subdivision in section 15126.2 on energy impacts to further elevate the issue, and remove any question about whether such an analysis is required.”¹⁰³

Further, an “Explanation of Proposed Amendments” contained in the Proposed Update (and now adopted amendments) to the CEQA Guidelines documents stated that OPR proposed to add a new subdivision (b) to section 15126.2 which discusses the required contents of an environmental impact report. The new subdivision would specifically address the analysis of a project’s potential energy impacts. This addition is necessary for several reasons explained as follows. ¹⁰⁴

“The first sentence clarifies that an EIR must analyze whether a project will result in significant environmental effects due to “wasteful, inefficient, or unnecessary consumption of energy.” This clarification is necessary to implement Public Resources Code section 21100(b)(3). Since the duty to impose mitigation measures arises when a lead agency determines that the project may have a significant effect, section 21100(b)(3) necessarily requires both analysis and a determination of significance in addition to energy efficiency measures. (Pub. Resources Code, § 21002.)

The second sentence further clarifies that all aspects of the project must be considered in the analysis. This clarification is consistent with the rule that lead agencies must consider the “whole of the project” in considering impacts. It is also necessary to ensure that lead agencies consider issues beyond just building design. (See, e.g., California Clean Energy Com. v. City of Woodland, supra, 225 Cal.App.4th at pp. 210-212.) The analysis of vehicle miles traveled provided in proposed section 15064.3 (implementing Public Resources Code section 21099 (SB 743)) on transportation impacts may be relevant to this analysis.

The third sentence signals that the analysis of energy impacts may need to extend beyond building code compliance. (Ibid.) The requirement to determine whether a project’s use of energy is “wasteful, inefficient, and unnecessary” compels consideration of the project in its context. (Pub. Resources Code, § 21100(b)(3).) While building code compliance is a relevant factor, the generalized rules in the building code will not necessarily indicate whether a particular project’s energy use could be improved. (Tracy First v. City of Tracy (2009) 177 Cal.App.4th 912, 933 (after analysis, lead agency concludes that project proposed to be at least 25% more energy efficient than the building code requires would have a less than significant impact); see also CEQA Guidelines, Appendix F, § II.C.4 (describing building code compliance as one of several different considerations in determining the significance of a project’s energy impacts).) That the Legislature added the energy analysis requirement in CEQA at the same time that it created an Energy Commission authorized to impose building energy standards indicates that compliance with the building

¹⁰³ State of California. Office of Planning and Research. Proposed Update to the CEQA Guidelines. November 2017. Pages 65-66. Accessed January 2023 at: http://opr.ca.gov/docs/20171127_Comprehensive_CEQA_Guidelines_Package_Nov_2017.pdf

¹⁰⁴ Ibid. 66.

code is a necessary but not exclusive means of satisfying CEQA's independent requirement to analyze energy impacts broadly.

The new proposed [now adopted] subdivision (b) also provides a cross-reference to Appendix F. This cross-reference is necessary to direct lead agencies to the more detailed provisions contained in that appendix. Finally, new proposed subdivision (b) cautions that the analysis of energy impacts is subject to the rule of reason, and must focus on energy demand actually caused by the project. This sentence is necessary to place reasonable limits on the analysis. Specifically, it signals that a full "lifecycle" analysis that would account for energy used in building materials and consumer products will generally not be required. (See also Cal. Natural Resources Agency, Final Statement of Reasons for Regulatory Action: Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB97 (Dec. 2009) at pp. 71-72.)"¹⁰⁵

Specifically, Section 15121.6 added new sub-section (b), to wit: "(b) Energy Impacts. If the project may result in significant environmental effects due to wasteful, inefficient, or unnecessary consumption of energy, the EIR shall analyze and mitigate that energy use. This analysis should include the project's energy use for all project phases and components, including transportation-related energy, during construction and operation. In addition to building code compliance, other relevant considerations may include, among others, the project's size, location, orientation, equipment use and any renewable energy features that could be incorporated into the project. (Guidance on information that may be included in such an analysis is presented in Appendix F.) This analysis is subject to the rule of reason and shall focus on energy demand that is caused by the project. This analysis may be included in related analyses of air quality, greenhouse gas emissions or utilities in the discretion of the lead agency."¹⁰⁶

CEQA Thresholds of Significance

- Result in significant environmental effects due to wasteful, inefficient, or unnecessary consumption of energy.
- The project's energy use for all project phases and components, including transportation-related energy, during construction and operation.
- The project's size, location, orientation, equipment use and any renewable energy features that could be incorporated into the project.
- Analysis is subject to the rule of reason and shall focus on energy demand that is caused by the project.

Local

The following Tulare County General Plan 2030 Update policies for this resource apply to this proposed Project: *ERM-4.1 Energy Conservation and Efficiency Measures* wherein the County encourages the use of solar energy, solar hot water panels, and other energy conservation and efficiency features; and *ERM-4.3 Local and State Programs* wherein the County shall participate, to the extent feasible, in local and State programs that strive to reduce the consumption of natural or man-made energy sources.

Project Impact Analysis:

- a) **Less Than Significant Impact:** As noted previously, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary referred to as the wastewater collection system and pipeline inter-tie Project). The energy requirements for the proposed project were determined using the construction- and operational-related estimates generated from the Air Quality Analysis Memorandum (Memo, refer to Attachment A for related CalEEMod output files). The calculation worksheets for diesel fuel consumption rates for off-road construction equipment and on-road vehicles are provided in Attachment C of Attachment "A" of this MND. Short-term construction-related energy consumption is discussed below.

¹⁰⁵ Op. Cit. 66-67.

¹⁰⁶ Op. Cit. 67-68.

Short Term Construction

Off-Road Equipment

“The proposed project is anticipated to begin construction in 2024. For modeling purposes, construction was assumed to be completed in a four-month period. Based on applicant-provided information, it is anticipated that the project would be constructed over a three (3) to four (4) month period. Table 10 [in the Air Quality, Health Risk Analysis, Greenhouse Gas, and Energy Technical Memorandum (Memo), Attachment “A” of this MND] provides estimates of the project’s construction fuel consumption from off-road construction equipment for the entire project, categorized by construction activity.

As shown in the Table 22 [in the Memo, **Table 6-1** in this MND], use of off-road equipment associated with construction of the proposed project is estimated to consume approximately 14,333 gallons of diesel fuel over the entire construction duration. There are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy efficient than at comparable construction sites in the Tulare County region or other parts of California. Therefore, it is expected that construction fuel consumption associated with the proposed Project would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region.”¹⁰⁷

Table 6-1 Construction Off-Road Fuel Consumption¹⁰⁸		
Project Component	Construction Activity	Fuel Consumption (gallons)
Proposed Project (On-site, Off-road Equipment Use)	Site Preparation	352
	Grading	441
	Building Construction	12,811
	Paving	618
	Architectural Coating	111
Total		14,333
<i>Note: Totals may not appear to sum correctly due to rounding.</i>		
<i>Source: Energy Consumption Calculations (Attachment C of Attachment “A” of this MND).</i>		

On-Road Vehicles

“On-road vehicles for construction workers, vendors, and haulers would require fuel for travel to and from the site during construction. Table 11 [in the Memo, **Table 6-2** in this document]) provides an estimate of the total on-road vehicle fuel usage during construction. There are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy efficient than at comparable construction sites in other parts of the state. Therefore, it is expected that construction fuel consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region.”¹⁰⁹

Table 6-2 Construction On-Road Fuel Consumption¹¹⁰	
Project Component	Total Annual Fuel Consumption (gallons)
Site Preparation	77
Grading	318
Building Construction	4,963
Paving	243
Architectural Coating	118

¹⁰⁷ Air Quality, Health Risk Analysis, Greenhouse Gas, and Energy Technical Memorandum for the Setton Project. January 25, 2022. PDF Page 49 (included in Attachment A of this document).

¹⁰⁸ Ibid. 50.

¹⁰⁹ Op. Cit.

¹¹⁰ Op. Cit.

Table 6-2 Construction On-Road Fuel Consumption¹¹⁰	
Project Component	Total Annual Fuel Consumption (gallons)
Total	5,719
<i>Note: Totals may not appear to sum correctly due to rounding</i> <i>Source: Energy Consumption Calculations (Attachment C of Attachment "A" of this MND).</i>	

Other Energy Consumption Anticipated During Project Construction

“Other equipment could include construction lighting, field services (office trailers), and electrically driven equipment such as pumps and other tools. As the on-site construction activities would be restricted to the permissible hours allowed in Tulare County, it is anticipated that the use of construction lighting would be minimal. Singlewide mobile office trailers, which are commonly used in construction staging areas, generally range in size from 160 square feet to 720 square feet. A typical 720-square-foot office trailer would consume approximately 2,744 kWh during the approximate 4-month construction phase.”¹¹¹

Construction Energy Demand

As summarized in **6-1** and **Table 6-2**, the proposed project would require 14,333 gallons of diesel fuel for construction-related off-road equipment and 5,719 gallons of gasoline and diesel for on-road vehicles during construction-related activities. There are no unusual project characteristics that would necessitate the use of construction-related equipment that would be less energy efficient than at comparable construction sites in the region or other parts of the state. In addition, the overall construction-related schedule and process is already designed to be efficient in order to avoid excess monetary costs. For example, equipment and fuel are not typically used wastefully due to the added expense associated with renting the equipment, maintaining it, and fueling it. Therefore, it is anticipated that construction-related fuel consumption associated with the proposed Project would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region, and as such, impacts would be less than significant.

Long-Term Operations

Transportation Energy Demand

“Table 12 (in the Memo, **Table 6-3** in this document) provides an estimate of the daily and annual fuel consumed by vehicles traveling to and from the proposed Project. These estimates were derived using the same assumptions used in the operational air quality analysis for the proposed project.”¹¹²

Table 6-3 Long-Term Operational Vehicle Fuel Consumption¹¹³							
Vehicle Type	Total Daily Trips	Percent of Vehicle Trips	Daily VMT	Annual VMT	Average Fuel Economy (miles/ gallon)	Total Daily Fuel Consumption (gallons)	Total Annual Fuel Consumption (gallons)
Passenger Vehicles	368	68.15%	2,643	964,833	28.45	95.4	34,824
Heavy-Heavy Trucks (HHDT)	172	31.85%	8,576	3,130,400	7.00	1,226.0	447,498
Total	540	100%	11,219	4,095,233	—	1,321.4	482,322
<i>Notes: Percent of Vehicle Trips and VMT provided by CalEEMod.</i> <i>VMT = vehicle miles traveled</i> <i>Source: Energy Consumption Calculations (Attachment C of Attachment "A" of this MND).</i>							

¹¹¹ Op. Cit.

¹¹² Op. Cit. 51.

¹¹³ Op. Cit.

“The daily vehicular fuel consumption is estimated to be 1,321 gallons of both gasoline and diesel fuel (95.4 gallons from passenger vehicles and 1,226 gallons from heavy trucks). Annual consumption is estimated at 482,322 gallons (34,824 from passenger vehicles and 447,498 gallons from heavy trucks). In addition, the proposed project would constitute development within very near proximity of an established community and would not be opening a new geographical area for development. As such, the proposed project would not result in unusually long trip lengths for future employees, vendors, or visitors. The property is located along a major highway (State Route 99), within 0.50 miles of the City of Tulare, less than one mile from extensive single- and multi-family residential development, and less than 1.5 miles from the Tulare Outlets Mall. The proposed project would be well-positioned to accommodate an existing community. Vehicles accessing the site would be typical of vehicles accessing similar warehouse-type uses in the Tulare County and surrounding areas. For these reasons, it would be expected that vehicular fuel consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than for any other similar land use activities in the region, and impacts would be less than significant.”¹¹⁴

Building Energy Demand

“As shown in Table 25 and Table 26 [in the Memo, **Tables 6-4** and **6-5** in this document; respectively], the proposed Project is estimated to demand 500,500 kilowatt-hours (KWhr) of electricity and 851,500 1,000-British Thermal Units (KBTU) of natural gas, respectively, on an annual basis.”¹¹⁵

Table 6-4 Long-Term Electricity Usage¹¹⁶	
Land Use	Total Electricity Demand (KWhr/year)
Industrial Park	483,000
Parking Lot	17,500
Other Asphalt Surfaces	0
Other Non-Asphalt Surfaces	0
Total	500,500
<i>Source: Energy Consumption Calculations (Attachment C of Attachment A).</i>	

Table 6-5 Long-Term Natural Gas Usage¹¹⁷	
Land Use	Total Natural Gas Demand (KBTU/year)
Industrial Park	851,500
Parking Lot	0
Other Asphalt Surfaces	0
Other Non-Asphalt Surfaces	0
Total	851,500
<i>Source: Energy Consumption Calculations (Attachment C of Attachment A).</i>	

“Buildings and infrastructure constructed pursuant to the proposed Project would comply with the versions of CCR Titles 20 and 24, including California Green Building Standards (CALGreen), that are applicable at the time that building permits are

¹¹⁴ Op. Cit. 53.

¹¹⁵ Op. Cit.

¹¹⁶ Ibid.

¹¹⁷ Air Quality, Health Risk Analysis, Greenhouse Gas, and Energy Technical Memorandum for the Setton Project. January 25, 2022. Attachment A.

issued. The proposed Project is estimated to demand 500,500 KWhr of electricity per year and 851,500 KBTU of natural gas per year. This would represent an increase in demand for electricity and natural gas.

It would be expected that building energy consumption associated with the proposed Project would not be any more inefficient, wasteful, or unnecessary than for any other similar buildings in the region. Current state regulatory requirements for new building construction contained in the 2019 CALGreen and Title 24 standards would increase energy efficiency and reduce energy demand in comparison to existing commercial structures, and therefore would reduce actual environmental effects associated with energy use from the proposed Project. Additionally, the CALGreen and Title 24 standards have increased efficiency standards through each update.

Therefore, while the proposed Project would result in increased electricity and natural gas demand, the electricity and natural gas would be consumed more efficiently and would be typical of existing commercial development.

Based on the above information, the proposed Project would not result in the inefficient or wasteful consumption of electricity or natural gas, and impacts would be less than significant. As such, Project-specific impacts related to this Checklist Item to a level considered less than significant.”¹¹⁸

- b) Less Than Significant Impact:** As noted previously, the comprehensive Project Description can be found on pages 2 and 3 of this document. In summary, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary referred to as the wastewater collection system and pipeline inter-tie Project). The construction-related activities of the proposed Project will be short-term, temporary, and intermittent. The operational component of the proposed Project will be limited to maintenance-related activities, repairs as necessary, and possible use of standby generators in the event of power outages from the main electricity source. The nature of the project, essentially a gravity-flow wastewater collection/conveyance system to the City of Tulare’s existing DWWTP, would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. As such, the proposed Project would result in a less than significant impact to this resource.

Cumulative Impact Analysis: Less Than Significant Impact – The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, Tulare County 2030 General Plan EIR, Matheny Tract Wastewater Collection System DEIR and REIR, and the “Phase I Survey/Class III Inventory, PNP Matheny Pipeline Project, Tulare County, California”. The nature of the proposed Project, essentially a gravity-flow wastewater collection/conveyance system to the City of Tulare’s existing DWWTP, it is anticipated that the proposed Project’s contribution to cumulative impacts would not result in a significantly considerable wasteful use of energy resources, such that the proposed Project (and other cumulative projects), would not have a cumulative effect on energy conservation. The proposed Project will not have a direct or cumulative impact, or create wasteful, inefficient, or unnecessary consumption of energy resources during project construction-related activities or operations, nor will it conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, Project-specific and Cumulative Impacts as of a result of the proposed Project would be less than significant.

¹¹⁸ Op. Cit. 53-54.

VII. GEOLOGY/SOILS

Would the project:	SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT IMPACT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication No. 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Geology and Soils, etc.; contained in the Tulare County General Plan 2030 Update and Tulare County Environmental Impact Report, and Matheny Wastewater Collection System DEIR and REIR, are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Environmental Setting

The comprehensive Project Description can be found on pages 2 and 3 of this document. In summary, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary referred to as the wastewater collection system and pipeline inter-tie Project).

“Tulare County is divided into two major physiographic and geologic provinces: the Sierra Nevada Mountains and the Central Valley. The Sierra Nevada Physiographic Province, in the eastern portion of the county, is underlain by metamorphic and igneous rock. It consists mainly of homogeneous granitic rocks, with several islands of older metamorphic rock. The central

and western parts of the county are part of the Central Valley Province, underlain by marine and non-marine sedimentary rocks. It is basically a flat, alluvial plain, with soil consisting of material deposited by the uplifting of the mountains. The foothill area of the county is essentially a transition zone, containing old alluvial soils that have been dissected by the west-flowing rivers and streams that carry runoff from the Sierra Nevada Mountains. This gently rolling topography is punctured in many areas by outcropping soft bedrock. The native mountain soils are generally quite dense and compact”¹¹⁹

“The Central Valley is an asymmetrical structural trough filled with marine and continental sediments up to 15-kilometers (km) thick covering an area of more than 50,000 square kilometers (km²), bounded by the Cascade Range to the north, the Sierra Nevada ranges to the east, the Klamath Mountains and Coast Ranges to the west, and the Tehachapi Mountains to the south. The aquifer system in the Central Valley comprises unconfined, semi-confined, and confined aquifers, which are primarily contained within the upper 300 meters (m; though some wells exceed that depth) of alluvial sediments deposited by streams draining the surrounding Sierra Nevada and Coast Ranges (Page, 1986; California Department of Water Resources, 2003; Faunt, 2009). The [Sacramento] SAC occupies the northern third of the Central Valley and the [San Joaquin Valley] SJV occupies the southern two-thirds of the Central Valley (Fig. 1 [in the Scientific Investigations Report 2019-506]). The SJV is often further divided into the San Joaquin River Basin, which occupies the northern half of the SJV, and the Tulare Basin, which occupies the southern half of SJV. The Tulare Basin is, hydrologically, a closed basin, but it receives imported water from the San Joaquin and Sacramento Rivers. These will collectively be referred to as the SJV. In much of the western side of the SJV, the aquifer system is divided into an upper and lower zone by the Corcoran Clay Member of the Tulare Formation, a regionally extensive clay layer that limits vertical movement of groundwater (Page, 1986; Williamson and others, 1989; Belitz and Heimes, 1990; Burrow and others, 2004). Both zones of the aquifer in the area of the Corcoran Clay generally are tapped for groundwater withdrawals (Shelton and others, 2013; Fram, 2017).”¹²⁰

Geology & Seismic Hazards

Seismic hazards, such as earthquakes, can cause loss of human life and property damage, disrupt the local economy, and undermine the fiscal condition of a community. Secondary seismic hazards, including subsidence and liquefaction, can cause building and infrastructure damage.

Seismicity

“Seismicity varies greatly between the two major geologic provinces represented in Tulare County. The Central Valley is an area of relatively low tectonic activity bordered by mountain ranges on either side. The Sierra Nevada Mountains, partially located within Tulare County, are the result of movement of tectonic plates which resulted in the creation of the mountain range. The Coast Range on the west side of the Central Valley is also a result of these forces, and the continued uplifting of Pacific and North American tectonic plates continues to elevate these ranges. The remaining seismic hazards in Tulare County generally result from movement along faults associated with the creation of these ranges.

Earthquakes are typically measured in terms of magnitude and intensity. The most commonly known measurement is the Richter Scale, a logarithmic scale which measures the strength of a quake. The Modified Mercalli Intensity Scale measures the intensity of an earthquake as a function of the following factors:

- Magnitude and location of the epicenter;
- Geologic characteristics;
- Groundwater characteristics;
- Duration and characteristic of the ground motion;
- Structural characteristics of a building.”¹²¹

Faults

“Faults are the indications of past seismic activity. It is assumed that those that have been active most recently are the most likely to be active in the future. Recent seismic activity is measured in a geologic timescale. Geologically recent is defined as having occurred within the last two million years (the Quaternary Period). All faults believed to have been active during

¹¹⁹ Tulare County 2030 General Plan 2030 Update Background Report. Page 8-4 through 8-5.

¹²⁰ United States Department of the Interior United States Geologic Survey. “Delineation of Spatial Extent, Depth, Thickness, and Potential Volume of Aquifers Used for Domestic and Public Water-Supply in the Central Valley, California. Scientific Investigations Report 2019-5076 (SIR). Page 2. Accessed January 2023 at: <https://pubs.usgs.gov/sir/2019/5076/sir20195076.pdf>.

¹²¹ Tulare County General Plan 2030 Update. General Plan Background Report. Page 8-5. Accessed January 2023 at: <http://generalplan.co.tulare.ca.us/documents.html>, locate “Recirculated Draft Environmental Impact Report (February 2010 Draft)” then click on “Appendix B-Background Report.”

Quaternary time are considered “potentially active.”¹²² “In 1973, five counties within the Southern San Joaquin Valley undertook the preparation of the Five County Seismic Safety Element to assess seismic hazards... In general, zones C1, S1, and V1 are safer than zones C2, S2, and V2. Hazards due to groundshaking are considered to be “minimal” in the S1 Zone and “minimal” to “moderate” in the S2 and S2S Zones. Development occurring within the S1 Seismic Zone must conform to the Uniform Building Code-Zone II; while development within the S2 Zone must conform to Uniform Building Code-Zone III. There are three faults within the region that have been, and will be, principal sources of potential seismic activity within Tulare County. These faults are described below:

- **San Andreas Fault** is located approximately 40 miles west of the Tulare County boundary and [approximately] 60 miles west of the project area. This fault has a long history of activity, and is thus the primary focus in determining seismic activity within the County. Seismic activity along the fault varies along its span from the Gulf of California to Cape Mendocino. Just west of Tulare County lies the “Central California Active Area,” section of the San Andreas Fault where many earthquakes have originated.
- **Owens Valley Fault Group** is a complex system containing both active and potentially active faults, located on the eastern base of the Sierra Nevada Mountains approximately [approximately] 60 miles east of the project area. The Group is located within Tulare and Inyo Counties and has historically been the source of seismic activity within Tulare County.
- **Clovis Fault** is considered to be active within the Quaternary Period, although there is no historic evidence of its activity, and is therefore classified as “potentially active.” This fault lies approximately six miles south of the Madera County boundary in Fresno County and [approximately] 70 miles north of the project area. Activity along this fault could potentially generate more seismic activity in Tulare County than the San Andreas or Owens Valley fault systems. In particular, a strong earthquake on the Fault could affect northern Tulare County. However, because of the lack of historic activity along the Clovis Fault, inadequate evidence exists for assessing maximum earthquake impacts.”¹²³

There are other unnamed faults north of Bakersfield and near Tulare Buttes (about 30 miles north of Porterville). These faults are small and have exhibited activity in the last 1.6 million years, but not in the last 200 years. It is also possible, but unlikely, that previously unknown faults could become active in the area.¹²⁴

Groundshaking

“Ground-shaking is the primary seismic hazard in Tulare County because of the county’s seismic setting and its record of historical activity. Thus, emphasis focuses on the analysis of expected levels of ground-shaking, which is directly related to the magnitude of a quake and the distance from a quake’s epicenter. Magnitude is a measure of the amount of energy released in an earthquake, with higher magnitudes causing increased ground-shaking over longer periods of time, thereby affecting a larger area. Ground-shaking intensity, which is often a more useful measure of earthquake effects than magnitude, is a qualitative measure of the effects felt by population.”¹²⁵ “The San Joaquin Valley portion of Tulare County is located on alluvial deposits, which tend to experience greater ground-shaking intensities than areas located on hard rock. Therefore, structures located in the valley will tend to suffer greater damage from ground-shaking than those located in the foothill and mountain areas. However, existing alluvium valleys and weathered or decomposed zones are scattered throughout the mountainous portions of the county which could also experience stronger intensities than the surrounding solid rock areas. The geologic characteristics of an area can therefore be a greater hazard than its distance to the epicenter of the quake.”¹²⁶ “Older buildings constructed before current building codes were in effect, and even newer buildings constructed before earthquake resistance provisions were included in the current building codes, are most likely to suffer damage in an earthquake. Most of Tulare County’s buildings are no more than one or two stories in height and are of wood frame construction, which is considered the most structurally resistant to earthquake damage. Older masonry buildings (without earthquake resistance reinforcement) are the most susceptible to structural failure, which causes the greatest loss of life. The State of California has identified unreinforced masonry buildings (URMs) as a safety issue during earthquakes. In high risk areas (Bay Area), inventories and programs to mitigate this issue are required. Because Tulare County is not a high-risk area, state law only recommends that programs to retrofit URMs are adopted by jurisdictions.”¹²⁷

Liquefaction

¹²² Ibid.

¹²³ Op. Cit. 8-5 through 8-7.

¹²⁴ California Geological Survey. Fault Activity Map. Accessed January 2023 at: <https://maps.conservation.ca.gov/cgs/fam/>

¹²⁵ Tulare County General Plan 2030 Update. General Plan Background Report. Page 8-7.

¹²⁶ Ibid.

¹²⁷ Op. Cit.8-8.

“Liquefaction is a process whereby soil is temporarily transformed to a fluid form during intense and prolonged groundshaking. Areas most prone to liquefaction are those that are water saturated (e.g., where the water table is less than 30 feet below the surface) and consist of relatively uniform sands that are low to medium density. In addition to necessary soil conditions, the ground acceleration and duration of the earthquake must be of sufficient energy to induce liquefaction. Scientific studies have shown that the ground acceleration must approach 0.3g before liquefaction occurs in a sandy soil with relative densities typical of the San Joaquin alluvial deposits.”

“Liquefaction during major earthquakes has caused severe damage to structures on level ground as a result of settling, tilting, or floating. Such damage occurred in San Francisco on bay-filled areas during the 1989 Loma Prieta earthquake, even though the epicenter was several miles away. If liquefaction occurs in or under a sloping soil mass, the entire mass may flow toward a lower elevation, such as that which occurred along the coastline near Seward, Alaska during the 1964 earthquake. Also of particular concern in terms of developed and newly developing areas are fill areas that have been poorly compacted. No specific countywide assessments to identify liquefaction hazards have been performed in Tulare County. Areas where groundwater is less than 30 feet below the surface occur primarily in the valley. However, soil types in the area are not conducive to liquefaction because they are either too coarse or too high in clay content. Areas subject to 0.3g acceleration or greater are located in a small section of the Sierra Nevada Mountains along the Tulare-Inyo County boundary. However, the depth to groundwater in such areas is greater than in the valley, which would minimize liquefaction potential as well. Detailed geotechnical engineering investigations would be necessary to more accurately evaluate liquefaction potential in specific areas and to identify and map the areal extent of locations subject to liquefaction.”

Settlement

“Settlement can occur in poorly consolidated soils during ground-shaking. During settlement, the soil materials are physically rearranged by the shaking and result in reduced stabling alignment of the individual minerals. Settlement of sufficient magnitude to cause significant structural damage is normally associated with rapidly deposited alluvial soils, or improperly founded or poorly compacted fill. These areas are known to undergo extensive settling with the addition of irrigation water, but evidence due to ground-shaking is not available. Fluctuating groundwater levels also may have changed the local soil characteristics. Sufficient subsurface data is lacking to conclude that settlement would occur during a large earthquake; however, the data is sufficient to indicate that the potential exists in Tulare County.”

Other Geologic Hazards

Landslides

“Landslides are a primary geologic hazard and are influenced by four factors:

- Strength of rock and resistance to failure, which is a function of rock type (or geologic formation);
- Geologic structure or orientation of a surface along which slippage could occur;
- Water (can add weight to a potentially unstable mass or influence strength of a potential failure surface); and,
- Topography (amount of slope in combination with gravitation forces).

“As of June 2009, the California Geological Survey had not developed landslide hazard identification maps for Tulare County. However, it is reasonable to assume that certain areas in Tulare County are more prone to landslides than other areas... [As such,] There is no risk of large landslides in the valley area of the county due to its relatively flat topography.”¹²⁸

Subsidence

“Subsidence occurs when a large portion of land is displaced vertically, usually due to the withdrawal of groundwater, oil, or natural gas. Soils that are particularly subject to subsidence include those with high silt or clay content. Subsidence caused by groundwater withdrawal generally presents a more serious problem, since it can affect large areas. Oil and gas withdrawal, on the other hand, tends to affect smaller, localized areas. Some areas of the Central Valley have subsided more than 20 feet during the past 50 years.”¹²⁹

Seiche

¹²⁸ Op. Cit. 8-10.

¹²⁹ Op. Cit. 8-10 through 8-11.

“A seiche is a standing wave produced in a body of water such as a reservoir, lake, or harbor, by wind, atmospheric changes, or earthquakes. Seiches have the potential to damage shoreline structures, dams, and levees...Since this is less than wave heights that could be expected from wind induced waves, earthquake-induced seiches are not considered a risk in Tulare County. In addition, the effects from a seiche would be similar to the flood hazard for a particular area, and the risk of occurrence is perceived as considerably less than the risk of flooding.”¹³⁰

Volcanic Hazard

“The nearest volcanoes lie to the northeast of Tulare County in Mono County, in the Mammoth Lakes/Long Valley area. The most serious effect on Tulare County of an eruption in the Mammoth Lakes, area according to the California Geological Survey, would be ash deposition.”¹³¹ “A volcanic eruption during the winter could result in snowmelt and lead to flooding. The state has formulated a contingency plan, the “Long Valley Caldera Response Plan,” designed to notify the public in the event of an earthquake in the Long Valley area (outside of Tulare County).”¹³²

Paleontology

“Paleontological resources are any fossilized remains, traces, or imprints of organisms, preserved in or on the earth’s crust, that are of paleontological interest and that provide information about the history of life on earth, with the exception of materials associated with an archaeological resource (as defined in Section 3(1) of the Archaeological Resources Protection Act of 1979 (16 U.S.C. 470bb[1]), or any cultural item as defined in Section 2 of the Native American Graves Protection and Repatriation Act (25 U.S.C. 3001).”¹³³ “According to the University of California Museum of Paleontology (UCMP), 12 paleontological resources have been recorded in Tulare County, generally within the valley portion of the County. These resources primarily consist of invertebrates, vertebrate, and plant fossils (UCMP, 2009).”¹³⁴ CEQA requires that a determination be made as to whether a project would directly or indirectly destroy a unique paleontological resource or site or unique geological feature (CEQA Appendix G(v)(c)). If an impact is significant, CEQA requires feasible measures to minimize the impact (CCR Title 14(3) §15126.4 (a)(1)). California Public Resources Code §5097.5 also applies to paleontological resources.

Soil Characteristics

“The San Joaquin Valley portion of Tulare County is located on alluvial deposits, which tend to experience greater groundshaking intensities than areas located on hard rock. Therefore, structures located in the valley will tend to suffer greater damage from groundshaking than those located in the foothill and mountain areas. However, existing alluvium valleys and weathered or decomposed zones are scattered throughout the mountainous portions of the county which could also experience stronger intensities than the surrounding solid rock areas. The geologic characteristics of an area can therefore be a greater hazard than its distance to the epicenter of the quake.”¹³⁵ The entire area of the proposed Matheny Tract Wastewater Collection Project component lies entirely within Copien loam soil with 0 to 2 percent slopes. The Copien loam has moderately well drained soil resulting in rare frequency of flooding and ponding. As indicated in the Biological Evaluation of the pipeline component, this Project area consists of approximately 44.6% Colpien soil and 55.4% Nord fine sandy loam soil that is characterized as well drained, moderate permeability with negligible runoff.¹³⁶

Regulatory Setting

Federal

None that apply to the Project.

State

¹³⁰ Op. Cit. 8-11.

¹³¹ Op. Cit.

¹³² Op. Cit.

¹³³ Op. Cit. 9-43.

¹³⁴ Op. Cit. 9-53.

¹³⁵ Tulare County General Plan 2030 Update. Background Report. Page 8-7.

¹³⁶ Biological Evaluation (BE) for the Matheny Tract Wastewater Pipeline Project. Page 9. October 2022. Prepared by Provost & Pritchard Consulting Group and included in Attachment “B” of this document.

Seismic Hazards Mapping Act

“Under the Seismic Hazards Mapping Act, the State Geologist is responsible for identifying and mapping seismic hazards zones as part of the California Geologic Survey (CGS). The CGS provides zoning maps of non-surface rupture earthquake hazards (including liquefaction and seismically induced landslides) to local governments for planning purposes. These maps are intended to protect the public from the risks associated with strong ground shaking, liquefaction, landslides or other ground failure, and other hazards caused by earthquakes. For projects within seismic hazard zones, the Seismic Hazards Mapping Act requires developers to conduct geological investigations and incorporate appropriate mitigation measures into project designs before building permits are issued.”¹³⁷

California Building Code

“The California Building Code is another name for the body of regulations known as the California Code of Regulations (C.C.R.), Title 24, Part 2, which is a portion of the California Building Standards Code. Title 24 is assigned to the California Building Standards Commission, which, by law, is responsible for coordinating all building standards.”¹³⁸

State Water Resources Control Board and Regional Water Quality Control Board

National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity- Water Quality Order 99-08 DWQ.

Typically, General Construction Storm Water NPDES permits are issued by the RWQCB for grading and earth-moving activities. The General Permit is required for construction activities that disturb one or more acres. The General Permit requires development and implementation of a Storm Water Pollution Prevention Plan (SWPPP), which specifies practices that include prevention of all construction pollutants from contacting stormwater with the intent of keeping all products of erosion from moving off site into receiving waters. The NPDES permits are issued for a five-year term. NPDES general permits require adherence to the Best Management Practices (BMPs) including:

Local

Tulare County General Plan

The General Plan has a number of policies that apply to projects within Tulare County. General Plan policies that relate to the Project include: *HS-1.2 Development Constraints* - The County shall permit development only in areas where the potential danger to the health and safety of people and property can be mitigated to an acceptable level; *HS-1.3 Hazardous Lands* - The County shall designate areas with a potential for significant hazardous conditions for open space, agriculture, and other appropriate low intensity uses; *HS-1.5 Hazard Awareness and Public Education* - The County shall continue to promote awareness and education among residents regarding possible natural hazards, including soil conditions, earthquakes, flooding, fire hazards, and emergency procedures; *HS-1.11 Site Investigations* wherein the County shall conduct site investigations in areas planned for new development to determine susceptibility to landslides, subsidence/settlement, contamination, and/or flooding; *HS-2.1 Continued Evaluation of Earthquake Risks* wherein the County shall continue to evaluate areas to determine levels of earthquake risk; *HS-2.4 Structure Siting* The wherein the County shall permit development on soils sensitive to seismic activity permitted only after adequate site analysis, including appropriate siting, design of structure, and foundation integrity; *HS-2.7 Subsidence* wherein the County shall confirm that development is not located in any known areas of active subsidence; *HS-2.8 Alquist-Priolo Act Compliance* wherein The County shall not permit any structure for human occupancy to be placed within designated Earthquake Fault Zones; *WR-2.2 NPDES Enforcement* wherein the County shall continue to support the State in monitoring and enforcing provisions to control non-point source water pollution contained in the U.S. EPA NPDES program as implemented by the Water Quality Control Board; *WR-2.3 Best Management Practices* wherein the County shall continue to require the use of feasible BMPs and other mitigation measures designed to protect surface water and groundwater from the adverse effects of construction activities, agricultural operations requiring a County Permit and urban runoff in coordination with the Water Quality Control Board; and *WR-2.4 Construction Site Sediment Control* wherein the County shall continue to enforce provisions to control erosion and sediment from construction sites.

Tulare County Building and Grading Regulations

¹³⁷ Op. Cit. 3.6-9.

¹³⁸ Op. Cit.

The Tulare County Code, at Section 7-15-1066, adopts and incorporates by reference the 2019 Edition of the California Building Code (CBC) as the Tulare County Building Regulations.¹³⁹ The CBC is described earlier in this section. Appendix J of the CBC requires the issuance of grading permits prior to commencement of site grading, and provides for the submittal of a soils report and engineering geology report, as required by the Building Official, in support of grading plans. The recommendations contained in the reports and approved by the Building Official are required to be incorporated into the grading plans or specifications.

Ordinance Code Article 7 – Excavation and Grading, sets forth additional requirements including provisions for sediment control and revegetation details.¹⁴⁰ Ordinance Code Article 27 – Storm Water Quality and Regulation, addresses the control of storm water discharges and compliance with the provisions of the County’s National Pollutant Discharge Elimination System (NPDES) permit, including preparation of Storm Water Pollution Prevention Plans (SWPPPs) and implementation of Best Management Practices (BMPs).¹⁴¹ (See Item 10 Hydrology and Water Quality for discussion and analysis related to storm water runoff and water quality.)

Five County Seismic Safety Element (FCSSE)

The FCSSE report represents a cooperative effort between the governmental entities within Fresno, Kings, Madera, Mariposa and Tulare Counties to develop an adoptable Seismic Safety Element as required by State law. Part I, the Technical Report, is designed to be used when necessary to provide background for the Summary document. Part II, the Summary Report, establishes the framework and rationale for evaluation of seismic risks and hazards in the region. Part II of the Seismic Safety Element, the Policy Report, has been prepared as a “model” report designed to address seismic hazards as delineated in the Technical Report. The intent has been to develop a planning tool for use by county and city governments in implementing their seismic safety elements. The planning process utilized to develop the Element was developed through the efforts of Technical and Policy Committees, composed of both staff and elected representatives from Cities, Counties, and Special Districts or Areawide Planning Organizations in cooperation with the consulting firms of Envicom Corporation and Quinton-Redgate.¹⁴²

Project Impact Analysis:

- a) **Less Than Significant Impact:** According to the Tulare County General Plan, the proposed Project area lies in the V-1 seismic study area, characterized by a relatively thin section of sedimentary rock overlying a granitic basement.

The V-1 seismic zone, which is characterized by a relatively thick section of sedimentary rock overlying a granitic basement, has “low” risks for shaking hazards, “minimal” risk for landslides, “low to moderate” risk for subsidence, “low” risks for liquefaction and “minimal” risk for seicheing.

The distance to area faults i.e.; the Clovis Group, Pond-Poso, and San Andreas, expected sources of significant shaking, is sufficiently great that shaking effects should be minimal.

- i) *Fault Rupture:* Less Than Significant - No substantial faults are known to traverse Tulare County according to the Alquist-Priolo Earthquake Fault Zoning Maps and the State of California Department of Conservation. The nearest major fault line, which lies outside of Tulare County, is the San Andreas fault zones; approximately 40 miles west of the Tulare County line. According to the Five County Seismic Safety Element (FCSSE), Tulare County is located in the V-1 zone. This zone includes most of the eastern San Joaquin Valley and is characterized by a relatively thin section of sedimentary rock overlying a granitic basement. Amplification of shaking that would affect low to medium-rise structures is relatively high, but the distance of the faults that are expected sources of the shaking is sufficiently great that the effects should be minimal. The requirements of Zone II of the Uniform Building Code should be adequate for normal facilities.¹⁴³

¹³⁹ County of Tulare. Chapter 15. Building Regulations. Article 2. California Building Code of Regulations Part 2, Volumes 1 and 2. 7-15-1066 ADOPTION OF CALIFORNIA BUILDING CODE, PART 2, AND VOLUMES 1 AND 2, INCLUDING APPENDICES C, F, G, H, I AND J. Accessed August 2022 at: <https://www.codepublishing.com/CA/TulareCounty/html/TulareCounty07/TulareCounty07115.html>

¹⁴⁰ Op. Cit. ARTICLE 7 EXCAVATION AND GRADING.

¹⁴¹ Op. Cit. ARTICLE 27 CALIFORNIA REFERENCED STANDARDS CODE, TITLE 24, PART 12

¹⁴² Five County Seismic Safety Element. Fresno, Kings, Madera, Mariposa, & Tulare Counties. 1974. Pages 4-7. Prepared by Envicom Corporation. Available upon request at the RMA Administrative Office.

¹⁴³ Ibid. Summary & Policy Recommendations II. 1974. Pages 3 and 15. Prepared by Envicom Corporation. Available upon request at the RMA Administrative Office.

Therefore, as noted earlier, no Alquist-Priolo Earthquake Fault Zones or known active faults are in or near the Project area. As such, the risk of rupture of a known earthquake fault will be less than significant.

- ii) *Ground Shaking: Less Than Significant* - Ground shaking is the primary seismic hazard in Tulare County because of the County's seismic setting and its record of historical activity. Thus, emphasis focuses on the analysis of expected levels of ground shaking, which is directly related to the magnitude of a specific quake and the distance from a quake's epicenter. Magnitude is a measure of the amount of energy released in an earthquake, with higher magnitudes causing increased ground shaking over longer periods of time, thereby affecting a larger area. Ground shaking intensity, which is often a more useful measure of earthquake effects than magnitude, is a qualitative measure of the effects felt by the population.

The common way to describe ground motion during an earthquake is with the motion parameters of acceleration and velocity in addition to the duration of the shaking. A common measure of ground motion is the peak ground acceleration (PGA), which is the largest value of horizontal acceleration obtained from a seismograph. PGA is expressed as the percentage of the acceleration due to gravity (g), which is approximately 980 centimeters per second squared. The Project is located in an area that may experience 10 to 20%.

The Project area is located in a seismic zone which is sufficiently far from known faults and consists primarily of a stable geological formation. As noted earlier, due to the nature of the proposed Project (that is, a wastewater collection system and pipeline inter-tie), Project-specific hazards due to ground shaking would be less than significant.

- iii) *Ground Failure and Liquefaction: No Impact* - As noted earlier, the proposed Project area is located in the Five County Seismic Safety Element's V-1 zone, and therefore has a low risk of liquefaction. No subsidence-prone soils or oil or gas production is involved with the proposed Project. Soil liquefaction is the phenomenon which occurs in uniform, clean, loose, fine sandy and silty soil which is saturated by relatively shallow groundwater conditions. Severe ground shaking during seismic events increases the pore pressure in the soil resulting in groundwater moving upward, which essentially transforms the soil to a quicksand-like state. The resulting ground failure or surface deformation can cause total and differential settlement of structures. Ground accelerations of at least 0.10g and ground shaking durations of at least 30 seconds are needed to initiate liquefaction. The occurrence of liquefaction is generally limited to areas where the groundwater table is higher than 50 feet below ground surface (bgs). The sandy soils that cover the proposed Project area are susceptible to liquefaction. However, given the absence of near-surface groundwater (the groundwater table is approximately 125 feet below ground surface at the site) the potential for liquefaction at the proposed Project site is low.

In addition to necessary soil conditions, the ground acceleration and duration of the earthquake must be of sufficient energy to induce liquefaction. Scientific studies have shown that the ground acceleration must approach 0.3 g before liquefaction occurs in a sandy soil with relative densities typical of the San Joaquin alluvial deposits. Liquefaction during major earthquakes has caused severe damage to structures on level ground as a result of settling, tilting, or floating. Liquefaction occurs in or under a sloping soil mass, the entire mass may flow toward a lower elevation. Also of particular concern in terms of developed and newly developing areas are fill areas that have been poorly compacted. Lateral spreading can occur with seismic ground shaking on slopes where saturated soils liquefy and flow toward the open slope face. There is little or no potential for lateral spreading within the proposed Project site since it is essentially flat and does not include significant slopes, and does not have saturated soil conditions. No specific county-wide assessments to identify liquefaction hazards have been performed in Tulare County. Areas where groundwater is less than 30 feet below the surface occur primarily in the San Joaquin Valley portion of the County. However, soil types in the area are not conducive to liquefaction because they are either too coarse or too high in clay content.¹⁴⁴

As the Project area is sufficiently far from known faults and consists primarily of a stable geological formation, it is unlikely to be subject to seismically-induced liquefaction. As such, there would be less than significant impact caused by seismic-related ground failure, including liquefaction

- iv) *Landslides*: The flat terrain of the site and surrounding areas, and the general absence of hills or exposed slopes in the vicinity (such as those found along river terraces, bluffs, and foothills), makes landslides highly unlikely. Therefore, the proposed Project would result in no impact. Landslides are a geologic hazard influenced by four factors:

¹⁴⁴ Tulare County, 2030 General Plan Update. Recirculated Draft Environmental Impact Report. February 2010. Page 3.7-7.

- Strength of rock and resistance to failure, which is a function of rock type (or geologic formation);
- Geologic structure or orientation of a surface along which slippage could occur;
- Water (can add weight to a potentially unstable mass or influence strength of a potential failure surface); and,
- Topography (amount of slope in combination with gravitation forces).

Tulare County has three geologic environments: the valley, foothills, and mountains. The range in topography between these three areas presents a range of landslide hazards. As of June 2009, the California Geological Survey had not developed landslide hazard identification maps for Tulare County. However, it is reasonable to assume that certain areas in Tulare County are more prone to landslides than others. Such areas can be found in foothill and mountain areas where fractured and steep slopes are present (as in the Sierra Nevada Mountains), where less consolidated or weathered soils overlie bedrock, or where inadequate ground cover accelerates erosion. Additionally, development grading operations can create unstable slopes due to cut and fill activities.

Based on the analysis above, the proposed Project is unlikely to be subject to landslides. Therefore, Project-specific impacts would result in no impact.

- b) Less Than Significant Impact:** The proposed Project area is primarily flat and as such, soil erosion is not anticipated. As required by the Clean Water Act (CWA) and the Central Valley Regional Water Quality Control Board (CVRWQCB), a Stormwater Pollution Prevention Plan (SWPPP) will be developed by a qualified engineer or erosion control specialist and implemented before construction begins.

Construction of a future business park, parking stalls, buildings, landscaping, etc., will ultimately serve to anchor native soils in place through the laying of foundations, parking surfaces, lawns, etc. Prior to initiation of construction-related activities, a Stormwater Pollution Prevention Plan (SWPPP) will be developed and kept on site during construction-related activities and will be made available upon request to representatives of the CVRWQCB. The objectives of the SWPPP will be to identify pollutant sources that may affect the quality of stormwater associated with construction activity and to identify, construct, and implement stormwater pollution prevention measures to reduce pollutants in stormwater discharges during and after construction. To meet these objectives, the SWPPP will include a description of potential pollutants, a description of methods of management for dredged sediments, and hazardous materials present on site during construction (including vehicle and equipment fuels).

The SWPPP will also include details for best management practices (BMPs) for the implementation of sediment and erosion control practices. Implementation of the SWPPP will comply with state and federal water quality regulations and will reduce this impact to less-than-significant. Compliance with local grading and erosion control ordinances will also help minimize adverse effects associated with erosion and sedimentation.

Any stockpiled soils will be watered and/or covered to prevent loss due to wind erosion as part of the SWPPP during construction-related activities and reclamation. As a result of these efforts, loss of topsoil and substantial soil erosion during the construction-related activities and reclamation periods are not anticipated.

In addition, depending upon activity, the Project would be subject to the San Joaquin Valley Unified Air Pollution Control District's (Air District) Regulation VIII (Fugitive PM₁₀ Prohibitions)¹⁴⁵ to prevent, minimize, avoid, and clean up dust generated during construction-related activities. Likely applicable Regulation VIII rules include Rule 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities) for construction and earthmoving activities; Rule 8031 (Bulk Materials) which limits fugitive dust emissions from the outdoor handling, storage, and transport of bulk materials (such as topsoil); Rule 8041 (Carryout and Trackout) which requires prevention and/or cleanup of soil that is tracked out by vehicle tires exiting the site or carried out by vehicles exiting the site; Rule 8051 (Open Areas) requiring stabilization of areas cleared of vegetation in anticipation of construction-related activities; Rule 8061 (Paved and Unpaved Roads) such as unpaved access/haul roads, that is, any road or path that is not covered by one of the materials described in the Air District's paved road definition that is associated with any construction, demolition, excavation, extraction, and other earthmoving activity and used by vehicles, equipment, haul trucks, or any conveyances to travel within a site, to move materials from one part of a site to another part within the same site, or to provide temporary access to a site; and 8071 (Unpaved Vehicle/Equipment Traffic Areas) to limit fugitive dust emissions from unpaved vehicle and

¹⁴⁵ San Joaquin Valley Unified Air Pollution Control District. Current Rules and Regulations. Regulation VIII-FUGITIVE PM₁₀ PROHIBITIONS. Rules 8011 through 8071. Accessed January 2023 at: <https://www.valleyair.org/rules/1ruleslist.htm#reg8>

equipment traffic areas within the Project's construction-related areas. As a result of these efforts, loss of topsoil and substantial soil erosion during construction-related activities are not anticipated.

- c) **Less Than Significant Impact:** The Project is unlikely to be subject to soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. The foothill and mountain areas of the County are more likely to experience landslides than the Valley floor. Susceptible areas include areas where fractured and steep slopes are present or where inadequate ground cover accelerates erosion. Erosion and ground slumping of soils can also occur along bluff and banks of the Kaweah, Kings, and Tule Rivers. The probability of soil liquefaction actually taking place in the County is considered to be a low-to-moderate hazard. Soil types in the area are not conducive to liquefaction because they are either too coarse or too high in clay content. However, due to the high clay content, there is potential for some subsidence to occur. Impacts related to these types of geological hazards are site specific and need to be evaluated on a site by site basis.¹⁴⁶

As noted earlier, Tulare County General Plan Policies designed to minimize geologic hazard impacts to people and structures in the County include HS-1.2 Development Constraints; HS-1.3 Hazardous Lands; HS-1.5 Hazard Awareness and Public Education; and HS-1.11 Site Investigations

- d) The proposed Project site is not located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. According to the USDA, NRCS, Soil Survey of Tulare County, there are two soil types in the Project area, Copien Loam and Nord fine sandy loam series. The Colpien Loam consists of very deep, moderately-well-drained soils on terraces that formed in alluvium derived mainly from granitic rocks. These soils are artificially drained. Slopes are 0 to 2 percent. The average annual precipitation is about 10 inches and the average annual temperature is about 63 degrees F. According to the NRCS, a typical soil profile consists of loam between 0 and 60 inches and sandy loam between 60 and 65 inches. The frost-free season is 250 to 300 days. Although Colpien Loam is considered prime farmland if irrigated and protected or free from flooding during growing season, the Matheny Tract is within the City of Tulare's Sphere of Influence. As such, there is no proposed significant impact to the existing soils in the Matheny Tract area. The Nord fine sandy loam series consists of deep, well drained soils that formed from mixed alluvium. Nord fine sandy loam soils are on alluvial fans and flood plains. They have slope gradients from 0 to 2 percent. Elevations are 190 to 520 feet. Nord fine sandy loam soils are well drained with negligible runoff and moderate to moderately slow permeability.¹⁴⁷

The Tulare County General Plan, Health and Safety Element includes several policies and implementation measures that have been developed to ensure a safe environment for residents, visitors, and businesses. For example, policies include continued compliance with all applicable development requirements including the California Building Code (see Policies HS-1.4) and the restriction of development within a variety of hazardous areas (see Policies HS-1.2 and HS-1.3). Policy HS-1.5 promotes the awareness and education of residents about natural hazards, including soil conditions. Policy HS-1.11 requires the preparation of engineering studies for all new development proposals within areas of potential soil instability.

With adherence to these codes and regulations and implementation of the policies contained in the Health and Safety Element, geologic hazard impacts associated with expansive soils would be minimized. With implementation of required General Plan policies, there would be less than significant.

- e) **No Impact:** The Project would connect the community to the City of Tulare's existing WWTP. Implementation of the Project would take the community of Matheny Tract off private, individual septic systems and place it on a public sewer system. Therefore, there would be no impact.
- f) **Less Than Significant Impact With Mitigation:** There are no known paleontological resources within the Project area, nor are there any known geologic features in the proposed Project area. The CHRIS and NAHC/SLF searches did not identify any paleontological (or cultural) resources. Additionally, no paleontological resources or sites, or unique geologic features have previously been encountered in the proposed Project area. Project construction will not be anticipated to disturb any paleontological resources not previously disturbed; however unlikely, there is a possibility that subsurface resources could be uncovered during construction-related activities. In such an event, potentially significant impacts to previously unknown subsurface resources may occur. Implementation of Mitigation Measure 5-2 as specified in Item 5 Cultural Resources (as applicable) will ensure that any impact from the proposed Project would be less than significant with mitigation.

¹⁴⁶ Tulare County. 2030 General Plan Update. Recirculated Draft Environmental Impact Report. February 2010. Page 3.7-22.

¹⁴⁷ USDA. NRCS. Official Soil Series. Accessed January 2023 at: https://soilseries.sc.egov.usda.gov/OSD_Docs/N/NORD.html.

Cumulative Impact Analysis: Less Than Significant Impact With Mitigation - The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, Tulare County General Plan Background Report, Tulare County 2030 Update General Plan EIR, and Matheny Wastewater Collection System DEIR and REIR. As noted previously, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary referred to as the wastewater collection system and pipeline inter-tie Project). Based upon the analysis above, including compliance with Tulare County General Plan policies, Tulare Ordinance Code, Building Codes, Regional Water Quality Control Board, San Joaquin Valley Air Pollution Control District rules and Regulations, Mitigation Measure 5-1, etc., the proposed wastewater collection system and pipeline inter-tie would range from no to less than significant impacts to this resource.

VIII. GREENHOUSE GAS EMISSIONS

Would the project:	SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT IMPACT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Greenhouses Gases, etc.; contained in the Tulare County General Plan 2030 Update Tulare County General Plan Background Report, Tulare County Environmental Impact Report, and Matheny Wastewater Collection System DEIR and REIR, are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion

Environmental Setting

As noted previously, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary referred to as the wastewater collection system and pipeline inter-tie Project).

“An increase in the near surface temperature of the earth. Global warming has occurred in the distant past as the result of natural influences, but the term is most often used to refer to the warming predicted to occur as a result of increased emissions of greenhouse gases. Scientists generally agree that the earth’s surface has warmed by about 1 degree Fahrenheit in the past 140 years, but warming is not predicted evenly around the globe. Due to predicted changes in the ocean currents, some places that are currently moderated by warm ocean currents are predicted to fall into deep freeze as the pattern changes.”¹⁴⁸ “The warming of the earth’s atmosphere attributed to a buildup of CO₂ or other gases; some scientists think that this build-up allows the sun’s rays to heat the earth, while making the infra-red radiation atmosphere opaque to infrared radiation, thereby preventing a counterbalancing loss of heat. Ibid. Gases that trap heat in the atmosphere are called greenhouse gases (GHGs). The major concern is that increases in GHGs are causing global climate change. Global climate change is a change in the average weather on earth that can be measured by wind patterns, storms, precipitation and temperature. The gases believed to be most responsible for global warming are water vapor, carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).”¹⁴⁹ “Enhancement of the greenhouse effect can occur when concentrations of GHGs exceed the natural concentrations in the atmosphere. Of these gases, CO₂ and methane are emitted in the greatest quantities from human activities. Emissions of CO₂ are largely by-products of fossil fuel combustion, whereas methane primarily results from off-gassing associated with agricultural practices and landfills. SF₆ is a GHG commonly used in the utility industry as an insulating gas in transformers and other electronic equipment. There is widespread international scientific agreement that human-caused increases in GHGs has and will continue to contribute to global warming, although there is much uncertainty concerning the magnitude and rate of the warming.”¹⁵⁰ “Some of the potential resulting effects in California of global warming may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (CARB, 2006). Globally, climate change has the potential to impact numerous environmental resources through potential, though uncertain, impacts related to future air temperatures and precipitation patterns. The projected effects of global warming on weather and climate are likely to vary regionally, but are expected to include the following direct effects (IPCC, 2001):

- Higher maximum temperatures and more hot days over nearly all land areas;
- Higher minimum temperatures, fewer cold days and frost days over nearly all land areas;
- Reduced diurnal temperature range over most land areas; o Increase of heat index over land areas; and

¹⁴⁸ Tulare County General Plan 2030 Update Background Report. Page 6-31.

¹⁴⁹ Ibid. 6-16 and 6-20.

¹⁵⁰ Op. Cit. 6-31.

- More intense precipitation events.”¹⁵¹

“Snowpack and snowmelt may also be affected by climate change. Much of California’s precipitation falls as snow in the Sierra Nevada and southern Cascades Mountain ranges, and snowpack represents approximately 35 percent of the state’s useable annual water supply.”¹⁵² “The snowmelt typically occurs from April through July; it provides natural water flow to streams and reservoirs after the annual rainy season has ended.”¹⁵³ “As air temperatures increase due to climate change, the water stored in California’s snowpack could be affected by increasing temperatures resulting in: (1) decreased snowfall, and (2) earlier snowmelt.”¹⁵⁴

“In 2007, Tulare County generated approximately 5.2 million tonnes of Carbon Dioxide Equivalent (CO₂e). The largest portion of these emissions (63 percent) is attributed to dairies/feedlots, while the second largest portion (16 percent) is from mobile sources, the third largest portion (11%) is from electricity sources.”¹⁵⁵ Table 6-7 [Table 8-1 in this document] identifies Tulare County’s emissions by sector in 2007.”¹⁵⁶

Table 8-1		
GHG Emissions by Sector in 2007¹⁵⁷		
Sector	CO ₂ e (tons/year)	% of Total
Electricity	542,690	11%
Natural Gas	321,020	6%
Mobile Sources	822,230	16%
Dairy/Feedlots	3,294,870	63%
Solid Waste	227,250	4%
Total	5,208,060	100%
<i>Per Capita</i>	<i>36.1</i>	

“In 2030, Tulare County is forecast to generate approximately 6.1 million tonnes of CO₂e. The largest portion of these emissions (59%) is attributed to dairies/feedlots, while the second largest portion (20%) is from mobile sources, and third largest portion (11%) is from electricity as shown on Table 6-8 [Table 8-2 in this document]. Per capita emissions in 2030 are projected to be approximately 27 tonnes of CO₂e per resident.”¹⁵⁸

Table 8-2		
GHG Emissions by Sector in 2030¹⁵⁹		
Sector	CO ₂ e (tons/year)	% of Total
Electricity	660,560	11%
Natural Gas	384,410	6%
Mobile Sources	1,212,370	20%
Dairy/Feedlots	3,601,390	59%
Solid Waste	246,750	4%
Total	6,105,480	100%
<i>Per Capita</i>	<i>27.4</i>	

The Tulare County General Plan contains the following: Enhancement of the greenhouse effect can occur when concentrations of GHGs exceed the natural concentrations in the atmosphere. Of these gases, CO₂ and methane are emitted in the greatest quantities from human activities. Emissions of CO₂ are largely by-products of fossil fuel combustion, whereas methane primarily results from off-gassing associated with agricultural practices and landfills. SF₆ is a GHG commonly used in the utility industry as an insulating gas in transformers and other electronic equipment. There is widespread international scientific

¹⁵¹ Op. Cit.

¹⁵² Op. Cit. 8-85.

¹⁵³ Op. Cit.

¹⁵⁴ Op. Cit.

¹⁵⁵ Op. Cit. 6-36.

¹⁵⁶ Op. Cit. 6-38.

¹⁵⁷ Op. Cit.

¹⁵⁸ Op. Cit.

¹⁵⁹ Op. Cit.

agreement that human-caused increases in GHGs has and will continue to contribute to global warming, although there is much uncertainty concerning the magnitude and rate of the warming.¹⁶⁰

The San Joaquin Valley Air Pollution Control District (Air District) proposed, and subsequently adopted, the following process for determining the cumulative significance of project specific GHG emissions on global climate change when issuing permits for stationary source projects:

- “Projects determined to be exempt from the requirements of CEQA would be determined to have a less than significant individual and cumulative impact for GHG emissions and would not require further environmental review, including analysis of project specific GHG emissions. Projects exempt under CEQA would be evaluated consistent with established rules and regulations governing project approval and would not be required to implement [Best Performance Practices] BPS.
- Projects complying with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located would be determined to have a less than significant individual and cumulative impact for GHG emissions. Such plans or programs must be specified in law or approved by the lead agency with jurisdiction over the affected resource and supported by a CEQA compliant environmental review document adopted by the lead agency. Projects complying with an approved GHG emission reduction plan or GHG mitigation program would not be required to implement BPS.
- Projects implementing Best Performance Standards would not require quantification of project specific GHG emissions. Consistent with CEQA Guideline, such projects would be determined to have a less than significant individual and cumulative impact for GHG emissions.
- Projects not implementing Best Performance Standards would require quantification of project specific GHG emissions and demonstration that project specific GHG emissions would be reduced or mitigated by at least 29%, compared to [Business As Usual] BAU, including GHG emission reductions achieved since the 2002-2004 baseline period, consistent with GHG emission reduction targets established in ARB’s AB 32 Scoping Plan. Projects achieving at least a 29% GHG emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG.
- Project requiring preparation of an Environmental Impact Report would require quantification of project specific GHG emissions. Projects implementing BPS or achieving at least a 29% GHG emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG.”¹⁶¹

Regulatory Setting

Federal

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization’s Intergovernmental Panel on Climate Change (IPCC), the efforts devoted to greenhouse gas (GHG) emissions reduction and climate change research and policy have increased dramatically in recent years.

The USEPA Mandatory Reporting Rule (40 CFR Part 98), which became effective December 29, 2009, requires that all facilities that emit more than 25,000 metric tons CO₂-equivalent per year beginning in 2010, report their emissions on an annual basis. On May 13, 2010, the USEPA issued a final rule that established an approach to addressing GHG emissions from stationary sources under the CAA permitting programs. The final rule set thresholds for GHG emissions that define when permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities.

In addition, the Supreme Court decision in *Massachusetts v. EPA* (Supreme Court Case 05-1120) found that the USEPA has the authority to list GHGs as pollutants and to regulate emissions of GHGs under the CAA. On April 17, 2009, the USEPA found that CO₂, CH₄, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride may contribute to air pollution and may endanger public health and welfare. This finding may result in the USEPA regulating GHG emissions; however, to date the USEPA has not proposed regulations based on this finding.

State

¹⁶⁰ Op. Cit. 6-31.

¹⁶¹ SJVAPCD. District Policy. Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as Lead Agency. Page 8 and 9. Accessed in August 2022 at: <https://www.valleyair.org/Programs/CCAP/12-17-09/2%20CCAP%20-%20FINAL%20District%20Policy%20CEQA%20GHG%20-%20Dec%2017%202009.pdf>

In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and pro-active approach to dealing with GHG emissions and climate change at the state level. AB 1493 requires the Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck GHG emissions; these regulations applied to automobiles and light trucks beginning with the 2009 model year.

California has taken action to reduce GHG emissions. In June 2005, Governor Schwarzenegger signed Executive Order S-3-05 to address climate change and GHG emissions in California. This Order sets the following goals for statewide GHG emissions:

- Reduce to 2000 levels by 2010
- Reduce to 1990 levels by 2020
- Reduce to 80 percent below 1990 levels by 2050

“In 2006, the Legislature passed the California Global Warming Solutions Act of 2006 [Assembly Bill 32 (AB 32 Opens in New Window)], which created a comprehensive, multi-year program to reduce greenhouse gas (GHG) emissions in California. AB 32 required the California Air Resources Board (ARB or Board) to develop a Scoping Plan that describes the approach California will take to reduce GHGs to achieve the goal of reducing emissions to 1990 levels by 2020. The Scoping Plan was first approved by the Board in 2008 and must be updated every five years. Since 2008, there have been two updates to the Scoping Plan. Each of the Scoping Plans have included a suite of policies to help the State achieve its GHG targets, in large part leveraging existing programs whose primary goal is to reduce harmful air pollution.”¹⁶²

“The First Update to the Scoping Plan was approved by the Board on May 22, 2014, and builds upon the initial Scoping Plan with new strategies and recommendations. The First Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The First Update defines ARB’s climate change priorities for the next five years, and also sets the groundwork to reach long-term goals set forth in Executive Orders S-3-05 and B-16-2012. The Update highlights California’s progress toward meeting the “near-term” 2020 GHG emission reduction goals defined in the initial Scoping Plan. It also evaluates how to align the State’s “longer-term” GHG reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use.”¹⁶³

“On April 29, 2015, the Governor issued Executive Order B-30-15 establishing a mid-term GHG reduction target for California of 40 percent below 1990 levels by 2030. All state agencies with jurisdiction over sources of GHG emissions were directed to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 targets. ARB was directed to update the AB 32 Scoping Plan to reflect the 2030 target, and therefore, is moving forward with the update process. The mid-term target is critical to help frame the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to continue driving down emissions.”¹⁶⁴

“This Scoping Plan for Achieving California’s 2030 Greenhouse Gas Target (Scoping Plan or 2017 Scoping Plan) identifies how the State can reach our 2030 climate target to reduce greenhouse gas (GHG) emissions by 40 percent from 1990 levels, and substantially advance toward our 2050 climate goal to reduce GHG emissions by 80 percent below 1990 levels. By selecting and pursuing a sustainable and clean economy path for 2030, the State will continue to successfully execute existing programs, demonstrate the coupling of economic growth and environmental progress, and enhance new opportunities for engagement within the State to address and prepare for climate change.”¹⁶⁵

“This Scoping Plan builds on and integrates efforts already underway to reduce the State’s GHG, criteria pollutant, and toxic air contaminant emissions. Successful implementation of existing programs has put California on track to achieve the 2020 target. Programs such as the Low Carbon Fuel Standard and Renewables Portfolio Standard are delivering cleaner fuels and energy, the Advanced Clean Cars Program has put more than a quarter million clean vehicles on the road, and the Sustainable Freight Action Plan will result in efficient and cleaner systems to move goods throughout the State. Enhancing and implementing these ongoing efforts puts California on the path to achieving the 2030 target. This Scoping Plan relies on these, and other, foundational programs paired with an extended, more stringent Cap-and-Trade Program, to deliver climate, air quality, and other benefits.”¹⁶⁶

¹⁶² ARB. AB 32 Scoping Plan. Accessed August 2022 at: <https://www.arb.ca.gov/cc/scopingplan/scopingplan.htm>.

¹⁶³ ARB. First Update to the AB 32 Scoping Plan. Accessed August 2022 at: <https://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm>.

¹⁶⁴ ARB. Scoping Plan Update to Reflect 2030 Target. Accessed August 2022 at: <https://www.arb.ca.gov/cc/scopingplan/scopingplan.htm>.

¹⁶⁵ ARB. California’s 2017 Climate Change Scoping Plan. Page 1. Accessed August 2022 at: https://www3.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.

¹⁶⁶ Ibid.

California Environmental Quality Act (CEQA) Requirements

Section 15064.4 Determining the Significance of Impacts from Greenhouse Gas Emissions

(a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

(1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model or methodology it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or

(2) Rely on a qualitative analysis or performance based standards.

(b) A lead agency should consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment:

(1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;

(2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

(3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.¹⁶⁷

Regional

California Air Pollution Control Officers Association (CAPCOA)

"In January 2008, the California Air Pollution Control Officers Association (CAPCOA) issued a "white paper" on evaluating GHG emissions under CEQA (CAPCOA, 2008). The CAPCOA white paper strategies are not guidelines and have not been adopted by any regulatory agency; rather, the paper is offered as a resource to assist lead agencies in considering climate change in environmental documents."¹⁶⁸

The California Association of Air Pollution Control Officers (CAPCOA) represents all thirty-five local air quality agencies throughout California. CAPCOA, which has been in existence since 1975, is dedicated to protecting the public health and providing clean air for all our residents and visitors to breathe, and initiated the Greenhouse Gas Reduction Exchange.¹⁶⁹

"The Greenhouse Gas Reduction Exchange (GHG Rx) is a registry and information exchange for greenhouse gas emissions reduction credits designed specifically to benefit the state of California. The GHG Rx is a trusted source of locally generated credits from projects within California, and facilitates communication between those who create the credits, potential buyers, and funding organizations."¹⁷⁰ Four public workshops were held throughout the state including in the SJVAPCD. The mission

¹⁶⁷ California Environmental Quality Act (CEQA). Section 15064.4 Determining the Significance of Impacts from Greenhouse Gas Emissions. Accessed August 2022 at: https://www.califaep.org/statute_and_guidelines.php

¹⁶⁸ Op. Cit. Page 6-28. Background Report citation: CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act. January 2008.

¹⁶⁹ California Air Pollution Control Officers Association (CAPCOA). Accessed August 2022 at: <http://www.capcoa.org/>.

¹⁷⁰ Ibid. See "CAPCOA GHG RX" tab

is to provide a trusted source of high quality California-based greenhouse gas credits to keep investments, jobs, and benefits in-state, through an Exchange with integrity, transparency, low transaction costs and exceptional customer service.¹⁷¹

San Joaquin Valley Unified Air Pollution Control District (Air District)

The Air District is made up of eight counties in California's Central Valley: San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare and the San Joaquin Valley Air Basin portion of Kern. "The San Joaquin Valley Air District is a public health agency whose mission is to improve the health and quality of life for all Valley residents through efficient, effective and entrepreneurial air quality-management strategies."¹⁷²

The Air District adopted the *Climate Change Action Plan* (CCAP) in August 2008. "The CCAP directed the District Air Pollution Control Officer to develop guidance to assist Lead Agencies, project proponents, permit applicants, and interested parties in assessing and reducing the impacts of project specific greenhouse gas (GHG) emissions on global climate change.

On December 17, 2009, the San Joaquin Valley Air Pollution Control District (District) adopted the guidance: Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA, and the policy: District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency. The guidance and policy rely on the use of performance based standards, otherwise known as Best Performance Standards (BPS), to assess significance of project specific greenhouse gas emissions on global climate change during the environmental review process, as required by CEQA.

Use of BPS is a method of streamlining the CEQA process of determining significance and is not a required emission reduction measure. Projects implementing BPS would be determined to have a less than cumulatively significant impact. Otherwise, demonstration of a 29 percent reduction in GHG emissions, from business-as-usual, is required to determine that a project would have a less than cumulatively significant impact. The guidance does not limit a lead agency's authority in establishing its own process and guidance for determining significance of project related impacts on global climate change."¹⁷³

The Air District's *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Project under CEQA* document provides guidance to lead agencies for evaluating the significance of project-specific and cumulative impacts related to GHG emissions.¹⁷⁴ This guidance established the following process for evaluating the significance of project-specific GHG emissions on global climate change:

- "Projects determined to be exempt from the requirements of CEQA would be determined to have a less than significant individual and cumulative impact for GHG emissions and would not require further environmental review, including analysis of project specific GHG emissions. Projects exempt under CEQA would be evaluated consistent with established rules and regulations governing project approval and would not be required to implement [Best Performance Practices] BPS.
- Projects complying with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located would be determined to have a less than significant individual and cumulative impact for GHG emissions. Such plans or programs must be specified in law or approved by the lead agency with jurisdiction over the affected resource and supported by a CEQA compliant environmental review document adopted by the lead agency. Projects complying with an approved GHG emission reduction plan or GHG mitigation program would not be required to implement BPS.
- Projects implementing Best Performance Standards would not require quantification of project specific GHG emissions. Consistent with CEQA Guideline, such projects would be determined to have a less than significant individual and cumulative impact for GHG emissions.
- Projects not implementing Best Performance Standards would require quantification of project specific GHG emissions and demonstration that project specific GHG emissions would be reduced or mitigated by at least 29%, compared to Business-As-Usual (BAU), including GHG emission reductions achieved since the 2002-2004 baseline

¹⁷¹ CAPCOA. CAPCOA Greenhouse Gas Reduction Exchange. Accessed August 2022 at: <http://www.ghgrx.org/>.

¹⁷² Air District. About the District. Accessed August 2022 at: Website: http://www.valleyair.org/General_info/aboutdist.htm#Mission.

¹⁷³ Air District. Climate Change Action Plan. Accessed August 2022 at: http://www.valleyair.org/Programs/CCAP/CCAP_menu.htm

¹⁷⁴ Air District. Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Project under CEQA. Accessed August 2022 at: <http://www.valleyair.org/Programs/CCAP/12-17-09/3%20CCAP%20-%20FINAL%20LU%20Guidance%20-%20Dec%2017%202009.pdf>.

period. Projects achieving at least a 29% GHG emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG.

- Notwithstanding any of the above provisions, projects requiring preparation of an Environmental Impact Report for any other reason would require quantification of project specific GHG emissions. Projects implementing BPS or achieving at least a 29% GHG emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG.”¹⁷⁵

Local

Tulare County General Plan 2030 Update

The Tulare County General Plan 2030 Update: Chapter 9 – Air Quality contains a number of policies that apply to projects within Tulare County that support GHG reduction efforts and which have potential relevance to the Project’s CEQA review: *AQ-1.3 Cumulative Air Quality Impacts* wherein the County shall require development to be located, designed, and constructed in a manner that would minimize cumulative air quality impacts; *AQ-1.5 California Environmental Quality Act (CEQA) Compliance* wherein the County shall ensure that air quality impacts identified during the CEQA review process are consistently and reasonably mitigated when feasible; *AQ-1.7 Support Statewide Climate Change Solutions* wherein the County shall monitor and support the efforts of Cal/EPA, CARB, and the SJVAPCD, under AB 32 (Health and Safety Code §38501 et seq.), to develop a recommended list of emission reduction strategies, as appropriate, the County will evaluate each new project under the updated General Plan to determine its consistency with the emission reduction strategies; *AQ-1.8 Greenhouse Gas Emissions Reduction Plan/Climate Action Plan* wherein the County will develop a Greenhouse Gas Emissions Reduction Plan (Plan) that identifies greenhouse gas emissions within the County as well as ways to reduce those emissions. The Plan will incorporate the requirements adopted by the California Air Resources Board specific to this issue. In addition, the County will work with the Tulare County Association of Governments and other applicable agencies to include the following key items in the regional planning efforts.

1. Inventory all known, or reasonably discoverable, sources of greenhouse gases in the County,
2. Inventory the greenhouse gas emissions in the most current year available, and those projected for year 2020, and
3. Set a target for the reduction of emissions attributable to the County’s discretionary land use decisions and its own internal government operations.;

AQ-3.2 Infill near Employment requiring the County of identify opportunities for infill development near employment areas; *AQ-3.3 Street Design* regarding street designed to encourage transit use, biking, and pedestrian movement; *AQ-3.4 Landscape* regarding the use of ecologically based landscape design principles that can improve local air quality by absorbing CO₂, producing oxygen, providing shade that reduces energy required for cooling, and filtering particulates; *AQ-3.5 Alternative Energy Design* wherein the County shall encourage all new development to incorporate energy conservation and green building practices to maximum extent feasible; *ERM-4.1 Energy Conservation and Efficiency Measures* wherein the County shall encourage energy conservation and efficiency features in new construction in accordance with State law; and *ERM-4.8 Energy Efficiency Standards* wherein the County shall encourage new developments to incorporate energy efficiency and conservation measures that exceed State Title 24 standards.

Tulare County Climate Action Plan

The Tulare County Climate Action Plan (CAP) serves as a guiding document for County of Tulare (“County”) actions to reduce greenhouse gas emissions and adapt to the potential effects of climate change. The CAP is an implementation measure of the 2030 General Plan Update. The General Plan provides the supporting framework for development in the County to produce fewer greenhouse gas emissions during Plan buildout. The CAP builds on the General Plan’s framework with more specific actions that will be applied to achieve emission reduction targets consistent with California legislation.¹⁷⁶

“The County of Tulare (County) adopted the Tulare County Climate Action Plan (CAP) in August 2012. The CAP includes provisions for an update when the State of California Air Resources Board (CARB) adopts a Scoping Plan Update that provides post-2020 targets for the State and an updated strategy for achieving a 2030 target. Governor Brown signed Senate Bill (SB) 32 on September 8, 2016, which contains the new 2030 target. The CARB 2017 Scoping Plan Update for the Senate Bill (SB) 32 2030 targets was adopted by the CARB on December 14, 2017 which provided new emission inventories and a

¹⁷⁵ Ibid. 4 and 5.

¹⁷⁶ Tulare County Climate Action Plan. Page 1. Accessed August 2022 at:
<http://generalplan.co.tulare.ca.us/documents/GeneralPlan2010/ClimateActionPlan.pdf>

comprehensive strategy for achieving the 2030 target (CARB 2017a). With the adoption of the 2017 Scoping Plan, the County proceeded with the 2018 CAP Update that is provided in this document.

The 2018 CAP Update incorporates new baseline and future year inventories to reflect the latest information and updates the County's strategy to address the SB 32 2030 target. The 2030 target requires the State to reduce emissions by 40 percent below 1990 levels from the 2017 Scoping Plan and County data. The CAP identifies the County's fair share of reductions required to maintain consistency with the State target."¹⁷⁷

As discussed in the impact analysis, the proposed Project is consistent with the CAP and would therefore, not have a significant impact on the environment. As such, quantification of Project related GHG emissions would not be required. However, GHG emissions from construction of the Project were included in the CalEEMod output document used in the evaluation of potential impacts on the Air Quality resource. The CalEEMod outputs are provided in Attachment "A" of this document.

Project Impact Analysis:

GHG's Assessed

This analysis was restricted to GHGs identified by AB 32, which include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), and nitrogen trifluoride (NF₃). The proposed project would generate a variety of GHGs, including several defined by AB 32 such as CO₂, CH₄, and N₂O.

Water vapor could be emitted from evaporated water used for landscaping and other uses, but this is not a significant impact because water vapor concentrations in the upper atmosphere are primarily due to climate feedbacks rather than emissions from project-related activities.

Ozone is a GHG; however, unlike the other GHGs, ozone in the troposphere is relatively short-lived and can be reduced in the troposphere on a daily basis. Stratospheric ozone can be reduced through reactions with other pollutants.

Certain GHGs defined by AB 32 would not be emitted by the project. Perfluorocarbons and sulfur hexafluoride are typically used in industrial applications, none of which would be used by the project. Therefore, it is not anticipated that the project would emit perfluorocarbons or sulfur hexafluoride.

Certain GHGs defined by AB 32 would not be emitted by the project. HFCs, PFCs, SF₆, and NF₃ are typically used in certain industrial applications, none of which would be used for typical commercial or gas station operations. Therefore, it is not anticipated that the proposed project would emit those GHGs.

GHG emissions associated with the proposed Project construction were estimated using CO₂ equivalent (CO₂e) emissions as a proxy for all GHG emissions. In order to obtain the CO₂e, an individual GHG is multiplied by its Global Warming Potential (GWP). The GWP designates on a pound for pound basis the potency of the GHG compared to CO₂.

Thresholds of Significance

SJVAPCD

The SJVAPCD's Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA presents a tiered approach to analyzing project significance with respect to GHG emissions. Project GHG emissions are considered less than significant if they can meet any of the following conditions, evaluated in the order presented:

- Project is exempt from CEQA requirements;
- Project complies with an approved GHG emission reduction plan or GHG mitigation program;
- Project implements Best Performance Standards (BPS); or
- Project demonstrates that specific GHG emissions would be reduced or mitigated by at least 29 percent compared to Business-as-Usual (BAU), including GHG emission reductions achieved since the 2002-2004 baseline period.

The SJVAPCD's Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA includes thresholds based on whether the project will reduce or mitigate GHG levels by 29 percent from BAU levels

¹⁷⁷ Ibid.

compared with 2005 levels by 2020.¹⁷⁸ This level of GHG reduction is based on the target established by CARB's AB 32 Scoping Plan, approved in 2008. First occupancy at the project site is expected to occur in 2023. This date is past the AB 32 2020 milestone year. Given recent legislative and legal scrutiny on post-2020 compliance, additional discussion is provided to show progress towards GHG reduction goals identified in CARB's 2017 Scoping Plan for the year 2030. Additionally, although not included in a formal GHG reduction plan, Executive Order S-3-05 also includes a goal of reducing GHG emissions 80 percent below 1990 levels by 2050 and Executive Order B-55-18 set the goal to achieve carbon neutrality statewide by 2045.

Project-level Thresholds

Section 15064.4(b) of the CEQA Guidelines' amendments for GHG emissions states that a lead agency may take into account the following three considerations in assessing the significance of impacts from GHG emissions.

- Consideration #1: The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting.
- Consideration #2: Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- Consideration #3: The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an Environmental Impact Report (EIR) must be prepared for the project.

In addition, Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7(c)). The CEQA Guidelines also clarify that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see CEQA Guidelines § 15130(f)).

Per CEQA Guidelines § 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plans [and] plans or regulations for the reduction of greenhouse gas emissions." Put another way, CEQA Guidelines § 15064(h)(3) allows a lead agency to make a finding of less than significant for GHG emissions if a project complies with adopted programs, plans, policies and/or other regulatory strategies to reduce GHG emissions.

The significance of the project's GHG emissions is evaluated consistent with CEQA Guidelines §15064.4(b)(2) by considering whether the project complies with applicable plans, policies, regulations and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

The Tulare County CAP aims to reduce GHG emissions from development projects in Tulare County. The CAP builds on state and regional policies aimed at reducing GHG emissions consistent with the SB 32 2030 GHG reduction target. The CAP relies on policies of the Tulare County General Plan to guide development projects. In addition, the CAP provides specific guidelines for determining if new development projects are consistent with the CAP. The CAP includes a progress report with metrics and benchmarks for tracking progress toward meeting the GHG reduction targets. The County's progress is on track for all metrics.

The CAP is utilized to determine the significance from the project's contribution of GHG emissions. For informational purposes only, the analysis first quantifies project-related GHG emissions under a BAU scenario, and then compares these emissions with emissions that would occur when all project-related design features are accounted for, and when compliance with applicable regulatory measures is assumed.

¹⁷⁸ Air District. Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA. December 2019. Accessed January 2023. <http://www.valleyair.org/Programs/CCAP/12-17-09/3%20CCAP%20-%20FINAL%20LU%20Guidance%20-%20Dec%2017%202009.pdf>.

- a) **Less Than Significant Impact:** The CAP is utilized to determine the significance from the proposed Project's contribution of GHG emissions. The proposed Project's short-term GHG emissions are provided for informational purposes only.

The Project would generate GHG emissions through construction and operational (maintenance) activities. Construction activities would be short-term, temporary and intermittent and GHG emissions would occur from the off-road heavy-duty equipment and the on-road motor vehicles needed to mobilize crew, equipment, and materials, and to construct the pipeline. Similar to construction, GHG emissions would occur from the off-road heavy-duty equipment and the on-road motor vehicles needed to mobilize crew, equipment, and materials to the maintenance site; however, maintenance activities would be less intensive as they would occur on an as-needed basis. According to the Air District's *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* (Agency Guidance), projects implementing Best Performance Standards (BPS) in accordance with District guidance or projects complying with an approved GHG emission reduction plan or mitigation program that has been specified in law or adopted by the public agency with a certified Final CEQA document, are determined to have a less than significant individual and cumulative impact on global climate change and do not require project specific quantification of GHG emissions. Projects not implementing BPS or projects requiring preparation of an Environmental Impact Report (EIR) regardless of implementation of BPS should quantify emissions, and any project demonstrating a 29% reduction in GHG emissions as compared to business-as-usual (BAU) would have a less than significant impact.¹⁷⁹

The County has an adopted Climate Action Plan (CAP). The CAP was adopted and the EIR certified by the Tulare County Board of Supervisors in August 2012. The CAP was updated in December 2018.¹⁸⁰ The CAP is a strategic planning document that identifies sources of GHG emissions within the County, presents current and future emissions estimates, identifies a GHG reduction target for future years, and presents strategic policies and actions to reduce emissions from the development project subject to CEQA. The GHG-reduction strategies in the Plan build key opportunities prioritized by County staff and members of the public. The CAP does not require quantification of emissions for projects less intense than a 500-unit subdivision or 100,000 square feet of retail or equivalent intensity for other uses. The proposed Project consists of a new wastewater collection system within the community of Matheny Tract and connection and consolidation of the new system to the City of Tulare DWWTP. There are approximately 325 residences within the community. As the proposed Project would connect each (fewer than 500) existing residence to new collection system, the Project is consistent with the Tulare County General Plan and CAP, and does not require quantification of GHG emissions. As such, GHG emissions resulting from the construction of the proposed Project have been quantified for disclosure purposes. As presented in **Table 3-1** (in Section III, Air Quality), the Project would result in roughly 625 metric tons of construction related GHG emissions.

As previously noted, the proposed Project is consistent with the Tulare County General Plan and the Tulare County CAP. As such, the Project would not generate greenhouse gas emissions, either directly or indirectly, that would have a significant impact on the environment. Therefore, the Project will have a Less Than Significant Impact related to this resource.

- b) **No Impact:** The proposed Project consists of the construction of a new wastewater collection system within the community of Matheny Tract and connection and consolidation of the new system to the City of Tulare DWWTP. The new wastewater system is necessary for the abandonment of existing septic systems and leach fields within the community. Construction and operational (maintenance) activities associated with the proposed Project do not conflict with the Tulare Climate Action Plan, the Tulare County General Plan, the Air District Climate Change Action Plan, or any Air District rules or regulations, for the purpose of reducing greenhouse gas emissions. The Project objectives and components do not conflict with the goals of AB 32 and greenhouse gas reduction. Therefore, the Project is consistent with the aforementioned plans, policies, and regulations. As such, No Impact related to this Checklist Item would occur.

¹⁷⁹ Air District. *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA*. December 2019. Accessed January 2023. <http://www.valleyair.org/Programs/CCAP/12-17-09/3%20CCAP%20-%20FINAL%20LU%20Guidance%20-%20Dec%2017%202009.pdf>.

For a summary of the Guidance, see the Air District's Fact Sheet: Addressing Greenhouse Gas Emissions Impact under the California Environmental Quality Act (CEQA) – Land Use Development Projects.

http://www.valleyair.org/Programs/CCAP/bps/Fact_Sheet_Development_Sources.pdf.

¹⁸⁰ Tulare County. *Climate Action Plan 2018 Update*. December 2018. Accessed January 2023.

<http://generalplan.co.tulare.ca.us/documents/GP/001Adopted%20Tulare%20County%20General%20Plan%20Materials/220Climate%20Action%20Plan/CLIMATE%20ACTION%20PLAN%202018%20UPDATE.pdf>.

Cumulative Impact Analysis: Less Than Significant Impact With Mitigation - The geographic area of this cumulative analysis is the San Joaquin Valley Air Basin. As noted previously, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary referred to as the wastewater collection system and pipeline inter-tie Project). As the proposed Project is consistent with the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, Tulare County General Plan 2030 Update EIR, Tulare County Climate Action Plan, and previously noted plans, policies, and regulations, the Project will have a Less Than Significant impact related to this Checklist Item.

IX. HAZARDS AND HAZARDOUS MATERIALS

Would the project:	SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT IMPACT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Hazards and Hazardous Materials, etc. contained in the Tulare County General Plan 2030 Update, Tulare County General Plan 2030 Update Environmental Impact Report, and Matheny Wastewater Collection System DEIR and REIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Environmental Setting

The proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary referred to as the wastewater collection system and pipeline inter-tie Project).

Tulare County is surrounded by Fresno County to the north, Inyo County to the east, Kern County to the south, and Kings County to the west. Areas surrounding the Project are primarily utilized for agricultural purposes. Aside from some likely agricultural chemical use on agricultural properties in the vicinity, the current uses of the site and adjoining properties are not ones that are indicative of the use, treatment, storage, disposal or generation of significant quantities of hazardous substances or petroleum products.

“A hazardous material is defined by the California Code of Regulations (CCR) as a substance that, because of physical or chemical properties, quantity, concentration, or other characteristics, may either (1) cause an increase in mortality or an

increase in serious, irreversible, or incapacitating, illness; or (2) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported or disposed of (CCR, Title 22, Division 4.5, Chapter 10, Article 2, Section 66260.10).”¹⁸¹

“Hazardous wastes are hazardous materials that no longer have practical use, such as substances that have been discarded, discharged, spilled, contaminated, or are being stored prior to proper disposal. According to Title 22 of the CCR, hazardous materials and hazardous wastes are classified according to four properties: toxic, ignitable, corrosive, and reactive (CCR, Title 22, Chapter 11, Article 3).”¹⁸²

As noted in the EIR for the Matheny Tract Wastewater Collection System Project, “A search of potential sources of hazardous material in the Project vicinity was performed by Provost & Pritchard Consulting Group using the Geotracker database (the State Water Resources Control Board [SWRCB] underground contaminant information management system). Data about leaking underground storage tanks and other types of soil and groundwater contamination, along with associated cleanup activities, are part of the information that the SWRCB is required to maintain under Section 65962.5 of the California Public Resources Code (PRC) (i.e. the “Cortese List”). The Feasibility Report noted; “A review of Identified Hazardous Waste Sites on the EnviroStor Database determined that there are no identified hazardous sites within the Matheny Tract or nearby vicinity. A review of the Geotracker Database (Appendix E [in the Feasibility Report]), which is maintained by the California Environmental Protection Agency – State Water Resource Control Board (SWRCB), identifies C&E Feed & Auto Parts (T0610700135), at the northeast corner of Pratt Street and Addie Avenue, as a site with a cleanup status of “Completed- Case Closed” and Curti & Sons, Inc. (T0610700411) at 3235 Avenue 199, as a site with a cleanup status of “Open – Remediation.” The SWRCB defines “Open – Remediation” as an on-going corrective action at a site where the actual construction or implementation activities to accomplish cleanup at the site are in process.”¹⁸³

The nearest airstrip is Tulare Municipal Airport (Mefford Field, City of Tulare), located approximately 1.2 miles southeast of South Matheny Tract and approximately 0.80 miles southeast of North Matheny Tract, respectively.

The Visalia Landfill is approximately 15 miles north of Matheny Tract, while Woodville Landfill is located approximately 7 miles southeast of Matheny Tract.

The nearest school to the Project site is Palo Verde Elementary School approximately 1.5 – 2.0 miles from South Matheny/North Matheny Tract; respectively.

Regulatory Setting

Federal

Hazardous Materials Transportation Act

“The Hazardous Materials Transportation Act of 1975 (HMTA), as amended, is the major transportation-related statute affecting [Department of Energy] DOE. The objective of the HMTA according to the policy stated by Congress is “. . .to improve the regulatory and enforcement authority of the Secretary of Transportation to protect the Nation adequately against risks to life and property which are inherent in the transportation of hazardous materials in commerce.” The HMTA empowered the Secretary of Transportation to designate as hazardous material any “particular quantity or form” of a material that “may pose an unreasonable risk to health and safety or property.”

Regulations apply to “. . .any person who transports, or causes to be transported or shipped, a hazardous material; or who manufactures, fabricates, marks, maintains, reconditions, repairs, or tests a package or container which is represented, marked, certified, or sold by such person for use in the transportation in commerce of certain hazardous materials.”¹⁸⁴

Superfund

¹⁸¹ Tulare County General Plan 2030 Update Background Report. Page 8-26.

¹⁸² Ibid. 8-26.

¹⁸³ Draft EIR for Matheny Tract Wastewater System Project Feasibility Report. 2017. Pages 3.8-3 and -4.

¹⁸⁴ United States Department of Energy, The Office of Health, Safety and Security, <http://homer.ornl.gov/sesa/environment/policy/hmta.html>. Accessed December 31, 2015.

“[Comprehensive Environmental Response, Compensation and Liability Act] CERCLA, commonly referred to as Superfund, were enacted on December 11, 1980. The purpose of CERCLA was to provide authorities with the ability to respond to uncontrolled releases of hazardous substances from inactive hazardous waste sites that endanger public health and the environment. CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at such sites, and established a trust fund to provide for cleanup when no responsible party could be identified. Additionally, CERCLA provided for the revision and republishing of the National Contingency Plan (NCP) that provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also provides for the National Priorities List, a list of national priorities among releases or threatened releases throughout the United States for the purpose of taking remedial action.”¹⁸⁵

Superfund Amendments and Reauthorization Act (SARA)

“[Superfund Amendments and Reauthorization Act] SARA amended CERCLA on October 17, 1986. This amendment increased the size of the Hazardous Response Trust Fund to \$8.5 billion, expanded EPA’s response authority, strengthened enforcement activities at Superfund sites; and broadened the application of the law to include federal facilities. In addition, new provisions were added to the law that dealt with emergency planning and community right to know. SARA also required EPA to revise the Hazard Ranking System to ensure that the system accurately assesses the relative degree of risk to human health and the environment posed by sites and facilities subject to review for listing on the National Priorities List (NPL).”¹⁸⁶

State

Hazardous Substance Account Act (1984), California Health and Safety Code Section 25300 ET SEQ (HSAA)

“This act, known as the California Superfund, has three purposes: 1) to respond to releases of hazardous substances; 2) to compensate for damages caused by such releases; and 3) to pay the states 10 percent share in CERCLA cleanups. Contaminated sites that fail to score above a certain threshold level in the EPA’s ranking system may be placed on the California Superfund list of hazardous wastes requiring cleanup.”¹⁸⁷

Cal/EPA Department of Toxic Substance Control (DTSC)

“Cal/EPA has regulatory responsibility under Title 22 of the California Code of Regulations (CCR) for administration of the state and federal Superfund programs for the management and cleanup of hazardous materials. The DTSC is responsible for regulating hazardous waste facilities and overseeing the cleanup of hazardous waste sites in California. The Hazardous Waste Management Program (HWMP) regulates hazardous waste through its permitting, enforcement and Unified Program activities. HWMP maintains the EPA authorization to implement the [Resource Conservation and Recovery Act] RCRA program in California, and develops regulations, policies, guidance and technical assistance/ training to assure the safe storage, treatment, transportation and disposal of hazardous wastes. The State Regulatory Programs Division of DTSC oversees the technical implementation of the States Unified Program, which is a consolidation of six environmental programs at the local level, and conducts triennial reviews of Unified Program agencies to ensure that their programs are consistent statewide and conform to standards.”¹⁸⁸

California Occupational Safety and Health Administration (Cal/OSHA)

“Cal/OSHA and the Federal OSHA are the agencies responsible for assuring worker safety in the handling and use of chemicals in the workplace. Pursuant to the Occupational Safety and Health Act of 1970, Federal OSHA has adopted numerous regulations pertaining to worker safety, contained in the Code of Federal Regulations Title 29 (29 CFR). These regulations set standards for safe workplaces and work practices, including standards relating to hazardous material handling. Cal/OSHA assumes primary responsibility for developing and enforcing state workplace safety regulations. Because California has a federally approved OSHA program, it is required to adopt regulations that are at least as stringent as those identified in 29 CFR. Cal/OSHA standards are generally more stringent than federal regulations.”¹⁸⁹

¹⁸⁵ Tulare County General Plan 2030 Update. Background Report. February 2010. Page 8-27.

¹⁸⁶ Ibid.

¹⁸⁷ Op. Cit. 8-28 to 8-29.

¹⁸⁸ Op. Cit. 8-29.

¹⁸⁹ Op. Cit. 8-30 to 8-31.

Hazardous Materials Transport Regulations

“California law requires that Hazardous Waste (as defined in California Health and Safety Code Division 20, Chapter 6.5) be transported by a California registered hazardous waste transporter that meets specific registration requirements. The requirements include possession of a valid Hazardous Waste Transporter Registration, proof of public liability insurance, which includes coverage for environmental restoration, and compliance with California Vehicle Code registration regulations required for vehicle and driver licensing.”¹⁹⁰

Cal/EPA Cortese List

“The provisions in [Government Code Section 65962.5](#) are commonly referred to as the "Cortese List" (after the legislator who authored the legislation that enacted it). The list, or a site's presence on the list, has bearing on the local permitting process as well as on compliance with the California Environmental Quality Act (CEQA).”¹⁹¹ The Cortese List identifies the following:

- Hazardous Waste and Substances Sites
- Cease and Desist Order sites
- Waste Constituents above Hazardous Waste Levels outside the Waste Management Unit Sites
- Leaking Underground Storage Tank (LUST) Cleanup Sites
- Other cleanup sites
- Land disposal sites
- Military sites
- Waste Discharge Requirements sites
- Permitted Underground Storage Tank (UST) Facilities Sites
- Monitoring Wells Sites
- DTSC Cleanup Sites
- DTSC Hazardous Waste Permit Sites

California Hazardous Material Release Response Plans and Inventory Law of 1985

The California Hazardous Material Release Response Plans and Inventory Law of 1985, often referred to as the Business Plan Act, requires facility operators to prepare Hazardous Materials Business Plans (HMBP). HMBPs are required to inventory hazardous materials stored and used within the site, disclose the location of storage and uses on site, maintain an emergency response plan, and contain provisions specifying employee training in safety and emergency response procedures. Local regulatory authorities such as Environmental Health Departments collect Hazard materials Business Plans.

California Accidental Release Program (CalARP)

The CalARP requires certain facilities to prepare RMPs. The CalARP is similar to the CAA’s Section 112(r). A facility handling hazardous materials listed in the CalARP and federal RMP regulations must comply with both statutes. The CalARB formally replaced California’s old Risk Management Prevention Program (RMPP) as of January 1997. Certain facilities prior to implementation of the CalARP were required to comply with the RMPP regulation administered by the State Office of Emergency Services (OES). The majority of these facilities and future facilities are required to comply with both the federal RMP and CalARP regulations. These similar regulations require facility operators that handle an amount of a listed acutely hazardous material, as well as explosive or flammable material, exceeding a threshold quantity to conduct additional planning studies covering equipment and safety systems, operating procedures, preventative maintenance, off-site consequence and risk assessment analysis, and safety auditing. OES delegates its enforcement authority to local administering agencies such as county Environmental Health Departments.

Emergency Response to Hazardous Material Incidents

California has developed an Emergency Response Plan to coordinate emergency services provided by Federal, State, and local government and private agencies. Response to hazardous materials incidents is one part of this plan. The plan is administered by the state OES, which coordinates the responses of other agencies including CalEPA, the California Highway Patrol, CDFG, the Central RWQCB, and the Tulare County Office of Emergency Services.

Local

¹⁹⁰ Op. Cit. 8-31.

¹⁹¹ Cal/EPA. Cortese List Background and History. Accessed January 2023 at: <https://calepa.ca.gov/sitecleanup/corteselist/background/>

Tulare County Office of Emergency Services

“The Tulare County Office of Emergency Services (OES) is Tulare County's comprehensive emergency management program. The discipline of emergency management aims to create partnerships, plans, and systems to build capabilities and coordinate the efforts of government, industry, and voluntary organizations in all phases of an emergency.

The activities of Tulare County OES can be categorized under the four phases of the emergency management cycle: [Preparedness](#), [Response](#), [Recovery](#), and [Mitigation](#). The day-to-day activities of the program center around Preparedness and Mitigation phases, in order to combat potential hazards and minimize community impacts during the Response and Recovery phases. The following descriptions offer more detail about the activities in each phase of emergency management.

Preparedness

- [Public Education](#)
- [Training](#) & Exercise for responders
- [Grants](#) for public safety & health agencies

Response

Tulare County OES maintains the Emergency Operations Center (EOC) for the County and Operational Area. Tulare County OES also administers the [AlertTC](#) notification system and WebEOC crisis information management system.

Recovery

After the emergency is over, there is still considerable work to be done to help the community return to a pre-disaster state. Recovery often takes several years, perhaps even decades, to fully complete.

Mitigation

Mitigation is the process by which hazards and vulnerabilities are identified, and measures taken to decrease the potential for occurrence of the hazard, the vulnerability to the hazard should it occur, or both. Tulare County Office of Emergency Services implements the 2011 Tulare County Hazard Mitigation Plan.”¹⁹²

Tulare County General Plan 2030 Update

The Tulare County General Plan 2030 Update (at Chapter 10 – Health and Safety) contains the following goals and policies that relate to hazards and hazardous materials, and which have potential relevance to the proposed Project’s CEQA review: *HS-4.1 Hazardous Materials* wherein the County shall strive to ensure hazardous materials are used, stored, transported, and disposed of in a safe manner, in compliance with local, State, and Federal safety standards, including the Hazardous Waste Management Plan, Emergency Operations Plan, and Area Plan; and *HS-4.4 Contamination Prevention* - The County shall review new development proposals to protect soils, air quality, surface water, and groundwater from hazardous materials contamination.

Project Impact Analysis:

- a) and b) **Less Than Significant Impact:** Other than the two sites noted earlier in the EnviroStor Database search results provided in the Feasibility Report’s Appendix “E” of the Matheny Tract Wastewater Collection System EIR, there are no known hazardous materials sites in the Project vicinity. Construction of the Project’s components would require the transport and use of small quantities of hazardous materials in the form of gasoline, diesel and oil associated with construction equipment. There is the potential for small leaks due to refueling of the construction equipment; however, standard construction Best Management Practices (BMPs) included in the SWPPP would reduce the potential for and clean-up in the unlikely event of spills or leaks of construction-related fuels and other hazardous materials. The BMP included in the SWPPP addresses storm water contamination, control the amount of runoff from the site, and require proper disposal or recycling of hazardous materials. All solid construction wastes would be disposed of or recycled by

¹⁹² Tulare County Office of Emergency Services (OES) Accessed January 2023 at: <https://oes.tularecounty.ca.gov/oes/what-is-oes/> or [What is "OES"? - Office of Emergency Services \(ca.gov\)](#).

qualified service providers. In order to accommodate directing of construction materials to proper end-point destinations, contractors and workers would be educated on waste sorting, appropriate recycling storage areas, and measures to reduce landfill waste. Any hazardous wastes, in liquid or solid form, would be removed from the site by a licensed hazardous waste recycling or disposal firm.

The Project operation may require the storage of minimal amounts of hazardous materials, such as fuel and lubricants related to lift station maintenance. The storage, transport, and use of these materials would comply with Local, State, and Federal regulatory requirements. Typical operations and maintenance activities would produce less than 220 lbs. of combined solid and liquid waste. The EPA considers businesses that produce less than 220 lbs. of hazardous waste a Conditionally Exempt Small Quantity Generator, which are exempt from hazardous waste management regulations¹⁹³. Implementation of Tulare County General Plan policies would ensure that impacts from the handling, storage, transport, or accidental release of hazardous materials are less than significant. Construction and operation of the proposed Project would require equipment that utilizes insignificant amounts of hazardous materials, as such, the proposed Project would not result in a significant hazard to the public or the environment; therefore, Project-specific impacts would be less than significant.

- c) **No Impact:** As noted earlier, the nearest school (Palo Verde Elementary School) is located approximately 1.2 miles southeast of South Matheny Tract and approximately 0.80 miles southeast of North Matheny Tract, respectively. Also as noted earlier construction-related activities will be intermittent, temporary, and short-term as they occur. As such, it is not anticipated that the proposed Project would result in the release of hazardous emissions, involve hazardous materials, or create a hazard to the school. There will be no impact.
- d) **No Impact:** As noted earlier in Item a) – b), the EIR Report noted that there are no identified hazardous sites within the Matheny Tract or nearby vicinity. As such, the Project does not involve land that is listed as a hazardous materials site pursuant to Government Code Section 65962.5 and is not included on a list compiled by the Department of Toxic Substances Control. Therefore, no impact would occur.
- e) **No Impact:** The nearest airport is Tulare Municipal Airport (Mefford Field, City of Tulare), located approximately 1.2 miles southeast of South Matheny Tract and approximately 0.80 miles southwest of North Matheny Tract, respectively. The proposed Project would not result in the placement of any structures sufficiently tall enough to interfere with the flight path of either a public use airport or private airstrip. The proposed Project will not conflict with Tulare County Comprehensive Airport Land Use Plan (CALUP) policy and it is not within any airport's safety zone. The proposed Project will not result in a safety hazard for people working in the area. As such, the proposed Project would result in no impact to this resource.
- f) **No Impact:** The proposed Project will not impair the implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. The proposed Project site consists mainly of existing rural and semi-rural paved roads and existing road rights-of-way. The pipelines would be trenched in the existing rights-of-way that generally consist of gravel road shoulders (which is typical of roadways in the area). Occasionally, pipelines would require trenching beneath paved roadways to connect to other pipeline infrastructure, as is the case with the inter-tie with existing Tulare wastewater treatment plant pipeline at the intersection of Avenue 216 (Paige Avenue) and Road 96 (Pratt Street). The construction and operation of an underground pipeline would not require long-term roadway closures nor would it impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, there would be no impact as a result of the proposed Project.
- g) **No Impact:** As noted earlier, the proposed Project site consists mainly of existing rural and semi-rural paved roads and existing road rights-of-way. The pipelines would be trenched in the existing rights-of-way that generally consist of gravel road shoulders (which is typical of roadways in the area). Occasionally, pipelines would require trenching beneath paved roadways to connect to other pipeline infrastructure, as is the case with the inter-tie with existing Tulare wastewater treatment plant pipeline at the intersection of Avenue 216 (Paige Avenue) and Road 96 (Pratt Street). The surrounding areas are predominantly agriculturally productive lands. As such, it is not subject or vulnerable to wildland fires. As the proposed Project is not within a wildland area, it is not susceptible to wildland fire. As such, the proposed Project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires and would result in no impact to this resource. See also Item 20 Wildfire.

¹⁹³ U.S. Environmental Protection Agency. Managing Your Hazardous Waste: A Guide for Small Businesses. Accessed January 2023 at: <https://www.epa.gov/hwgenerators/managing-your-hazardous-waste-guide-small-businesses> or [Managing Your Hazardous Waste: A Guide for Small Businesses | US EPA](#)

Cumulative Impact Analysis: Less Than Significant Impact - The geographic area of this cumulative analysis is Tulare County. This cumulative analysis based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, Tulare County General Plan 2030 Update EIR, and Matheny Wastewater Collection System DEIR and REIR. The proposed wastewater collection system and pipeline inter-tie Project area is located immediately south of the City of Tulare in a predominantly agricultural area on the San Joaquin Valley floor. However, as discussed earlier, the transportation of hazardous materials will continue to be regulated by federal, state, regional agencies, and all applicable regulations to minimize potential health risks. Therefore, through appropriate regulations, potential cumulative health impacts associated with the proposed Project area would result in less than significant Project-specific and Cumulative Impacts related to this Checklist Item

X. HYDROLOGY AND WATER QUALITY

Would the project:	SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT IMPACT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i) Result in substantial erosion or siltation on-or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with or obstruct implementation of water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Hydrology and Water Quality, etc. contained in the Tulare County General Plan 2030 Update, Tulare County General Plan 2030 Update Environmental Impact Report, and Matheny Wastewater Collection System DEIR and REIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Environmental Setting

As previously noted, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary referred to as the wastewater collection system and pipeline inter-tie Project). The proposed Project site consists mainly of existing rural and semi-rural paved roads and existing road rights-of-way. The pipelines would be trenched in the existing rights-of-way that generally consist of gravel road shoulders (which is typical of roadways in the area). Occasionally, pipelines would require trenching beneath paved roadways to connect to other pipeline infrastructure, as is the case with the inter-tie with existing Tulare wastewater treatment plant pipeline at the intersection of Avenue 216 (Paige Avenue) and Road 96 (Pratt Street).

Hydrology in the Project vicinity is associated with the Tulare Lake Basin, one of three main water subareas in the county. The Tulare Lake Basin is in the northern alluvial fan and basin subarea which is characterized by southwest-to-south flowing rivers, creeks, and irrigation canal systems that convey water from the Sierra Nevada to the west toward the Tulare Lake Bed. The

southern portion of the basin is internally drained by the Kings, Kaweah, Tule, and Kern Rivers.¹⁹⁴ The Tulare Lake Basin comprises the drainage area of the San Joaquin Valley south of the San Joaquin River and is essentially a closed basin because surface water drains north into the San Joaquin River only in years of extreme rainfall. According to the U.S. Geological Survey, Cameron Creek is the nearest body of water in the vicinity of the proposed Project; it is located north of Oakdale Avenue, north of the proposed Project site.¹⁹⁵

Flooding

“Flooding is a natural occurrence in the Central Valley because it is a natural drainage basin for thousands of watershed acres of Sierra Nevada and Coast Range foothills and mountains. Two kinds of flooding can occur in the Central Valley: general rainfall floods occurring in the late fall and winter in the foothills and on the valley floor; and snowmelt floods occurring in the late spring and early summer. Most floods are produced by extended periods of precipitation during the winter months. Floods can also occur when large amounts of water (due to snowmelt) enter storage reservoirs, causing an increase in the amount of water that is released.”¹⁹⁶

“Official floodplain maps are maintained by the Federal Emergency Management Agency (FEMA). FEMA determines areas subject to flood hazards and designates these areas by relative risk of flooding on a map for each community, known as the Flood Insurance Rate Map (FIRM). A 100-year flood is considered for purposes of land use planning and protection of property and human safety. The boundaries of the 100-year floodplain are delineated by FEMA on the basis of hydrology, topography, and modeling of flow during predicted rainstorms.”¹⁹⁷

“The flood carrying capacity in rivers and streams has decreased as trees, vegetation, and structures (e.g., bridges, trestles, buildings) have increased along the Kaweah, Kings, and Tule Rivers. Unsecured and uprooted material can be carried down a river, clogging channels and piling up against trestles and bridge abutments that can, in turn, give way or collapse, increasing blockage and flooding potential. Flooding can force waters out of the river channel and above its ordinary floodplain. Confined floodplains can result in significantly higher water elevations and higher flow rates during high runoff and flood events.”¹⁹⁸

Regulatory Setting

Federal

Clean Water Act

“The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The basis of the CWA was enacted in 1948 and was called the Federal Water Pollution Control Act, but the Act was significantly reorganized and expanded in 1972. “Clean Water Act” became the Act’s common name with amendments in 1972. Under the CWA, EPA has implemented pollution control programs such as setting wastewater standards for industry. EPA has also developed national water quality criteria recommendations for pollutants in surface waters. The CWA made it unlawful to discharge any pollutant from a point source into navigable waters, unless a permit was obtained:

- EPA’s [National Pollutant Discharge Elimination System \(NPDES\)](#) permit program controls discharges.
- Point sources are discrete conveyances such as pipes or man-made ditches.
 - Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need a NPDES permit;
 - Industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters.”¹⁹⁹

Safe Drinking Water Act

¹⁹⁴ California Department of Water Resources. Draft California’s Groundwater Bulletin 118. 2020. Accessed January 2023 at: <https://water.ca.gov/Programs/Groundwater-Management/Bulletin-118>.

¹⁹⁵ United States Geological Survey (USGS). National Map Viewer. Accessed August 2022 at: [The National Map Viewer | U.S. Geological Survey \(usgs.gov\)](#)

¹⁹⁶ Tulare County General Plan 2030 Update. Recirculated Draft Environmental Impact Report. Page 3.6-28. Accessed January 2023 at: <http://generalplan.co.tulare.ca.us/documents/generalplan2010/RecirculatedDraftEIR.pdf>

¹⁹⁴ California Department Of Water Resources. California’s Groundwater Bulletin 118. Tulare Lake Hydrologic Region. San Joaquin Valley Groundwater Basin. Site. Pages 3.9-18. Accessed January 2023 at: http://www.water.ca.gov/pubs/groundwater/bulletin_118/basindescriptions/5-22.11.pdf.

¹⁹⁸ Ibid.

¹⁹⁹ U.S. EPA. Summary of the Clean Water Act. Accessed January 2023 at: <https://www.epa.gov/laws-regulations/summary-clean-water-act>

“The Safe Drinking Water Act (SDWA) is the main federal law that ensures the quality of Americans' drinking water. Under SDWA, EPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards... SDWA was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires many actions to protect drinking water and its sources: rivers, lakes, reservoirs, springs, and ground water wells. (SDWA does not regulate private wells which serve fewer than 25 individuals.)”²⁰⁰

The National Flood Insurance Act (1968) makes available federally subsidized flood insurance to owners of flood-prone properties. To facilitate identifying areas with flood potential, Federal Emergency Management Agency (FEMA) has developed Flood Insurance Rate Maps (FIRM) that can be used for planning purposes.

Environmental Protection Agency

The mission of EPA is to protect human health and the environment.

EPA's purpose is to ensure that:

- all Americans are protected from significant risks to human health and the environment where they live, learn and work;
- national efforts to reduce environmental risk are based on the best available scientific information;
- federal laws protecting human health and the environment are enforced fairly and effectively;
- environmental protection is an integral consideration in U.S. policies concerning natural resources, human health, economic growth, energy, transportation, agriculture, industry, and international trade, and these factors are similarly considered in establishing environmental policy;
- all parts of society -- communities, individuals, businesses, and state, local and tribal governments -- have access to accurate information sufficient to effectively participate in managing human health and environmental risks;
- environmental protection contributes to making our communities and ecosystems diverse, sustainable and economically productive; and
- the United States plays a leadership role in working with other nations to protect the global environment.”²⁰¹

United States Army Corps of Engineers

“The Department of the Army Regulatory Program is one of the oldest in the Federal Government. Initially it served a fairly simple, straightforward purpose: to protect and maintain the navigable capacity of the nation's waters. Time, changing public needs, evolving policy, case law, and new statutory mandates have changed the complexion of the program, adding to its breadth, complexity, and authority.

The Regulatory Program is committed to protecting the Nation's aquatic resources, while allowing reasonable development through fair, flexible and balanced permit decisions. The Corps evaluates permit applications for essentially all construction activities that occur in the Nation's waters, including wetlands.”²⁰²

State

The Porter-Cologne Water Quality Control Act

“The Porter-Cologne Act is the principal law governing water quality regulation in California. It establishes a comprehensive program to protect water quality and the beneficial uses of water. The Porter-Cologne Act applies to surface waters, wetlands, and ground water and to both point and nonpoint sources of pollution. Pursuant to the Porter-Cologne Act (California Water Code section 13000 et seq.), the policy of the State is as follows:

- That the quality of all the waters of the State shall be protected,
- That all activities and factors affecting the quality of water shall be regulated to attain the highest water quality within reason, and
- That the State must be prepared to exercise its full power and jurisdiction to protect the quality of water in the State from degradation.

²⁰⁰ United States Environmental Protection Agency (US EPA or EPA). EPA Drinking Water Requirements for States and Public Water System Drinking Water Regulations. Accessed January 2023 at: <http://water.epa.gov/lawsregs/rulesregs/sdwa/index.cfm>.

²⁰¹ US EPA Website. Our Mission and What We Do. Accessed January 2023 at: <https://www.epa.gov/aboutepa/our-mission-and-what-we-do>

²⁰² U.S. Army Corps of Engineers. Accessed January 2023 at: <http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits.aspx>.

The Porter-Cologne Act established nine Regional Water Boards (based on hydrogeologic barriers) and the State Water Board, which are charged with implementing its provisions and which have primary responsibility for protecting water quality in California. The State Water Board provides program guidance and oversight, allocates funds, and reviews Regional Water Boards decisions. In addition, the State Water Board allocates rights to the use of surface water. The Regional Water Boards have primary responsibility for individual permitting, inspection, and enforcement actions within each of nine hydrologic regions.”²⁰³

State Water Resources Control Board

The State Water Resources Control Board (the State Water Board) was created by the Legislature in 1967. The mission of the Water Board is to ensure the highest reasonable quality for waters of the State, while allocating those waters to achieve the optimum balance of beneficial uses. The joint authority of water allocation and water quality protection enables the Water Board to provide comprehensive protection for California's waters.

The Water Board consists of five full-time salaried Members, each filling a different specialty position. Each board member is appointed to a four-year term by the Governor and confirmed by the Senate.

There are nine Regional Water Quality Control Boards (Regional Boards). The mission of the Regional Boards is to develop and enforce water quality objectives and implementation plans that will best protect the beneficial uses of the State's waters, recognizing local differences in climate, topography, geology and hydrology.

Each Regional Board has seven part-time Members also appointed by the Governor and confirmed by the Senate. Regional Boards develop “basin plans” for their hydrologic areas, govern requirements/issue waste discharge permits, take enforcement action against violators, and monitor water quality. The task of protecting and enforcing the many uses of water, including the needs of industry, agriculture, municipal districts, and the environment is an ongoing challenge for the Water Board and Regional Boards.²⁰⁴

California Department of Water Resources

“This Department’s primary mission is to manage the water resources of California in cooperation with other agencies, to benefit the State's people, and to protect, restore, and enhance the natural and human environments.” Other goals contained in the Update 2018 California Water Plan include:

- Goal 1 - Improve Integrated Watershed Management: California’s vision of sustainable water management relies on the continued support of innovative and inclusive integrated water management strategies. Healthy watersheds, headwaters, aquifers, and working landscapes provide critical water supply and ecosystem services.
- Goal 2 - Strengthen Resiliency and Operational Flexibility of Existing and Future Infrastructure: Water managers must make plans to address aging infrastructure and impacts associated with climate change, population growth, ecosystem stressors, and funding constraints.
- Goal 3 - Restore Critical Ecosystem Functions California is one of the world’s great biodiversity hotspots. Anthropogenic influence — water management included — has impacts on natural resources; and environmental protections for many species has impacts on water management.
- Goal 4 - Empower California’s Under-Represented or Vulnerable Communities: Equitable water management means reliable, affordable, and safe water supplies and management for all Californians.
- Goal 5 - Improve Inter-Agency Alignment and Address Persistent Regulatory Challenges: Improved alignment and communication will more effectively deliver public benefits. Strengthening links between regulation and strategic planning, as well as utilizing restoration management on an ecosystem scale, will help balance environmental needs and human activities over the long term.
- Goal 6 - Support Real-Time Decision-Making, Adaptive Management, and Long-Term Planning Effective water management requires access to data and information necessary to understand current conditions, historic challenges, and future challenges. It also requires stable funding sufficient to support State and local sustainability goals.²⁰⁵

²⁰³ California Water Boards. State Laws Porter-Cologne Act. Accessed January 2023 at: https://www.waterboards.ca.gov/water_issues/programs/nps/encyclopedia/0a_laws_policy.html.

²⁰⁴ State of California Water Boards. Water Boards’ Structure. Accessed January 2023 at: https://www.waterboards.ca.gov/about_us/water_boards_structure/mission.html

²⁰⁵ California Department of Water Resources: California Water Plan Update 2018. Managing Water Resources for Sustainability. June 2019. Pages 3-2 through 3-6. Accessed January 2023 at: <https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/California-Water-Plan/Docs/Update2018/Final/California-Water-Plan-Update-2018.pdf#page=4>.

“On September 16, 2014, Governor Jerry Brown signed into law a three-bill legislative package, composed of AB 1739 (Dickinson), SB 1168 (Pavley), and SB 1319 (Pavley), collectively known as the Sustainable Groundwater Management Act (SGMA). For the first time in its history, California has a framework for sustainable, groundwater management - “management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results.”

SGMA requires governments and water agencies of high and medium priority basins to halt overdraft and bring groundwater basins into balanced levels of pumping and recharge. Under SGMA, these basins should reach sustainability within 20 years of implementing their sustainability plans. For critically over-drafted basins, that will be 2040. For the remaining high and medium priority basins, 2042 is the deadline.”²⁰⁶

Regional Water Quality Board

“There are nine Regional Water Quality Control Boards (Regional Boards). The mission of the Regional Boards is to develop and enforce water quality objectives and implementation plans that will best protect the State's waters, recognizing local differences in climate, topography, geology and hydrology. Each Regional Board has seven part-time members appointed by the Governor and confirmed by the Senate. Regional Boards develop “basin plans” for their hydrologic areas, issue waste discharge requirements, take enforcement action against violators, and monitor water quality.”²⁰⁷

“The primary duty of the Regional Board is to protect the quality of the waters within the Region for all beneficial uses. This duty is implemented by formulating and adopting water quality plans for specific ground or surface water basins and by prescribing and enforcing requirements on all agricultural, domestic and industrial waste discharges. Specific responsibilities and procedures of the Regional Boards and the State Water Resources Control Board are contained in the Porter-Cologne Water Quality Control Act.”²⁰⁸

California Water Boards Central Valley - R5

The California Water Boards Central Valley – R5 (Region 5) defines their missions as, “To preserve, enhance, and restore the quality of California's water resources and drinking water for the protection of the environment, public health, and all beneficial uses, and to ensure proper water resource allocation and efficient use, for the benefit of present and future generations.”²⁰⁹ In addition, the CA Water Boards Central Valley – R5 indicates their Duty as, “The primary duty of the Regional Board is to protect the quality of the waters within the Region for all beneficial uses. This duty is implemented by formulating and adopting water quality plans for specific ground or surface water basins and by prescribing and enforcing requirements on all agricultural, domestic and industrial waste discharges. Specific responsibilities and procedures of the Regional Boards and the State Water Resources Control Board are contained in the [Porter-Cologne Water Quality Control Act](#).”²¹⁰

The Central Valley Regional Water Quality Control Board (RWQCB) administers the NPDES storm water-permitting program in the Central Valley region. Construction activities on one acre or more are subject to the permitting requirements of the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction Permit). The General Construction Permit requires preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The plan will include specifications for Best Management Practices (BMPs) that will be implemented during proposed Project construction to control degradation of surface water by preventing the potential erosion of sediments or discharge of pollutants from the construction area. The General Construction Permit program was established by the RWQCB for the specific purpose of reducing impacts to surface waters that may occur due to construction activities. BMPs have been established by the RWQCB in the California Storm Water Best Management Practice Handbook (2003), and are recognized as effectively reducing degradation of surface waters to an acceptable level. Additionally, the SWPPP will describe measures to prevent or control runoff degradation after construction is complete, and identify a plan to inspect and maintain these facilities or project elements.

²⁰⁶ State of California Department of Water Resources. SGMA Groundwater Management. Accessed January 2023 at: <https://water.ca.gov/Programs/Groundwater-Management/SGMA-Groundwater-Management>

²⁰⁷ Ibid.

²⁰⁸ Central Valley Water Quality Control Board. Accessed January 2023 at: http://www.swrcb.ca.gov/centralvalley/about_us/.

²⁰⁹ The California Water Boards. Central Valley – R5. Accessed January 2023 at: https://www.waterboards.ca.gov/centralvalley/about_us/

²¹⁰ Ibid.

SB 610 (Costa) & SB 221 (Kuehl) 2001

“Senate Bills 610 (Chapter 643, Statutes of 2001) and Senate Bill 221 (Chapter 642, Statutes of 2001) amended state law, effective January 1, 2002, to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 and SB 221 are companion measures which seek to promote more collaborative planning between local water suppliers and cities and counties. Both statutes require detailed information regarding water availability to be provided to the city and county decision-makers prior to approval of specified large development projects. Both statutes also require this detailed information be included in the administrative record that serves as the evidentiary basis for an approval action by the city or county on such projects. Both measures recognize local control and decision making regarding the availability of water for projects and the approval of projects.

Under SB 610, water assessments must be furnished to local governments for inclusion in any environmental documentation for certain projects (as defined in Water Code 10912 [a]) subject to the California Environmental Quality Act. Under SB 221, approval by a city or county of certain residential subdivisions requires an affirmative written verification of sufficient water supply.”²¹¹

Local

Tulare County Environmental Health Division

“The mission of the Division of Environmental Health is to enhance the quality of life in Tulare County through implementation of environmental health programs that protect public health and safety as well as the environment. We accomplish this goal by overseeing and enforcing numerous different programs, from food facility inspections to hazardous waste. All of our inspectors are licensed and/or certified in the field that they practice in and participate in continuing education to maintain licensure.”²¹² “Tulare County Environmental Health permits and regulates State Small Water Systems, which serve drinking water to between 5 and 14 service connections, and no more than an average of 25 persons no more than 60 days out of the year. There are currently 42 of these systems, throughout Tulare County, which serve about 314 connections and approximately 640 people. These systems are inspected by Tulare County Environmental Health, and are required to routinely monitor their water quality.”²¹³ This division requires water quality testing of public water systems. Any project that involves septic tanks and water wells within Tulare County is subject to approval by this agency. All recommendations provided by this division will be added as mitigation measures to ensure reduction of environmental impacts.

Tulare County General Plan 2030 Update

The Tulare County General Plan 2030 Update has a number of policies that apply to projects within Tulare County. General Plan policies that relate to the proposed Project are listed: *AG-1.10 Extension of Infrastructure into Agricultural Areas* - The County shall oppose extension of urban services, such as sewer lines, water lines, or other urban infrastructure, into areas designated for agriculture use unless necessary to resolve a public health situation. Where necessary to address a public health issue, services should be located in public rights-of-way in order to prevent interference with agricultural operations and to provide ease of access for operation and maintenance. Service capacity and length of lines should be designed to prevent the conversion of agricultural lands into urban/suburban uses; *HS-4.4 Contamination Prevention* wherein the County shall review new development proposals to protect soils, air quality, surface water, and groundwater from hazardous materials contamination; *HS-5.1 Development Compliance with Federal, State, and Local Regulations* wherein the County shall ensure that all development within the designated floodway or floodplain zones conforms to FEMA regulations and the Tulare County Flood Damage Prevention Ordinance. New development and divisions of land, especially residential subdivisions, shall be developed to minimize flood risk to structures, infrastructure, and ensure safe access and evacuation during flood conditions; *HS-5.4 WR-1.1 Groundwater Withdrawal* wherein the County shall cooperate with water agencies and management agencies during land development processes to help promote an adequate, safe, and economically viable groundwater supply for existing and future development within the County. These actions shall be intended to help the County mitigate the potential impact on ground water resources identified during planning and approval processes; *WR-1.5 Expand Use of Reclaimed Wastewater* to augment groundwater supplies and to conserve potable water for domestic purposes, the County shall seek opportunities to expand

²¹¹ California Department of Water Resources. Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001 to assist water suppliers, cities, and counties in integrating water and land use planning. Page iii. Accessed January 2023 at: <https://cawaterlibrary.net/wp-content/uploads/2017/06/guidebook.pdf>

²¹² Tulare County Environmental Health Division. Who Are We. Accessed January 2023 at: <https://tularecountyeh.org/eh/about-us/who-are-we/>

²¹³ Ibid. Water Systems Program. Accessed January 2023 at: <https://tularecountyeh.org/eh/our-services/water-systems-program/>

groundwater recharge efforts; *WR-1.6 Expand Use of Reclaimed Water* wherein the County shall encourage the use of tertiary treated wastewater and household gray water for irrigation of agricultural lands, recreation and open space areas, and large landscaped areas as a means of reducing demand for groundwater resources; *WR-2.1 Protect Water Quality* wherein the all major land use and development plans shall be evaluated as to their potential to create surface and groundwater contamination hazards from point and non-point sources. The County shall confer with other appropriate agencies, as necessary, to assure adequate water quality review to prevent soil erosion; direct discharge of potentially harmful substances; ground leaching from storage of raw materials, petroleum products, or wastes; floating debris; and runoff from the site; *WR-2.2 National Pollutant Discharge Elimination System (NPDES) Enforcement* wherein the County shall continue to support the State in monitoring and enforcing provisions to control non-point source water pollution contained in the U.S. EPA NPDES program as implemented by the Water Quality Control Board; *WR-2.3 Best Management Practices (BMPs)*; wherein the County shall continue to require the use of feasible BMPs and other mitigation measures designed to protect surface water and groundwater from the adverse effects of construction activities, agricultural operations requiring a County Permit and urban runoff in coordination with the Water Quality Control Board; *WR-2.4 Construction Site Sediment Control*; wherein the County shall continue to enforce provisions to control erosion and sediment from construction sites; *WR-2.8 Point Source Control* wherein the County shall work with the Regional Water Quality Control Board to ensure that all point source pollutants are adequately mitigated (as part of the California Environmental Quality Act review and project approval process) and monitored to ensure long-term compliance; *WR-3.3 Adequate Water Availability* wherein the County shall review new development proposals to ensure the intensity and timing of growth will be consistent with the availability of adequate water supplies. Projects must submit a Will-Serve letter as part of the application process, and provide evidence of adequate and sustainable water availability prior to approval of the tentative map or other urban development entitlement; *WR-3.6 Water Use Efficiency* wherein the County shall support educational programs targeted at reducing water consumption and enhancing groundwater recharge; *WR-1.5 Expand Use of Reclaimed Wastewater* - To augment groundwater supplies and to conserve potable water for domestic purposes, the County shall seek opportunities to expand groundwater recharge efforts; *PFS-1.8 Funding for Service Providers* - The County shall encourage special districts, including community service districts and public utility districts to:

1. Institute impact fees and assessment districts to finance improvements,
2. Take on additional responsibilities for services and facilities within their jurisdictional boundaries up to the full extent allowed under State law, and
3. Investigate feasibility of consolidating services with other districts and annexing systems in proximity to promote economies of scale, such as annexation to city systems and regional wastewater treatment systems;

PFS-1.13 Municipal Service Reviews (MSRs) - The County shall use MSRs adopted by LAFCo and Urban Water Management Plans, as tools to assess the capacity, condition, and financing of various public utility services provided by special districts and cities, most commonly, domestic water and sanitary sewer ;*PFS-3.3 New Development Requirements* - The County shall require all new development, within UDBs, UABs, Community Plans, Hamlet Plans, Planned Communities, Corridor Areas, Area Plans, existing wastewater district service areas, or zones of benefit, to connect to the wastewater system, where such systems exist. The County may grant exceptions in extraordinary circumstances, but in these cases, the new development shall be required to connect to the wastewater system when service becomes readily available; *PFS-3.7 Financing* - The County shall cooperate with special districts when applying for State and federal funding for major wastewater related expansions/upgrades when such plans promote the efficient solution to wastewater treatment needs for the area and County; *FGMP-8.4 Development of Wastewater Systems* - The County shall ensure that new wastewater systems meet the standards of the Regional Water Quality Control Board and Tulare County Health & Human Services; and *FGMP-9.2 Provision of Adequate Infrastructure* - The County shall require evidence, prior to project approval, which (1) describes a safe and reliable method of wastewater treatment and disposal; and (2) substantiates an adequate water supply for domestic and fire protection purposes.

Project Impact Analysis:

- a) **Less Than Significant Impact:** As previously noted, the proposed Project is construction of a new wastewater collection system and pipeline inter-tie Project to serve the unincorporated community of Matheny Tract with connection to the City of Tulare DWWTP. The proposed Project would result in the installation of underground pipelines that would not result in increased runoff. The pipelines would be constructed within existing road rights-of-way which typically collect stormwater runoff from the roadways. No chemicals would be used in the construction or operation of the pipelines that could be discharged into surface water; therefore, no impact would occur to surface water (i.e., stormwater) quality. The proposed wastewater pipelines would not require the construction of a new well. Minimal water may be used during construction phases for dust suppression. No chemicals will be used in the construction or operation of the pipelines that could be discharged into ground water; therefore, no impact would occur to ground water quality. As such, the proposed Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality and would result in a less than significant impact to this resource.

- b) **Less Than Significant Impact:** As previously noted, the proposed Project is construction of a new wastewater collection system and pipeline inter-tie Project to serve the unincorporated community of Matheny Tract with connection to the City of Tulare DWWTP. The proposed Project would not require the construction of a new well. “The Matheny Tract’s water supply is provided by Pratt Mutual Water Company [PVMC]. PVMC is classified as a community water system and serves a population of 1,212 people. PVMC provides water through two wells on a closed-loop system; the system provides both domestic and fire suppression supplies. The water system is served solely by groundwater.”²¹⁴ As a result of this Project, the rate/usage of water currently used for septic systems is not anticipated to change; rather, the wastewater discharge will be directed to the wastewater collection system ultimately reaching the City of Tulare Waste Water Treatment Plant (WWTP). Also, minimal water may be used during construction phases for dust suppression. Therefore, Project-specific impacts would be less than significant.
- c) **No Impact:** As previously noted, the proposed Project is construction of a new wastewater collection system to serve the unincorporated community of Matheny Tract and a pipeline to convey the wastewater to the City of Tulare DWWTP which could result in an impact to the following:
- i) *Erosion and Siltation:* The proposed underground pipelines would not result in increased runoff. The pipelines would be constructed within existing road rights-of-way which are highly disturbed and typically collect stormwater runoff from the roadways. Following construction-related activities, the trenches would be backfilled and restored to roadways and gravel roadway shoulders. Therefore, the Project would not alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.
 - ii) *Runoff and Flooding:* The proposed underground pipelines would not result in increased runoff. The pipelines would be constructed within existing road rights-of-way which are highly disturbed and typically collect stormwater runoff from the roadways. Following construction-related activities, the trenches would be backfilled and restored to roadways and gravel roadway shoulders. Therefore, the Project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site. Therefore, there would be less than significant.
 - iii) *Drainage Systems and Polluted Runoff:* See Items 10 c) i) and ii). The proposed Project will not connect to any existing or planned stormwater drainage system, as such it will not provide any additional sources of polluted runoff. As noted earlier, the very nature of the proposed Project (wastewater collection system and inter-tie pipeline) does not lend itself as a contributor of polluted runoff. Therefore, the proposed Project would result in no impact to this resource. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, and as such, would result in no impact.
 - iv) *Impede or Redirect Flood Flows:* See items 10 c) ii) and iii). In addition, no streams or water features (other than the Cameron Creek, north of and outside of the proposed Project boundary) are within the proposed Project vicinity that would be altered by the improvements associated with the proposed Project. The proposed Project would not alter the surface area of the area where the wastewater collection system or pipeline will be located. As such, the proposed Project would not impede or redirect flood flows. Therefore, there will be no impact to this resource.
- d) **No Impact:** As noted earlier, the proposed Project is not subject to flooding and does not lie within a flood zone per the Federal Emergency Management Agency FIRM map (Panels 06107C1275E and 06107126E). Due to the nature of the proposed Project (that is, a wastewater collection system and pipeline inter-tie) is not anticipated to result in the additional exposure of persons or structures to risks associated with inundation. The proposed Project is not located on or near any areas that would result in or be impact by a flood hazard, tsunami, or seiche zones, that would result in a risk release of pollutants due to project inundation. Moreover, the proposed Project site is not exposed to or near any river, reservoirs, pond, or lake subject to seiches from earthquake activity; and it is approximately 100 miles east of the nearest coastline that would be subject to tsunami. Therefore, there would be no impact from potential inundation in a flood hazard, tsunami, or seiche zones.
- e) **No Impact:** As indicated earlier in Impact 10-a), the proposed Project would not violate any water quality standards or waste discharge requirements; or otherwise substantially degrade surface or groundwater quality; and would not conflict

²¹⁴ Matheny Tract Wastewater Collection System Project EIR. Project Feasibility Report, Matheny Tract Wastewater System, Tulare County, California 2016. Page 9. (Included in Appendix “D” of the EIR.)

with or obstruct a water quality control plan. As indicated in 10-b) the proposed Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that project may impede sustainable groundwater management of the basin. Therefore, based on the analysis above, the proposed wastewater collection system and pipeline inter-tie project would result in no impact related to this Checklist Item.

Cumulative Impact Analysis: Less Than Significant Impact: The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, Tulare County General Plan 2030 Update EIR, and Matheny Wastewater Collection System DEIR and REIR. As there are no Project-specific impacts resulting from proposed Project development, no cumulative impacts are anticipated. Additionally, the County has available surface water storage facilities to allow for future recharge areas should they be required. As noted earlier, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary referred to as the wastewater collection system and pipeline inter-tie Project). The proposed Project site consists mainly of existing rural and semi-rural paved roads and existing road rights-of-way. The pipelines would be trenched in the existing rights-of-way that generally consist of gravel road shoulders (which is typical of roadways in the area). Occasionally, pipelines would require trenching beneath paved roadways to connect to other pipeline infrastructure, as is the case with the inter-tie with existing Tulare wastewater treatment plant pipeline at the intersection of Avenue 216 (Paige Avenue) and Road 96 (Pratt Street). Compliance with Regional Water Quality Control Board, City of Tulare, and County of Tulare drainage, storm runoff, flooding, etc. requirements, as applicable would result in no impact to these resources.

XI. LAND USE AND PLANNING

Would the project:	SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT IMPACT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Land Use and Planning, etc. contained in the Tulare County General Plan 2030 Update, Tulare County General Plan 2030 Update Environmental Impact Report, and Matheny Wastewater Collection System DEIR and REIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Environmental Setting

As noted earlier, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary referred to as the wastewater collection system and pipeline inter-tie Project). The proposed Project site consists mainly of existing rural and semi-rural paved roads and existing road rights-of-way. The pipelines would be trenched in the existing rights-of-way that generally consist of gravel road shoulders (which is typical of roadways in the area). Occasionally, pipelines would require trenching beneath paved roadways to connect to other pipeline infrastructure, as is the case with the inter-tie with existing Tulare wastewater treatment plant pipeline at the intersection of Avenue 216 (Paige Avenue) and Road 96 (Pratt Street).

Matheny Tract directly abuts the City of Tulare city limit line and lies generally south of Paige Avenue (Avenue 216), east of Pratt Street (Road 96) and west of “I” Drive and State Route 99. Matheny Tract is located just west of industrial land uses and a Union Pacific Railroad line running through Tulare County. Physically, the Community of Matheny Tract is divided by agricultural fields and an irrigation canal that separate approximately 256 households in North Matheny from 80 households in South Matheny. The Matheny Tract Community is predominantly surrounded by agricultural land.

Overall, Matheny Tract is primarily a bedroom community with a majority of land uses consisting of single-family detached residential units. Matheny Tract has paved roads which provide adequate circulation access to all areas of the community. Matheny Tract’s vehicular traffic is controlled via 4-way or 3-way stop signs at key intersections. As an unincorporated community, Matheny Tract is predominantly residential, neighborhood commercial, religious establishments, and limited industrial areas similar to the type of land uses found in incorporated places within Tulare County. Matheny Tracts consists mainly of single-family homes fronting on existing paved County road rights-of-way with dirt shoulders (i.e.; without curb and gutter) with surrounding land uses in the agricultural production. Similarly, surrounding areas are served by semi-rural paved, two-lane roads with rough-graded, unpaved, gravel shoulders. All proposed pipelines would be installed within existing County rights-of-way. Occasionally, pipelines would require trenching across paved roadways to connect to other components of the pipeline infrastructure, as is the case with the inter-tie with the existing City of Tulare wastewater treatment plant main pipeline at the intersection of Paige Avenue (Avenue 216) and Pratt Street (Road 96). At least one lift station (or other appurtenant structures) will be necessary for the project; final engineering and design would determine a surface or subsurface location.

As described in the *Project Feasibility Report, Matheny Tract Wastewater System, Tulare County, California 2016*. (Feasibility Report or Report), “Matheny Tract is a community primarily comprised of rural residential properties with single-family dwelling units. The area has paved roads which are owned and maintained by the County of Tulare and provide sufficient circulation throughout the community. The County of Tulare is the agency that determines property land use and zoning; however, the area is also considered in the City of Tulare’s General Plan.”²¹⁵

²¹⁵ Final Project Feasibility Report Matheny Tract Wastewater System Tulare County, California. Page 5. Prepared by Provost & Pritchard Consulting Group February 2016

Existing land uses in Tulare County have been organized into generalized categories that are summarized on Table 11-1. These lands total 3,930 square miles or approximately 81 percent of Tulare County. Open space, which includes wilderness, national forests, monuments and parks, and county parks, encompass 1,230 square miles, or approximately 25 percent of the County. Agricultural uses total over 2,150 square miles or about 44 percent of the entire county. Incorporated cities in Tulare County capture less than three percent of the entire County.

Table 11-1		
County of Tulare Summary of Assessed Land by Generalized Use Categories²¹⁶		
Generalized Land Use Category	Sq. Miles¹	%²
Residential	110	2
Commercial	10	<1%
Industrial	10	<1%
Agriculture	2,150	44
Public (including airports, charitable organizations, churches, fraternal organizations, government owned land, hospitals and rest homes, institutional facilities, rehab facilities and schools)	420	9
Open Space (including national forests and parks, timber preserves)	1,230	25
Classified Subtotal	3,930	81
Unclassified (includes streets and highways, rivers, canals, etc.)	780	16
Unincorporated County Subtotal	4,710	97
Incorporated Cities	130	3
Total County	4,840	100
<i>1 One square mile = 640 acres.</i>		
<i>2 Percent reflect those estimated for the total land area of the County and may not equal 100 due to rounding.</i>		

Existing Project Area Conditions

Tulare County Urban Development Boundaries

“Urban Development Boundaries (UDB) is a development boundary drawn around cities and unincorporated communities. For cities, the UDB is an officially adopted and mapped County line delineating the area expected for urban growth over a 20-year period. The UDB is located outside of the city limits but within the Urban Area Boundary (UABs). UABs are described below. For the unincorporated communities, the UDB is a County adopted line that divides land to be developed from land to be protected for agricultural, natural, or rural uses. The area within the UDB serves as the official planning area for communities over a 20 year period. The General Plan 2030 Update assumes that a majority of future growth will occur within the [County Adopted City Urban Development Boundaries] (CACUDBs) for the County’s cities and communities.”²¹⁷

Tulare County Urban Area Boundaries

“Urban Area Boundaries (UAB) are officially adopted and illustrated by a boundary diagram showing the County lines around incorporated cities. An UAB is located outside of the UDB and the incorporated city limits. The UABs establish areas around incorporated cities where the County and cities may coordinate plans, policies, and standards relating to building construction, parcel mapping, subdivision development, land use and zoning regulations, street and highway construction, public utility systems, and other closely related matters affecting the orderly development of incorporated city urban fringe areas. The area between the UDB and the UAB is considered to be the next logical area in which urban development may occur. Although it is the intent of the General Plan that this area will at some time become appropriate for urban development, generally no public purpose is served by permitting intensive development therein. As cities grow and expand, it is logical to assume the UDBs will be correspondingly expanded or established until they coincide with the UAB. The land lying between the UDB and the UAB is typically designated as rural residential, agriculture, and may include existing grandfathered land uses.”²¹⁸

The Tulare County General Plan identifies the unincorporated community of Matheny Tract as within the Urban Area Boundary (UAB) of the City of Tulare. “A UAB is considered as the next logical area of expansion beyond was defined as the

²¹⁶ Tulare County General Plan 2030 Update. Background Report. Page 3-53.

²¹⁷ Tulare County General Plan 2030 Update Recirculated Draft EIR. Page 2-17. Available at: [http://generalplan.co.tulare.ca.us/documents/GP/002Board%20of%20Supervisors%20Materials/002Resolution%20No.%202012-0696%20\(FEIR\)/002Exhibit%201.%20FEIR%20Exec.%20Summary%20&%20Chap%201-6/Recirculated%20Draft%20EIR.pdf](http://generalplan.co.tulare.ca.us/documents/GP/002Board%20of%20Supervisors%20Materials/002Resolution%20No.%202012-0696%20(FEIR)/002Exhibit%201.%20FEIR%20Exec.%20Summary%20&%20Chap%201-6/Recirculated%20Draft%20EIR.pdf)

²¹⁸ Ibid. 2-18.

ultimate growth boundary for each city or community.”²¹⁹ “The UAB establishes 20-year ultimate growth boundary within which the County and community may coordinate plans and policies relating to land development, street and highway construction, public utility systems, and future right-of-way preservation for orderly development.”²²⁰ “Allowable land use types within UABs generally include: Valley Agriculture, Resource Conservation, and Rural Residential.”²²¹ This project is not intended to accommodate new development; rather, it is an effort to provide an already established community with a wastewater collection system with ultimate connection to the City of Tulare’s WWTP via a main line along Pratt Street (Road 96).

City of Tulare

As defined in the City of Tulare General Plan 2035; “The UDB is identified in response to the requirements of the Tulare County Local Agency Formation Commission and identifies the amount of land needed to accommodate a 20-year development horizon.”²²² As shown in the City’s General Plan (Figure 2-1 Unincorporated Communities Around Tulare, page 2-8 of the City’s General Plan), Matheny Tract is outside of both the City’s Limit and 2035 UBD; but within the City’s Sphere of Influence (SOI) and also shown as a Disadvantage Community²²³. The City’s General Plan also include Figure 2-2 (2035 General Plan Land Use Map) which shows the City’s land use pattern, City Limit, and 2035 Urban Development Boundary.²²⁴ Note the Light Industrial land use designation north of North Matheny (immediately adjacent to the existing northernmost residential development) and Heavy Industrial land use designation east and southeast of the existing east/southeast residential development.

The proposed connection to the City of Tulare’s WWTP is consistent with the City’s General Plan Policy LU-P2.8 Regional Cooperation, to wit; “The City shall maintain a cooperative relationship with other local governments (i.e. Tulare County, the City of Visalia) to address regional issues and opportunities related to growth, transportation, infrastructure, greenhouse gas emissions reductions, and other planning issues.”²²⁵

Also, as noted in the City of Tulare General Plan regarding wastewater service; “All of the disadvantaged and non-disadvantaged communities adjacent to the City of Tulare use individual septic systems to dispose of wastewater. The County of Tulare is currently working on a project, funded by a Proposition 84 planning grant, to connect the Matheny Tract to the City’s wastewater system.”²²⁶

Regulatory Setting

Federal

Federal regulations for land use are not relevant to the Project because it is not a federal undertaking (the Project site is not located on lands administered by a federal agency, and the project applicant is not requesting federal funding or a federal permit).

State

The Project is being evaluated pursuant to CEQA; however, there are no state regulations, plans, programs, or guidelines associated with land use and planning that are applicable to the proposed Project.

Local

County of Tulare Land Agency Formation Commission (LAFCO) – Standards for the Formation of Special Districts

Tulare County LAFCO, Policy and Procedure Manual, Section C - Policy and Procedures for Reviewing Proposals, §1.7 Standards for Formation of Special Districts sets forth procedure for establishing and revising local government boundaries. The

²¹⁹ Op. Cit.

²²⁰ Op. Cit.

²²¹ Op. Cit.

²²² City of Tulare General Plan 2035. Page 2-5. Accessed January 2023 at: <https://www.tulare.ca.gov/home/showpublisheddocument/2393/635907185852000000>

²²³ Ibid. 2-8.

²²⁴ Op. Cit. 2-13.

²²⁵ Op. Cit. 2-26.

²²⁶ Op. Cit. 2-10.

range of procedures includes judicial approval, special state legislation, and the use of “boundary commissions” local required for creation of new special districts. The following criteria are included in § “1.7 Standards for the Formation of Special Districts:

- A. There is a demonstrated need for services or controls that can be provided by a special district.
- B. There is no alternative that would provide for the required service in a more reasonable manner.
- C. There will be sufficient revenue to adequately finance the required services or controls.
- D. The proposal does not represent a conflict with the reasonable and logical expansion of adjacent governmental agencies.
- E. The boundary configurations will not create or result in areas difficult to serve.
- F. The boundaries of the proposed formation must be definite and certain and must conform to lines of assessment whenever possible.
- G. The boundaries must not conflict with boundaries of other public agencies possessing the same powers unless properly justified.”²²⁷

The proposed Project would not require formation of a special district as the objective is to connect with the City of Tulare’s wastewater treatment plant via a main pipeline to the City’s existing wastewater collection system.

Tulare County Association of Governments

“[The Tulare County Association of Governments] TCAG is committed to improving the quality of life for residents and visitors throughout Tulare County. We prove our commitment by addressing congestion using a preventative approach. We coordinate regional transit programs to make getting around easy and convenient. We have improved air quality and strive to continue to meet national standards. We responsibly use the extra hard earned tax dollars that the people of Tulare County bring in to us from the passage of Measure R under the supervision of the board and citizen’s review committee. We address current and future rail needs and possibilities with a forward thinking approach. We gather important data which is used by the census and the public to properly forecast housing and transit needs. We also manage the abandoned vehicle program for the county, and do a whole lot more.”²²⁸.

Tulare County General Plan 2030 Update

The General Plan contains the following policies aimed at reducing potential land use conflicts, promoting an efficient urban form, and ensuring consistency with local land use and environmental plans. General Plan policies that relate to the proposed Project are listed as follows: *PF-6.4 UDBs and Interagency Coordination* - The County shall use UDBs to provide a definition of an urban area for other planning programs, such as:

1. The area within the UDB should be considered as the same area for which water and sewer system planning may be needed and to be a consideration in the determination of an area required to adequately assess the availability and sufficiency of water supplies.
2. UDBs should be used to define traffic analysis zones in the Regional Transportation Plan program.
3. The UDBs shall be used to provide a framework for inventories on growth and development, as well as socio-economic data;

AG-1.10 Extension of Infrastructure into Agricultural Areas - The County shall oppose extension of urban services, such as sewer lines, water lines, or other urban infrastructure, into areas designated for agriculture use unless necessary to resolve a public health situation. Where necessary to address a public health issue, services should be located in public rights-of-way in order to prevent interference with agricultural operations and to provide ease of access for operation and maintenance. Service capacity and length of lines should be designed to prevent the conversion of agricultural lands into urban/suburban uses.; *WR-2.2 National Pollutant Discharge Elimination System (NPDES) Enforcement* - The County shall continue to support the State in monitoring and enforcing provisions to control non-point source water pollution contained in the U.S. EPA NPDES program as implemented by the Water Quality Control Board; *WR-2.4 Construction Site Sediment Control* - The County shall continue to enforce provisions to control erosion and sediment from construction sites; *WR-2.8 Point Source Control* - The County shall work with the Regional Water Quality Control Board to ensure that all point source pollutants are adequately mitigated (as part of the California Environmental Quality Act review and project approval process) and monitored to ensure long-term compliance; *PFS-1.5 Funding for Public Facilities* - The County shall implement programs and/or procedures to ensure that funding mechanisms necessary to adequately cover the costs related to planning, capital improvements, maintenance, and operations of necessary public facilities and services are in place, whether provided by the County or another entity; *PFS-3.4 Alternative Rural Wastewater Systems* - The County shall consider alternative rural wastewater systems for areas outside of

²²⁷ Tulare County Local Agency Formation Commission. Policy and Procedure Manual. Pages 35-36. Accessed January 2023 at: <https://lafco.co.tulare.ca.us/fees-and-policies/policy-and-procedures/>

²²⁸ Tulare County Association of Governments. About Us. Accessed January 2023 at: <https://tularecog.org/tcag/about-us/history-of-tcag/>

community UDBs and HDBs that do not have current systems or system capacity. For individual users, such systems include elevated leach fields, sand filtration systems, evapotranspiration beds, osmosis units, and holding tanks. For larger generators or groups of users, alternative systems, including communal septic tank/leach field systems, package treatment plants, lagoon systems, and land treatment, can be considered; and *PFS-3.5 Wastewater System Failures* - The County shall require landowners to repair failing septic tanks, leach field, and package systems that constitute a threat to water quality and public health or connect to an existing community system through applicable County and/or Regional Water Quality Control Board standards and requirements.

Tulare County Zoning

Of the 302 parcels included in this project, all but 17 are zoned R-A-M (Rural Residential, Special Mobil home Zone). Five (5) parcels are zoned AE-20 (Exclusive Agriculture Zone – 20 Acre Minimum); five (5) parcels are zoned R-2 (Two Family Residential Zone); one (1) parcel is zoned C-1 (Neighborhood Commercial Zone); two (2) parcels are zoned C-2-M (General Commercial, Special Mobil home Zone); and three (3) parcels are zoned C-2 (General Commercial Zone). Many Tracts consists of several Tulare County zone districts including: A-1 (Agriculture Zone), C-1 (Neighborhood Commercial), M-1 (Light Manufacturing), and R-A (Rural Residential Zone). Rural Residential is the largest zone district within the County designated Matheny Tract Urban Area Boundary (UAB). Lands outside the Matheny Tract UAB are identified as agricultural in nature within the County's jurisdiction to the west and south; and City of Tulare industrial zones to the north and east. Although Matheny Tract does not have a land use designation by the Rural Valley Lands Plan, the area outside Matheny Tract is designated Agricultural lands by the Tulare County General Plan Land Use Map and as light and heavy industrial by the City of Tulare General Plan Land Use Map. The preferred project would not result in any changes to zoning districts or land use designations as the objective is to connect with the City of Tulare's wastewater treatment plant via a main pipeline to the City's existing wastewater collection system.

As noted earlier, the potential connection to City of Tulare's WWTP is consistent with the City's General Plan Policy LU-P2.8 Regional Cooperation, to wit; "The City shall maintain a cooperative relationship with other local governments (i.e. Tulare County, the City of Visalia) to address regional issues and opportunities related to growth, transportation, infrastructure, greenhouse gas emissions reductions, and other planning issues."²²⁹

Project Impact Analysis:

- a) **Less Than Significant Impact:** As noted earlier, the proposed Project is essentially construction of underground wastewater pipelines that does not have the potential to physically divide an established community. The pipelines would be constructed within existing road rights-of-way which are highly disturbed and typically collect stormwater runoff from the roadways. The wastewater pipelines would be trenched in areas generally consisting of gravel road shoulders. Occasionally, pipelines would require trenching through paved roadways to connect to other components of the pipeline infrastructure, as is the case with the inter-tie with a new pipeline that would then convey wastewater to the existing domestic wastewater treatment plant (DWWTP) along Avenue 216 (Paige Avenue), West Avenue, and Levin Avenue Alignment. The trenches would be backfilled and restored to paved roadways and gravel roadway shoulders along each segment of roadway/shoulders as installation/construction of pipeline, lift station(s), or other subsurface appurtenances is completed. As such the proposed Project would result in a less than significant Project-specific impact related to this Checklist Item.
- b) **Less Than Significant Impact:** As indicated in Tulare County General Plan Policy **AG-1.10**, Extension of Infrastructure into Agricultural Areas – "The County shall oppose extension of urban services, such as sewer lines, water lines, or other urban infrastructure, into areas designated for agriculture use unless necessary to resolve a public health situation. Where necessary to address a public health issue, services should be located in public rights-of-way in order to prevent interference with agricultural operations and to provide ease of access for operation and maintenance. Service capacity and length of lines should be designed to prevent the conversion of agricultural lands into urban/suburban uses." As such, consistent with AG-1-.10, the Project is being recommended to remedy existing (and avoid future potential) public health issues within Matheny Tract.

The proposed wastewater pipelines would be sized to serve the community's existing needs (including potential infill development and within the community's Urban Area Boundary) and would not provide additional capacity that could accommodate a substantial amount of future development. Since the Project would not result in substantial growth and is generally consistent with the existing conditions in Matheny Tract, it would not conflict with the Tulare County General Plan. As noted earlier, the Project would be consistent with several Tulare County General Plan policies and the City of

²²⁹ City of Tulare General Plan 2035. Page 2-26.

Tulare’s General Plan Policy LU-P2.8 Regional Cooperation, to wit; “The City shall maintain a cooperative relationship with other local governments (i.e., Tulare County, the City of Visalia) to address regional issues and opportunities related to growth, transportation, infrastructure, greenhouse gas emissions reductions, and other planning issues.” Therefore, the proposed Project would result in a less than significant impact.

Cumulative Impact Analysis: Less Than Significant Impact: The geographic area of this cumulative analysis is Tulare County and the City of Tulare. This cumulative analysis is based on the information provided in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, the Tulare County General Plan 2030 Update EIR, Matheny Wastewater Collection System DEIR and REIR, and the City of Tulare General Plan. As noted earlier, the proposed Project is a wastewater collection system for Matheny Tract and pipeline inter-tie to the City of Tulare’s DWWTP. The proposed Project would provide an environmental benefit through consolidation with an existing WWTP thereby elimination potential water contamination from the existing, individual, septic system (i.e., septic tanks and leach lines). As such, a less than significant cumulative impact related to this Checklist Item will occur.

XII. MINERAL RESOURCES

Would the project:		SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT IMPACT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a)	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Mineral Resources, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, Tulare County General Plan 2030 Update Environmental Impact Report, and Matheny Wastewater Collection System DEIR and REIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Environmental Setting

As noted earlier, The proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary referred to as the wastewater collection system and pipeline inter-tie Project).

Per the Tulare County General Plan Background Report, Tulare County is divided into two major physiographic and geologic provinces: the Sierra Nevada Mountains and the Central Valley. The Sierra Nevada Physiographic Province, in the eastern portion of the Tulare County, is underlain by metamorphic and igneous rock. It consists mainly of homogeneous granitic rocks, with several islands of older metamorphic rock. The central and western parts of the County are part of the Central Valley Province, underlain by marine and non-marine sedimentary rocks. It is basically a flat, alluvial plain, with soil consisting of material deposited by the uplifting of the mountains.

Economically, the most important minerals that are extracted in Tulare County are sand, gravel, crushed rock, and natural gas. Other minerals that could be mined commercially include tungsten, which has been mined to some extent, and relatively small amounts of chromite, copper, gold, lead, manganese, silver, zinc, barite, feldspar, limestone, and silica. Minerals that are present but do not exist in the quantities desired for commercial mining include antimony, asbestos, graphite, iron, molybdenum, nickel, radioactive minerals, phosphate, construction rock, and sulfur.

Aggregate resources are the most valuable mineral resource in Tulare County because it is a major component of the Portland cement concrete (PCC) and asphaltic concrete (AC). PCC and AC are essential to constructing roads, buildings, and providing for other infrastructure needs. There are four streams that have provided the main source of high quality sand and gravel in Tulare County: Kaweah River, Lewis Creek, Deer Creek and the Tule River. The highest quality deposits are located at the Kaweah and Tule Rivers. Lewis Creek deposits are considerably inferior to those of the other two rivers.

Regulatory Setting

Federal

There are no federal or local regulations pertaining to mineral resources relevant to the proposed project.

State

California Surface Mining and Reclamation Act of 1975

Enacted by the State Legislature in 1975, the Surface Mining and Reclamation Act (SMARA), Public Resources Code Section 2710 et seq., insures a continuing supply of mineral resources for the State. The act also creates surface mining and reclamation policy to assure that:

- Production and conservation of minerals is encouraged;
- Environmental effects are prevented or minimized;
- Consideration is given to recreational activities, watersheds, wildlife, range and forage, and aesthetic enjoyment;
- Mined lands are reclaimed to a useable condition once mining is completed; and
- Hazards to public safety both now and in the future are eliminated.

Areas in the State (city or county) that do not have their own regulations for mining and reclamation activities rely on the Department of Conservation, Division of Mines and Geology, Office of Mine Reclamation to enforce this law. SMARA contains provisions for the inventory of mineral lands in the State of California. The State Geologist, in accordance with the State Board's Guidelines for Classification and Designation of Mineral Lands, must classify Mineral Resource Zones (MRZ) as designated below:

- MRZ-1. Areas where available geologic information indicates that there is minimal likelihood of significant resources.
- MRZ-2. Areas underlain by mineral deposits where geologic data indicate that significant mineral deposits are located or likely to be located.
- MRZ-3. Areas where mineral deposits are found but the significance of the deposits cannot be evaluated without further exploration.
- MRZ-4. Areas where there is not enough information to assess the zone. These are areas that have unknown mineral resource significance.

SMARA only covers mining activities that impact or disturb the surface of the land. Deep mining (tunnel) or petroleum and gas production is not covered by SMARA.

Local

Tulare County General Plan 2030 Update

The Tulare County General Plan 2030 Update: Chapter 8 – Environmental Resources Management contains the following goals and policies that relate to mineral resources and which have potential relevance to the Project's California Environmental Quality Act (CEQA) review: *ERM-2.1 Conserve Mineral Deposits* wherein the County will encourage the conservation of identified and/or potential mineral deposits, recognizing the need for identifying, permitting, and maintaining a 50 year supply of locally available PCC grade aggregate; *ERM-2.2 Recognize Mineral Deposits* - The County will recognize as a part of the General Plan those areas of identified and/or potential mineral deposits; and *ERM-2.10 Incompatible Development* - Proposed incompatible land uses in the County shall not be on lands containing or adjacent to identified mineral deposits, or along key access roads, unless adequate mitigation measures are adopted or a statement of overriding considerations stating public benefits and overriding reasons for permitting the proposed use are adopted.

Project Impact Analysis:

a) and b) No Impact: Mineral resources located within Tulare County are predominately sand and gravel resources primarily provided by four streams: Kaweah River, Lewis Creek, Deer Creek, and the Tule River. The Kaweah river is the nearest of these four streams to the proposed Project site and is located approximately greater than 22 miles to the northeast. Due to the distance from these streams, the Project will not result in the loss of an available known mineral resource. The Tulare County General Plan Update (see Figure 8-2 Mineral Resource Zone in the General Plan) indicates the locations of State-designated Mineral Resource Zones. According to the map, the Project site is not located in or within 10 miles of a Mineral Resource Zone. The California Department of Conservation indicates that the nearest, active mining operation (Kaweah South, mining sand and gravel) is located approximately 22 miles northeast of the Project site.²³⁰ As such, the Project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

²³⁰ State of California Department Of Conservation. Division of Mine Reclamation. Maps: Mines and Mineral Resources Accessed January 2023 at: <https://maps.conservation.ca.gov/mol/index.html>.

The proposed Project site is not delineated on a local land use plan as a locally important mineral resource recovery site. Therefore, the proposed Project would not result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Cumulative Impact Analysis: **No Impact** - The geographic area of this cumulative analysis is Tulare County and the City of Tulare. This cumulative analysis is based on the information provided in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, the Tulare County General Plan 2030 Update EIR, and Matheny Wastewater Collection System DEIR and REIR. As noted previously, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare. As such, no cumulative impact related to this Checklist Item will occur.

XIII. NOISE

Would the project result in:	SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT IMPACT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Generation of excessive ground-borne vibration or ground-borne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Noise Resource, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, Tulare County General Plan 2030 Update Environmental Impact Report, and Matheny Wastewater Collection System DEIR and REIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Environmental Setting

As noted previously, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary, the wastewater collection system and pipeline inter-tie project).

Noise

“Sound is a vibratory disturbance created by a moving or vibrating source, which is capable of being detected by the hearing organs. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired and may therefore be classified as a more specific group of sounds. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment (California Department of Transportation [Caltrans] 2013a).

Noise levels are commonly measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels so that they are consistent with the human hearing response, which is most sensitive to frequencies around 4,000 Hertz and less sensitive to frequencies around and below 100 Hertz (Kinsler, et. al. 1999). Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used to measure earthquake magnitudes. A doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dBA; reducing the energy in half would result in a 3 dBA decrease (Crocker 2007).

Human perception of noise has no simple correlation with sound energy: the perception of sound is not linear in terms of dBA or in terms of sound energy. Two sources do not “sound twice as loud” as one source. It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA, increase or decrease (i.e., twice the sound energy); that a change of 5 dBA is readily perceptible (8 times the sound energy); and that an increase (or decrease) of 10 dBA sounds twice (half) as loud ([10.5x the sound energy] Crocker 2007).

Sound changes in both level and frequency spectrum as it travels from the source to the receiver. The most obvious change is the decrease in level as the distance from the source increases. The manner in which noise reduces with distance depends on factors such as the type of sources (e.g., point or line, the path the sound will travel, site conditions, and obstructions). Noise levels from a point source typically attenuate, or drop off, at a rate of 6 dBA per doubling of distance (e.g., construction, industrial machinery, ventilation units). Noise from a line source (e.g., roadway, pipeline, railroad) typically attenuates at about 3 dBA per doubling of distance (Caltrans 2013a). The propagation of noise is also affected by the intervening ground, known as ground absorption. A hard site, such as a parking lot or smooth body of water, receives no additional ground attenuation and the changes in noise levels with distance (drop-off rate) result from simply the geometric spreading of the source. An additional ground attenuation value of 1.5 dBA per doubling of distance applies to a soft site (e.g., soft dirt, grass, or scattered bushes and trees) (Caltrans 2013a). Noise levels may also be reduced by intervening structures; the amount of attenuation provided by this “shielding” depends on the size of the object and the frequencies of the noise levels. Natural terrain features such as hills and dense woods, and man-made features such as buildings and walls, can significantly alter noise levels. Generally, any large structure blocking the line of sight will provide at least a 5- dBA reduction in source noise levels at the receiver (Federal Highway Administration [FHWA] 2011). Structures can substantially reduce exposure to noise as well. The FHWA’s guidelines indicate that modern building construction generally provides an exterior-to-interior noise level reduction of 20 to 35 dBA with closed windows.

The impact of noise is not a function of loudness alone. The time of day when noise occurs and the duration of the noise are also important factors of project noise impact. Most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors have been developed. One of the most frequently used noise metrics is the equivalent noise level (Leq); it considers both duration and sound power level. Leq is defined as the single steady Aweighted level equivalent to the same amount of energy as that contained in the actual fluctuating levels over time. Typically, Leq is summed over a one-hour period. Lmax is the highest root mean square (RMS) sound pressure level within the sampling period, and Lmin is the lowest RMS sound pressure level within the measuring period (Crocker 2007).

Noise that occurs at night tends to be more disturbing than that occurring during the day. Community noise is usually measured using Day-Night Average Level (Ldn), which is the 24-hour average noise level with a +10 dBA penalty for noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours; it is also measured using Community Noise Equivalent Level (CNEL), which is the 24- hour average noise level with a +5 dBA penalty for noise occurring from 7:00 p.m. to 10:00 p.m. and a +10 dBA penalty for noise occurring from 10:00 p.m. to 7:00 a.m. (Caltrans 2013a). Noise levels described by Ldn and CNEL usually differ by about 1 dBA. The relationship between the peak-hour Leq value and the Ldn/CNEL depends on the distribution of traffic during the day, evening, and night. Quiet suburban areas typically have CNEL noise levels in the range of 40 to 50 dBA, while areas near arterial streets are in the 50 to 60-plus CNEL range. Normal conversational levels are in the 60 to 65- dBA Leq range; ambient noise levels greater than 65 dBA Leq can interrupt conversations (Federal Transit Administration [FTA] 2018)”²³¹

Vibration

Groundborne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent structures. The number of cycles per second of oscillation makes up the vibration frequency, described in terms of Hz. The frequency of a vibrating object describes how rapidly it oscillates. The normal frequency range of most groundborne vibration that can be felt by the human body starts from a low frequency of less than 1 Hz and goes to a high of about 200 Hz (Crocker 2007). While people have varying sensitivities to vibrations at different frequencies, in general they are most sensitive to low frequency vibration. Vibration in buildings, such as from nearby construction activities, may cause windows, items on shelves, and pictures on walls to rattle. Vibration of building components can also take the form of an audible low frequency rumbling noise, referred to as groundborne noise. Groundborne noise is usually only a problem when the originating vibration spectrum is dominated by frequencies in the upper end of the range (60 to 200 Hz), or when foundations or utilities, such as sewer and water pipes, physically connect the structure and the Environmental Impact Analysis Noise Draft Program Environmental Impact Report 4.12-3 vibration source (FTA 2018). Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. The primary concern from vibration is that it can be intrusive and annoying to building occupants and vibration-sensitive land uses. Vibration energy spreads out as it travels through the ground, causing the vibration level to diminish with distance away from the source. High-frequency vibrations diminish much more rapidly than low frequencies, so low frequencies tend to dominate the spectrum at large distances from the source. Discontinuities in the soil strata can also cause diffractions or channeling effects that affect the propagation of vibration over long distances (Caltrans 2013b). When a building is impacted by vibration, a ground-to-foundation coupling loss will usually reduce the overall vibration level. However, under rare circumstances, the ground-to-

²³¹ Tulare County Association of Governments (TCAG). Draft Program EIR for the 2022 Regional Transportation Plan & Sustainable Communities Strategy. Pages 4.12-1 through 4.12-2. Accessed January 2023 at: <https://tularecog.org/sites/tcag/assets/File/TCAG%202022%20RTP-SCS%20DPEIR%20Final.pdf>. or [1 Introduction \(slg\)_revised \(slg\) \(00714451-2\).DOCX \(tularecog.org\)](#).

foundation coupling may actually amplify the vibration level due to structural resonances of the floors and walls. Vibration amplitudes are usually expressed in peak particle velocity (PPV) or RMS vibration velocity. The PPV and RMS velocity are normally described in inches per second. PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used in monitoring of blasting vibration because it is related to the stresses that are experienced by buildings (Caltrans 2013b).²³²

Noise and Vibration Sources

“The principal noise generators in the TCAG region are associated with transportation (i.e., major roads, airports, and rail lines). Local collector streets are not typically significant noise sources as traffic volume and speeds are generally much lower than for freeways and arterial roadways. Similar to the environmental setting for noise, the vibration environment is typically dominated by traffic from nearby roadways and activity on construction sites. Heavy trucks typically operate on major streets and can generate groundborne vibration that varies depending on vehicle type, weight, and pavement conditions. Nonetheless, vibration due to roadway traffic is typically not perceptible.”²³³ The major noise and vibration sources in the region are motor vehicle traffic, aircraft operation, railroad operations, industrial and manufacturing, and construction noise and vibration. The primary noise generators in the vicinity of the proposed Project area include SR 99 (approximately 0.5 to the east, also the primary roadway corridor noise source in the County); Mefford field (nearest airport) approximately 0.75 miles southeast; Union Pacific RR crossing at Paige Avenue (where the loudest sound of trains’ horns and railroad crossing barrier’s bells occur) approximately 0.5 miles northeast; and the nearest light industrial source approximately 500’ north of the nearest residence in Matheny Tract.

Construction Noise and Vibration

“Noise and vibration from construction sites are characterized as stationary or point sources even though heavy construction equipment is often mobile. Construction activities typically generate high, intermittent noise and vibration on and adjacent to construction sites and related noise and vibration impacts are short-term, occurring primarily on weekdays and during daylight hours. The dominant source of noise from most construction equipment is their diesel engine. During pile driving or pavement breaking events, impact noise is the dominant source and equipment produces the highest vibration levels. Construction equipment operates in two modes, stationary and mobile. Stationary equipment operates in one location for one or more days at a time and can generate a constant noise level (e.g., pumps, generators, and air compressors) or variable noise levels (e.g., pile drivers and pavement breakers). Mobile equipment moves around the construction site (e.g., dozers, tractors). Noise levels vary depending on the power cycle being used. Mobile equipment such as trucks, move to and from the site using adjacent streets/roads.”²³⁴

Regulatory Setting

Federal

Federal Vibration Policies

The Federal Railway Administration (FRA) and the Federal Transit Administration (FTA) have published guidance relative to vibration impacts. According to the FRA, fragile buildings can be exposed to ground-borne vibration levels of 0.5 PPV without experiencing structural damage. The FTA has identified the human annoyance response to vibration levels as 80 RMS (Root Mean Square = The square root of the arithmetic average of the squared amplitude of the signal).²³⁵ There are no federal standards related to noise applicable to the Project. The Federal Noise Control Act of 1972 divided the powers between federal, state, and local governments, in which the primary federal responsibility is for noise source emission control. State and local governments are responsible for controlling the use of noise sources and determining the levels of noise to be permitted in the environment²³⁶

²³² Ibid. 4.12-2 through 4.12-3.

²³³ Op. Cit. 4.12-3.

²³⁴ Op. Cit. 4.12-5.

²³⁵ U.S. Department of Transportation. “The Noise and Vibration Impact Assessment Manual”. September 2018. FTA Report No. 0123 Federal Transit Administration Page 113. Accessed September 2022 at: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf.

²³⁶ USEPA-EPA Identifies Noise Levels Affecting Health and Welfare. Accessed January 2023 at: <https://nepis.epa.gov/Exe/ZyPDF.cgi/2000L3LN.PDF?Dockey=2000L3LN.PDF>

State

The California Noise Control Act was enacted in 1973 (Health and Safety Code § 46010 et seq.), and states that the Office of Noise Control (ONC) should provide assistance to local communities in developing local noise control programs. It also indicates that ONC staff will work with the OPR to provide guidance for the preparation of the required noise elements in city and county General Plans, pursuant to Government Code § 65302(f). California Government Code § 65302(f) requires city and county general plans to include a noise element. The purpose of a noise element is to guide future development to enhance future land use compatibility.

Local

Analytical noise modeling techniques, in conjunction with actual field noise level measurements, were used to develop generalized Ldn or Community Noise Equivalent Level (CNEL) contours for traffic noise sources within Tulare County for existing conditions. Traffic data representing annual average daily traffic volumes, truck mix, and the day/night distribution of traffic for existing conditions (1986) and future were obtained from the Tulare County Public Works Department and used in the Tulare County Noise Element. The Tulare County General Plan 2030 Update Health & Safety Element (2012) includes noise and land use compatibility standards for various land uses. These are shown in **Table 13-1** Land Use Compatibility for Community Noise Environments²³⁷.

Tulare County General Plan 2030 Update

The General Plan has a number of policies that apply to projects within Tulare County. General Plan policies regarding the noise resource that relate to the proposed Project are listed as follows:

The Tulare County General Plan 2030 Update: Chapter 10 – Health and Safety contains the following goals and policies that relate to noise and which have potential relevance to the Project’s California Environmental Quality Act (CEQA) review: *HS-8.2 Noise Impacted Areas* – wherein the County shall designate areas as noise-impacted if exposed to existing or projected noise levels that exceed 60 dB Ldn (or Community Noise Equivalent Level (CNEL)) at the exterior of buildings; *HS-8.11 Peak Noise Generators* wherein the County shall limit noise generating activities, such as construction, to hours of normal business operation (7 a.m. to 7 p.m.). No peak noise generating activities shall be allowed to occur outside of normal business hours without County approval; *HS-8.18 Construction Noise* wherein the County shall seek to limit the potential noise impacts of construction activities by limiting construction activities to the hours of 7 a.m. to 7 p.m., Monday through Saturday when construction activities are located near sensitive receptors. No construction shall occur on Sundays or national holidays without a permit from the County to minimize noise impacts associated with development near sensitive receptors; *HS-8.19 Construction Noise Control* wherein the County shall ensure that construction contractors implement best practices guidelines (i.e.; berms, screens, etc.) as appropriate and feasible to reduce construction-related noise-impacts on surrounding land uses.

Tables 13-1 and 13-2 show typical vibration levels from construction-related equipment and the Tulare County General Plan 2030 Update Land Use Compatibility for Community Noise Environments; respectively.

Table 13-1	
Construction Equipment Noise Emission Levels²³⁸	
Equipment	Typical Noise Level 50 ft from Source, dBA
Air Compressor	80
Backhoe	80
Compactor	82
Generator	82
Grader	85
Jack Hammer	88
Loader	80
Paver	85
Roller	85

²³⁷ Tulare County General Plan 2030 Update. Goals and Policies Report. Page 10-25.

²³⁸ United States Department of Transportation. Federal Transit Administration (FTA). Federal Transit Administration. Transit Noise and Vibration Impact Assessment Manual. September 2018. FTA Report No. 0123 Federal Transit Administration. Table 7-1. Page 176. Accessed January 2023 at: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf or [Transit Noise and Vibration Impact Assessment Manual \(dot.gov\)](#)

Table 13-1 Construction Equipment Noise Emission Levels ²³⁸	
Equipment	Typical Noise Level 50 ft from Source, dBA
Saw	76
Scarifier	83
Scraper	85
Shovel	82
Truck	84
Source: Excerpt from Table 7-1 of FTA Transit Noise and Vibration Impact Assessment Manual, 2018.	

Table 13-2 Land Use Compatibility for Community Noise Environments	
Land Use Category	Community Noise Exposure-L _{dn} or CNEL (dB)
	50 55 60 65 70 75 80
Residential - Low Density Single Family, Duplex, Mobile Homes	
Residential – Multi-Family	
Transient Lodging – Motels, Hotels	
Schools, Libraries, Churches, Hospitals, Nursing Homes	
Auditoriums, Concerts Halls, Amphitheaters	
Sports Arenas, Outdoor Spectator Sports	
Playgrounds, Neighborhood Parks	
Golf Courses, Riding Stables, Water Recreation, Cemeteries	
Office Buildings, Business Commercial and Professional	
Industrial, Manufacturing, Utilities, Agriculture	
Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
Normally Unacceptable	New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
Clearly Unacceptable	New construction or development generally should not be undertaken.
[Source: Figure Noise-1. State Land Use Compatibility Standards for Community Noise Environment: California Governor's Office of Planning and Research, October 2003]	

Project Impact Analysis:

- a) **Less Than Significant Impact:** As noted previously, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary, the wastewater collection system and pipeline inter-tie project).

The ambient noise environment in the proposed Project vicinity is dominated by agricultural-related uses, including tractor-intensive work and the Union Pacific RR crossing at Paige Avenue (where the loudest sound of trains' horns and railroad crossing barrier's bells occur). The magnitude and frequency of the existing ambient noise levels may vary considerably over the course of the day and throughout the week. The variation is caused by different reasons, for example, changing weather conditions, the effects of rotation of agricultural crops, and other human-related activities.

Project construction would involve temporary, short-term noise sources including site preparation (for the lift station(s)), installation of the pipeline, and site cleanup work is expected to last for approximately six (6) months. Construction-related short-term, temporary noise levels would be higher than existing ambient noise levels in the Project area, but would not occur after construction is completed.

The Tulare County Health and Safety Element does not identify short-term, construction-noise-level thresholds. It limits noise generating activities (such as construction) to hours of normal business operation unless specific County approval is given. Construction-related activities would be restricted to daytime hours and would be short-term and temporary in nature. Operation and maintenance noise would likely be less intrusive than existing noise in the area resulting from existing neighboring agricultural-related operations as the wastewater collection system and pipeline tie-in will be completely subsurface.

Although impacts are considered less than significant due to the operational noise (which will be negligible due to the nature of the wastewater collection system and pipeline inter-tie) and the short-term, temporary, and intermittent nature of construction-related activities, the Project will be required to adhere to the County's noise policies, as noted earlier, to ensure that impacts remain less than significant; particularly *HS-8.11 Peak Noise Generators*, *HS-8.18 Construction Noise*, and *HS-8.19 Construction Noise Control*. As such, the proposed Project would result in a less than significant impact.

- b) **No to Less Than Significant Impact:** Vibration is an oscillatory motion that can be described in terms of the displacement, velocity, or acceleration. Because the motion is oscillatory, there is no net movement of the vibration element and the average of any of the motion metrics is zero. Displacement is the most intuitive metric. For a vibrating floor, the displacement is simply the distance that a point on the floor moves away from its static position. The velocity represents the instantaneous speed of the floor movement and acceleration is the rate of change of the speed. Although displacement is easier to understand than velocity or acceleration, it is rarely used for describing ground-borne vibration. Most transducers used for measuring ground-borne vibration use either velocity or acceleration. Furthermore, the response of humans, buildings, and equipment to vibration is more accurately described using velocity or acceleration.”²³⁹

There are no federal or state standards that address construction noise or vibration. Additionally, Tulare County does not have regulations that define acceptable levels of vibration. One reference suggesting vibration standards is the Federal Transit Administration (FTA) publication concerning noise and vibration impact assessment from transit activities. Although the FTA guidelines are to be applied to transit activities and construction, they may be reasonably applied to the assessment of the potential for annoyance or structural damage resulting from other activities. To prevent vibration annoyance in residences, a level of 80 VdB (vibration velocity level in dB) or less is suggested when there are fewer than 70 vibration events per day. A level of 100 VdB or less is suggested by the FTA guidelines to prevent damage to fragile buildings.

As shown earlier, **Table 3.12-1** describes the typical construction equipment vibration levels. While these construction-related activities would result in minor amounts of groundborne vibration, such groundborne noise or vibration would attenuate rapidly from the source and would not be generally perceptible outside of the construction areas. In addition, there would not be any vibrational impacts from operation and maintenance activities.

“The effects of ground-borne vibration can include perceptible movement of floors in buildings, rattling of windows, shaking of items on shelves or hanging on walls, and low-frequency noise (ground-borne noise). Building damage is not a factor for typical transportation projects, but in extreme cases, such as during blasting or pile-driving during construction, vibration could cause damage to buildings. Although the perceptibility threshold is approximately 65 VdB, human response to vibration is not usually substantial unless the vibration exceeds 70 VdB. A vibration level that causes annoyance is well below the damage risk threshold for typical buildings (100 VdB).”²⁴⁰ “Ground-borne vibration is almost never a problem outdoors. Although the motion of the ground may be perceived, without the effects associated with the shaking of a building,

²³⁹ Ibid. 110.

²⁴⁰ Op. Cit. 117-118.

the motion does not provoke the same adverse human reaction.”²⁴¹ **Table 13-3** presents the human response to different levels of ground-borne vibration and noise. “The vibration level (VdB) is presented with the corresponding frequency assuming that the vibration spectrum peaks at 30 Hz or 60 Hz.(xi) The groundborne noise levels (dBA) are estimated for the specified vibration velocity with a peak vibration spectrum of 30 Hz (Low Freq) and 60 Hz (Mid Freq). Note that the human response differs for vibration velocity level based on frequency. For example, the noise caused by vibrating structural components may cause annoyance even though the vibration cannot be felt. Alternatively, a low frequency vibration can cause annoyance while the ground-borne noise level it generates does not.”²⁴²

Table 13-3			
Human Response to Different levels of Ground-Bourne Vibration and Noise²⁴³			
Vibration Velocity Level	Noise Level		Human Response
	Low Freq*	Mid Freq**	
65 VdB	25 dBA	40dBA	Approximate threshold of perception for many humans. Low frequency sound: usually inaudible. Mid-frequency sound: excessive for quiet sleeping areas.
75 VdB	35 dBA	50dBA	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find transit vibration at this level annoying. Low-frequency noise: tolerable for sleeping areas. Mid-frequency noise: excessive in most quiet occupied
85 VdB	45 dBA	60dBA	Vibration tolerable only if there are an infrequent number of events per day. Low-frequency noise: excessive for sleeping areas. Mid-frequency noise: excessive even for infrequent events for some activities.
*Approximate noise level when vibration spectrum peak is near 30 Hz.			
**Approximate noise level when vibration spectrum peak is near 60 Hz.			

Table 13-4 presents average source levels in terms of velocity for various types of construction equipment measured under a wide variety of construction activities.

Typical outdoor sources of perceptible ground borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. Construction vibrations can be transient, random, or continuous. The approximate threshold of vibration perception is 65 VdB, while 85 VdB is the vibration acceptable only if there are an infrequent number of events per day.

Construction Related Vibration Impacts: While construction-related activities will result in minor amounts of groundbourne vibration, such groundbourne noise or vibration will attenuate rapidly from the source and will not be generally perceptible outside of the construction areas. Also, vibration from construction-related activities will be short-term, temporary, and intermittent and will complete vanish upon cessation of construction-related activities. As such, impacts to the nearest neighboring sensitive receptors will be less than significant.

Project Operational Vibration Impacts: As described in Impact 13 a), Operations (and maintenance) noise would likely be less intrusive than existing noise in the area resulting from existing neighboring agricultural-related operations as the wastewater collection system and pipeline tie-in will be completely subsurface. Typical noise will likely result from infrequent maintenance/inspection vehicles accessing and egressing the network of subsurface pipelines, lift station(s), or other appurtenances within the proposed Project area. Other than these sources, there will be no vibrational impacts because of the operations nature of the wastewater collection system and pipeline inter-tie. As such, there will be no exposure of persons to or generation of excessive groundborne vibration as a result of the proposed Project and therefore no impact to or from this resource.

²⁴¹ Op. Cit. 118.

²⁴² Op. Cit. 119.

²⁴³ Op. Cit. 120.

Table 13-4 Vibration Source Levels for Construction Equipment²⁴⁴		
Equipment	PPV at 25 ft. in/sec	Approximate Lv * at 25 ft
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58
<i>Note: *RMS velocity in decibels, VDB re 1 micro-in/sec</i> <i>Source: Excerpt from Table 7-4 of FTA Transit Noise and Vibration Impact Assessment Manual. 2018.</i>		

- c) **No Impact:** The proposed Project is not within an airport land use plan or within two miles of a private airfield. The proposed Project will not conflict with Tulare County Airport Land Use Plan policy and as such, there will be no impact to this Checklist Item.

Cumulative Impact Analysis: Less Than Significant Impact - The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, Tulare County 2030 General Plan EIR, and Matheny Wastewater Collection System DEIR and REIR. The wastewater collection system's northern portion (North Matheny) is generally bound by Road 96 (Pratt Street) and "I" Street in the east-west direction, and Wade and Addie Avenues in the north-south direction. The Union Pacific Railroad tracks (which are adjacent to and east of South "I" Street), are elevated approximately 10-feet above natural ground surface and act as a physical boundary between the City of Tulare and the Matheny Tract. The wastewater collection system's southern portion (South Matheny) is generally bound by Road 96 on the west and Prine and Matheny Avenues in the north-south direction. The Matheny Tract is bordered by agriculture lands to the west, north and south; agriculture land also lies between the northern and southern portions of the community. The pipeline inter-tie to the City of Tulare's DWWTP is currently adjacent to agriculturally productive lands on all sides and includes the existing DWWTP. There will be no vibration impacts because of the operations nature of the wastewater collection system and pipeline inter-tie. The Project will contribute to the cumulative impacts on the noise resource during short-term, temporary, and intermittent construction-related activities that will vanish upon cessation of construction-related activities; however, overall, the proposed Project in and of itself will result in a minimal impact. Vibration impacts, both construction- and project operational-related would not generate excessive groundborne vibration or noise resulting in a less than significant impact. Lastly, as the proposed Project is located outside of the Tulare Municipal Airport (Mefford Field) noise contours, it would not expose people residing or working in the proposed Project area to excessive noise levels. Therefore, Project-specific and Cumulative Impacts will be less than significant.

²⁴⁴ Op. Cit. 184.

XIV. POPULATION AND HOUSING

Would the project:	SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT IMPACT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Population and Housing, etc. contained in the Tulare County General Plan 2030 Update, Tulare County General Plan 2030 Update Environmental Impact Report, and Matheny Wastewater Collection System DEIR and REIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Environmental Setting

As noted previously, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary, the wastewater collection system and pipeline inter-tie project).

Tulare County is located in a geographically diverse region with the majestic peaks of the Sierra Nevada framing its eastern region, while its western portion includes the San Joaquin Valley floor, which is very fertile and extensively cultivated. In addition to its agricultural production, the County's economic base also includes agricultural packing and shipping operations. Small and medium size manufacturing plants are located in the western part of the county and are increasing in number. Tulare County contains portions of Sequoia National Forest, Sequoia National Monument, Inyo National Forest, and Kings Canyon National Park. Sequoia National Park is entirely contained within the county.

The County encompasses approximately 4,840 square miles of classified lands (lands with identified uses) and can be divided into three general topographical zones: a valley region; a foothill region east of the valley area; and a mountain region just east of the foothills. The eastern half of the county is generally comprised of public lands, including the Mountain Home State Forest, Golden Trout Wilderness area, and portions of the Dome Land and south Sierra Wilderness areas. Federal lands, which include wilderness, national forests, monuments and parks, along with County parks, make up 52 percent of the County, the largest percentage found in the County. Agricultural uses, which include row crops, orchards, dairies, and grazing lands on the Valley floor and in the foothills total over 2,020 square miles or about 43 percent of the entire County. Urban uses such as incorporated cities, communities, hamlets, other unincorporated urban uses, and infrastructure rights-of-way make up the remaining land in the County.

Tulare County Regional Housing Needs Assessment Plan 2014-2023 (TCAG, June 2014)

State housing element law assigns the responsibility for preparing the Regional Housing Needs Assessment (RHNA) for the Tulare County region to the Tulare County Association of Governments (TCAG). The RHNA is updated prior to each housing element cycle. The current RHNA, adopted on June 30, 2014, covers a 9.75-year projection period (January 1, 2014 to September 30, 2023). The growth projections applied in the Housing Element Update are based upon growth projections developed by the State of California. The RHNA housing allocations for Tulare County were incorporated into **Table 3.14-2**. "A Regional Housing Needs Assessment Plan" provides a general measure of each local jurisdiction's responsibility in the provision of housing to meet those needs. The Tulare County Association of Governments (TCAG) was responsible for allocating the State's projections to each local jurisdiction within Tulare County including the County unincorporated area, which is reflected in this Housing Element.

“The Sustainable Communities and Climate Protection Act of 2008 (SB 375) was passed to support the State’s climate action goals...to reduce greenhouse gas (GHG) emissions through coordinated transportation and land use planning. The bill mandates each of California’s Metropolitan Planning Organizations (MPO) prepare a *sustainable communities strategy* as part of its regional transportation plan (RTP). The SCS contains land use, housing and transportation strategies that, if implemented, would allow the region to meet its GHG reduction targets. In the past, the RHNA was undertaken independently from the RTP. SB 375 requires that the RHNA and RTP/SCS processes be undertaken together to better integrate housing, land use, and transportation planning. In addition to the RHNA requirements, SB 375 requires that TCAG address the region’s housing needs in the SCS of the RTP, to include sections on state housing goals (Government Code Section 65080(b)(2)(B)(vi)); identify areas within the region sufficient to house all the population of the region (including all economic segments of the population) over the course of the planning period for the RTP (out to 2040 for the 2040 RTP/SCS); and identify areas within the region sufficient to meet the regional housing needs”²⁴⁵

According to the Tulare County Regional Housing Needs Plan, the number of household in Tulare County’s was 110,356 in 2000. In 2007 the number of households was 125,836. The 2014 household projection was 159,514. **Table 3.13-1** summarizes Tulare County’s population between 1980 and 2020 according to California Department of Finance.

Table 3.13-1 Tulare County Population²⁴⁶					
	1980	1990	2000	2010	2020
Tulare County’s Population	245,738	311,921	368,021	441,179	479,403
<i>State of California. Department of Finance, E-4 Population Estimates (see footnote).</i>					

The RHNA housing results are summarized in **Table 3.13-2**. The Tulare County RHNA Plan recommends that the County provide land use and zoning to accommodate approximately 7,081 units in the unincorporated portions of the County. The County administratively agreed to a housing share of 7,081 units (726 units per year over the 9.75-year RHNA planning period). The RTP allocates 30% of population to the County. The RHNA bases the housing needs assessment on this percentage.

Table 3.13-2 Regional Housing Needs Assessment Plan January 1, 2014 – September 30, 2023					
Income Category					
Jurisdiction	Very Low	Low	Moderate	Above Moderate	Total
Dinuba	211	163	121	470	965
Exeter	143	125	85	272	625
Farmersville	74	65	68	259	466
Lindsay	80	80	82	348	590
Porterville	623	576	566	1,431	3,196
Tulare	920	609	613	1,452	3,594
Visalia	2,616	1,931	1,802	3,672	10,021
Woodlake	71	41	69	191	372
Unincorporated Area	1,477	1,065	1,169	3,370	7,081
Total Tulare County	6,215	4,655	4,575	11,465	26,910
<i>Source: Table 1: “2014-2023 Final RHNA Allocations by Income Category,” Final Regional Housing Needs Plan for Tulare County 2014-2023, page 19 (TCAG, 2014)</i>					

²⁴⁵ Tulare County General Plan. Goals and Policies Report. Tulare County Housing Element 2015 Update (2014-2023). Page 1-18. Accessed January 2023 at: <http://generalplan.co.tulare.ca.us/documents/GP/001Adopted%20Tulare%20County%20General%20Plan%20Materials/110Part%20I%20Voluntary%20Elements%20Chapters%206,%2012%20and%2015/001CHP%206%20Tulare%20County%20Housing%20Element%20Update%202015/CHP%206%20Tulare%20County%20Housing%20Element%20Update%202015.pdf> or [CHP 6 Tulare County Housing Element Update 2015.pdf](#)

²⁴⁶ State of California, Department of Finance. Table E-4 Population Estimates for Counties and State 2011-2020 with 2010 Benchmark. Accessed January 2023 at: https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fdoe.ca.gov%2Fwp-content%2Fuploads%2FForecasting%2FDemographics%2FDocuments%2FE-4_2010-2020-Internet-Version.xlsx&wdOrigin=BROWSELINK or [E-4_2010-2020-Internet-Version.xlsx \(live.com\)](#)

“Affordability problems occur when housing costs become so high in relation to income that households have to pay an excessive proportion of their income for housing, or are unable to afford any housing and are homeless. A household is considered to be overpaying (or cost burdened) if it spends more than 30 percent of its gross income on housing. Severe overpayment occurs when a household spends more than 50 percent of income on housing. Housing costs depend upon many variables, including the type, size, value and/or location of the housing units, the intended tenure of the unit (whether it is to be occupied by owners or renters), and the inclusion or exclusion of one or more utilities, services, property taxes, insurance, and maintenance.”²⁴⁷

“Housing costs continue to rise significantly. The 2010 Census reports the median rent has increased 10.72% from \$727 in 2000 to \$805 in 2010. The median monthly owner costs for housing units with a mortgage have seen a minor decrease going from \$1,518 to \$1,471 which is a -3.09% decrease. The monthly owner costs for those housing units without a mortgage increased by less than 1%, going from \$330 to \$361.”²⁴⁸

Regulatory Setting

Federal

“HUD’s mission is to create strong, sustainable, inclusive communities and quality affordable homes for all. HUD is working to strengthen the housing market to bolster the economy and protect consumers; meet the need for quality affordable rental homes; utilize housing as a platform for improving quality of life; build inclusive and sustainable communities free from discrimination; and transform the way HUD does business.” However, as the proposed Project does not propose any housing, HUD or other, federal regulations do not apply.

State

California Department of Housing and Community Development (HCD)

HCD’s mission is to “Promote safe, affordable homes and strong vibrant communities throughout California.” ²⁴⁹ In 1977, the State Department of Housing and Community Development (HCD) adopted regulations under the California Administrative Code, known as the Housing Element Guidelines, which are to be followed by local governments in the preparation of local housing elements. AB 2853, enacted in 1980, further codified housing element requirements. Since that time, new amendments to State Housing Law have been enacted. Each of these amendments has been considered during development of this Housing Element.

California Relocation Assistance Act

The State of California adopted the California Relocation Assistance Act (California Government Code §7260 et seq.) in 1970. This State law, which follows the federal Uniform Relocation Assistance and Real Property Acquisition Act, requires public agencies to provide procedural protections and benefits when they displace businesses, homeowners, and tenants in the process of implementing public programs and projects. This State law calls for fair, uniform, and equitable treatment of all affected persons through the provision of relocation benefits and assistance to minimize the hardship of displacement on the affected persons. There are no state regulations that are relevant to this proposed Project.

Housing Element Law – Article 10.6 of the Government Code, Sections 65580–65589.8

The California legislature has declared the attainment of affordable housing and a suitable living environment for every Californian to be of vital importance. Attaining the state’s housing goals requires efforts from all sectors, including the private sector, and all levels of government. Each local government has power to facilitate the improvement and development of housing for all economic segments of the community accounting for economic, environmental, and fiscal factors as well as community goals and regional housing needs. One tool used by local governments to achieve these goals is the housing element of the general plan. The housing element identifies and analyzes existing and projected housing needs and presents goals, policies, quantified objectives, and programs to address those needs. Housing elements also provide implementation measures for these programs. Housing elements must be updated at least every five years. The current County of Tulare

²⁴⁷ Ibid. 3-21.

²⁴⁸ Op. Cit. Page 4-17.

²⁴⁹ California Department of Housing and Community Development (HCD). Accessed January 2023 at: <https://www.hcd.ca.gov/about-hcd> or [About HCD | California Department of Housing and Community Development](#).

Housing Element was adopted by the County Board of Supervisors on November 17, 2015. HCD is subsequently on track to certify the Housing Element as complying with Housing Element Law in April 2016.

Local

Tulare County Regional Housing Needs Assessment Plan 2014-2023

“It is the responsibility of the Tulare County Association of Governments (TCAG) to determine how to allocate to local jurisdictions the basic housing needs provided by the State Department of Housing and Community Development. The determination of household needs by income category is designed for the equitable distribution of households by income category within the region. The presumptive goal is to promote greater housing opportunities throughout the County. In 2014 the Regional Housing Needs Assessment Plan (RHNA) allocated a disproportionate amount of low and very low housing to the unincorporated area of Tulare County. In 2014, the RHNA plan provides a more equitable distribution of the regional housing needs allocation, as required by Section 65584 of the government Code, thereby providing greater affordable housing opportunities through the entire County including unincorporated areas as well as within the cities’.”²⁵⁰

Tulare County Regional Blueprint 2009

This Blueprint includes the following preferred growth scenario principals:

- Increase densities county-wide by 25% over the status quo densities;
- Establish light rail between cities;
- Extend Highway 65 north to Fresno County;
- Expand transit throughout the county;
- Maintain urban separators around cities; and
- Growth will be directed toward incorporated cities and communities where urban development exists and where comprehensive services and infrastructure are or will be provided.

Tulare County Housing Authority

“The Housing Authority of the County of Tulare (HATC) has been officially designated as the local public housing agency for the County of Tulare by the Board of Supervisors and was created pursuant to federal and state laws. ...HATC is a unique hybrid: a public sector agency with private sector business practices. Their major source of income is the rents from residents. The HATC mission is “to provide affordable, well-maintained rental housing to qualified low- and very low-income families. Priority shall be given to working families, seniors and the disabled. Tenant self sufficiency and responsibility shall be encouraged. Programs shall be self-supporting to the maximum extent feasible.”

HATC provides rental assistance to very low and moderate-income families, seniors and the handicapped throughout the county. HATC offers many different programs, including the conventional public housing program, the housing choice voucher program (Section 8), the farm labor program for families with farm labor income, senior housing programs, and other programs. They also own or manage some individual subsidized rental complexes that do not fall under the previous categories, and can provide information about other affordable housing that is available in Tulare County. All programs are handicap accessible. Almost all of the complexes have 55-year recorded affordability covenants.”²⁵¹ As noted earlier, the proposed Project does not include (or remove/displace) any public housing, no impact would occur to HATC’s objectives/programs.

2015-2030 Tulare County Housing Element Policies

Policy 1.11 Encourage the development of a broad range of housing types to provide an opportunity of choice in the local housing market; *Policy 1.14* Pursue an equitable distribution of future regional housing needs allocations, thereby providing a greater likelihood of assuring a balance between housing development and the location of employment opportunities; *Policy 1.33* Encourage and support a balance between housing and agricultural needs; *Policy 2.11* Encourage Federal and State governments to increase the level of funding for improvements or expansion of public infrastructure serving the unincorporated communities; *Policy 2.12* Increase opportunities for technical assistance to public utility districts and community service districts and mutual water companies in an effort to educate and assist them in attaining the necessary public infrastructure;

²⁵⁰ Op. City. 3-74.

²⁵¹ Op. Cit. 5-12.

Policy 2.13 When land is purchased by the County in conjunction with installation of new public facilities, the County will endeavor to make any excess land available to housing agencies for development of affordable housing; *Policy 2.14* Create and maintain a matrix of Infrastructure Development Priorities for Disadvantaged Unincorporated Communities in Tulare County through analysis and investigation of public infrastructure needs and deficits, pursuant to Action Program 9; *Policy 2.21* Require all proposed housing within the development boundaries of unincorporated communities is either (1) served by community water and sewer, or (2) that physical conditions permit safe treatment of liquid waste by septic tank systems and the use of private wells; *Policy 2.24* Improvement requirements should reflect a balance between housing needs and the protection of public health and safety; *Policy 2.25* The County shall encourage special districts, including community services districts and public utility districts to: 1. Institute impact fees and assessment districts to finance improvements, 2. Take on additional responsibilities for services and facilities within their jurisdictional boundaries up to the full extent allowed under State law, and 3. Investigate feasibility of consolidating services with other districts and annexing systems in proximity to promote economies of scale, such as annexation to city systems and regional wastewater treatment systems (GPU PFS 1.8 Funding for Service Providers); *Policy 3.11* Support and coordinate with local economic development programs to encourage a “jobs to housing balance” throughout the unincorporated area; *Policy 5.21* Administer and enforce the relevant portions of the Health and Safety Code; *Action Program 9 – Housing Related Infrastructure Needs* [that] Provide vital information used for planning and development purposes, target expansion or repair of infrastructure and municipal services to areas with the most need and secure Federal and State funding for housing-related infrastructure. Provide technical assistance to PUDs, CSDs, and Mutual to fund infrastructure improvement and expansion, ensure safe and adequate water and liquid waste disposal, and have an equitable balance of fees between new and existing residents.

Project Impact Analysis:

- a) **Less Than Significant Impact:** As noted previously, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary, the wastewater collection system and pipeline inter-tie project).

The Project would require an extraterritorial service connection and consolidation of facilities with the City of Tulare’s Wastewater Treatment Facility. The purpose of the grant funding this Project is to design a sewage collection system of sufficient size to serve the existing population of Matheny Tract and to construct a pipeline inter-tie to convey wastewater from Matheny Tract to the City of Tulare’s Domestic Wastewater Treatment Plant (DWWTP). Further, the intent of this Project is to also remedy and/or avoid potential future groundwater contamination caused by seepage of septic system leach fields wastewater into the underground water supply. Connecting to and consolidating of wastewater collection and treatment with the City of Tulare’s DWWTP would accomplish this goal through eventual abandonment of existing septic systems, termination of wastewater discharge from system tanks into the ground, and avoidance of construction of a stand-alone waste water treatment facility (including percolation ponds) in or near Matheny Tract. As such, designing and constructing a wastewater system capable of servicing the existing land uses and limited planned growth within Matheny Tract would result in a less than significant impact.

- b) **No Impact:** As noted earlier, the proposed wastewater collection system and pipeline inter-tie Project includes construction of wastewater collection laterals to the property line of each home, commercial, or religious use within Matheny Tract to allow for connection to wastewater collection lines in the various County rights-of-way abutting the respective homes and businesses. These collection lines would then inter-tie to a mainline within the right-of-way (easement) along Road 95/Pratt Street that would ultimately convey the wastewater to the City of Tulare via a new pipeline inter-tie along Paige Avenue/Avenue 216. The pipeline inter-tie would subsequently connect to the City’s DWWTP located northwest of the Avenue 216/Paige Avenue and Road 96/Pratt Street. As such, the Project would not displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere. Therefore, no project-specific impact would occur.

Cumulative Impact Analysis: **No Impact** – The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, and Tulare County General Plan 2030 Update EIR, and Matheny Wastewater Collection System DEIR and REIR. The proposed Project will not require additional permanent housing, it does not impact existing homes on the proposed Project site; and it will not displace any additional housing units will not result in the conversion of any inhabited housing on-site or off-site. Therefore, the proposed Project will not result in the conversion of any inhabited housing on-site or off-site. As such, No Project-specific or Cumulative Impact related to this Checklist Item will occur.

XV. PUBLIC SERVICES

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

	SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT IMPACT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Public Services, etc. contained in the Tulare County General Plan 2030 Update, Tulare County General Plan 2030 Update Environmental Impact Report, and Matheny Wastewater Collection System DEIR and REIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Environmental Setting

As noted previously, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary, the wastewater collection system and pipeline inter-tie project).

The Tulare County Sheriff's Department provides law enforcement protection services to the unincorporated County. The nearest Sheriff's Office station is the Pixley Substation located approximately 13.5 miles southeast of the proposed Project area. Other law enforcement stations within proximity of the proposed Project area are the California Highway Patrol Visalia Station and the City of Tulare Police Department. In the event of a mutual aid request for police services from the County of Tulare, the City of Tulare Police Department Headquarters is approximately three (3) surface miles from the nearest residence in North Matheny Tract, 3.4 miles from the nearest residence in South Matheny Tract, and approximately 2.5 from the anticipated pipeline inter-tie at the intersection of Road 95/Pratt Street and Paige Avenue/Avenue 216. It is noted that both Sheriff and Tulare Police patrols are constantly circulating/patrolling and it would be speculative to estimate actual police response distance or times.

Tulare County Fire Department provides fire protection services with the nearest substation, Fire Station No. 25 located at 2082 Foster Drive (in the City of Tulare) approximately 2.25 surface miles east of the proposed Project area.²⁵² In the event of a mutual aid request for fire services from the County of Tulare, City of Tulare Westside Fire Station (located at 138 N. E Street) and Station No. 61 (located at 800 S. Blackstone Street) are approximately 2.75 and 2.50 surface miles north of Matheny Tract; respectively.²⁵³

The Tulare County Fire Department uses an "attack" time protocol of 14 minutes to respond to 80 percent of the calls in rural areas. As the Project area is within the 14-minute response area; response times are achievable from the stations mentioned earlier (see **Table 3.14-1**).

²⁵² Tulare County Fire Department Web Site: <http://www.tularecounty.ca.gov/fire/>

²⁵³ City of Tulare General Plan 2035. Land Use Element. Page 2-10. Accessed January 2023 at: <https://www.tulare.ca.gov/home/showpublisheddocument/2393/635907185852000000> or [635907185852000000 \(ca.gov\)](https://www.tulare.ca.gov/home/showpublisheddocument/2393/635907185852000000)

Table 3.14-1 Fire Staffing and Response Time Standards			
	Demographics	Staffing/Response Time	% of Calls
Urban	> 1,000 people/sq. mi.	15 FF/9 min.	90
Suburban	500-100 people/sq. mi.	10 FF/10 min.	80
Rural	< 500 people/sq. mi.	6 FF/14 min.	80
Remote*	Travel Dist. > 8 min.	4 FF/no specific response time	90

**Upon assembling the necessary resources at the emergency scene, the fire department should have the capacity to safely commence an initial attack within 2 minutes, 90% of the time. (FF = Fire Fighters)*

Source: Tulare County 2030 General Plan

Schools

A total of 48 school districts provide education throughout Tulare County. Of the 48 school districts, seven are unified districts providing educational services for kindergarten through 12th grade. The remaining 41 districts consist of 36 elementary school districts and four high school districts. Many districts only have one school.”²⁵⁴

The nearest elementary school (Palo Verde Elementary School, in Tulare) is located approximately 1.5-2.0 miles from South Matheny/North Matheny Tract; respectively. Also, see parks discussion at Item 15 Recreation.

Parks

There are a number of Federal, State, and local parks within Tulare County, including 13 park and recreational facilities operated by the County of Tulare. The nearest community recreational facility is Elk Bayou Park approximately two miles southeast of Matheny Tract. Additional recreational facilities are located in City of Tulare with the nearest being Cypress Park which is approximately 2.5 miles northeast of Matheny Tract. Additional discussion of recreational facilities is provided in Chapter 3.15.

Library

“The Tulare County Public Library System is comprised of interdependent branches, grouped by services, geography and usage patterns to provide efficient and economical services to the residents of the county.”²⁵⁵ Since the Tulare County General Plan Update 2030 in 2012, there are now 16 regional branch libraries (rather than the previous 14) and one main branch.²⁵⁶

The nearest Tulare County Library Branch is the Tipton Branch Library in the community of Tipton approximately 10 miles north of Matheny Tract.

Regulatory Setting

Federal

None that are applicable to this Project regarding this resource topic.

State

None that are applicable to this Project regarding this resource topic.

Local

Tulare County General Plan 2030 Update

The following Tulare County General Plan 2030 Update, Chapter 14 – Public Facilities and Services, contains the following policies that relate to public services and may apply to this Project: *PFS-7.2 Fire Protection Standards* wherein the County

²⁵⁴ Tulare County General Plan Update 2030. Background Report. February 2010. Pages 7-75 and 7-76.

²⁵⁵ Op. Cit.

²⁵⁶ Tulare County Library. Accessed January 2023 at: <https://www.tularecountylibrary.org/locations> or [Locations | Tulare County Library](#).

shall require all new development to be adequately served by water supplies, storage, and conveyance facilities supplying adequate volume, pressure, and capacity for fire protection; *PFS-7.3 Visible Signage for Roads and Buildings* – wherein the County shall strive to ensure all roads are properly identified by name or number with clearly visible signs. The County shall strive to ensure all roads are properly identified by name or number with clearly visible signs; *PFS-7.5 Fire Staffing and Response Time Standards* wherein the County shall strive to maintain fire department staffing and response time goals consistent with National Fire Protection Association (NFPA) standards; *PFS-7.6 Provision of Station Facilities and Equipment* wherein the County shall strive to provide sheriff and fire station facilities, equipment (engines and other apparatus), and staffing necessary to maintain the County’s service goals. The County shall continue to cooperate with mutual aid providers to provide coverage throughout the County;

Fire Staffing and Responses Time Standards			
	Demographics	Staffing/Response Time	% of Calls
Urban	> 1,000 people/sq. mi.	15 firefights (FF)/9 min.	90
Suburban	500-100 people/sq. mi.	10 FF/10 min.	80
Rural	< 500 people/sq. mi.	6 FF/14 min.	80
Remote*	Travel Dist.>8 min.	4 FF/no specific response time	90
*Upon assembling the necessary resources at the emergency scene, the fire department should have the capacity to safely commence an initial attack within 2 minutes, 90% of the time.			

PFS-7.6 Provision of Station Facilities and Equipment - The County shall strive to provide sheriff and fire station facilities, equipment (engines and other apparatus), and staffing necessary to maintain the County’s service goals. The County shall continue to cooperate with mutual aid providers to provide coverage throughout the County; *PFS-7.8 Law Enforcement Staffing Ratios* - The County shall strive to achieve and maintain a staffing ratio of 3 sworn officers per 1,000 residents in unincorporated areas; *PFS-7.9 Sheriff Response Time* wherein the County shall work with the Sheriff’s Department to achieve and maintain a response time of:

1. Less than 10 minutes for 90 percent of the calls in the valley region; and
2. 15 minutes for 75 percent of the calls in the foothill and mountain regions;

and *PFS-7.12 Design Features for Crime Prevention and Reduction* wherein the County shall promote the use of building and site design features as means for crime prevention and reduction.

Project Impact Analysis:

- a) **Less Than Significant Impact:** The Project is within the service area of the Tulare County Fire Department. The proposed underground wastewater pipelines do not require electricity or flammable materials which could ignite a fire. The potential for an unlikely fire to ignite at a lift station would not pose a significant threat to nearby properties. Therefore, Project-specific impacts to fire protection services will be less than significant.
- b) **Less Than Significant Impact:** The County of Tulare’s Sheriff’s Office provides police protection services to the Project area, with or without the Project. Police services response is, and would remain, adequate to the Project and surrounding areas. The proposed underground wastewater pipeline would not require active police protection. While the County of Tulare’s Sheriff’s Office may be contacted for non-emergency situations (such as vandalism to lift stations), it is not anticipated that such vandalism would occur. As such, Project-specific impacts would be less than significant .
- c)-e) **No Impact:** The proposed underground wastewater pipelines would not result in the creation of new residences or other facilities that could result in an influx of population; as discussed in Item 15 Recreation, the subsurface wastewater collection system and pipeline inter-tie would not impact parks; schools, libraries, or other public facilities as it does not involve the creation of new residences or other facilities that could result in an influx of population such that other public facilities would be needed. Therefore, the proposed Project will result in no impact to these resources/facilities.

Cumulative Impact Analysis: Less Than Significant Impact – The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, Tulare County General Plan 2030 Update EIR, and Matheny Wastewater Collection System DEIR and REIR. As noted previously, the proposed Project is a wastewater collection system and pipeline inter-tie project. As noted earlier, the proposed Project will not result in significant population growth in the area. Impacts to fire and police services, schools, parks, libraries, or other public services are generally the result of new residential developments. There are no proposed new residential facilities associated with the proposed Project that could result in an influx of population such that other public facilities would be needed. Therefore, there would be no impacts to these resources.

XVI. RECREATION

Would the project:	SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT IMPACT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Recreation, etc. contained in the Tulare County General Plan 2030 Update, Tulare County General Plan 2030 Update Environmental Impact Report, and Matheny Wastewater Collection System DEIR and REIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Environmental Setting

As noted previously, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary, the wastewater collection system and pipeline inter-tie project).

"Tulare County contains several county, state, and federal parks. Aside from parks in the county, there are many open space areas as well. This section will highlight these various parks and open space areas and identify recreational opportunities within them."²⁵⁷ Two new parks were completed and became operational in the unincorporated communities of Plainview (Plainview Community Park) in 2016 and Earlimart (Earlimart Community Park) in 2017. In addition to the 15 parks and recreation facilities that are owned and operated by Tulare County, there are State Parks and Forests, National Parks and National Forests, trails, and recreational areas.

Recreational Facilities

Schools and Parks

Matheny Tract does not have any parks or schools located within the community. The nearest school is Palo Verde Elementary School approximately 1.5-2.0 miles from South Matheny/North Matheny Tract; respectively. The nearest County park is Elk Bayou Park located approximately two miles southeast of Matheny Tract north of Avenue 200. The nearest City of Tulare public park is Cypress Park which is approximately 2.5 miles northeast of Matheny Tract. **Table 3.15-1** provides a summary of federal recreation areas within Tulare County, while Table 3.15-2 lists County of Tulare recreational areas.

Federal

Lakes Kaweah and Success

"Lake Kaweah was formed after the construction of the Terminus Dam on the Kaweah River in 1962. The lake offers many recreational opportunities including fishing, camping, and boating. Lake Kaweah is located 20 miles east of Visalia on Highway 198 and was constructed by the U.S. Army Corps of Engineers for flood control and water conservation purposes. The lake has a maximum capacity to store 143,000 acre-feet of water. There are a total of 80 campsites at the lake's Horse

²⁵⁷ Tulare County General Plan 2030 Update Background Report. February 2010. Page 4-1. Accessed January 2023 at: <http://generalplan.co.tulare.ca.us/documents.html> then scroll to and click on "Appendix B-Background Report"

Creek Campground, which contains toilets, showers and a playground. Campfire programs are also available. Aside from camping, boat ramps are provided at the Lemon Hill and Kaweah Recreation Areas. Both Kaweah and Horse Creek provide picnic areas, barbecue grills and piped water. Swimming is allowed in designated areas. In addition, there is a one-mile hiking trail between Slick Rock and Cobble Knoll, which is ideal for bird watching.

Lake Success was formed by construction of the Success Dam on the Tule River in 1961. The lake offers many recreational activities including fishing, boating, waterskiing, and picnicking. The U.S. Army Corps of Engineers (USACOE) constructed this reservoir for both flood control and irrigation purposes. The lake has a capacity of 85,000 acre-feet of water. The lake is located eight miles east of Porterville in the Sierra Nevada foothills area. Recreational opportunities include ranger programs, camping at the Tule campground, which provides 104 sites, boating, fishing, picnic sites, playgrounds and a softball field. Seasonal hunting is also permitted in the 1,400-acre Wildlife Management Area.”²⁵⁸

National Parks and National Forests

“Most of the recreational opportunities in the county are located in Sequoia National Forest, Giant Sequoia National Monument, and in Sequoia and Kings Canyon National Parks (SEKI). Although these parks span adjacent counties, they make a significant contribution to the recreational opportunities that Tulare County has to offer.”²⁵⁹

Sequoia National Forest

“Sequoia National Forest takes its name from the Giant Sequoia, which is the world’s largest tree. There are more than 30 groves of sequoias in the lower slopes of the park. The park includes over 1,500 miles of maintained roads, 1,000 miles of abandoned roads and 850 miles of trails for hikers, off-highway vehicle users and horseback riders. The Pacific Crest Trail connecting Canada and Mexico, crosses a portion of the forest, 78 miles of the total 2,600 miles of the entire trail. It is estimated that 10 to 13 million people visit the forest each year.”²⁶⁰

Table 3.15-1 National Park and Forest Facilities		
Recreation Area	Location	Camping Sites
Sequoia National Forest		
Gray’s Meadow	5 miles West of Independence on Onion Valley Road.	52 tent/RV sites
Oak Creek	4 ½ miles NW of Independence off Highway 395.	21 tent/RV sites
Onion Valley	14 miles West of Independence on Onion Valley Road.	29 tent/RV sites
Stony Creek	14 miles SE of Grant Grove on Generals Highway.	49 tent/RV sites
Whitney Portal	13 miles West of Lone Pine on Whitney Portal Road.	43 tent/RV sites
Total		194 sites
Kings Canyon and Sequoia National Park		
Atwell Mill	Sequoia, 19 miles from Highway 198 on Mineral King Road.	21 tent sites
Azalea	Kings Canyon, 3 ½ miles from Kings Canyon Park entrance.	110 tent sites
Buckeye Flat	Sequoia, 11 miles South of Giant Forest of Generals Highway.	28 tent sites
Canyon View	Cedar Grove in Kings Canyon	23 tent sites
Cold Springs	Sequoia, Mineral King Area.	25 tent sites
Crystal Springs	Kings Canyon, ½ mile North of Grant Grove.	67 tent/RV sites
Dorst Creek	Sequoia, 9 miles North of Lodgepole off Generals Highway.	210 tent/RV sites
Lodgepole	Sequoia, 4 miles NE of Cedar Grove.	203 tent/RV sites
Moraine	Kings Canyon, 1 mile East of Cedar Grove.	120 tent/RV sites
Potwisha	Sequoia, 4 miles NE of Ash Mountain entrance off Generals Highway.	42 tent/RV sites
Sentinel	In the Cedar Grove area near the Kings River.	82 tent sites

²⁵⁸ Ibid. 4-7.

²⁵⁹ Op. Cit. 4-8.

²⁶⁰ Op. Cit. 4-9.

<p align="center">Table 3.15-1 National Park and Forest Facilities</p>		
Recreation Area	Location	Camping Sites
Sheep Creek	Kings Canyon, 1/2-mile West of Cedar Grove.	111 tent/RV sites
South Fork	Sequoia, 13 miles on South Fork from Highway 198.	10 tent sites
Sunset	In the Grant Grove area 3 miles from Kings Canyon park entrance.	157 tent sites
Total		1,209 sites

Source: Tulare County Resource Management Agency, Parks and Recreation Branch, 2008; Automobile Club of Southern California, Tulare County Map.

Giant Sequoia National Monument

“The Giant Sequoia National Monument was created in 2000 by President Clinton in an effort to preserve 34 groves of ancient sequoias located in the Sequoia National Forest. The Monument includes a total of 327,769 acres of federal land, and provides various recreational opportunities, including camping, picnicking, fishing, and whitewater rafting. According to the Giant Sequoia National Monument Management Plan EIS, the Monument includes a total of 21 family campgrounds with 502 campsites and seven group campgrounds. In addition, there are approximately 160 miles of system trails, including 12 miles of the Summit National Recreation Trail.”²⁶¹

Sequoia and Kings Canyon National Parks (SEKI)

“The U.S. Congress created the Kings Canyon National Park in 1940 and Sequoia National Park in 1890. Because they share many miles of common boundaries, they are managed as one park. The extreme large elevation ranges in the parks (from 1,500 to 14,491 feet above sea level), provide for a wide range of vegetative and wildlife habitats. This is witnessed from exploring Mt. Whitney, which rises to an elevation of 14,491 feet, and is the tallest mountain in the contiguous United States. During the summer months, park rangers lead walks through the parks, and tours of Crystal and Boyden Caves. During the winter, visitors explore the higher elevations of the parks via cross country skis or snowshoes, or hike the trails in the foothills. The SEKI also contains visitor lodges, the majority of which are open year round. According to the National Parks Conservation Association, a combined total of approximately 1.5 million people visit the two parks on an annual basis.”²⁶²

State

“The Mountain Home State Forest is a State Forest managed by the California Department of Forestry and Fire Protection (CDF). The Forest consists of 4,807 acres of parkland containing a number of Giant Sequoias, and is located just east of Porterville. The Forest is a Demonstration Forest, which is considered timberland that is managed for forestry education, research, and recreation. Fishing ponds, hiking trails, and campsites are some of the amenities that can be found in the Forest.”²⁶³ Colonel Allensworth State Historic Park (approximately 3,715 acres in area) is located in the unincorporated community of Allensworth in southwestern Tulare County.

Other Recreational Facilities

Other recreational resources available in Tulare County include portions of the Pacific Crest Trail, South Sierra Wilderness Area, Dome Land Wilderness Area, Golden Trout Wilderness Area, International Agri-Center, and the Tulare County Fairgrounds.²⁶⁴

In addition, there are several nature preserves open to the public which are owned and operated by non-profit organizations, including the Kaweah Oaks Preserve and Dry Creek- Homer Ranch preserves, both owned and operated by Sequoia Riverlands Trust.

Local

²⁶¹ Op. Cit.

²⁶² Op. Cit.

²⁶³ Op. Cit. 4-7.

²⁶⁴ Op. Cit. 4-10 to 4-11.

Parks

Mooney Grove Park (a 143-acre site) is the nearest County owned/operated park, located approximately seven (7) miles northeast of the proposed Project site; the next nearest County owned/operated park is Elk Bayou Park (a 60-acre site) located approximately two (2) miles south. Lastly, each incorporated city in the County maintains and operates municipal park and recreation facilities which can also be accessed by the County's total population; the nearest City park is the City of Tulare's Parkwood Meadows Park located approximately 1.5 miles north Matheny Tract.

Table 3.15-2				
County of Tulare Recreational Areas				
ID	Recreation Area	Location	Acres	Type of Use/Features
County				
1	Alpaugh Park	Located in Alpaugh on Road 40.	3	Reservations for picnic areas are taken. No entrance fee.
2	Balch Park Campgrounds	20 miles NE of Springville in the Sierras.	160	71 Campsites. No reservations taken; first come first serve basis. Entrance fee for vehicles.
3	Bartlett Park	8 miles east of Porterville on North Drive.	127.5	Reservations for picnic areas are taken. Entrance fee for vehicles.
4	Camp COTYAC	Near Ponderosa in Eastern Tulare County.	8	County of Tulare Youth Adventure Camp (Camp COTYAC). Cabins, lodge with kitchen, restrooms and showers.
5	Cutler Park	5 miles east of Visalia on Highway 216 to Ivanhoe.	50	Reservations for picnic areas are taken. Entrance fee for vehicles.
6	Elk Bayou Park	6 miles SE of Tulare on Avenue 200.	60	Reservations for picnic areas are taken. No fee for day use.
7	Kings River Nature Preserve	2 miles east of Highway 99 on Road 28	85	This park is only for school environmental programs.
8	Ledbetter Park	1 mile northwest of Cutler on Road 124/Hwy 63	11	Reservations for picnic areas are taken. No fee.
9	Mooney Grove Park	2 Miles south of Caldwell Avenue on Mooney Blvd. In South Visalia.	143	Reservations for picnic areas are taken. Paddle boats, playground, and baseball diamonds. Home of the End Trail statue. One of the largest oak woodlands in Tulare County. Location of the Agriculture and Farm Labor Museum.
10	Pixley Park	1 mile NE of Pixley on Road 124.	22	Reservations for picnic areas are taken. No fee.
11	Tulare County Museum	In Mooney Grove Park, South Visalia.	8.5	Free admission with park fee. Museum is opened Thursday thru Monday (closed Tuesday and Wednesday).
12	Woodville Park	Located in Avenue 166 in Woodville.	10	Reservations for picnic areas are taken. Day use, no entrance fee.
13	West Main Street Park	2 blocks west of County Courthouse on Main Street in Downtown Visalia.	5	Day use, no entrance fee.
Total Acres				693

Source: Tulare County Resource Management Agency, Parks and Recreation Branch, 2008; Automobile Club of Southern California, Tulare County Map. In addition, Earlimart and Plainview Parks have been developed after adoption of the General Plan.

Schools

“A total of 48 school districts provide education throughout Tulare County... Of the 48 school districts, seven are unified districts providing educational services for kindergarten through 12th grade. The remaining 41 districts consist of 36 elementary school districts and four high school districts. Many districts only have one school.”²⁶⁵ As noted earlier, the nearest school is Palo Verde Elementary School, located approximately 1.5-2.0 miles from South Matheny/North Matheny Track; respectively.

Regulatory Setting

Federal

None that apply to this proposed Project.

State

None that apply to this proposed Project.

Local

Project Impact Analysis:

a)and b) No Impact: As discussed in Item 15 e), the proposed Project will not increase the demand for recreational facilities, nor will it put a strain on the existing recreational facilities. The nearest park is Mooney Grove Cutler Park (approximately four miles northeast). The proposed Project does not include recreational facilities. Since there is no population growth associated with the proposed Project, the proposed wastewater collection system and pipeline inter-tie project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; further, there will be no need to construct or expand any recreational facilities as there would be no adverse physical effect on the environment. Therefore, there will be no impact to this resource.

Cumulative Impact Analysis: No Impact: The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, Tulare County General Plan 2030 Update EIR, and Matheny Wastewater Collection System DEIR and REIR. As noted earlier, the proposed Project is a wastewater collection system and pipeline inter-tie project. As there would be no population growth associated with the proposed Project, there would be no impacts to the Recreation resource.

²⁶⁵ Tulare County General Plan 2030 Update Background Report. Pages 7-75 and 7-76. Accessed January 2023 at: <http://generalplan.co.tulare.ca.us/documents.html> then scroll to Recirculated Draft EIR, the click on “Appendix B-Background Report”

XVII. TRANSPORTATION

Would the project:	SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT IMPACT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses, (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in inadequate emergency access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Transportation Resource, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, Tulare County General Plan 2030 Update Environmental Impact Report, and Matheny Wastewater Collection System DEIR and REIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Environmental Setting

As noted previously, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary, the wastewater collection system and pipeline inter-tie project).

“Tulare County has two major regional highways, State Highway [Route] 99 and 198. State Highway [Route] 99 connects Tulare County to Fresno and Sacramento to the north and Bakersfield to the south. State Highway 198 connects from U.S. Highway 101 on the west and continues eastward to Tulare County, passing through the City of Visalia and into Sequoia National Park. The highway system in the County also includes State highways, County-maintained roads, and local streets within each of the eight cities.”²⁶⁶

“Tulare County’s transportation system is composed of several State Routes, including three freeways, multiple highways, as well as numerous county and city routes. The county’s public transit system also includes two common carriers (Greyhound and Orange Belt Stages), the AMTRAK Service Link, other local agency transit and paratransit services, general aviation, limited passenger air service and freight rail service.

Travel within Tulare County is a function of the size and spatial distribution of its population, economic activity, and the relationship to other major activity centers within the Central Valley (such as Fresno and Bakersfield) as well as more distant urban centers such as Los Angeles, Sacramento, and the Bay Area. In addition, there is considerable travel between the northwest portions of Tulare County and southern Fresno County and travel to/from Kings County to the west. Due to the interrelationship between urban and rural activities (employment, housing, services, etc.) and the low average density/ intensity of land uses, the private automobile is the dominant mode of travel for residents in Tulare County.”²⁶⁷

Area Roadways

²⁶⁶ Tulare County General Plan 2030 Update. Page 13-2. Accessed September 2022 at: <http://generalplan.co.tulare.ca.us/index.asp>.

²⁶⁷ Tulare County General Plan 2030 Update Background Report. Page 5-4.

SR 99 east of the proposed Project site; SR 99 provides a connection to Visalia to the north and Tulare to the south, and for general north and south travel. Paige Avenue/Avenue 216 (north of the Matheny Tract and the corridor where the pipeline inter-tie to the City of Tulare DWWTP will run) and Road 95/Pratt Street (on the west side of Matheny Tract) as the corridor where the wastewater pipeline will convey wastewater to the new pipeline inter-tie along Paige Avenue/Avenue 216) are the two primary roadways which will be impacted by construction-related activities of the proposed Project.

Airport

There are seven public use airports in Tulare County. These include six publicly owned and operated facilities (Porterville Municipal, Sequoia Field, Tulare Municipal [Mefford Field], Visalia Municipal, Woodlake, Exeter Airport, and Eckert Field.”²⁶⁸ Mefford Field is the nearest public airport and is located approximately 1.2 miles southeast of South Matheny Tract and approximately 0.80 miles southeast of North Matheny Tract, respectively.

Design for Emergency Access

According to § 21060.3 and § 15359 of the CEQA Guidelines, an “Emergency” means a sudden, unexpected occurrence, involving a clear and imminent danger, demanding immediate action to prevent or mitigate loss of, or damage to, life, health, property, or essential public services. “Emergency” includes such occurrences as fire, flood, earthquake, or other soil or geologic movements, as well as such occurrences as riot, accident, or sabotage.

Alternative Transportation

“Transit planning in Tulare County is done at the county and local level. The Tulare County Association of Governments (TCAG) is the County’s designated Metropolitan Planning Organization (MPO) and also serves as the Tulare County Council of Governments, Transportation Authority, and Regional Transportation Planning Agency. TCAG’s nine member agencies include eight incorporated cities (Dinuba, Exeter, Farmersville, Lindsay, Porterville, Tulare, Visalia, and Woodlake) and Tulare County.”²⁶⁹ Fixed routes transit services operating in Tulare County are provided by Dinuba Area Regional Transit (DART), Porterville Transit (COLT), Tulare Intermodal Express (TIME), Tulare County Area Transit (TCaT), Visalia Transit, and Visalia-Fresno intercity service (V-Line).²⁷⁰

Regulatory Setting

Federal

Not that apply to this Project.

State

CEQA Guidelines Section 15064.3, Subdivision (b): Criteria for Analyzing Transportation Impacts

- (2) Land Use Projects. Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be considered to have a less than significant transportation impact.
- (3) Transportation Projects. Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, a lead agency may tier from that analysis as provided in Section 15152.

²⁶⁸ Tulare County Comprehensive Airport Land Use Plan. Pages 1-1 and 1-3 Accessed January 2023 at: <https://tularecounty.ca.gov/rma/rma-documents/planning-documents/tulare-county-comprehensive-airport-land-use-plan/>

²⁶⁹ Tulare County Association of Governments (TCAG). Tulare County Long Range Transit Plan. Page 2-2. Accessed January 2023 at: <https://tularecog.org/tcag/planning/transit-planning/transit-plans/transit-development-plans-short-and-long-range-transit-plans/tulare-county-regional-long-range-transit-plan/>

²⁷⁰ Ibid. 30-32.

- (4) Qualitative Analysis. If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.
- (5) Methodology. A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.

Caltrans: Transportation Concept Reports

Each District of the State of California Transportation Department (Caltrans) prepares a Transportation Concept Report (TCP) for every state highway or portion thereof in its jurisdiction. The TCR usually represents the first step in Caltrans' long-range corridor planning process. The purpose of the TCR is to determine how a highway will be developed and managed so that it delivers the targeted LOS and quality of operations that are feasible to attain over a 20-year period, otherwise known as the "route concept" or beyond 20 years, for what is known as the "ultimate concept".

Caltrans has prepared a number concept reports for State Routes, Interstate Routes, and U.S. Routes. Tulare County is located in Caltrans District 6. Caltrans has completed a Transportation Concept Report (November 2003 2016) for State Route 99, which is adjacent to and west of the proposed Project site.

Caltrans Guide for the Preparation of Traffic Impact Studies

The California Department of Transportation (Caltrans) has developed this "Guide for the Preparation of Traffic Impact Studies" to provide a starting point and a consistent basis in which Caltrans evaluates traffic impacts to State highway facilities. The applicability of this guide for local streets and roads (non-State highways) is at the discretion of the effected jurisdiction. Caltrans Guide for the Preparation of Traffic Impact Studies establishes the following criterion as a starting point in determining when a TIS is needed:

1. Generates over 100 peak hour trips assigned to a State highway facility
2. Generates 50 to 100 peak hour trips assigned to a State highway facility – and, affected State highway facilities are experiencing noticeable delay; approaching unstable traffic flow conditions (LOS "C" or "D").
3. Generates 1 to 49 peak hour trips assigned to a State highway facility – the following are examples that may require a full TIS or some lesser analysis
 - a. Affected State highway facilities experiencing significant delay; unstable or forced traffic flow conditions (LOS "E" or "F").
 - b. The potential risk for a traffic incident is significantly increased (i.e., congestion related collisions, non-standard sight distance considerations, increase in traffic conflict points, etc.).
 - c. Change in local circulation networks that impact a State highway facility (i.e., direct access to State highway facility, a non-standard highway geometric design, etc.).²⁷¹

Caltrans: Transportation Concept Reports

Each District of the State of California Transportation Department (Caltrans) prepares a Transportation Concept Report (TCP) for every state highway or portion thereof in its jurisdiction. The TCR usually represents the first step in Caltrans' long-range corridor planning process. The purpose of the TCR is to determine how a highway will be developed and managed so that it delivers the targeted LOS and quality of operations that are feasible to attain over a 20-year period, otherwise known as the "route concept" or beyond 20 years, for what is known as the "ultimate concept". The proposed Project site is located in Tulare County which and Caltrans District 6. As there is an on-ramp from Oakdale Avenue allowing direct access to northbound SR 99, it is included in the SR 99 Transportation Concept Report (prepared in November 2003) which applies to this proposed Project.

²⁷¹ Caltrans. Guide for the Preparation of Traffic Impact Studies. A. Trip Generation Thresholds. December 2002. Page 2. Accessed January 2023 at: <https://www.contracosta.ca.gov/DocumentCenter/View/34121/Caltrans2002-TIS-Guidelines-PDF>

"The California Department of Transportation (Caltrans) has developed this "Guide for the Preparation of Traffic Impact Studies" in response to a survey of cities and counties in California. The purpose of that survey was to improve the Caltrans local development review process (also known as the Intergovernmental Review/California Environmental Quality Act or IGR/CEQA process). The survey indicated that approximately 30 percent of the respondents were not aware of what Caltrans required in a traffic impact study (TIS). In the early 1990s, the Caltrans District 6 office located in Fresno identified a need to provide better quality and consistency in the analysis of traffic impacts generated by local development and land use change proposals that effect State highway facilities. At that time, District 6 brought together both public and private sector expertise to develop a traffic impact study guide. The District 6 guide has proven to be successful at promoting consistency and uniformity in the identification and analysis of traffic impacts generated by local development and land use changes. The guide developed in Fresno was adapted for statewide use by a team of Headquarters and district staff. The guide will provide consistent guidance for Caltrans staff who review local development and land use change proposals as well as inform local agencies of the information needed for Caltrans to analyze the traffic impacts to State highway facilities. The guide will also benefit local agencies and the development community by providing more expeditious review of local development proposals."²⁷²

Local

"Transportation Control Measures (TCM) are designed to reduce vehicle miles traveled, vehicle idling, and/or traffic congestion in order to reduce vehicle emissions. Currently, Tulare County is a nonattainment region under the Federal Clean Air Act (CAA) and the California Clean Air Act (CCAA). Both of these acts require implementation of TCMs. These TCMs for Tulare County are as follows:

- Rideshare Programs;
- Park and Ride Lots;
- Alternate Work Schedules;
- Bicycle Facilities;
- Public Transit;
- Traffic Flow Improvement; and
- Passenger Rail and Support Facilities."²⁷³

Tulare County General Plan 2030 Update

The following Tulare County General Plan 2030 Update policies for this resource apply to this Project: *TC-1.14 Roadway Facilities* - As part of the development review process, new development shall be conditioned to fund, through impact fees, tonnage fees, and/or other mechanism, the construction and maintenance of roadway facilities impacted by the project. As projects or locations warrant, construction or payment of pro-rata fees for planned road facilities may also be required as a condition of approval;; *TC-1.16 County Level Of Service (LOS) Standards* wherein the County shall strive to develop and manage its roadway system (both segments and intersections) to meet a LOS of "D" or better in accordance with the LOS definitions established by the Highway Capacity Manual; and *HS-1.9 Emergency Access* wherein the County shall require, where feasible, road networks (public and private) to provide for safe and ready access for emergency equipment and provide alternate routes for evacuation.

Tulare County Transportation Control Measures (TCM)

"Transportation Control Measures (TCM) are designed to reduce vehicle miles traveled, vehicle idling, and/or traffic congestion in order to reduce vehicle emissions. Currently, Tulare County is a nonattainment region under the Federal Clean Air Act (CAA) and the California Clean Air Act (CCAA). Both of these acts require implementation of TCMs. These TCMs for Tulare County are as follows:

- Rideshare Programs;
- Park and Ride Lots;
- Alternate Work Schedules;
- Bicycle Facilities;
- Public Transit;

²⁷² Ibid.

²⁷³ Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report. Page 3.2-2.

- Traffic Flow Improvement; and
- Passenger Rail and Support Facilities.

The proposed wastewater collection system and pipeline inter-tie project, it will not result in an increase to vehicle traffic volumes, vehicle miles travelled, or any of the TCMs listed earlier, the TCMs do not apply to the proposed Project.

Project Impact Analysis:

- a) **No Impact:** The Project does not require the construction of any new roadways. The Project would result in short-term, temporary traffic impacts during the construction-related phase. Additionally, following completion, the wastewater collection system and pipeline tie-in would not generate vehicle trips, with the exception of routine maintenance-related trips. Therefore, the Project would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. As such, the Project would result in
- b) **No Impact:** The proposed Project will not result a conflict or be inconsistent with CEQA Guideline section 15064.3(b) is vehicle-related trips will be short-term, temporary, and intermittent during construction-related activities and will cease during operations-related activities. The nature of the proposed project (that is, wastewater collection system and pipeline tie-in) is not conducive to generating vehicle miles travelled (VMT). VMT will be limited to construction-related jobs (that is, employees), as such, VMT will also be short-term, temporary, and intermittent during construction-related activities and will cease during operations-related activities. Therefore, the proposed Project would result in no impact to CEQA Guideline section 15064.3(b).
- c) **No Impact:** Construction of the proposed Project would require the delivery of construction-related equipment and facility materials, some of which may require transport by oversize vehicles. The use of oversize vehicles during construction can create a hazard to the public by limiting motorist views on roadways and by the obstruction of space. Construction-related oversize vehicle loads must comply with permit-related and other requirements of the California Vehicle Code and the California Streets and Highway Code. California Highway Patrol escorts may be required at the discretion of Caltrans and the County and would be detailed in respective oversize load permits. Due to the rural nature of the area roads and flat terrain, construction-related vehicles are not anticipated to incur hazards traveling to and from the Project site. Furthermore, the proposed Project would not include a design feature or use vehicles with incompatible uses that would create a hazard on the roadways surrounding the Project area. Any impacts to this Checklist Item would be less than significant. Road 95/Pratt Street and Paige Avenue/Avenue 216
- d) **Less Than Significant Impact With Mitigation:** The proposed Project construction-related activities may temporarily interrupt access to adjacent properties. However, the interruptions would be no longer than a few hours while trenching- and installation-related activities occur at each property's access driveway. It is possible that that Project construction-related activities would temporarily impact vehicle travel lanes while the pipelines are being installed underneath roadways or along roadway shoulders. With the implementation of **Mitigation Measure 17-1**, the Project would result in a less than significant impact to this resource.

Cumulative Impact Analysis: Less Than Significant Impact With Mitigation: The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, Tulare County General Plan Background Report, Tulare County General Plan 2030 Update EIR, and Matheny Wastewater Collection System DEIR and REIR.

The proposed Project will not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. Further, it will not conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways. VMT will be limited to construction-related jobs (that is, employees), as such, VMT will also be short-term, temporary, and intermittent during construction-related activities and will cease during operations-related activities. Therefore, the proposed Project would result in no impact to CEQA Guideline section 15064.3(b). The proposed Project construction-related activities may temporarily interrupt access to adjacent properties. However, as noted earlier, the interruptions would be no longer than a few hours while

trenching- and installation-related activities occur at each property's access driveway. Also as noted earlier, it is possible that that Project construction-related activities would temporarily impact vehicle travel lanes while the pipelines are being installed underneath roadways or along roadway shoulders. With the implementation of Mitigation Measure 17-1, the Project would result in a less than significant impact to this resource.

Mitigation Measure(s):

Mitigation Measure 17-1

- 17-1** Fences, barriers, lights, flagging, guards, and signs will be installed as determined appropriate by the public agency having jurisdiction to give adequate warning to the public of the construction and of any potentially dangerous condition to be encountered as a result thereof.

XVIII. TRIBAL CULTURAL RESOURCES

Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

	SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT IMPACT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Transportation Resource, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, Tulare County General Plan 2030 Update Environmental Impact Report, and Matheny Wastewater Collection System DEIR and REIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Environmental Setting

“Tulare County lies within a culturally rich province of the San Joaquin Valley. Studies of the prehistory of the area show inhabitants of the San Joaquin Valley maintained fairly dense populations situated along the banks of major waterways, wetlands, and streams. Tulare County was inhabited by aboriginal California Native American groups consisting of the Southern Valley Yokuts, Foothill Yokuts, Monache, and Tubatulabal. Of the main groups inhabiting the Tulare County area, the Southern Valley Yokuts occupied the largest territory.”²⁷⁴

Information provided by the Southern San Valley Historical Resources Information Center, at California State University, Bakersfield (Center) and the California Native American Heritage Commission Sacred Lands File search (included in Attachment “C” of this document) were used as the basis for determining that this Project would result in a less than significant impact with mitigation.

As noted previously, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary, the wastewater collection system and pipeline inter-tie project).

Cultural Background

“Tulare County lies within a culturally rich province of the San Joaquin Valley. Studies of the prehistory of the area show inhabitants of the San Joaquin Valley maintained fairly dense populations situated along the banks of major waterways, wetlands, and streams. Tulare County was inhabited by aboriginal California Native American groups consisting of the Southern Valley Yokuts, Foothill Yokuts, Monache, and Tubatulabal. Of the main groups inhabiting the Tulare County area, the Southern Valley Yokuts occupied the largest territory.”²⁷⁵

²⁷⁴ Tulare County General Plan 2030 Update. August 2012. Page 8-5.

²⁷⁵ Tulare County 2030 General Plan. Page 8-5.

“California’s coast was initially explored by Spanish (and a few Russian) military expeditions during the late 1500s. However, European settlement did not occur until the arrival into southern California of land-based expeditions originating from Spanish Mexico starting in the 1760s. Early settlement in the Tulare County area focused on ranching. In 1872, the Southern Pacific Railroad entered Tulare County, connecting the San Joaquin Valley with markets in the north and east. About the same time, valley settlers constructed a series of water conveyance systems (canals, dams, and ditches) across the valley. With ample water supplies and the assurance of rail transport for commodities such as grain, row crops, and fruit, a number of farming colonies soon appeared throughout the region.”²⁷⁶

“The colonies grew to become cities such as Tulare, Visalia, Porterville, and Hanford. Visalia, the County seat, became the service, processing, and distribution center for the growing number of farms, dairies, and cattle ranches. By 1900, Tulare County boasted a population of about 18,000. New transportation links such as SR 99 (completed during the 1950s), affordable housing, light industry, and agricultural commerce brought steady growth to the valley. The California Department of Finance estimated the 2007 Tulare County population to be 430,167.”²⁷⁷

Tulare County’s Documented Cultural Resources

Tulare County’s known and recorded cultural resources were identified through historical records, such as those found in the National Register of Historic Places, the Historic American Building Survey/Historic American Engineering Record (HABS/HAER), the California Register of Historic Resources, California Historical Landmarks, and the Tulare County Historical Society list of historic resources. These resources are available to the general public. They have been summarized in the Tulare County General Plan Update 2030 Background Report (2010).²⁷⁸

As noted in the Cultural resources Item, in addition to the Cultural Resources discussion contained in the Matheny Tract Wastewater Collection Project Feasibility Report DEIR, the Matheny Tract Wastewater Pipeline Project, “Phase I Survey/Class III Inventory, PNP Matheny Pipeline Project, Tulare County, California” (Phase I Survey) prepared for the pipeline project to the City of Tulare DWWTP supplements the information in the Wastewater Collection Project’s EIR. The Phase I Survey includes information regarding environmental background and geoarchaeological sensitivity; ethnographic background; pre-contact archaeological background; historical background; etc.²⁷⁹ In summary, the Center’s search response letter indicated that there are no recorded cultural resources within the project area and three recorded resources within a one-half mile radius (P-54-000042 Prehistoric, habitation site [Collected materials in Kern County Historical Museum, Latta Collection and Munger Collection]; (P-54-003608, the Tulare Irrigation Canal); and P-54-005358, Hooper Ditch). There are no recorded cultural resources within the project area or radius that are listed in the National Register of Historic Places, the California Register of Historical Resources, the California Points of Historical Interest, California Inventory of Historic Resources, or the California State Historic Landmarks.²⁸⁰ The Center also recommended that the NAHC be contacted regarding cultural resources that may not be included in the CHRIS inventory (see Attachment “C”). It is noted that the Phase I report is limited in area to where the alignment to the pipeline inter-tie (i.e., the 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP) will occur. Tulare County RMA also requested an updated Sacred Lands File (SLF) search from the California Native American Heritage Commission (NAHC) on December 22, 2022, for the proposed Project areas including the entirety of Matheny Tract and the alignment of the pipeline inter-tie to the DWWTP. The NAHC provided a letter dated January 19, 2023, showing “positive” results which indicates there is a documented Sacred Lands within the Project area (also in Attachment “C”) and that RMA contact the tribes included on the list provided by NAHC.

Regulatory Setting

Federal

The National Historic Preservation Act

²⁷⁶ Ibid.

²⁷⁷ Op. Cit. 8-6.

²⁷⁸ Tulare County General Plan Background Report. Pages 9-57 to 9-59.

²⁷⁹ See “Phase I Survey/Class III Inventory, PNP Matheny Pipeline Project, Tulare County, California” Pages 7-13. Prepared by ASM Affiliates, Inc. as included in Attachment “C”

²⁸⁰ DEIR for the Tract Wastewater Collection System Matheny Tract. Chapter 3.5 Cultural Resources. Page 3.5-11. Available at: <https://tularecounty.ca.gov/rma/planning-building/environmental-planning/environmental-planning-archive/> California Historical Resources Information System (CHRIS). Southern San Joaquin Valley Information Center. California State University, Bakersfield. Record Search 22-319. See Attachment “C” of this MND.

The National Historic Preservation Act (NHPA) of 1966, which has been amended several times, was passed to acknowledge the importance of protecting our nation's heritage from federal development. The NHPA sets federal historic preservation policy, establishes partnerships between the Federal government and states and the Federal government and tribes, creates the [National Register of Historic Places](#) and [National Historic Landmarks](#) programs, mandates the selection of qualified [State Historic Preservation Officers](#), establishes the [Advisory Council on Historic Preservation](#), charges Federal agencies with stewardship, and establishes the role of [Certified Local Governments](#) within the states.

Title I of the statute established the National Register of Historic Places to create a national listing of historic properties (districts, sites, buildings, structures, and objects) significant in American history, architecture, archeology, engineering, and culture. Title I also expanded the level of Federal concern to include the preservation of historic properties of local or State significance. It established State Historic Preservation Officers as partners in the national historic preservation program and also describes how local governments or Indian tribes may, in certain circumstances, carry out SHPO functions.

Implementation of Section 106 of Title I has been critical to archeology and archeological preservation in the United States. Section 106 requires federal agencies to take into account the effects of their actions on historic properties by identifying historic properties, assessing adverse effects, and resolving those adverse effects. The process is initiated by the federal agency, and includes comment and input from stakeholders at the local and State levels, as well as the Advisory Council on Historic Preservation. After the procedures for implementing Section 106 were established (6 CFR 800), the field of professional archeology expanded throughout governments and the private sector to meet the need for compliance.

Section 110 requires all federal agencies to establish -- in conjunction with the Secretary of the Interior -- their own historic preservation programs for the identification, evaluation, and protection of historic properties, including archeological properties. Determinations of Eligibility for the National Register are established during Phase II archeological surveys.

Title II

Title II of NHPA establishes the Advisory Council on Historic Preservation, an independent Federal agency. The Council and its staff advise Federal agencies on their roles in the national historic preservation program, especially Section 106. The ACHP also develops advice and training to support Federal agencies.

Title IV

Title IV of the statute established the National Center for Preservation Technology and Training, part of the National Park Service. NCPTT contributes research and training to archeological preservation practice.

Statute and regulation texts:

- [National Historic Preservation Act](#) (16 U.S. Code 470 et seq.), statute text.
- [National Register of Historic Places](#) (36 CFR 60), regulation text.
- [Procedures for State, Tribal, and Local Government Historic Preservation Programs](#) (36 CFR 61), regulation text.
- [Determinations of Eligibility for Inclusion in the National Register of Historic Places](#) (36 CFR 63), regulation text.
- [Protection of Historic Properties](#) (36 CFR 800), regulation text.²⁸¹

State

California State Office of Historic Preservation (OHP)

“The California State Office of Historic Preservation (OHP) is responsible for administering federally and state mandated historic preservation programs to further the identification, evaluation, registration and protection of California's irreplaceable archaeological and historical resources under the direction of the State Historic Preservation Officer (SHPO), a gubernatorial appointee, and the State Historical Resources Commission.”²⁸²

²⁸¹ U.S. Department of the Interior. National Park Service. Accessed January 2023 at: [National Historic Preservation Act of 1966 - Archeology \(U.S. National Park Service\) \(nps.gov\)](https://www.nps.gov/actof1966/archeology)

²⁸² Office of Historic Preservation. Mission and Responsibilities. Accessed January 2023 at: http://ohp.parks.ca.gov/?page_id=1066.

“OHP’s responsibilities include identifying, evaluating, and registering historic properties; ensuring compliance with federal and state regulatory obligations; encouraging the adoption of economic incentives programs designed to benefit property owners; encouraging economic revitalization by promoting a historic preservation ethic through preservation education and public awareness and, most significantly, by demonstrating leadership and stewardship for historic preservation in California.”²⁸³

A historical resource may be eligible for inclusion in the California Register of Historical Resources (CRHR) if it:

- Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
- Is associated with the lives of persons important to our past;
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Has yielded, or may be likely to yield, information important in prehistory or history.²⁸⁴

Native American Heritage Commission

“The Native American Heritage Commission (NAHC), created in statute in 1976, is a nine-member body, appointed by the Governor, to identify and catalog cultural resources -- ancient places of special religious or social significance to Native Americans and known ancient graves and cemeteries of Native Americans on private and public lands in California. The NAHC is also charged with ensuring California Native American tribes’ accessibility to ancient Native American cultural resources on public lands, overseeing the treatment and disposition of inadvertently discovered Native American human remains and burial items, and administering the California Native American Graves Protection and Repatriation Act (CalNAGPRA), among many other powers and duties.”²⁸⁵

Tribal Consultation Requirements: AB 52 (Gatto, 2014)

The Public Resources Code has established that “[a] project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment.” (Pub. Resources Code, § 21084.2.) To help determine whether a project may have such an effect, the Public Resources Code requires a lead agency to consult with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a proposed project. That consultation must take place prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report for a project. (Pub. Resources Code, § 21080.3.1.) If a lead agency determines that a project may cause a substantial adverse change to tribal cultural resources, the lead agency must consider measures to mitigate that impact.²⁸⁶

CEQA Guidelines: Archaeological Resources

Section 15064.5(c) of CEQA Guidelines provides specific guidance on the treatment of archaeological resources as noted below.^{287 288}

- (1) When a Project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource, as defined in subdivision (a).
- (2) If a lead agency determines that the archaeological site is an historical resource, it shall refer to the provisions of Section 21084.1 of the Public Resources Code, and this section, Section 15126.4 of the Guidelines, and the limits contained in Section 21083.2 of the Public Resources Code do not apply.
- (3) If an archaeological site does not meet the criteria defined in subdivision (a), but does meet the definition of a unique archeological resource in Section 21083.2 of the Public Resources Code, the site shall be treated in accordance with the provisions of section 21083.2. The time and cost limitations described in Public Resources Code Section 21083.2 (c–f) do not apply to surveys and site evaluation activities intended to determine whether the Project location contains unique archaeological resources.

²⁸³ Ibid.

²⁸⁴ Office of Historic Preservation. California Register of Historic Places. Accessed January 2023 at: http://www.ohp.parks.ca.gov/?page_id=21238.

²⁸⁵ Native American Heritage Commission. Welcome. Accessed January 2023 at: <http://nahc.ca.gov/>.

²⁸⁶ Office of Planning and Research. Technical Advisory: AB 52 and Tribal Cultural Resources in CEQA (June 2017). Page 3. Accessed January 2023 at: https://www.opr.ca.gov/docs/20200224-AB_52_Technical_Advisory_Feb_2020.pdf

²⁸⁷ Office of Historic Preservation. CEQA Basics. Accessed January 2023 at: https://ohp.parks.ca.gov/?page_id=21721.

²⁸⁸ CEQA Guidelines. Section 15064.5 - Determining the Significance of Impacts to Archaeological and Historical Resources. Accessed January 2023 at: https://www.califaep.org/docs/2022_CEQA_Statue_and_Guidelines.pdf or [2022 CEQA Statutes and Guidelines \(califaep.org\)](https://www.califaep.org/docs/2022_CEQA_Statue_and_Guidelines.pdf)

- (4) If an archaeological resource is neither a unique archaeological nor an historical resource, the effects of the Project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study or EIR, if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process.

CEQA Guidelines: Human Remains

Public Resources Code Sections 5097.94 and 5097.98 provide guidance on the disposition of Native American burials (human remains), and fall within the jurisdiction of the Native American Heritage Commission:²⁸⁹

- (d) When an initial study identifies the existence of, or the probable likelihood, of Native American human remains within the Project, a lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission as provided in Public Resources Code Section 5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any Items associated with Native American burials with the appropriate Native Americans as identified by the Native American Heritage Commission. Action implementing such an agreement is exempt from:
- (1) The general prohibition on disinterring, disturbing, or removing human remains from any location other than a dedicated cemetery (Health and Safety Code Section 7050.5).
 - (2) The requirements of CEQA and the Coastal Act.
- (e) In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken:
- (1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:
 - (A) The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and
 - (B) If the coroner determines the remains to be Native American:
 4. The coroner shall contact the Native American Heritage Commission within 24 hours.
 5. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American.
 6. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98, or
 - (2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.
 - (D) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.
 - (E) The descendant identified fails to make a recommendation; or
 - (C) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.
- (f) As part of the objectives, criteria, and procedures required by Section 21082 of the Public Resources Code, a lead agency should make provisions for historical or unique archaeological resources accidentally discovered during construction. These provisions should include an immediate evaluation of the find by a qualified archaeologist. If the find is determined to be an historical or unique archaeological resource, contingency funding and a time allotment sufficient to allow for implementation of avoidance measures or appropriate mitigation should be available. Work could continue on other parts of the building site while historical or unique archaeological resource mitigation takes place.

Local

Tulare County General Plan 2030 Update

The General Plan has a number of policies that apply to Projects within Tulare County. General Plan policies that relate to the proposed Project are listed as follows: *ERM-6.1 Evaluation of Cultural and Archaeological Resources* wherein the County shall participate in and support efforts to identify its significant cultural and archaeological resources using appropriate State and Federal standards; *ERM-6.2 Protection of Resources with Potential State or Federal Designations* wherein the County

²⁸⁹ Op. Cit.

shall protect cultural and archaeological sites with demonstrated potential for placement on the National Register of Historic Places and/or inclusion in the California State Office of Historic Preservation's California Points of Interest and California Inventory of Historic Resources; *ERM-6.3 Alteration of Sites with Identified Cultural Resources* which states that when planning any development or alteration of a site with identified cultural or archaeological resources, consideration should be given to ways of protecting the resources. Development can be permitted in these areas only after a site specific investigation has been conducted pursuant to CEQA to define the extent and value of resource, and Mitigation Measures proposed for any impacts the development may have on the resource; *ERM-6.4 Mitigation* which states that if preservation of cultural resources is not feasible, every effort shall be made to mitigate impacts, including relocation of structures, adaptive reuse, preservation of facades, and thorough documentation and archival of records; *ERM-6.9 Confidentiality of Archaeological Sites* wherein the County shall, within its power, maintain confidentiality regarding the locations of archaeological sites in order to preserve and protect these resources from vandalism and the unauthorized removal of artifacts; and *ERM-6.10 Grading Cultural Resources Sites* wherein the County shall ensure all grading activities conform to the County's Grading Ordinance and California Code of Regulations, Title 20, § 2501 et. seq.

The intensive agricultural use of the Project site has continually been disturbed to the point that there are no evident surface Tribal cultural resources. However, as discussed below, mitigation measures are included in the unlikely event that Tribal cultural resources are encountered.

Project Impact Analysis:

a) and b) Less Than Significant Impact With Mitigation: As noted previously, information provided by the Southern San Valley Historical Resources Information Center, at California State University, Bakersfield (Center) and the California Native American Heritage Commission Sacred Lands File search (included in Attachment "C" of this document) were used as the basis for determining that this proposed Project would result in a less than significant impact with mitigation. Although no cultural resources were identified within the proposed Project area in the records search, there is a possibility that subsurface resources could be uncovered during proposed Project construction-related activities. In such an unlikely event, potentially significant impacts to previously unknown subsurface resources may occur. Also, to date, two responses have been received from the tribes that were notified in compliance with AB 52 requirements through a list of potentially affected tribes provided by the NAHC. One tribe (who's affiliation will be confidential) responded which included a request for tribal representative monitoring in the event a subsurface discovery was to occur. Although it is not anticipated that Native American tribal cultural resources or remains will be found within the proposed Project area, **Mitigation Measures 18-1 through 18-3** are included in the unlikely event that Native American remains or tribal cultural resources are unearthed during any ground disturbance activities. **Mitigation Measures 18-1 through 18-3** would be implemented to reduce the potential level of impact to this resource as less than significant for resources listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k); or to a resource consider significant to a California Native American tribe. Therefore, the proposed Project would result in a less than significant impact to this resource.

Cumulative Impact Analysis: Less Than Significant Impact With Mitigation: - The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, Tulare County General Plan 2030 Update EIR, and Matheny Wastewater Collection System DEIR and REIR. The proposed Project would only contribute to cumulative impacts related to this Checklist Item if Project-specific impacts were to occur. With implementation of Mitigation Measure 18-1 through 18-3, potential Project-specific impacts would be reduced to less than significant levels. Therefore, the proposed Project's cumulative impacts would be less than significant with mitigation. Also see the Mitigation Monitoring and Reporting Program (MMRP) in Attachment "C".

As previously discussed, based on the analysis noted earlier, impacts to Tribal Cultural Resources will be reduced to a level of ***Less Than Significant Project-specific and Cumulative Impacts With Mitigation*** with the implementation of Mitigation Measures 18-1 through 18-3.

Mitigation Measures: 18-1 through 18-3 (which can be found in their entirety in Attachment C of this IS/MND)

Summary of Mitigation Measures:

18-1. Tribal representative monitoring during construction-related activities as appropriate and applicable.

- 18-2.** Cessation of work activities, County notification, determination of significance, actions to be taken as determined by a qualified archaeologist/paleontologist, treatment plan, collaboration with affected Native American Tribe.
- 18-3.** Inadvertent discovery of human remains during excavation, cessation of excavation or disturbance, contact of Coroner/Sheriff, contact NAHC, and dignified reburial.

Therefore, implementation of Mitigation Measure 18-1 through 18-3 would result in a less than significant impact to this item.

XIX. UTILITIES AND SERVICE SYSTEMS

Would the project:	SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT IMPACT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Analysis:

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Utility/Service Systems Resources, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, Tulare County General Plan 2030 Update Environmental Impact Report, and Matheny Wastewater Collection System DEIR and REIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Environmental Setting

"Tulare County and special districts provide many important services to County residents and businesses in unincorporated communities and hamlets such as water, wastewater, storm drainage, solid waste removal, utilities, communications, fire protection, law enforcement, and a number of other community facilities and services (schools, community centers, etc.)."²⁹⁰

"Water districts supply water to communities and hamlets throughout the County. Most communities and some hamlets have wastewater treatment systems; however, several communities including Three Rivers, Plainview, Alpaugh, and Ducor rely on individual septic systems. Storm drainage facilities are generally constructed and maintained in conjunction with transportation improvements or new subdivisions in communities. Solid waste collection in the County is divided into service areas, as determined by the Board of Supervisors, with one license for each area. Southern California Edison provides electric service to the south and central areas of Tulare County while PG&E provides electric service in the north. The [Southern California] Gas Company is the primary provider of natural gas throughout the County."²⁹¹

As previously noted, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and

²⁹⁰ Tulare County General Plan Update 2030. Page 14-3.

²⁹¹ Ibid. 14-3.

connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary, the wastewater collection system and pipeline inter-tie project).

Regulatory Setting

Federal

U.S. Environmental Protection Agency (U.S. EPA) - Federal Regulation Title 40, Part 503

In 1993, the U.S. Environmental Protection Agency (U.S. EPA) promulgated Standards for the Use or Disposal of Sewage Sludge (Code of Federal Regulations Title 40, Part 503), which establish pollutant limitations, operational standards for pathogen and vector attraction reduction, management practices, and other provisions intended to protect public health and the environment from any reasonably anticipated adverse conditions from potential waste constituents and pathogenic organisms.

This part establishes standards, which consist of general requirements, pollutant limits, management practices, and operational standards, for the final use or disposal of sewage sludge generated during the treatment of domestic sewage in a treatment works. Standards are included in this part for sewage sludge applied to the land, placed on a surface disposal site, or fired in a sewage sludge incinerator. Also included in this part are pathogen and alternative vector attraction reduction requirements for sewage sludge applied to the land or placed on a surface disposal site.

In addition, the standards in this part include the frequency of monitoring and recordkeeping requirements when sewage sludge is applied to the land, placed on a surface disposal site, or fired in a sewage sludge incinerator. Also included in this part are reporting requirements for Class I sludge management facilities, publicly owned treatment works (POTWs) with a design flow rate equal to or greater than one million gallons per day, and POTWs that serve 10,000 people or more.²⁹²

Resource Conservation and Recovery Act (RCRA)²⁹³

Congress passed RCRA on October 21, 1976 to address the increasing problems the nation faced from our growing volume of municipal and industrial waste. RCRA, which amended the Solid Waste Disposal Act of 1965, set national goals for:

- Protecting human health and the environment from the potential hazards of waste disposal.
- Conserving energy and natural resources.
- Reducing the amount of waste generated.
- Ensuring that wastes are managed in an environmentally-sound manner
- To achieve these goals, RCRA established three distinct, yet interrelated, programs:
- The solid waste program, under RCRA Subtitle D, encourages states to develop comprehensive plans to manage nonhazardous industrial solid waste and municipal solid waste, sets criteria for municipal solid waste landfills and other solid waste disposal facilities, and prohibits the open dumping of solid waste.
- The hazardous waste program, under RCRA Subtitle C, establishes a system for controlling hazardous waste from the time it is generated until its ultimate disposal — in effect, from “cradle to grave.”
- The underground storage tank (UST) program, under RCRA Subtitle I, regulates underground storage tanks containing hazardous substances and petroleum products. RCRA banned all open dumping of waste, encouraged source reduction and recycling, and promoted the safe disposal of municipal waste. RCRA also mandated strict controls over the treatment, storage, and disposal of hazardous waste.

State

The Integrated Waste Management Act (Assembly Bill 939)

In 1989 the California legislature passed the Integrated Waste Management Act of 1989, known as AB 939. The bill mandates a reduction of waste being disposed: jurisdictions were required to meet diversion goals of 25% by 1995 and 50% by the year 2000. AB 939 also established an integrated framework for program implementation, solid waste planning, and solid waste facility and landfill compliance.

²⁹² National Archives and Records Administration. Code of Federal Regulations. Title 40: Protection of Environment Part 503: Standards for the Use of Disposal of Sewage Sludge. Accessed January 2023 at: <https://www.ecfr.gov/current/title-40/chapter-I/subchapter-O/part-503?toc=1>.

²⁹³ United States Environmental Protection Agency. Summary of the Resource Conservation and Recovery Act. Accessed January 2023 at: <https://www.epa.gov/laws-regulations/summary-resource-conservation-and-recovery-act> ; then click on “EPA History: RCRA”.

State Water Quality Control Board

“The State Water Resources Control Board (State Water Board) was created by the Legislature in 1967. The joint authority of water allocation and water quality protection enables the State Water Board to provide comprehensive protection for California’s waters. The State Water Board consists of five full-time salaried members, each filling a different specialty position. Board members are appointed to four-year terms by the Governor and confirmed by the Senate. There are nine Regional Water Quality Control Boards (Regional Boards). The mission of the Regional Boards is to develop and enforce water quality objectives and implementation plans that will best protect the State’s waters, recognizing local differences in climate, topography, geology and hydrology. Each Regional Board has seven part-time members appointed by the Governor and confirmed by the Senate. Regional Boards develop “basin plans” for their hydrologic areas, issue waste discharge requirements, take enforcement action against violators, and monitor water quality. The task of protecting and enforcing the many uses of water, including the needs of industry, agriculture, municipal districts, and the environment is an ongoing challenge for the State and Regional Water Quality Control Boards.”²⁹⁴

Regional Water Quality Control Board (RWQCB)

“There are nine Regional Water Quality Control Boards (Regional Boards). The mission of the Regional Boards is to develop and enforce water quality objectives and implementation plans that will best protect the State’s waters, recognizing local differences in climate, topography, geology and hydrology. Each Regional Board has seven part-time members appointed by the Governor and confirmed by the Senate. Regional Boards develop “basin plans” for their hydrologic areas, issue waste discharge requirements, take enforcement action against violators, and monitor water quality.”²⁹⁵

The Regional Water Quality Control Board – Biosolids

In California, the beneficial reuse of treated municipal sewage sludge (*a.k.a.*, biosolids) generally must comply with the California Water Code in addition to meeting the requirements specified in Part 503 in Title 40 of the Code of Federal Regulations.

In July 2004, the State Water Resources Control Board adopted Water Quality Order No. 2004-12-DWQ (General Order), and certified a supporting statewide Programmatic Environmental Impact Report (PEIR)

The General Order incorporates the minimum standards established by the Part 503 Rule and expands upon them to fulfill obligations to the California Water Code. However, since California does not have delegated authority to implement the Part 503 Rule, the General Order does not replace the Part 503 Rule. The General Order also does not preempt or supersede the authority of local agencies to prohibit, restrict, or control the use of biosolids subject to their jurisdiction, as allowed by law.

Persons interested in seeking coverage under the General Order should contact the appropriate Regional Water Quality Control Board. Only applicants who submit a complete *Notice of Intent* (NOI), appropriate application fee, and are issued a Notice of Applicability by the executive officer of the appropriate Regional Water Quality Control Board are authorized to land apply biosolids at an agricultural, horticultural, silvicultural, or land reclamation site as a soil amendment under the General Order.

State Water Resources Control Board, Divisions of Drinking Water and Clean Water

Recycled water regulations are administered by both Central RWQCB and the California State Water Resources Control Board (SWRCB). The regulations governing recycled water are found in a combination of sources, including the Health and Safety Code, Water Code, and Titles 22 and 17 of the California Code of Regulations (CCR). Issues related to the treatment and distribution of recycled water are generally under the permitting authority of RWQCB and the Clean Water Division of the SWRCB.

State Water Resources Control Board Water Onsite Wastewater Treatment Systems (OWTS) Policy

“The purpose of this Policy is to allow the continued use of OWTS, while protecting water quality and public health. This Policy recognizes that responsible local agencies can provide the most effective means to manage OWTS on a routine basis. Therefore, as an important element, it is the intent of this policy to efficiently utilize and improve upon where necessary

²⁹⁴ California State Water Boards Mission Statement. Accessed January 2023 at:
http://www.waterboards.ca.gov/about_us/water_boards_structure/mission.html.

²⁹⁵ Ibid.

existing local programs through coordination between the State and local agencies. To accomplish this purpose, this Policy establishes a statewide, risk-based, tiered approach for the regulation and management of OWTS installations and replacements and sets the level of performance and protection expected from OWTS. In particular, the Policy requires actions for water bodies specifically identified as part this Policy where OWTS contribute to water quality degradation that adversely affect beneficial uses.”²⁹⁶

State NPDES General Construction Permit

The State NPDES General Construction Permit requires development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) that uses storm water “Best Management Practices” to control runoff, erosion and sedimentation from the site both during and after construction. The SWPPP has two major objectives: (1) to help identify the sources of sediments and other pollutants that affect the quality of storm water discharges; and (2) to describe and ensure the implementation of practices to reduce sediment and other pollutants in storm water discharges.

CalRecycle

CalRecycle (formerly the California Integrated Waste Management Board) governs solid waste regulations on the state level, delegating local permitting, enforcement, and inspection responsibilities to Local Enforcement Agencies (LEA). Regulations authored by CalRecycle (Title 14) were integrated with related regulations adopted by the State Water Resources Control Board (SWRCB) pertaining to landfills (Title 23, Chapter 15) to form CCR Title 27.

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates privately owned electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies, in addition to authorizing video franchises. In 1911, the CPUC was established by Constitutional Amendment as the Railroad Commission. In 1912, the Legislature passed the Public Utilities Act, expanding the Commission's regulatory authority to include natural gas, electric, telephone, and water companies as well as railroads and marine transportation companies. In 1946, the Commission was renamed the California Public Utilities Commission. It is tasked with ensuring safe, reliable utility service is available to consumers, setting retail energy rates, and protecting against fraud.

Local

Tulare County Local Agency Formation Commission

Since 1963, when State law created Local Agency Formation Commissions (LAFCO), commissions in each California County have encouraged the orderly formation of local government agencies, preserved agricultural and open space land, and discouraged urban sprawl. Tulare County LAFCO has jurisdiction over changes in local government organization occurring within Tulare County. The most significant recent changes are the result of the passage of AB 2838 (Hertzberg) in 2000, which significantly revised the Act and substantially strengthened the powers of LAFCO. The Act is now known as the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000.

Tulare County LAFCO’s Policy and Procedure Manual has policies that apply to projects within Tulare County. Formation of some level of governing entity will be necessary in order to construct, operate, and maintain the proposed infrastructure. The policies that may relate to the Project are listed as follows:

Policy Number A-2 LAFCO Process - The powers and responsibilities of Local Agency Formation Commissions (LAFCOs) are defined in the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (Government Code Section 56000 et seq.)

Policy Number C-1 Factors and Standards to be considered in Review of Proposal - The Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 sets a number of factors that are to be considered when reviewing proposals for changes of organization, reorganization, incorporations, dissolution and other proposals processed by LAFCO.

²⁹⁶ California State Water Resources Control Board. OWTS Policy. Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems. June 19, 2012. Accessed September 2022 at: https://www.waterboards.ca.gov/water_issues/programs/owts/docs/owts_policy.pdf.

Policy Number C-6 Extraterritorial Services Agreement - The Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 authorizes LAFCO to approve proposals to extend services beyond the jurisdictional boundary of a local agency, where the territory subject to receiving such services is within the affected agency's sphere of influence in anticipation of a later change of organization.

Tulare County General Plan 2030 Update

As the Project will not utilize any new or expanded water, wastewater treatment or storm water drainage, natural gas, or telecommunications facilities, the applicable Tulare County General Plan 2030 Update policies for this resource are limited to the following for this resource item: *PFS-2.3 Well Testing* wherein the County shall require new development that includes the use of water wells to be accompanied by evidence that the site can produce the required volume of water without impacting the ability of existing wells to meet their needs; *PFS-2.5 New Systems or Individual Wells* - Where connection to a community water system is not feasible per PFS-2.4: Water Connections, service by individual wells or new community systems may be allowed if the water source meets standards for quality and quantity; *PFS-3.1 Private Sewage Disposal Standards* - The County shall maintain adequate standards for private sewage disposal systems (e.g., septic tanks) to protect water quality and public health *PFS-4.1 Stormwater Management Plans* - The County shall oversee, as per Community Plan Content Table PF-2.1 and Specific Plan Content, Hamlet Plans Policy PF-3.3, and Table LU-4.3, the preparation and adoption of stormwater management plans for communities and hamlets to reduce flood risk, protect soils from erosion, control stormwater, and minimize impacts on existing drainage facilities, and develop funding mechanisms as a part of the Community Plan and Hamlet Plan process; *PFS-4.7 NPDES Enforcement* wherein the County shall continue to monitor and enforce provisions to control non-point source water pollution contained in the U.S. Environmental Protection Agency National Pollution Discharge Elimination System (NPDES) program; and *PFS-5.8 Hazardous Waste Disposal Capabilities* wherein the County shall require the proper disposal and recycling of hazardous materials in accordance with the County's Hazardous Waste Management Plan.

Project Impact Analysis:

- a) **Less Than Significant Impact:** As noted in DEIR/REIR prepared for the Matheny Wastewater Collection System, "Based on information contained in the Feasibility Report, it is anticipated that the raw wastewater characteristics from the unincorporated community of Matheny Tract would be as shown on Table 3.18-1²⁹⁷ (Table 3-3 in the Feasibility Report):

Table 3.18-1 Influent Characteristics	
Constituent	Design Values
BOD 5 day (mg/l)	350
TSS (mg/l)	400
Total N (mg/l)	70
Ec (µmhos/cm)	Source +500

As indicated in the Feasibility Report, at section 5.3.1.3 Capacity of Neighboring System, "The City of Tulare's WWTP has two components, a Domestic Plant and an Industrial Plant. The Domestic Plant has a permitted capacity of 6.0 MGD, with a plan to increase the capacity to 8 MGD in the future. Of the current 6.0 MGD capacity, existing development within the City uses 4.9 MGD and approved future development will utilize 0.2 MGD, for a total committed capacity of 5.1 MGD, some 85% of the total permitted capacity. Of the remaining 0.9 MGD capacity, the Matheny Tract use would be 0.13 MGD, bringing the plant to 87% of available capacity. The Industrial Plant has a permitted capacity of 12.0 MGD with a total committed capacity of 7.6 MGD, approximately 65% of the permitted capacity."²⁹⁸ "The ongoing responsibility for Operation & Maintenance (O&M) costs and Replacement costs of the project would be borne by the City; the funding for those expenses would be built into the sewer rates paid by the residents of the Matheny Tract."²⁹⁹

"The community is solely reliant on groundwater supply. The drinking water standards specify allowable levels for constituents of concern in the area (Arsenic and Nitrate). The Maximum Contaminant Levels (MCLs) for Arsenic and Nitrate are 10 µg/L and 45 mg/L, respectively. In addition, the water quality characteristics must meet the Federal and State drinking water standards for other regulated constituents. 3.3.1 Past Water System Violations PMWC has received several Notices of Violation from the California Department of Public Health (CDPH). In 1999 and 2000, Well 2 was cited several times for exceeding the MCL for nitrate, resulting in the well's condemnation in 2002 by DHS. With the

²⁹⁷ DEIR for Matheny Tract Wastewater System. Page 3.18-8 and 3.18-9.

²⁹⁸ Ibid. 3.18-9.

²⁹⁹ Op. Cit.

development of the lower 10 µg/L MCL for Arsenic in 2006, the remaining two wells of the water system are now in exceedance. The nitrate levels in Well 2 were sampled in 1999 and 2000 with reported levels 60 mg/L in both instances. The presence of Nitrate at levels significantly in excess of the MCL in Well 2 was attributed to the shallowness of the well; the shallow groundwater has been affected by both septic systems and agricultural uses in the surrounding area. This well is no longer in use by Pratt MWC for this reason. From 2002 to 2010, Pratt MWC conducted 8 and 12 sampling events on Wells 1 and 3, respectively. The average Arsenic concentration was 15.0 µg/L at Well 1 and 11.9 µg/L at Well 3; substantially above the 10 µg/L MCL.”³⁰⁰

The proposed Project site consists mainly of existing rural and semi-rural paved roads and existing road rights-of-way. The wastewater pipelines would be trenched in the existing rights-of-way that generally consist of gravel road shoulders, which is typical of roadways in the area. Occasionally, pipelines would require trenching through paved roadways to connect to other components of the pipeline infrastructure, as is the case with the inter-tie with existing Tulare wastewater treatment plant pipeline at the intersection of Avenue 216 (Paige Avenue) and Road 96 (Pratt Street). To prevent water and wind erosion during the construction-related activities period, a Storm Water Pollution Prevention Plan (SWPPP) would be developed for the Project as required for all projects that disturb more than one acre in area. As part of the SWPPP, the applicant (in this instance the County of Tulare) would be required to provide erosion control measures to protect the topsoil. Any stockpiled soils would be watered and/or covered to prevent loss due to wind erosion as part of the SWPPP during construction-related activities. As a result of these efforts, loss of topsoil and substantial soil erosion during the construction-related activities period are not anticipated.

The wastewater collection system and pipeline inter-tie would result in meeting the comprehensive objective of providing a reliable and modern wastewater collection, conveyance, and treatment system for Matheny Tract as envisioned when the original project was first considered. As noted earlier (based on the information contained in the DEIR/REIR), of the remaining 0.9 MGD capacity of the City of Tulare domestic WWTP (plant), Matheny Tract use would be 0.13 MGD, bringing the plant to 87% of available capacity. The Matheny Tract project would not be the trigger for the expansion of the domestic WWTP, since it is already in the window where planning for expansion must begin. The connection of Matheny Tract to the City of Tulare system may result in modifications to the existing Waste Discharge Requirements for the City. The RWQCB would need to be notified of the intended connection to determine if there would be revisions to the existing Waste Discharge Permit. It is possible that a new Report of Waste Discharge would be required to update the existing Waste Discharge Requirements (Order R5-2013-0019; April 2013). Therefore, with revisions to the existing Waste Discharge Permit, Project-specific impacts would be less than significant.

- b) **Less Than Significant Impact:** As previously noted, the proposed Project is a new wastewater collection system and pipeline inter-tie for the unincorporated community of Matheny Tract. Generally, the proposed Project will be predominantly construction of a network of wastewater pipelines to convey wastewater to the City of Tulare DWWTP. Minimal water would be used during the construction phase for dust suppression. Construction-related water used for dust suppression would come from an existing public water system and would be transported to each segment of the pipeline. Therefore, the Project would utilize water from existing sources only during the short-term, temporary construction-related activities phase and would not require new or expanded water entitlements. As such, the proposed Project-specific impacts would be less than significant.
- c) **Less Than Significant Impact:** As indicated in the analysis in Item 17 a), the City of Tulare’s Wastewater Treatment Facility has adequate capacity to serve Matheny Tract. The City of Tulare and the County of Tulare are in the process of identifying/discussing specifics to allow connection to the City’s wastewater treatment system. As such, Project-specific impacts would be less than significant.
- d) **Less Than Significant Impact:** The proposed Project would generate minimal solid waste (most likely in the form of construction-related materials) as a result of the construction phase of the Project. Solid waste materials would be properly disposed of at a local landfill (most likely, either County owned and operated Woodville or Visalia Landfills as they are the nearest, operating landfills). Upon completion of construction-related activities, the Project would not result in the generation of any solid waste. Therefore, less than significant impacts would occur.
- e) **No Impact:** The proposed Project’s solid waste resulting from construction-related activities would be disposed of by the County’s franchised hauler on a periodic basis and would be properly disposed at a County owned/operated landfill (likely either Woodville or Visalia Landfills). All solid waste disposal procedures would be in compliance with the relevant provisions of AB 939. As such, there would be no impact.

³⁰⁰ Op. Cit.

Cumulative Impact Analysis: Less Than Significant Impact – The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, Tulare County General Plan 2030 Update EIR, and Matheny Wastewater Collection System DEIR and REIR. As previously noted, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary, the wastewater collection system and pipeline inter-tie project). The proposed Project would ultimately utilize the City of Tulare DWWTP thereby avoiding the need for construction of new or expanded water, wastewater, stormwater drainage, electric power, natural gas, or telecommunications facilities. Due to the nature of the proposed Project (that is, a wastewater collection system and pipeline inter-tie) it would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; and it will comply with federal, state, and local management and reduction statutes and regulations related to solid waste as applicable. Overall, the proposed Project would benefit both the community and the environment through economies of scale and elimination of Matheny Tract’s septic tanks and leach line systems. As such, there will be less than significant Project-specific and cumulative impacts.

XX. WILDFIRES

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

	SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT IMPACT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose people or structures to significant risks, including downslope or downstream flooding, or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Utility/Service Systems Resources, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, Tulare County General Plan 2030 Update Environmental Impact Report, and Matheny Wastewater Collection System DEIR and REIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Environmental Setting

As noted earlier, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary, the wastewater collection system and pipeline inter-tie project).

“A wildfire is an uncontrolled fire spreading through vegetative fuels. Wildfires can be caused by human activities (such as arson or campfires) or by natural events (such as lightning). Wildfires often occur in forests or other areas with ample vegetation. Wildfires differ from other fires due to their large size, the speed at which the fires can spread, and the ability of the fire to change direction unexpectedly and to jump gaps, such as roads, rivers, and fire breaks. In areas where structures and other human development meet or intermingle with wildland or vegetative fuels (referred to as the wildland urban interface or WUI), wildfires can cause significant property damage and present extreme threats to public health and safety. The following three factors contribute significantly to wildfire behavior and can be used to identify wildfire hazard areas.

Topography: As slope increases, the rate of wildfire spread increases. South-facing slopes are also subject to more solar radiation, making them drier and thereby intensifying wildfire behavior. However, ridgetops may mark the end of wildfire spread because fire spreads more slowly or may even be unable to spread downhill.

Fuel: The type and condition of vegetation plays a significant role in the occurrence and spread of wildfires. Certain types of plants are more susceptible to burning or will burn with greater intensity, and non-native plants may be more susceptible to burning than native species. Dense or overgrown vegetation increases the amount of fuel load. The ratio of living to dead plant matter is also important. The risk of fire increases significantly during periods of prolonged drought, as the moisture content of both living and dead plant matter decreases; or when a disease or infestation has caused widespread damage. The fuel’s continuity, both horizontally and vertically, is also an important factor.

Weather: The most variable factor affecting the behavior of wildfires is weather. Temperature, humidity, wind, and lightning can affect chances for ignition and spread of fire. Extreme weather, such as high temperatures and low humidity, can lead to extreme wildfire activity. By contrast, cooling and higher humidity often signal reduced wildfire occurrence and easier containment. Years of precipitation followed by warmer years tend to encourage more widespread fires and longer burn periods. Also, since the mid-1980s, earlier snowmelt and associated warming due to global climate change has been associated with longer and more severe wildfire seasons in the western U.S.

Wildfires can have serious effects on the local environment, beyond the removal of vegetation. Soil exposed to intense heat may lose its capability to absorb moisture and support life. Exposed soils erode quickly and enhance siltation of rivers and streams, thereby enhancing flood potential, harming aquatic life, and degrading water quality. Lands stripped of vegetation are also subject to increased debris flow hazards, as described above. Wildfires can also greatly affect the air quality of the surrounding area.

Local responsibility areas generally include incorporated cities, cultivated agriculture lands and portions of the desert. Local responsibility area fire protection is typically provided by city fire departments, fire protection districts, counties, and by CAL FIRE under contract to the local government. The fire hazard severity zones for the area of local responsibility in the County are shown on Figure B-4 (Appendix B, Hazard Figures [in the MJLHMP]). Fire severity zones are depicted for the Cities of Porterville and Woodlake in Figures B-13 and B-20 (Appendix B, Hazard Figures MJLHMP).

State responsibility area is a legal term defining the area where the State has financial responsibility for wildfire protection. Incorporated cities and Federal ownership are not included. The prevention and suppression of fires in all areas that are not State responsibility areas are primarily the responsibility of local or Federal agencies.

The portion of the County that transitions from the valley floor into the foothills and mountains is characterized by high to very high threat of wildfire; this includes the cities of Porterville and Woodlake, the jurisdiction of Tulare County Office of Education (TCOE), the Tule River Tribe Reservation and areas of the County unincorporated. Steeper terrain in these areas increases the threat of wildfire. The western portion of the County has little or no threat of wildfire. The risk of wildfire increases where human access exists in high fire hazard severity zones, such as the Sierra Nevada Mountains and foothills, because of a greater chance for human carelessness and because of historic and current fire management practices.

Impact of Climate Change

Climate and weather have long been acknowledged as playing key roles in wildfire activity, and global warming is expected to exacerbate fire impacts on natural and urban ecosystems. Predicting future fire regimes requires an understanding of how temperature and precipitation interact to control fire activity.⁷ Since 2012, record drought and record temperatures, have weakened trees throughout California, resulting in millions of acres of failing forestland that then become vulnerable to disease and infestation. Infestations, such as those caused by native bark beetles, have caused tree mortality of epidemic proportions. The scale of tree mortality in California contributes to significantly increased wildfire risks, and presents life safety risks due to falling trees that can injure or kill people. The immediate consequence of tree mortality on California forestlands increases the potential for wildfires, further spread of forest insect tree damage, threats to critical public safety infrastructure from falling trees, reduced forest carbon stocks, loss of commercial timber values to landowners, and diminished wildlife habitat. Due to these increased risks, the County proclaimed states of emergency for tree mortality.

In addition, and in response to the millions of dead trees, a State of Emergency Proclamation was issued by the Governor. A Tree Mortality Task Force, comprised of State and Federal agencies led by CAL FIRE, Cal OES and the Governor's office has identified six counties as high hazard zones due to dead and dying trees and the hazards, this tree mortality presents. The 10 counties include: Amadore, Calaveras, El Dorado, Fresno, Kern, Madera, Mariposa, Placer, Tulare, and Tuolumne. Both the State's and the County's Tree Mortality Task Forces are structured as a Multi-Agency Coordination Group and meet monthly to exchange information and updates among stakeholders. Participants are encouraged to discuss needs and concerns, and leverage each other's subject matter expertise and resources to further response efforts."³⁰¹

The proposed Project's location does not lend itself to wildfire risk as it is not within a fire hazard severity zone (as identified by CalFire³⁰²), lacks slope/terrain conducive to wildfire spread, lacks vegetation which would fuel wildfire (i.e., dense

³⁰¹ Tulare County 2018 Multi-Jurisdictional Local Hazard Mitigation Plan (MJLHMP). March 2018. Pages 70-72. Accessed January 2023 at: <https://oes.tularecounty.ca.gov/oes/mitigation/tulare-county-mjlhmp/>

³⁰² California Department of Forestry and Fire Protection. 2007. Draft Fire Severity Zones in LRA Map. Accessed January 2023 at: https://osfm.fire.ca.gov/media/6832/fhszl06_1_map54.pdf

vegetation consisting of shrubs and bushes, dead or dying trees caused by drought or pest infestation (i.e., bark beetle), is surrounded by predominantly agriculturally productive lands, and, as noted earlier, is in the valley portion of the County which has no threat of wildfire.

Regulatory Setting

Federal

None that apply to the proposed Project.

State

Senate Bill 1241 (Kehoe, 2012)

“Wildfire: Senate Bill 1241 (Kehoe, 2012) required the Office of Planning and Research, the Natural Resources Agency, and CalFire to develop “amendments to the initial study checklist of the [CEQA Guidelines] for the inclusion of questions related to fire hazard impacts for projects located on lands classified as state responsibility areas, as defined in section 4102, and on lands classified as very high fire hazard severity zones, as defined in subdivision (i) of section 51177 of the Government Code.” (Pub. Resources Code, § 21083.01 (emphasis added).) The Agency added several questions addressing this issue. Notably, while SB 1241 required the questions to address specific locations, it did not necessarily limit the analysis to those locations, and so the Agency posed the questions for projects located within “or near” those zones. Lead agencies will be best placed to determine precisely where such analysis is needed outside of the specified zones.”³⁰³

“The safety elements of local general plans will also describe potential hazards, including: “any unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence; liquefaction; and other seismic hazards ..., and other geologic hazards known to the legislative body; flooding; and wildland and urban fires.” (Gov. Code § 65302(g)(1).) Hazards associated with flooding, wildfire and climate change require special consideration. (Id. at subd. (g)(2)-(g)(4).) Lead agencies must “discuss any inconsistencies between the proposed project and applicable general plans” related to a project’s potential environmental impacts in a project’s environmental review. (State CEQA Guidelines § 15125(d).) Local governments may regulate land use to protect public health and welfare pursuant to their police power. (Cal. Const., art. XI, § 7; California Building Industry Assn. v. City of San Jose (2015) 61 Cal. 4th 435, 455 (“so long as a land use restriction or regulation bears a reasonable relationship to the public welfare, the restriction or regulation is constitutionally permissible.”)³⁰⁴

CAL FIRE - Tulare Unit Strategic Fire Plan

As summarized in the 2017 Tulare Multi-Jurisdictional Local Hazard Mitigation Plan (MJLHMP), “The Plan is a local road map to create and maintain defensible landscapes in order to protect vital assets. It seeks to reduce firefighting cost and property loss, increase public and firefighter safety, minimize wildfire risk to communities and contribute to ecosystem health. The Plan identifies pre-suppression projects including opportunities for reducing structural ignitability, and the identification of potential fuel reduction projects and techniques for minimizing those risks. The central goals that are critical to reducing and preventing the impacts of fire revolve around both suppression efforts and fire prevention efforts. The MJLHMP fire hazard analysis and fire related mitigation measures will be provided to Cal Fire to support the Tulare Unit Strategic Fire Plan.”³⁰⁵

Cal Fire publishes Fire Hazard Severity Zone Maps for all regions in California, which can be viewed here. The fire hazard measurement used as the basis for these maps includes the speed at which a wildfire moves, the amount of heat the fire produces, and most importantly, the burning fire brands that the fire sends ahead of the flaming front. Lead agencies and project proponents can review the Cal Fire maps to determine whether a given project site will be subject to the new CEQA wildfire impacts analysis.

Local

Tulare County General Plan 2030 Update

³⁰³ MJLHMP. Page 70.

³⁰⁴ Ibid. Pages 38 and 39.

³⁰⁵ Ibid Table 3-1: Legal & Regulatory Capabilities. 14.

The proposed Project is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones. The following Tulare County General Plan 2030 Update policies could apply to this Project if it were located on sloped areas, fire hazards areas, lands susceptible to landslides, subsidence/settlement, contamination, and/or flooding; potential for wildland fires; etc.: *HS-6.1 New Building Fire Hazards* - The County shall ensure that all building permits in urban areas, as well as areas with potential for wildland fires, are reviewed by the County Fire Chief; *HS-6.7 Water Supply System* - The County shall require that water supply systems be adequate to serve the size and configuration of land developments, including satisfying fire flow requirements. Standards as set forth in the subdivision ordinance shall be maintained and improved as necessary; *HS-7.1 Coordinate Emergency Response – Service with Government Agencies* wherein the County shall coordinate emergency response with local, State, and Federal governmental agencies, community organizations, volunteer agencies, and other response partners during emergencies or disasters utilizing SEMS and NIMS; and *HS-7.2 Mutual Aid Agreement* - The County shall participate in established local, State, and Federal mutual aid systems. Where necessary and appropriate, the County shall enter into agreements to ensure the effective provision of emergency services, such as mass care, heavy rescue, hazardous materials, or other specialized function.

Project Impact Analysis:

a) - d) No Impact: As noted earlier, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary, the wastewater collection system and pipeline inter-tie project). The nature and location of the proposed Project does not lend itself to substantially impair an adopted emergency response plan or emergency evacuation plan; there are no factors that would exacerbate wildfire risks, (and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire); there would be no need to install or maintain associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities); and it would not expose people or structures to significant risks. As such, there would be no impact to this resource.

Cumulative Impact Analysis: No Impact – The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, Tulare County General Plan Background Report, the Tulare County 2030 General Plan EIR, and Matheny Wastewater Collection System DEIR and REIR. As previously noted, and as summarized here, the proposed Project is a wastewater collection system and pipeline inter-tie project. For the reasons stated above, Items 20 a) through d) do not apply to the proposed Project as it is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones. As such, no Project-specific Impact or Cumulative Impacts will occur.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

- | | | | | |
|---|--------------------------|-------------------------------------|-------------------------------------|--------------------------|
| a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal species, or eliminate important examples of the major periods of California history or prehistory? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Project Impact Analysis:

This analysis is based on the information provided in the Tulare County 2030 General Plan, Tulare County General Plan Background Report, the Tulare County 2030 General Plan EIR, and Matheny Wastewater Collection System DEIR and REIR. The analysis conducted in this Initial Study/Mitigated Negative Declaration results in a determination that the proposed Project will have no-to-less than significant impacts or effects on the local environment. As previously noted, the proposed Project consists of a new gravity wastewater collection system within the Matheny Tract Community; sewer lateral service connections to each existing residence; new lift station in proximity to Matheny Tract along Pratt Street; construction of approximately 10,700 feet a sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP; in-place abandonment of existing septic systems and leach fields, and connection and consolidation of Matheny Tract wastewater system to the City of Tulare (collectively and in summary, the wastewater collection system and pipeline inter-tie project). It is noted that the following determinations are based upon the determinations of the original Matheny Wastewater Collection System DEIR and REIR as the proposed Project would implement Alternative 2 consisting of the wastewater collection system and pipeline inter-tie to the City of Tulare's DWWTP.

- a) **Less Than Significant Impact With Mitigation:** Cumulative impacts are address for each checklist item. In addition, cumulative impacts are summarized in Chapter 4 of the DEIR/REIR. Cumulative impacts for biological and cultural resources are discussed within Chapters 3.4 and 3.5; respectively of the DEIR/REIR, and Item 4 Cultural Resources, Item 5 Biological Resources, Item 7 Geology and Soils (specifically, paleontological resources), and Item 18 Tribal Cultural Resources are addressed earlier in this MND. The mitigation measures contained in the DEIR/REIR are also incorporated herein in their entirety. The potential for impacts to biological resources will be less than significant with implementation of Mitigation Measures 4-1 through 4-7 and cultural resources (including cultural, paleontological, and tribal cultural resources) from the construction-related activities of the proposed Project will be less than significant with the incorporation of the Mitigation Measures 4-1 through 4-3 as contained in Item 5 Cultural Resources and Mitigation Measures 18-1 through 18-3 as contained in Item 18 Tribal Cultural Resources. Accordingly, the proposed Project will involve no potential for significant impacts due to degradation of the quality of the environment, substantial reductions in the habitat of a fish or wildlife species, causing a fish or wildlife population to drop below self-sustaining levels, threatening to eliminate a plant or animal community, reduction in the number or restriction of the range of a rare or endangered plant or animal or elimination of important examples of the major periods of California history or prehistory. As such, the impact from the proposed Project will be less than significant with mitigation for biological resources and less than significant with mitigation for cultural, paleontological, and tribal cultural resources.

- b) **Less Than Significant Impact:** Projects considered in a cumulative analysis include those that would be constructed

concurrently with the Project and those that would be in operation at the same time as the Project. The cumulative projects considered in this analysis are limited to projects that would result in similar impacts to the proposed Project due to their potential to collectively contribute to significant cumulative impacts, as well as other development projects that would be located in the vicinity of the proposed Project.

Tulare County staff have determined that there are no projects that could have the potential to contribute to cumulative impacts. The proposed Project was determined to have less than- to no impacts to all resources with the exception of the biological resources, cultural resources (including Tribal Cultural Resources), and geological resources (in the form of paleontological resources), with incorporation/implementation of mitigation measures and project design features identified earlier.

The majority of the potential impacts resulting from the proposed Project will be short term, temporary, and intermittent occurring during Project construction-related activities; and with negligible impacts resulting from proposed Project operations as discussed earlier in this environmental analysis. Because construction-related impacts are typically short duration, temporary, intermittent, and localized, they would have to occur concurrently and in proximity of other projects in order to have a cumulative impact. Construction-related impacts (which are primarily associated with air quality, biological resources, greenhouse gases, noise, and traffic) are not likely to act cumulatively with any other projects in a manner that would result in significant impacts.

The proposed Project (as described in Items 3 and 8) will have short-term impacts with regard to air quality and greenhouse gases during construction-related activities. However, the emissions associated with this proposed Project are less significant when compared to baseline emissions levels as quantified in Items 3 Air Quality and 8 Greenhouse Gases, and are not considered cumulatively considerable pursuant to guidelines from the Air District. (See Impact 3(c) for a complete discussion of the Project's cumulative air quality impacts.) The proposed Project would implement the applicable SJVAPCD rules, regulations, permit requirements, etc., (e.g., Best Available Control Measures); therefore, reducing the Project specific and cumulative impacts to a less than significant level.

As discussed in in Item 5 Biological Resources, the proposed Project site is not suitable habitat or known to host any special status species, when combined cumulatively with other projects, the proposed Project would not result in impacts to biological resources that are cumulatively considerable. As indicated at Item 5, the proposed Project site does not contain any known cultural or tribal cultural resources. However, as an abundance of caution, Mitigation Measures 4-1 through 4-16, 5-1 through 5-2, and 18-1 through 18-3 have been incorporated into this MND.

Impacts to aesthetics from the proposed Project would be minimal as these types of business parks are commonly found within or adjacent to nearby urban type development, and when adjacent to or near a major transportation corridor such as SR 99. The contribution of the proposed Project would not be cumulatively considerable. Thus, the proposed Project would result in less than significant cumulative impact to Aesthetics.

No archaeological or historic resources were located on the proposed Project site. With implementation of the cultural resource mitigation measures specified in Impact 5 Cultural Resources, the proposed Project would not cause cumulatively considerable cultural resource impacts because impacts to unknown cultural resources would be minimized.

The proposed Project also will not cause cumulatively considerable geology and soils impacts (with the exception of paleontological resources, as noted earlier), as Project-specific impacts will be less than significant and will not be anticipated to combine with impacts caused by the cumulative projects identified by the County.

The proposed Project will not cause cumulatively considerable impacts related to hazards and hazardous materials. While small amounts of hazardous materials may be used or transported as a result during construction-related activities of the proposed Project, these activities will occur in compliance with applicable laws and regulations, and any impacts resulting from use, transport, disposal, or accident or upset conditions will be localized in nature. As a result, any Project-level impacts will not have the potential to contribute to hazards associated with other projects because these impacts would only occur intermittently, if at all. Any storage, transport, and use of these materials will be required to comply with Local, State, and Federal regulatory requirements.

The proposed Project will not cause cumulatively considerable hydrology and water quality-related impacts. The proposed Project applicant will be required to implement a SWPPP to reduce impacts and will not cause discharge to any surface or groundwater sources or alter the course of any stream or river. Nor will the proposed Project change runoff patterns in the area.

The proposed Project will not cause cumulatively considerable land use and planning impacts. The proposed Project is consistent with all applicable land use planning policies (that is Tulare County 2030 General Plan). As a result, the proposed Project's impacts will not be cumulatively significant.

The proposed Project also will not combine noise-related impacts with that of other projects to cause cumulatively considerable impacts. Construction-related activities will cause short-term, temporary, and intermittent increases in noise in the area, and could occur at the same time as other noise-causing events in the area. However, no other concurrent construction projects are anticipated to occur adjacent to or near the proposed Project site, and operational noise will be minimal. As a result, the proposed Project is not anticipated to considerably contribute to cumulative noise impacts during construction or operation. Therefore, a less than significant Project-specific impact related to this Checklist Item will occur.

As indicated in the discussion of Item 15 a) through f) Public Services, earlier, the proposed Project will not significantly impact the fire or police response times, schools, parks, or other facilities. Therefore, less than significant Project-specific or Cumulative Impacts related to this Checklist Item will occur.

As discussed in Item 16 a) and b) Recreation, there will be no need to construct or expand any recreational facilities, as such, there would be no adverse physical effect on the environment from the proposed Project. Therefore, there would be a less than significant impact to this resource.

As indicated at the discussion of Item 17 Transportation, the proposed Project is consistent the Tulare County 2030 General Plan. As such, the proposed Project will not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. Further, it will not conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways. As indicated in Item 17 b), the proposed Project is not subject to a VMT analysis using the screening criteria as defined in Tulare County's SB 743 Guidelines. As the proposed Project is not anticipated to exceed the 500-trip threshold. Also, the proposed Project will not result in a change in air traffic patterns, including either increase in traffic levels or a change in location that results in substantial safety risks; it will not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses, (e.g., farm equipment) and it will include adequate emergency access; and it will not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. However, it is possible that the proposed Project may interfere with emergency access on a short-term, temporary, and intermittent basis. Implementation of Mitigation Measure 17-1 would reduce this potential impact to less than significant.

The proposed Project would not require or result in the relocation or construction of new or expanded water facilities there are sufficient water supplies available to serve the proposed Project and reasonably foreseeable future development during normal, dry and multiple dry years. The proposed Project would result in a need to construct or expand storm water drainage facilities. Lastly, the proposed Project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals and it will comply with federal, state, and local management and reduction statutes and regulations related to solid waste. As such, the proposed Project would result in a less than significant impact.

Finally, as noted earlier, Items 20 a) through d) Wildfire, does not apply to the proposed Project as it is not located in state responsibility areas or lands classified as very high fire hazard severity zones. As such, no Project-specific Impact or Cumulative Impacts will occur.

Each of the cumulative projects considered in this section would be required to comply with project-specific mitigation measures, project design features, as well as applicable General Plans, zoning ordinances, laws and policies. Implementation of the identified Project-specific mitigation measures and compliance with applicable codes, Tulare County General Plan policies, ordinances, laws and other requirements will reduce the impact of cumulative impacts to less than significant. Lastly, projects are also required to comply with other entities'/agencies' (e.g., San Valley Unified Air Pollution Control District, Regional Water Quality Control Board, etc.) applicable rules, regulations, standards, orders, permits, thresholds, etc., which would then also contribute to minimizing or avoiding adverse impacts.

- c) **Less Than Significant Impact With Mitigation:** The proposed Project will not result in substantial adverse effect on human beings, either directly or indirectly. Mitigation Measures (see **Mitigation Measures 4-1** through **4-7**, **5-1** through **5-2**, **17-1**, and **18-1** through **8-3** are provided to reduce the Project's potential effects on Biological Resources, Cultural/Tribal Cultural Resources, Paleontological Resources, and Transportation (emergency access) to less than significant. No additional mitigation measures will be required. Therefore, implementation of the proposed Project would result in a less than significant impact.

REFERENCES

California Air Pollution Control Officers Association (CAPCOA). Accessed August 2022 at: <http://www.capcoa.org/>.

CAPCOA. California Emission Estimator Model (CalEEMod) Version 2020.4.0 User's Guide. Accessed August 2022 at: [User's Guide \(southcoastaqmd.gov\)](#)

CAPCOA Greenhouse Gas Reduction Exchange. Accessed August 2022 at: <http://www.ghgrx.org/>.

City of Tulare

City of Tulare. General Plan Land Use Map. Accessed September 2022 at: <http://www.tulare.ca.gov/home/showpublisheddocument/604/635702261116100000>

County of Tulare

2019 California Fire Code (Title 24, Part 9 of the California Code of Regulations). 1.1.2 Purpose. Page 3. Accessed September 2022 at: [Building Department - RMA \(ca.gov\)](#) then click [CHAPTER 24 - FLAMMABLE FINISHES, 2019 California Fire Code, Title 24, Part 9 | ICC Digital Codes \(iccsafe.org\)](#)

Resource Management Agency. Tulare County Subvention Report for Fiscal Year 2012-2013 (submitted to Department of Conservation, November 2012).

Tulare County 2030 General Plan: Recirculated Draft EIR (RDEIR). Accessed in August 2022 at: <http://generalplan.co.tulare.ca.us/documents/generalplan2010/RecirculatedDraftEIR.pdf>

Tulare County General Plan 2030 Update. Goals and Policies Report. Designated Candidate Scenic and County Scenic Routes Figure 7-1. Accessed July 2022 at: <http://generalplan.co.tulare.ca.us/documents/GP/001Adopted%20Tulare%20County%20General%20Plan%20Materials/000General%20Plan%202030%20Part%20I%20and%20Part%20II/GENERAL%20PLAN%202012.pdf>

Tulare County Climate Action Plan. Page 1. Accessed August 2022 at: <http://generalplan.co.tulare.ca.us/documents/GeneralPlan2010/ClimateActionPlan.pdf>

Tulare County Comprehensive Airport Land Use Plan. Pages 1-1 and 1-3 Accessed August 2022 at: <https://tularecounty.ca.gov/rma/rma-documents/planning-documents/tulare-county-comprehensive-airport-land-use-plan/>

Tulare County 2018 Multi-Jurisdictional Local Hazard Mitigation Plan (MJLHMP). March 2018. Pages 70-72. Accessed September 2022 at: <https://oes.tularecounty.ca.gov/oes/mitigation/tulare-county-mjlhmp/>

Agricultural Commissioner. 2021 Tulare County Crop and Livestock Report, September 2022. Cover letter from Tom Tucker, II, Agricultural Commissioner. Accessed August 2022 at <https://agcomm.co.tulare.ca.us/pest-exclusion-standardization/crop-reports1/crop-reports-2021-2030/crop-and-livestock-report-2021/>

Environmental Health Division. Who Are We. Accessed September 2022 at: <https://tularecountyeh.org/eh/about-us/who-are-we/>

Housing Element 2015 Update. Page 1-3. Accessed September 2022 at: <http://generalplan.co.tulare.ca.us/documents/GP/001Adopted%20Tulare%20County%20General%20Plan%20Materials/110Part%20I%20Voluntary%20Elements%20Chapters%206,%2012%20and%2015/001CHP%206%20Tulare%20County%20Housing%20Element%20Update%202015/CHP%206%20Tulare%20County%20Housing%20Element%20Update%202015.pdf>

Water Systems Program. Accessed September 2022 at: <https://tularecountyeh.org/eh/our-services/water-systems-program/>

Chapter 1 of Part VII of the Ordinance Code. ARTICLE 7. PRELIMINARY MAP. Section 7-01-1610; ARTICLE 9 TENTATIVE MAP. Sections 7-01-1725 and 7-01-1740. Accessed August 2022 at: <https://www.codepublishing.com/CA/TulareCounty/html/TulareCounty07/TulareCounty0701.html>

Chapter 1 of Part VII of the Ordinance Code. Section 7-15-1066 ADOPTION OF CALIFORNIA BUILDING CODE, PART 2, AND VOLUMES 1 AND 2, INCLUDING APPENDICES C, F, G, H, I AND J; ARTICLE 7 EXCAVATION AND GRADING; and ARTICLE 27 CALIFORNIA REFERENCED STANDARDS CODE, TITLE 24, PART 12. Accessed August 2022 at: <https://www.codepublishing.com/CA/TulareCounty/html/TulareCounty07/TulareCounty0715.html>

Five County Seismic Safety Element. Fresno, Kings, Madera, Mariposa, & Tulare Counties. 1974. Prepared by Envicom Corporation. Available upon request at the RMA Administrative Office.

National Fire Protection Association. 2010. NFPA 70: National Fire Code. Accessed August 2022 at: [NFPA 70®: National Electrical Code®](https://www.nfpa.org/codes-standards/nfpa-70-national-fire-code)

San Joaquin Valley Unified Air Pollution Control District

Ambient Air Quality Standards & Valley Attainment Status. Accessed May 2022 at: <http://www.valleyair.org/aqinfo/attainment.htm>.

Current Rules and Regulations. Regulation VIII-FUGITIVE PM10 PROHIBITIONS. Rules 8011 through 8071. Accessed August 2022 at: <https://www.valleyair.org/rules/1ruleslist.htm#reg8>

District Policy. Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as Lead Agency. Accessed in August 2022 at: <https://www.valleyair.org/Programs/CCAP/12-17-09/2%20CCAP%20-%20FINAL%20District%20Policy%20CEQA%20GHG%20-%20Dec%2017%202009.pdf>

About the District. Accessed August 2022 at: Website: http://www.valleyair.org/General_info/aboutdist.htm#Mission.

Climate Change Action Plan. Accessed August 2022 at: http://www.valleyair.org/Programs/CCAP/CCAP_menu.htm

Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Project under CEQA. Accessed August 2022 at: <http://www.valleyair.org/Programs/CCAP/12-17-09/3%20CCAP%20-%20Guidance%20for%20Valley%20Land-use%20Agencies%20in%20Addressing%20GHG%20Emission%20Impacts%20for%20New%20Project%20under%20CEQA.pdf>

[%20FINAL%20LU%20Guidance%20-%20Dec%2017%202009.pdf](#)

Society for California Archaeology. Chronological and Cultural Units. A Glossary of Proper Names in California History. Accessed August 2022 at: <https://scahome.org/public-resources/glossary-of-terms/chronological-and-cultural-units/>

Southern California Edison (SCE). 2020. 2019 Power Content Label. Accessed August 2022 at: https://www.sce.com/sites/default/files/inline-files/SCE_2019PowerContentLabel.pdf.

State of California

Air Resources Board (ARB). Ambient Air Quality Standards. Accessed January 2022 at: <https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf>.

ARB. AB 32 Scoping Plan. Accessed August 2022 at: <https://ww3.arb.ca.gov/cc/scopingplan/scopingplan.htm>.

First Update to the AB 32 Scoping Plan. Accessed August 2022 at: <https://www.arb.ca.gov/cc/scopingplan/document/updatescopingplan2013.htm>.

Scoping Plan Update to Reflect 2030 Target. Accessed August 2022 at: <https://www.arb.ca.gov/cc/scopingplan/scopingplan.htm>.

California's 2017 Climate Change Scoping Plan. Page 1. Accessed August 2022 at: https://ww3.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.

California Energy Commission (CEC). 2019 Building Energy Efficiency Standards. Accessed August 2022 at: <https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2019-building-energy-efficiency>

Employment Development Department. Labor Market Information Division. Visalia-Porterville Metropolitan Statistical Area (Tulare County). August 19, 2022. Accessed September 2022 at: [https://www.labormarketinfo.edd.ca.gov/file/lfmonth/visa\\$pds.pdf](https://www.labormarketinfo.edd.ca.gov/file/lfmonth/visa$pds.pdf).

Energy Commission Adopts Standards Requiring Solar Systems for New Homes, First in Nation. Accessed August 2022 at: <https://www.energy.ca.gov/news/2018-05/energy-commission-adopts-standards-requiring-solar-systems-new-homes-first>

Outdoor Lighting – Overview. 6.1. Overview. What's new for the 2019 California Energy Code. Accessed August 2022 at: https://www.energy.ca.gov/sites/default/files/2020-05/06_OutdoorLighting.pdf

Department of Forestry and Fire Protection (Cal Fire). 2007. Draft Fire Severity Zones in LRA Map. Accessed August 2022 at: https://osfm.fire.ca.gov/media/6832/fhszl06_1_map54.pdf

Department of Toxic Substances Control (DTSC). EnviroStor. Accessed September 2022 at: <https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=Tulare+County%2C+CA>

DTSC. Moore Aviation (60000853). Accessed September 2022 at:

https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=60000853

Department of Transportation (Caltrans). Scenic Highway Program. Frequently Asked Questions. Accessed July 2022 at: <https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways/lap-liv-i-scenic-highways-faq2>

Caltrans. Guide for the Preparation of Traffic Impact Studies. A. Trip Generation Thresholds. December 2002. Page 2. Accessed August 2022 at: <https://www.contracosta.ca.gov/DocumentCenter/View/34121/Caltrans2002-TIS-Guidelines-PDF>

Caltrans Guide for the preparation of traffic studies, page ii. Accessed September 2022 at: <https://www.contracosta.ca.gov/DocumentCenter/View/34121/Caltrans2002-TIS-Guidelines-PDF>.

Department of Conservation (DOC). Division of Land Resource Protection. Farmland Mapping and Monitoring Program, Table 2014-2016. Table A-44, Part I. Accessed August 2022 at: <http://www.conservation.ca.gov/dlrp/fmmp/Pages/Tulare.aspx>. The California Farmland Conversion Report 2014-2016 Accessed May 2022 at: https://www.conservation.ca.gov/dlrp/fmmp/Pages/2014-2016_Farmland_Conversion_Report.aspx.

DOC. Division of Land Resource Protection. “Williamson Act Status Report (2010)”. Accessed August 2022 at: https://www.conservation.ca.gov/dlrp/wa/Pages/stats_reports.aspx.

DOC. Tulare County Land Use Conversion Tables 2008-2010, 2010-2012, 2012-2014, and 2014-2016. Table A-44, Part III. Accessed August 2022 at: <http://www.conservation.ca.gov/dlrp/fmmp/Pages/Tulare.aspx>.

DOC. Tulare County Land Use Conversion Tables 2014-2016. Table A-44, Part I. Accessed August 2022 at: <https://www.conservation.ca.gov/dlrp/fmmp/Pages/Tulare.aspx>

DOC. Tulare County Land Use Conversion Tables 2016-2018. Accessed August 2022 at: <https://www.conservation.ca.gov/dlrp/fmmp/Pages/Tulare.aspx>.

DOC. Division of Land Resource Protection. Farmland Mapping and Monitoring Program, Table 2014-2016. Table A-44, Part I. Accessed August 2022 at: <https://www.conservation.ca.gov/dlrp/fmmp/Pages/Tulare.aspx>.

DOC. California Important Farmland Finder. Accessed August 2022 at: <https://maps.conservation.ca.gov/DLRP/CIFF/>

DOC. FMMP – Important Farmland Map Categories. Accessed August 2022 at: <https://www.conservation.ca.gov/dlrp/fmmp/Pages/Important-Farmland-Categories.aspx>

DOC. California Geological Survey. Fault Activity Map. Accessed August 2022 at: <https://maps.conservation.ca.gov/cgs/fam/>

DOC. EQ Zapp: California Earthquake Hazards Zone Application. Earthquake Zones of Required Investigation. Accessed August 2022. See: <https://maps.conservation.ca.gov/cgs/EQZApp/app/>

DOC Division of Mine Reclamation. Maps: Mines and Mineral Resources Accessed September 2022 at: <https://maps.conservation.ca.gov/mol/index.html>

DOC. Williamson Act Program. Accessed August 2022 at: <https://www.conservation.ca.gov/dlrp/wa>.

DOC. Williamson Act Contracts. Accessed August 2022 at: <https://www.conservation.ca.gov/dlrp/wa/Pages/contracts.aspx>.

Department of Forestry and Fire Protection. 2007. Draft Fire Severity Zones in LRA Map. Accessed August 2022 at: https://osfm.fire.ca.gov/media/6832/fhszl06_1_map54.pdf.

Native American Heritage Commission (NAHC). Welcome. Accessed September 2022 at: <http://nahc.ca.gov/>.

NAHC. About The Native American Heritage Commission. Accessed August 2022 at: <http://nahc.ca.gov/about/>.

Natural Resources Agency. California Environmental Quality Act (CEQA) Guidelines. Section 15064.5(a). Statute and Guidelines - California Association of Environmental Professionals. Accessed August 2022 at: https://www.califaep.org/statute_and_guidelines.php

CEQA Guidelines. Section 15064.4 Determining the Significance of Impacts from Greenhouse Gas Emissions. Accessed August 2022 at: https://www.califaep.org/statute_and_guidelines.php

CEQA Guidelines, Section 15064.5 - Determining the Significance of Impacts to Archaeological and Historical Resources. Accessed September 2022 at: <https://casetext.com/regulation/california-code-of-regulations/title-14-natural-resources/division-6-resources-agency/chapter-3-guidelines-for-implementation-of-the-california-environmental-quality-act/article-5-preliminary-review-of-projects-and-conduct-of-initial-study/section-150645-determining-the-significance-of-impacts-to-archaeological-and-historical-resources>

Natural Resources Agency. Office of Planning and Research. Technical Advisory: AB 52 and Tribal Cultural Resources in CEQA (June 2017). Page 3. Accessed September 2022 at: https://www.opr.ca.gov/docs/20200224-AB_52_Technical_Advisory_Feb_2020.pdf

Office of Historic Preservation (OHP). Mission and Responsibilities. Accessed August 2022 at: [Mission and Responsibilities \(ca.gov\)](#)

OHP. California Historical Resources Information System (CHRIS). Accessed August 2022 at: http://ohp.parks.ca.gov/?page_id=1068.

OHP. About the CHRIS Information Centers. Accessed August 2022 at: http://ohp.parks.ca.gov/?page_id=28730.

OHP. CEQA Basics. Accessed September 2022 at: https://ohp.parks.ca.gov/?page_id=21721.

OHP. California Register: Criteria for Designation. August 2022 at: https://ohp.parks.ca.gov/?page_id=21238

OHP. California Register of Historic Places. Accessed September 2022 at: http://www.ohp.parks.ca.gov/?page_id=21238.

Office of Planning and Research. Technical Advisory: AB 52 and Tribal Cultural Resources in CEQA (June 2017). Page 3. Accessed September 2022 at: https://www.opr.ca.gov/docs/20200224-AB_52_Technical_Advisory_Feb_2020.pdf

Department of Resources Recycling and Recovery (CalRecycle). 2016. California's 75 Percent Initiative: Defining the Future. Accessed August 2022 at: [Laws and Regulations - CalRecycle Home Page](#)

Department of Water Resources (DWR). Draft California's Groundwater Bulletin 118. 2020. Accessed August 2022 at: <https://water.ca.gov/Programs/Groundwater-Management/Bulletin-118>.

DWR. California's Groundwater Bulletin 118. Tulare Lake Hydrologic Region. San Joaquin Valley Groundwater Basin. Site. Pages 3.9-18. Accessed August 2022 at: http://www.water.ca.gov/pubs/groundwater/bulletin_118/basindescriptions/5-22.11.pdf

DWR. California Water Plan Update 2018. Managing Water Resources for Sustainability. June 2019. Accessed August 2022 at: <https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/California-Water-Plan/Docs/Update2018/Final/California-Water-Plan-Update-2018.pdf#page=4>.

DWR. SGMA Groundwater Management. Accessed August 2022 at: <https://water.ca.gov/Programs/Groundwater-Management/SGMA-Groundwater-Management>

Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001 to assist water suppliers, cities, and counties in integrating water and land use planning. Accessed September 2022 at: <https://cawaterlibrary.net/wp-content/uploads/2017/06/guidebook.pdf>

Water Boards. State Laws Porter-Cologne Act. Accessed August 2022 at: https://www.waterboards.ca.gov/water_issues/programs/nps/encyclopedia/0a_laws_policy.html.

Water Boards. Mission Statement. State Water Boards Mission Statement. Accessed September 2022 at: http://www.waterboards.ca.gov/about_us/water_boards_structure/mission.html.

Water Boards. Water Boards' Structure. Accessed August 2022 at: https://www.waterboards.ca.gov/about_us/water_boards_structure/mission.html

Water Boards. OWTS Policy. Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems. June 19, 2012. Accessed September 2022 at: https://www.waterboards.ca.gov/water_issues/programs/owts/docs/owts_policy.pdf.

Water Boards. Central Valley Water Quality Control Board. Accessed August 2022 at: http://www.swrcb.ca.gov/centralvalley/about_us/.

Water Boards. Central Valley – R5. Accessed August 2022 at: https://www.waterboards.ca.gov/centralvalley/about_us/

Tulare County Association of Governments

Tulare County Association of Governments (TCAG). About Us. Accessed September 2022 at: <https://tularecog.org/tcag/about-us/history-of-tcag/>

TCAG. Tulare County Long Range Transit Plan. Accessed September 2022 at: <https://tularecog.org/tcag/planning/transit-planning/transit-plans/transit-development-plans-short-and-long-range-transit-plans/tulare-county-regional-long-range-transit-plan/>

Tulare County Farm Bureau, “Agricultural Facts,” Accessed August 2022 at: <http://www.tulcofb.org/index.php?page=agfacts>

United States

Department of Agriculture (USDA). Natural Resources Conservation Service (NRCS). Accessed August 2022 at: <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>

USDA. NRCS. Official Soil Series. Accessed August 2022 at: https://soilseries.sc.egov.usda.gov/OSD_Docs/N/NORD.html.

USDA. NRCS. Tagus Series. Accessed August 2022 at:

https://soilseries.sc.egov.usda.gov/OSD_Docs/T/TAGUS.html

Army Corps of Engineers. Accessed August 2022 at:

<http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits.aspx>.

Environmental Protection Agency (U.S. EPA). EPA Drinking Water Requirements for States and Public Water System Drinking Water Regulations. Accessed August 2022 at:

<http://water.epa.gov/lawsregs/rulesregs/sdwa/index.cfm>.

U.S. EPA Website. Our Mission and What We Do. Accessed August 2022 at:

<https://www.epa.gov/aboutepa/our-mission-and-what-we-do>

U.S. EPA. Summary of the Resource Conservation and Recovery Act. Accessed September 2022 at:

<https://www.epa.gov/laws-regulations/summary-resource-conservation-and-recovery-act> ; then click on “EPA History: RCRA”.

Geological Survey. U.S. Quaternary Faults Map. Accessed August 2022 at:

<https://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=5a6038b3a1684561a9b0aadf88412fcf>

Geological Survey. National Map Viewer. Accessed August 2022 at: [The National Map Viewer | U.S. Geological Survey \(usgs.gov\)](#)

Department of Homeland Security (DHS). Federal Emergency Management Agency (FEMA). Earthquake Hazard Maps. Accessed August 2022 at: <https://www.fema.gov/earthquake-hazard-maps>

DHS. FEMA. FIRM Panel 06107C0940E June 16, 2009. Accessed August 2022 at: <https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd&extent=-119.43111661234694,36.21814285944352,-119.26494839945653,36.287358109855994>

Department of the Interior United States Geologic Survey. “Delineation of Spatial Extent, Depth, Thickness, and Potential Volume of Aquifers Used for Domestic and Public Water-Supply in the Central Valley, California. Scientific Investigations Report 2019-5076 (SIR). Page 2. Accessed August 2021 at: <https://pubs.usgs.gov/sir/2019/5076/sir20195076.pdf>.

National Archives and Records Administration. Code of Federal Regulations. Title 40: Protection of Environment Part 503: Standards for the Use of Disposal of Sewage Sludge. Accessed September 2022 at: <https://www.ecfr.gov/current/title-40/chapter-I/subchapter-O/part-503?toc=1>.

Department of Transportation. “The Noise and Vibration Impact Assessment Manual”. September 2018. FTA Report No. 0123 Federal Transit Administration. Accessed September 2022 at:

https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf.

Environmental Protection Agency (EPA). Criteria Air Pollutants. Access December 2021 at:

<https://www.epa.gov/criteria-air-pollutants>

U.S. Department of the Interior. National Park Service. Accessed September 2022 at: [National Historic Preservation Act of 1966 - Archeology \(U.S. National Park Service\) \(nps.gov\)](#)

ATTACHMENT “A”

Air Quality and Greenhouse Gas Assessment for the Matheny Tract Wastewater Collection System and Pipeline Inter-Tie Project Technical Memorandum



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AIR QUALITY AND GREENHOUSE GAS ASSESSMENT TECHNICAL MEMORANDUM

DATE: January 24, 2023
TO: Hector Guerra, Chief Environmental Planner
FROM: Jessica Willis, Planner IV
SUBJECT: Air Quality and Greenhouse Gas Assessment for the Matheny Tract Wastewater Collection System and Pipeline Inter-Tie Project

PROJECT DESCRIPTION AND LOCATION

The unincorporated community of Matheny Tract (Matheny) is home to approximately 1,200 residents in 325 houses within 287 parcels, and is considered a Disadvantaged Community per State Water Resources Control Board definition.¹ The proposed Project consists of a new wastewater collection system within the community and consolidation with the City of Tulare (City). The major components of the Project include: a new gravity wastewater collection system composed of a combination of 8-inch and 10-inch polyethylene vinyl chloride (PVC) sewer mains within the community, including new 4-inch PVC sewer lateral service connections to each existing residence; a new lift station in proximity to the community along Pratt Street; approximately 10,700 feet of 4-inch high density polyethylene (HDPE) sewer force main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the City's Domestic Wastewater Treatment Plant (DWWTP); proper in-place abandonment of existing septic systems and leach fields; and connection and consolidation of the new Matheny Tract wastewater system to the City's DWWTP (see **Figure 2 of Attachment A**). The force main would be dedicated to solely serving the community and run in parallel with the City's existing facilities on the north side of Paige Avenue.

Matheny is divided into two subareas, North and South, and is located approximately eight (8) miles southwest of Visalia. North Matheny is located directly southwest and adjacent to the City of Tulare, while South Matheny is located 0.7 mile west of the City (see **Figure 1 of Attachment A**). The entirety of the Matheny development area is situated within the USGS 7.5-Minute Tulare Quadrangle in Sections 22, 23, and 27, Township 20 South, Range 24 East, Mount Diablo Base and Meridian. A section of the water main connecting to the existing DWWTP is located within the USGS 7.5-Minute Paige Quadrangle in Section 16, Township 20 South, Range 24 East, Mount Diablo Base and Meridian.

¹ SWRCB defines Disadvantaged Community as a community in which the "median household income (MHI) < 80% of the statewide MHI." https://www.waterboards.ca.gov/water_issues/programs/grants_loans/tech_asst_funding.html. See also WAT § 79505.5 and HSC § 116681(g) at <https://codes.findlaw.com/ca/>. Accessed December 2022.

METHODOLOGY

The CEQA Guidelines provide the criteria (as Checklist Items) for evaluating potential impacts on the environment.² The San Joaquin Valley Unified Air Pollution Control District (Air District) provides guidance for determining potential impacts specific to the Air Quality and Greenhouse Gas (GHG) Emissions resources. This assessment has been conducted within the context of CEQA and the methodology follows the Air District's recommendations for quantification of emissions and evaluation of potential impacts as provided in their guidance documents:

- *Guidance for Assessing and Mitigating Air Quality Impacts* (GAMAQI), adopted March 19, 2015.³
- *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Project under CEQA*, adopted December 17, 2009.⁴

A Draft Environmental Impact Report (EIR) was prepared for the Matheny Tract Wastewater System Project Feasibility Study (SCH# 2017011028).⁵ A Technical Addendum to the Feasibility Study was prepared for the Project and the Draft EIR was recirculated to include the Addendum. The Final EIR was adopted and certified by the Tulare County Board of Supervisors in December 2017. Project related air quality impacts identified in the EIR were evaluated by analogy using the emissions analysis provided in the EIR prepared for the Plainview Wastewater System Project Feasibility Study (SCH# 2014041078).⁶ Criteria pollutant and greenhouse gas (GHG) emissions evaluated in the Plainview EIR were calculated with the Sacramento Metropolitan Air Quality Management District (Sac Metro) Road Construction Emissions Model (Road Model), Version 7.1.5.1. A second Technical Addendum to the Project, dated October 2022, has been prepared and serves as the basis for this analysis. As it has been six (6) years since the Plainview air quality and GHG analysis was performed and emissions models have been updated with more current emission factors, an analysis specific to the proposed Project (inclusive of the first and second addendums to the Matheny Tract Wastewater System Project Feasibility Study) is appropriate.

Project related construction emissions were quantified using the California Air Pollution Control Officers Association (CAPCOA) California Emissions Estimator Model (CalEEMod) version 2020.4.0.⁷ The following assumptions were used in the emissions modeling (see Attachments B and C)

² California Environmental Quality Act (CEQA), Public Resources Code (PRC), Division 13, Sections 21000-21189. https://leginfo.ca.gov/faces/codes_displayexpandedbranch.xhtml?tocCode=PRC&division=13.&title=&part=&chapter=&article=&nodetreepath=30
CEQA Guidelines, California Code of Regulation (CCR), Title 14, Division 6, Chapter 3, Sections 15000-15387. <https://govt.westlaw.com/calregs/Index?bhcp=1&transitionType=Default&contextData=%28sc.Default%29>.

³ San Joaquin Valley Unified Air Pollution Control District (Air District). *Guidance for Assessing and Mitigating Air Quality Impacts*. <https://www.valleyair.org/transportation/GAMAQI.pdf>. Accessed December 2022.

⁴ Air District. *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Project under CEQA*. www.valleyair.org/Programs/CCAP/12-17-09/3%20CCAP%20-%20FINAL%20LU%20Guidance%20-%20Dec%2017%202009.pdf. Accessed December 2022.

⁵ The EIR for Matheny Tract Wastewater System Project Feasibility Study is available on the Tulare County RMA website at: <https://tularecounty.ca.gov/rma/planning-building/environmental-planning/environmental-impact-reports/matheny-tract-wastewater-system-project/>.

⁶ The EIR for the Plainview Wastewater System Project Feasibility Study is available on the Tulare County RMA website at: <https://tularecounty.ca.gov/rma/projects/planning-projects/environmental-documents/plainview-wastewater-system/>.

⁷ California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod). <http://www.aqmd.gov/caleemod/>. Accessed January 2023.

and represent a conservative estimate as the linear feet of pipeline and the lift station modeled are greater than that provided in the Project description:

- 10,700 linear feet (2.03 miles) of pipeline for Sewer Main Line to City's DWWTP
- 22,584 linear feet (4.28 miles) of 8-10" pipeline for Gravity Collection System
- 7,100 linear feet (1.34 mile) of pipeline for lateral connection to 284 parcels (approximately 325 residences)
- 7.0 acres of total construction area
- 6.4 acres of permanent resurfacing (asphalt replacement)

To determine the potential significance of Project related criteria pollutant emissions, the Project emissions were compared to the Air District's thresholds of significance. **Table 1** identifies Project related emissions and the Air District's significance thresholds for each criteria pollutant.

IMPACT EVALUATION

Air Quality

a) Would the project conflict with or obstruct implementation of the applicable air quality plan (AQP)?

Project Specific Impact: **No Impact**

The following three criteria are used for determining whether the Project will conflict with or obstruct the implementation of the applicable air quality plan (AQP):

- 1. Will the project result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQPs?*

The Air District has determined that projects with emissions below their thresholds of significance for criteria pollutants would not conflict with or obstruct implementation of the Air District's AQP.^{8, 9} The Air District has determined that if project specific emissions would not exceed State or Federal ambient air quality standard (AAQS) at the project boundary, the project would not violate any AAQS or contribute substantially to an existing or projected air quality violation.¹⁰

The Project would generate criteria pollutant emissions through construction activities and operational (maintenance) activities. Construction activities would be short-term, temporary, and intermittent and emissions would occur directly from the off-road heavy-duty equipment and the on-road motor vehicles needed to mobilize crew, equipment, and materials, and to construct the pipelines. Operational activities would be limited to the operation and maintenance of the gravity lift station and repair of

⁸ Air District. GAMAQI, Section 7.12, Page 65.

⁹ Air District. Air Quality Thresholds of Significance – Criteria Pollutants. <http://www.valleyair.org/transportation/0714-GAMAQI-Criteria-Pollutant-Thresholds-of-Significance.pdf>. Accessed December 2022.

¹⁰ Air District. GAMAQI, Section 7.13, Page 65.

pipelines on an as-needed basis. Operational emissions would occur directly from the on-road motor vehicles needed to transport maintenance workers to the lift station site and maintenance/repair sites. The Air District evaluates the significance of impacts of the emissions from construction, operational non-permitted equipment (primarily mobile sources) and activities, and operational permitted equipment (stationary sources) and activities separately.¹¹ Project construction related emissions were quantified using CalEEMod and are provided in **Table 1**. Operational activities are likely to be limited to maintenance of the lift station and segments of the force main or inter-tie pipelines on an as-needed basis. Operational related emissions have not been quantified as the vehicle trips necessary for maintenance/repairs will be on an as-needed basis and will fall below the Air District's Small Project Analysis Level (SPAL) for industrial uses of 140 vehicle trips and 15 heavy-heavy duty truck trips per day and residential uses of 800 vehicle trips and 15 heavy-heavy duty truck trips per day.^{12, 13}

As shown in **Table 1**, construction related criteria pollutant emissions fall below the Air District's thresholds of significance. Therefore, the Project will not conflict with or obstruct implementation of the applicable AQP. The Project will have **No Impact** related to this Checklist Item.

Table 1. Project Construct Emissions (mitigated)							
	ROG	NOx	CO	SO₂	PM₁₀ Total	PM_{2.5} Total	metric tons per year CO_{2e}
Annual Emissions (tons per year)							
Construction Total	0.3561	3.4462	3.2797	6.99e-003	0.6315	0.3828	624.8624
Threshold	10	10	100	27	15	15	N/A
Exceeds Threshold?	No	No	No	No	No	No	N/A
Daily Emissions (pounds per day)							
Construction	0.0011	0.0111	0.0102	2.21e-005	0.0021	0.0013	1.9756
Threshold	100	100	100	100	100	100	N/A
Exceeds Threshold?	No	No	No	No	No	No	N/A
Source: CalEEMod Report (included as Attachment C to this memo)							

2. Will the project conform to the assumptions in the AQPs?

The Air District estimates future emissions in the air basin and develops strategies required to reduce emissions through new regulations. Emissions are calculated based on population, vehicle, and development trends. A project may be inconsistent with an air quality plan if it results in population or employment growth greater than estimates in the air quality plans. Projects that propose growth greater than anticipated projections would conflict with air quality plans and may result in potentially significant impacts as a result of emissions levels in excess of established thresholds.

As the Project consists solely of installation of a wastewater collection system and pipeline inter-tie for the existing unincorporated community of Matheny Tract, the proposed Project would neither increase population nor employment within the Project vicinity or the air basin. As such, the proposed Project

¹¹ Air District. GAMAQI, Section 8.3, Page 80.

¹² Air District. Small Project Analysis Levels (SPAL), November 2020. Accessed December 2022.

<https://www.valleyair.org/transportation/CEQA%20Rules/GAMAQI-SPAL.PDF>.

¹³ The Air District does not have a SPAL for linear construction projects. The collection system (force main and inter-tie pipelines) would occupy approximately 190,000 sf. The community has approximately 325 dwelling units. As operational activities are likely to be limited to maintenance of the lift station and segments of the force main or inter-tie pipelines on an as-needed basis, maintenance activities would not exceed the industrial or residential SPAL size limits.

conforms to the assumptions in the applicable AQPs. Therefore, the proposed Project will have **No Impact** related to this Checklist Item.

3. *Will the project comply with applicable control measures in the AQPs?*

The proposed Project is subject to all applicable Air District rules and regulations for construction and operational related activities. A Dust Control Plan will be submitted to the Air District in compliance with Regulation VIII (Fugitive PM₁₀ Prohibitions) requirements prior to the initiation of construction. Authority to Construct and Permits to Operate for regulated operational related equipment, such as emergency backup engines, will be obtained as deemed necessary by the Air District. Therefore, the proposed Project will have **No Impact** related to this Checklist Item.

Cumulative Impact: **No Cumulative Impact**

The Project would not be considered cumulatively significant if project specific impacts are less than significant. As previously noted, Project related criteria pollutant emissions fall below the Air District's thresholds of significance. Furthermore, the Project will implement standard measures, such as Construction Best Management Practices (BMP), and will be required to comply with the applicable air quality regulations and permitting requirements of local, regional, state, and federal agencies including but not limited to, County of Tulare, Tulare Irrigation District, San Joaquin Valley Air Pollution Control District, Regional Water Quality Control Board, and California Department of Transportation. Therefore, the Project will have a **No Cumulative Impact** related to this Checklist Item.

b) *Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?*

Project Specific Impact: **Less Than Significant Impact**

The Air District has determined that a Lead Agency may determine that project specific contributions to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program, including, but not limited to an air quality attainment or maintenance plan. Therefore, if project specific criteria pollutant emissions exceed Air District thresholds of significance, then the project would result in a cumulatively considerable net increase in emissions.¹⁴

The San Joaquin Valley is designated as nonattainment of federal and state AAQS for ozone (specifically ozone precursor NO_x emissions) and respirable particulate matter (PM_{2.5}) and nonattainment of state AAQS for coarse particulate matter (PM₁₀). As previously noted, the proposed Project consists entirely of a wastewater collection system and pipeline inter-tie and does not include a land development component. Project related criteria pollutant emissions will not exceed the Air District's thresholds of significance during the short-term construction activities or ongoing operational activities. As project specific impacts are less than significant, the cumulative impacts would also be less than significant. Therefore, the proposed Project would not result in a cumulatively

¹⁴ Air District. GAMAQI, Section 7.14, Pages 65-66.

considerable net increase of any criteria pollutants and will have a **Less Than Significant Impact** related to this Checklist Item.

Cumulative Impact: The Project would not be considered cumulatively significant if project specific impacts are less than significant. As previously noted, Project specific criteria pollutant emissions will not exceed the Air District's thresholds of significance and would have a less than significant impact on air quality. Furthermore, the Project will implement standard measures, such as Construction Best Management Practices, and will be required to comply with the applicable regulations and permitting requirements of local, regional, state, and federal agencies including but not limited to, County of Tulare, Tulare Irrigation District, San Joaquin Valley Air Pollution Control District, Regional Water Quality Control Board, and California Department of Transportation. Therefore, the Project will have a **Less Than Significant Cumulative Impact** related to this Checklist Item.

c) Would the project expose sensitive receptors to substantial pollutant concentrations?

Project Specific Impact: Less Than Significant Impact

The Air District recommends that when evaluating localized impacts, the Lead Agency consider the nature of the air pollutant emissions, the proximity between the emitting facility and sensitive receptors, the direction of prevailing winds, and local topography.¹⁵ The Air District encourages Lead Agencies to use the screening tools presented in Section 6.5 of the GAMAQI to identify potential conflicts between land uses and areas with sensitive receptors.^{16,17} If a project is within the area identified in the screening tools, then additional evaluation would be required to determine if project related toxic air contaminant (TAC) emissions would exceed the Air District's threshold of significance.¹⁸

Localized Criteria Pollutant Health Impacts

Emissions occurring at or near the proposed Project have the potential to create a localized impact that could expose sensitive receptors to substantial pollutant concentrations. The Air District defines sensitive receptors as, "People that have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential dwelling unit(s). The location of sensitive receptors is needed to assess toxic impacts on public health."¹⁹

¹⁵ Air District. GAMAQI, Section 7.15, Page 66.

¹⁶ Air District. GAMAQI, Section 6.5, Pages 44-45.

¹⁷ Additional resources cited in the GAMAQI available online:

Air Resources Board (ARB). Air Quality and Land Use Handbook: A Community Health Perspective. No longer available on the ARB website. See <http://forms.cupertino.org/inc/pdf/SR85/Exhibit%20G%20-%20CARB%20Air%20Quality%20and%20Land%20Use%20Handbook%202005.pdf>. Accessed December 2022. California Air Pollution Control Officers Association (CAPCOA). Health Risk Assessments for Proposed Land Use Projects. http://www.capcoa.org/wp-content/uploads/2020/12/with-stamp_CAPCOA_HRA_LU_Guidelines_8-6-09-min.pdf. Accessed December 2022.

¹⁸ Air District. Air Quality Thresholds of Significance – Toxic Air Contaminants. <http://www.valleyair.org/transportation/0714-GAMAQI-TACs-Thresholds-of-Significance.pdf>. Accessed December 2022.

¹⁹ Air District. GAMAQI, Glossary, Page 10.

There are approximately 325 sensitive receptors (i.e., residences) located within Matheny Tract and along the proposed pipeline alignments. The nearest schools, Cypress Elementary School and Countryside High School, are located approximately 1.3 miles northeast and north, respectively, of North Matheny. Existing businesses within the community and immediately east of the community are considered worker receptors.

The Air District has provided a screening threshold for localized impacts of 100 pounds per day of any criteria pollutant. If a project exceeds 100 pounds per day of any criteria pollutant, then ambient air quality modeling would be necessary. If the project does not exceed 100 pounds per day of any criteria pollutant, then it can be assumed that it would not cause a violation of an AAQS.²⁰ As AAQS were established to protect public health, projects not resulting in any violations of AAQS would be considered to have no significant health impact to nearby receptors.

Project related average daily construction emissions were calculated and are provided in **Table 1**. Construction of the Project would take place over the course of approximately 300 working days. As shown in **Table 1**, the average daily emissions are all below the Air District's 100 pounds per day screening threshold.

As Project construction related emissions do not require an ambient air quality analysis and operations are likely to be limited to maintenance of the lift station and pipelines (which do not require quantification of emissions), the Project does not warrant a health risk assessment. Also, as noted earlier, the Project would result in short-term, temporary, and intermittent construction related criteria air pollutant emissions. As such, significant health risk impacts are not anticipated; therefore, there would be a **Less Than Significant Impact** related to this Checklist Item.

Toxic Air Contaminants

The GAMAQI does not currently include recommendations for analysis of toxic air contaminant (TAC) emissions from project construction activities. The Air District's significance thresholds for TACs have been established for permitted and non-permitted source operation related emissions.

Diesel particulate matter (DPM) represents the primary (TAC) of concern associated with the proposed Project. Project construction related DPM emissions would be the result of the operation of internal combustion engines in equipment (e.g., loaders, backhoes and resurfacing equipment, as well as haul trucks) commonly associated with construction-related activities. Construction related DPM emissions would occur over a short period of time and would cease upon completion of the Project. As such, Project construction related activities would not expose nearby sensitive receptors to substantial DPM emissions that would result in a health risk; therefore, there would be a **Less Than Significant Impact** related to this Checklist Item.

Project operational related activities consist of maintenance activities associated with the lift station and pipelines. Operational related maintenance activities would result in short-term, temporary, and intermittent use of mobile sources (e.g., maintenance workers driving to and from the Project site) or stationary sources (e.g., emergency generators) of DPM. Maintenance vehicles would be subject to California Air Resources Board (CARB) on- and off-road emissions standards. Stationary source emissions would be subject to Air District permitting requirements. As such, Project operation related

²⁰ Air District. GAMAQI, Section 8.4.2, Page 93.

activities would not expose nearby sensitive receptors to substantial DPM emissions that would result in a health risk. There would be a **Less Than Significant Impact** related to this Checklist Item.

Valley Fever

Valley fever, or coccidioidomycosis, is an infection caused by inhalation of the spores of the fungus, *Coccidioides immitis* (*C. immitis*). The spores live in soil and can live for an extended time in harsh environmental conditions. Activities or conditions that increase the amount of fugitive dust contribute to greater exposure, and they include dust storms, grading and other earthmoving activities, and use of recreational off-road vehicles.

The San Joaquin Valley is considered an endemic area for Valley fever. Construction related activities could generate fugitive dust that contain *C. immitis* spores. The Air District's Regulation VIII (Fugitive PM10 Prohibition) places limits on the amount of fugitive dust generated at a construction site. The proposed Project will minimize the generation of fugitive dust during construction related activities by complying with the requirements of the Regulation VIII. Furthermore, construction related earthmoving activities are short-term and will cease upon completion of the Project. Therefore, health risks related to exposure of Valley fever during construction are considered **Less Than Significant**.

Project operational related activities consist of maintenance activities associated with the lift station and pipelines. During operational related activities, fugitive dust emissions are anticipated to be relatively small because the areas where maintenance would be required would be covered with compacted soil and/or pavement. Furthermore, maintenance activities would be limited to the area of the lift station or individual segments of the pipeline requiring maintenance. Maintenance activities would be short-term, temporary, and intermittent. Therefore, health risks related to exposure of Valley fever during operational related activities are considered **Less Than Significant**.

Naturally Occurring Asbestos

A review of maps of areas where naturally occurring asbestos in California are likely to occur does not indicate that the proposed Project area would contain naturally occurring asbestos.²¹ Therefore, construction of the proposed Project is not anticipated to expose receptors to naturally occurring asbestos. The Project will have a **Less Than Significant Impact** related to this Checklist Item.

Cumulative Impact: **Less Than Significant Impact**

The Project would not be considered cumulatively significant if project specific impacts are less than significant. As Project specific health risk impacts from criteria pollutant emission, TAC emissions, Valley fever, and naturally occurring asbestos are considered less than significant, the cumulative health risk impacts are also considered less than significant. Furthermore, the Project will result in an overall health benefit to the residents of Matheny Tract as existing septic systems will be abandoned and wastewater and sewage will be transported offsite to the existing Tulare DWWTP. Therefore, the Project will have a **Less Than Significant Cumulative Impact** related to this Checklist Item.

²¹ United States Geologic Survey (USGS). Asbestos mines, prospects, and occurrences. Accessed January 2023.

<https://mrdata.usgs.gov/asbestos/map-us.html#home>; and

California Department of Conservation, California Geological Survey (CGS). A General Location Guide for Ultramafic Rocks in California - Areas More Likely to Contain Naturally Occurring Asbestos (USGS, 2000). Accessed January 2023. https://www.conservation.ca.gov/cgs/minerals/hazardous_minerals/asbestos..

d) Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Project Specific Impact: Less Than Significant Impact

Due to the subjective nature of odor impacts, the Air District recommends odor analyses strive to fully disclose all pertinent information.²² The Air District recommends a qualitative assessment of a project's potential to adversely affect area receptors based on the distances of common odor-producing land uses identified in Table 6 of the GAMAQI.²³ The Air District has determined that if a project is a potential odor source, then additional evaluation would be required.²⁴

It is anticipated that Project construction related activities would result in diesel exhaust emissions from use of construction equipment which may release odors into the atmosphere. However, construction related emissions would be short-term, temporary, and intermittent and are not anticipated to affect a substantial number of receptors at any given time. Following construction related activities, the Project would not emit odors; rather, the Project will result in a benefit to the residents of the community as failing septic system and leach fields would be abandoned and wastewater and sewage will be transported to the City's DWTTP. Therefore, the Project will result in a **Less Than Significant Impact** related to this Checklist Item.

Cumulative Impact: Less Than Significant Impact

The Project would not be considered cumulatively significant if project specific impacts are less than significant. As Project specific odor impacts are less than significant, the Project will have a **Less Than Significant Cumulative Impact** related to this Checklist Item.

GHG Emissions

a) Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

Project Specific Impact: Less Than Significant Impact

The Project would generate GHG emissions through construction and operational (maintenance) activities. Construction activities would be short-term, temporary and intermittent and GHG emissions would occur from the off-road heavy-duty equipment and the on-road motor vehicles needed to mobilize crew, equipment, and materials, and to construct the pipeline. Similar to construction, GHG emissions would occur from the off-road heavy-duty equipment and the on-road motor vehicles needed to mobilize crew, equipment, and materials to the maintenance site; however, maintenance activities would be less intensive as they would occur on an as-needed basis. According to the Air District's *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under*

²² Air District. GAMAQI, Section 7-16, Pages 66-67.

²³ Air District. GAMAQI, Section 8.6, Table 6, Page 103, or online at: <https://www.valleyair.org/transportation/GAMAQI-2015/GAMAQI-Criteria-Pollutant-Thresholds-of-Odors.pdf>. Accessed December 2022.

²⁴ The Air District provides guidance for detailed odor analysis online at <https://www.valleyair.org/transportation/GAMAQI-Detailed-Analysis-for-Assessing-Odor-Impacts-to-Sensitive-Receptors.pdf>. Accessed December 2022.

CEQA (Agency Guidance), projects implementing Best Performance Standards (BPS) in accordance with District guidance or projects complying with an approved GHG emission reduction plan or mitigation program that has been specified in law or adopted by the public agency with a certified Final CEQA document, are determined to have a less than significant individual and cumulative impact on global climate change and do not require project specific quantification of GHG emissions. Projects not implementing BPS or projects requiring preparation of an Environmental Impact Report (EIR) regardless of implementation of BPS should quantify emissions, and any project demonstrating a 29% reduction in GHG emissions as compared to business-as-usual (BAU) would have a less than significant impact.²⁵

The County has an adopted Climate Action Plan (CAP). The CAP was adopted and the EIR certified by the Tulare County Board of Supervisors in August 2012. The CAP was updated in December 2018.²⁶ The CAP is a strategic planning document that identifies sources of GHG emissions within the County, presents current and future emissions estimates, identifies a GHG reduction target for future years, and presents strategic policies and actions to reduce emissions from the development project subject to CEQA. The GHG-reduction strategies in the Plan build key opportunities prioritized by County staff and members of the public. The CAP does not require quantification of emissions for projects less intense than a 500-unit subdivision or 100,000 square feet of retail or equivalent intensity for other uses. The proposed Project consists of a new wastewater collection system within the community of Matheny Tract and connection and consolidation of the new system to the City of Tulare DWWTP. There are approximately 325 residences within the community. As the proposed Project would connect each (fewer than 500) existing residence to new collection system, the Project is consistent with the Tulare County General Plan and CAP, and does not require quantification of GHG emissions. As such, GHG emissions resulting from the construction of the proposed Project have been quantified for disclosure purposes and are provided in **Table 1**.

As previously noted, the proposed Project is consistent with the Tulare County General Plan and the Tulare County CAP. As such, the Project would not generate greenhouse gas emissions, either directly or indirectly, that would have a significant impact on the environment. Therefore, the Project will have a **Less Than Significant Impact** related to this resource.

Cumulative Impact: **Less Than Significant Impact**

The Project would not be considered cumulatively significant if project specific impacts are less than significant. As Project related GHG emissions will have a less than significant impact on the environment, the Project will have a **Less Than Significant Cumulative Impact** related to this Checklist Item.

²⁵ Air District. Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA. December 2019. Accessed January 2023. <http://www.valleyair.org/Programs/CCAP/12-17-09/3%20CCAP%20-%20FINAL%20LU%20Guidance%20-%20Dec%2017%202009.pdf>.

For a summary of the Guidance, see the Air District's Fact Sheet: Addressing Greenhouse Gas Emissions Impact under the California Environmental Quality Act (CEQA) – Land Use Development Projects.

http://www.valleyair.org/Programs/CCAP/bps/Fact_Sheet_Development_Sources.pdf.

²⁶ Tulare County. Climate Action Plan 2018 Update. December 2018. Accessed January 2023.

<http://generalplan.co.tulare.ca.us/documents/GP/001Adopted%20Tulare%20County%20General%20Plan%20Materials/220Climate%20Action%20Plan/CLIMATE%20ACTION%20PLAN%202018%20UPDATE.pdf>.

b) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions?

Project Specific Impact: **No Impact**

The proposed Project consists of the construction of a new wastewater collection system within the community of Matheny Tract and connection and consolidation of the new system to the City of Tulare DWWTP. The new wastewater system is necessary for the abandonment of existing septic systems and leach fields within the community. Construction and operational (maintenance) activities associated with the proposed Project do not conflict with the Tulare Climate Action Plan, the Tulare County General Plan, the Air District Climate Change Action Plan, or any Air District rules or regulations, for the purpose of reducing greenhouse gas emissions. The Project objectives and components do not conflict with the goals of AB 32 and greenhouse gas reduction. Therefore, the Project is consistent with the aforementioned plans, policies, and regulations. As such, **No Impact** related to this Checklist Item would occur.

Cumulative Impact: **No Impact**

The Project would not be considered cumulatively significant if project specific impacts are less than significant. As the Project will not conflict with any applicable GHG plan, policy, or regulation and will have no impact at the project level, the Project will have **No Cumulative Impact** related to this Checklist Item.

CONCLUSION

The proposed Project will ultimately result in an overall benefit to the health and safety of the public by allowing the unincorporated community of Matheny to connect to the City of Tulare DWWTP, thereby providing the community with a viable, sustainable solution for their wastewater collection, treatment, and disposal needs.

The proposed Project would result in direct impacts attributable to criteria pollutant, toxic air contaminant, and greenhouse gas emissions generated during construction and operational (maintenance) related activities. Construction emissions are short term, temporary, and intermittent, and would cease upon completion of the Project. Operational maintenance activities are also intermittent, occurring on an as needed basis. Indirect impacts would occur upon Project completion when the community's wastewater is piped to the City's DWWTP.

The Project will not conflict with any applicable Air Quality Plan. Project related criteria pollutant and TAC emissions will not exceed any Air District threshold of significance, and any odor emissions generated during construction would cease upon completion of the Project. The Project will not result in substantial GHG emissions and would not conflict with any plan, policy, or regulation in place to reduce GHG emissions. Therefore, the proposed Project will have **No Impact to Less Than Significant Project Specific and Cumulative Impacts** related to the Air Quality and Greenhouse Gas Resources.

ATTACHMENT A

Project Maps

Figure 1. Matheny Tract Wastewater Pipeline Project Vicinity

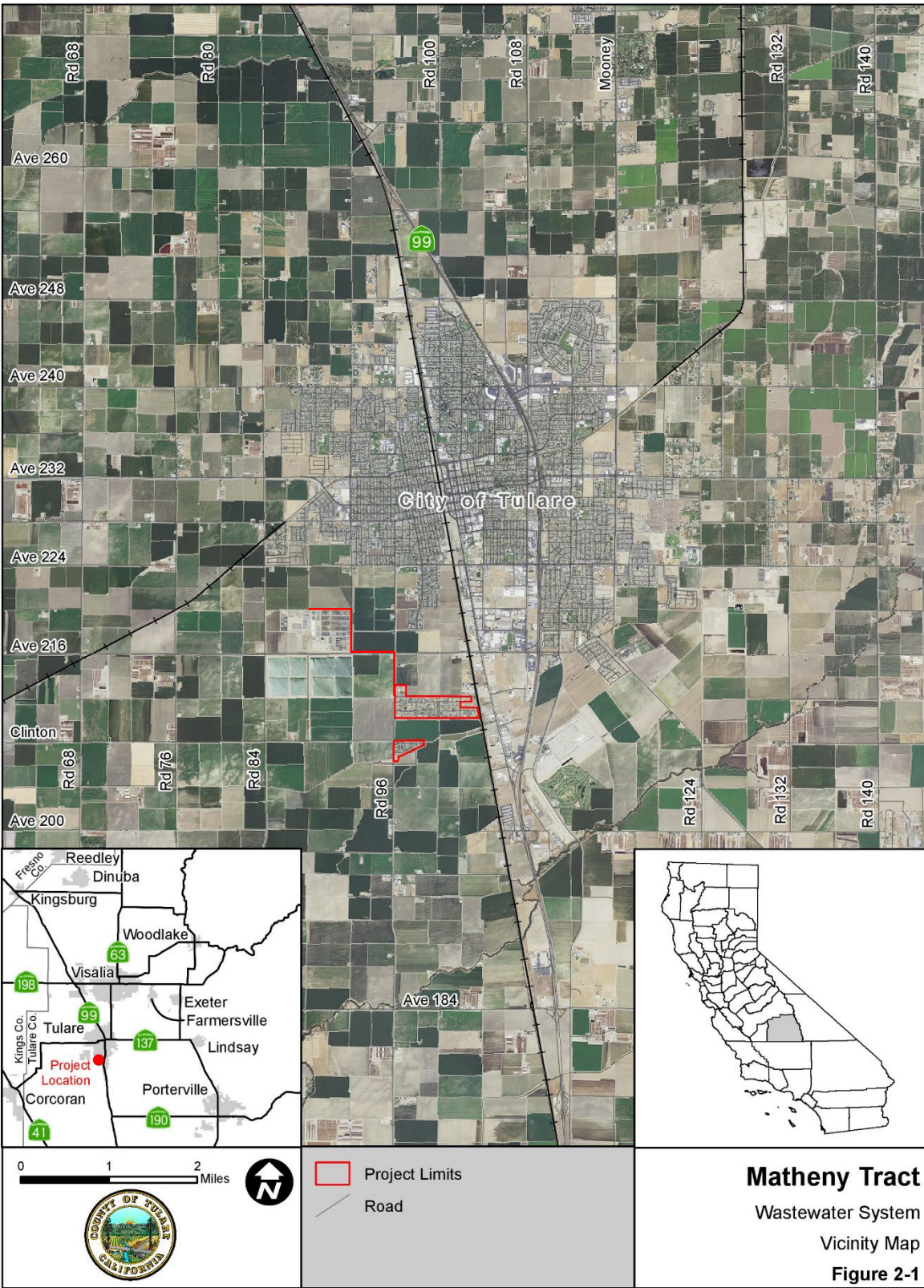
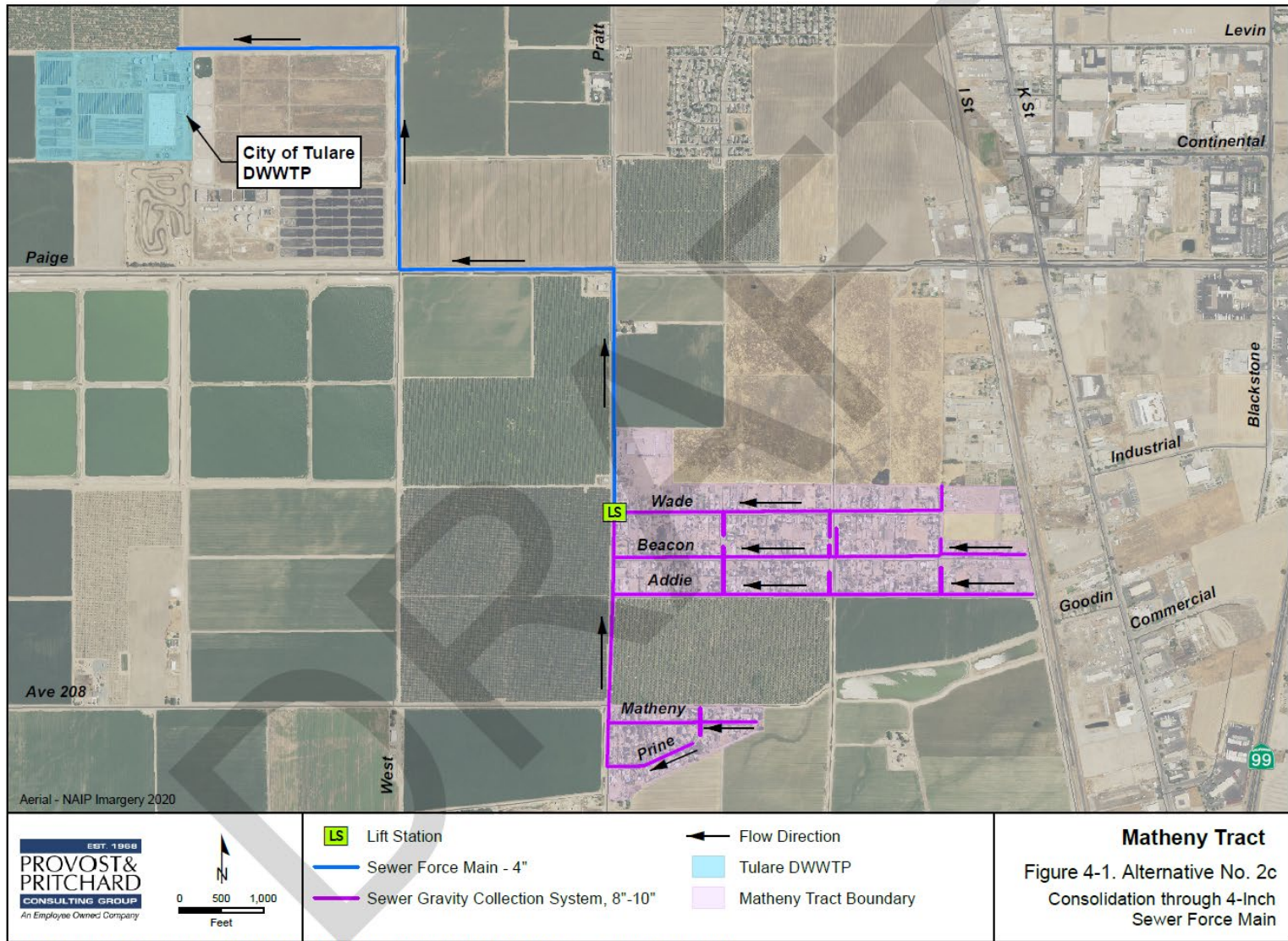


Figure 2. Matheny Tract Wastewater Pipeline Project Site Plan



ATTACHMENT B

Project Calculations (CalEEMod Input Data)

PROJECT CALCULATIONS

Total Working Days 300

30 Site Prep

225 Grading

45 paving

Total Acres 7

Section	length (miles)	length (ft.)	width (ft.)	area (sq. ft.)	acres	depth	volume (cu. ft.)	volume (cu. yd.)
Lift Station Construction Area		50	100	5,000	0.115			
Forcemain Lift Station		9	9	81	0.002	19	1,539	57
Valve Box		6	6	36	0.001			
Motor Panel		6	2	9	0.0002			
4" Sewer Main Pipeline	2.03	10,700	3	32,100	0.74	3	96,300	3,567
8-10" Gravity Collection	4.28	22,584	5	112,920	2.59	16	1,826,165	67,636
Lateral Connections	1.34	7,100	3	21,300	0.49	3	63,900	2,367
Total	7.65			171,446	3.94		1,987,904	73,626

Import Materials	length (ft.)	depth (ft.)	width (ft.)	area (sq. ft.)	acres	volume (cu. ft.)	volume (cu. yd.)
Trench Aggregate Base Rock (3ft)	17,800	0.500	3	53,400	1.226	26,700	989
Trench Aggregate Base Rock (5ft)	22,584	0.500	5	112,920	2.592	56,460	2,091
Temporary Trench Resurfacing		0.333		280,000	6.428	93,333	3,457
Permanent Trench Resurfacing (asphalt)		0.333		280,000	6.428	93,333	3,457
Total				726,320	16.67		9,994

ATTACHMENT C

CalEEMod Report, January 24, 2023

Matheny Wastewater Lines - Tulare County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Matheny Wastewater Lines
Tulare County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	171.45	1000sqft	7.00	171,446.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	51
Climate Zone	7			Operational Year	2025
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

- Project Characteristics -
- Land Use - total area includes soil & base storage areas
- Construction Phase - construction per engineering staff
- Off-road Equipment - fleet is combination of defaults and similar projects
- Off-road Equipment - fleet is combination of defaults and similar projects.
- Grading - The total acres graded was defaulted to non default values when staff entered the screen (which is appropriate as the area is already within the roadway and easements).
- Off-road Equipment -
- Vehicle Trips - evaluating construction emissions only
- Construction Off-road Equipment Mitigation -

Matheny Wastewater Lines - Tulare County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	225.00
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	NumDays	10.00	30.00
tblConstructionPhase	PhaseEndDate	3/8/2024	12/20/2024
tblConstructionPhase	PhaseEndDate	2/21/2025	1/31/2025
tblConstructionPhase	PhaseStartDate	1/25/2025	12/21/2024
tblConstructionPhase	PhaseStartDate	1/27/2024	1/1/2024
tblGrading	AcresOfGrading	337.50	20.00
tblGrading	AcresOfGrading	45.00	15.00
tblGrading	MaterialExported	0.00	3,080.00
tblGrading	MaterialImported	0.00	9,994.00
tblLandUse	LotAcreage	3.94	7.00
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	CC_TL	6.60	0.00
tblVehicleTrips	CNW_TL	6.60	0.00
tblVehicleTrips	CW_TL	14.70	0.00

2.0 Emissions Summary

Matheny Wastewater Lines - Tulare County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**2.1 Overall Construction****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.3344	3.3160	3.0513	6.6300e-003	1.0146	0.1392	1.1538	0.5361	0.1281	0.6642	0.0000	586.4962	586.4962	0.1699	6.4500e-003	592.6658
2025	0.0217	0.1302	0.2284	3.6000e-004	3.5600e-003	6.0700e-003	9.6300e-003	9.5000e-004	5.5900e-003	6.5300e-003	0.0000	31.9380	31.9380	9.5400e-003	7.0000e-005	32.1973
Maximum	0.3344	3.3160	3.0513	6.6300e-003	1.0146	0.1392	1.1538	0.5361	0.1281	0.6642	0.0000	586.4962	586.4962	0.1699	6.4500e-003	592.6658

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.3344	3.3160	3.0513	6.6300e-003	0.4827	0.1392	0.6219	0.2482	0.1281	0.3763	0.0000	586.4955	586.4955	0.1699	6.4500e-003	592.6652
2025	0.0217	0.1302	0.2284	3.6000e-004	3.5600e-003	6.0700e-003	9.6300e-003	9.5000e-004	5.5900e-003	6.5300e-003	0.0000	31.9380	31.9380	9.5400e-003	7.0000e-005	32.1972
Maximum	0.3344	3.3160	3.0513	6.6300e-003	0.4827	0.1392	0.6219	0.2482	0.1281	0.3763	0.0000	586.4955	586.4955	0.1699	6.4500e-003	592.6652

Matheny Wastewater Lines - Tulare County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	52.24	0.00	45.72	53.60	0.00	42.92	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2024	3-31-2024	0.9388	0.9388
2	4-1-2024	6-30-2024	0.9092	0.9092
3	7-1-2024	9-30-2024	0.9192	0.9192
4	10-1-2024	12-31-2024	0.8678	0.8678
5	1-1-2025	3-31-2025	0.1463	0.1463
		Highest	0.9388	0.9388

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0148	1.0000e-005	1.5700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.0600e-003	3.0600e-003	1.0000e-005	0.0000	3.2600e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0148	1.0000e-005	1.5700e-003	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	1.0000e-005	1.0000e-005	0.0000	3.0600e-003	3.0600e-003	1.0000e-005	0.0000	3.2600e-003

Matheny Wastewater Lines - Tulare County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0148	1.0000e-005	1.5700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.0600e-003	3.0600e-003	1.0000e-005	0.0000	3.2600e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0148	1.0000e-005	1.5700e-003	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	1.0000e-005	1.0000e-005	0.0000	3.0600e-003	3.0600e-003	1.0000e-005	0.0000	3.2600e-003

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2024	2/9/2024	5	30	
2	Grading	Grading	2/10/2024	12/20/2024	5	225	
3	Paving	Paving	12/21/2024	1/31/2025	5	30	

Matheny Wastewater Lines - Tulare County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Acres of Grading (Site Preparation Phase): 15****Acres of Grading (Grading Phase): 20****Acres of Paving: 7****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Crawler Tractors	1	8.00	212	0.43
Grading	Off-Highway Tractors	2	8.00	124	0.44
Paving	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Plate Compactors	2		8	0.43
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	9	23.00	0.00	1,293.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	10	25.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

Matheny Wastewater Lines - Tulare County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.1 Mitigation Measures Construction**

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2024**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2790	0.0000	0.2790	0.1498	0.0000	0.1498	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0399	0.4076	0.2750	5.7000e-004		0.0184	0.0184		0.0170	0.0170	0.0000	50.1856	50.1856	0.0162	0.0000	50.5914
Total	0.0399	0.4076	0.2750	5.7000e-004	0.2790	0.0184	0.2974	0.1498	0.0170	0.1668	0.0000	50.1856	50.1856	0.0162	0.0000	50.5914

Matheny Wastewater Lines - Tulare County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.2 Site Preparation - 2024****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1300e-003	8.3000e-004	9.7000e-003	3.0000e-005	3.3400e-003	2.0000e-005	3.3600e-003	8.9000e-004	1.0000e-005	9.0000e-004	0.0000	2.5405	2.5405	6.0000e-005	7.0000e-005	2.5631
Total	1.1300e-003	8.3000e-004	9.7000e-003	3.0000e-005	3.3400e-003	2.0000e-005	3.3600e-003	8.9000e-004	1.0000e-005	9.0000e-004	0.0000	2.5405	2.5405	6.0000e-005	7.0000e-005	2.5631

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1255	0.0000	0.1255	0.0674	0.0000	0.0674	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0399	0.4076	0.2750	5.7000e-004		0.0184	0.0184		0.0170	0.0170	0.0000	50.1855	50.1855	0.0162	0.0000	50.5913
Total	0.0399	0.4076	0.2750	5.7000e-004	0.1255	0.0184	0.1440	0.0674	0.0170	0.0844	0.0000	50.1855	50.1855	0.0162	0.0000	50.5913

Matheny Wastewater Lines - Tulare County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.2 Site Preparation - 2024****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1300e-003	8.3000e-004	9.7000e-003	3.0000e-005	3.3400e-003	2.0000e-005	3.3600e-003	8.9000e-004	1.0000e-005	9.0000e-004	0.0000	2.5405	2.5405	6.0000e-005	7.0000e-005	2.5631
Total	1.1300e-003	8.3000e-004	9.7000e-003	3.0000e-005	3.3400e-003	2.0000e-005	3.3600e-003	8.9000e-004	1.0000e-005	9.0000e-004	0.0000	2.5405	2.5405	6.0000e-005	7.0000e-005	2.5631

3.3 Grading - 2024**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6881	0.0000	0.6881	0.3736	0.0000	0.3736	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2742	2.7740	2.5865	5.2800e-003		0.1177	0.1177		0.1083	0.1083	0.0000	463.5694	463.5694	0.1499	0.0000	467.3176
Total	0.2742	2.7740	2.5865	5.2800e-003	0.6881	0.1177	0.8058	0.3736	0.1083	0.4818	0.0000	463.5694	463.5694	0.1499	0.0000	467.3176

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.3 Grading - 2024****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3800e-003	0.0818	0.0171	3.8000e-004	0.0110	7.8000e-004	0.0118	3.0400e-003	7.4000e-004	3.7800e-003	0.0000	36.1055	36.1055	1.8000e-004	5.6800e-003	37.8022
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0108	7.9100e-003	0.0930	2.7000e-004	0.0321	1.5000e-004	0.0322	8.5200e-003	1.4000e-004	8.6600e-003	0.0000	24.3463	24.3463	6.1000e-004	6.8000e-004	24.5631
Total	0.0122	0.0897	0.1101	6.5000e-004	0.0431	9.3000e-004	0.0440	0.0116	8.8000e-004	0.0124	0.0000	60.4518	60.4518	7.9000e-004	6.3600e-003	62.3653

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3096	0.0000	0.3096	0.1681	0.0000	0.1681	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2742	2.7740	2.5865	5.2800e-003		0.1177	0.1177		0.1083	0.1083	0.0000	463.5688	463.5688	0.1499	0.0000	467.3170
Total	0.2742	2.7740	2.5865	5.2800e-003	0.3096	0.1177	0.4274	0.1681	0.1083	0.2764	0.0000	463.5688	463.5688	0.1499	0.0000	467.3170

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3800e-003	0.0818	0.0171	3.8000e-004	0.0110	7.8000e-004	0.0118	3.0400e-003	7.4000e-004	3.7800e-003	0.0000	36.1055	36.1055	1.8000e-004	5.6800e-003	37.8022
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0108	7.9100e-003	0.0930	2.7000e-004	0.0321	1.5000e-004	0.0322	8.5200e-003	1.4000e-004	8.6600e-003	0.0000	24.3463	24.3463	6.1000e-004	6.8000e-004	24.5631
Total	0.0122	0.0897	0.1101	6.5000e-004	0.0431	9.3000e-004	0.0440	0.0116	8.8000e-004	0.0124	0.0000	60.4518	60.4518	7.9000e-004	6.3600e-003	62.3653

3.4 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.4700e-003	0.0435	0.0668	1.0000e-004		2.1100e-003	2.1100e-003		1.9400e-003	1.9400e-003	0.0000	8.9256	8.9256	2.8900e-003	0.0000	8.9978
Paving	2.1400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	6.6100e-003	0.0435	0.0668	1.0000e-004		2.1100e-003	2.1100e-003		1.9400e-003	1.9400e-003	0.0000	8.9256	8.9256	2.8900e-003	0.0000	8.9978

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.4 Paving - 2024****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.7000e-004	3.1400e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0900e-003	2.9000e-004	0.0000	2.9000e-004	0.0000	0.8233	0.8233	2.0000e-005	2.0000e-005	0.8306
Total	3.7000e-004	2.7000e-004	3.1400e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0900e-003	2.9000e-004	0.0000	2.9000e-004	0.0000	0.8233	0.8233	2.0000e-005	2.0000e-005	0.8306

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.4700e-003	0.0435	0.0668	1.0000e-004		2.1100e-003	2.1100e-003		1.9400e-003	1.9400e-003	0.0000	8.9256	8.9256	2.8900e-003	0.0000	8.9978
Paving	2.1400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	6.6100e-003	0.0435	0.0668	1.0000e-004		2.1100e-003	2.1100e-003		1.9400e-003	1.9400e-003	0.0000	8.9256	8.9256	2.8900e-003	0.0000	8.9978

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.4 Paving - 2024****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.7000e-004	3.1400e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0900e-003	2.9000e-004	0.0000	2.9000e-004	0.0000	0.8233	0.8233	2.0000e-005	2.0000e-005	0.8306
Total	3.7000e-004	2.7000e-004	3.1400e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0900e-003	2.9000e-004	0.0000	2.9000e-004	0.0000	0.8233	0.8233	2.0000e-005	2.0000e-005	0.8306

3.4 Paving - 2025**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0136	0.1294	0.2189	3.3000e-004		6.0600e-003	6.0600e-003		5.5700e-003	5.5700e-003	0.0000	29.3246	29.3246	9.4800e-003	0.0000	29.5617
Paving	7.0300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0206	0.1294	0.2189	3.3000e-004		6.0600e-003	6.0600e-003		5.5700e-003	5.5700e-003	0.0000	29.3246	29.3246	9.4800e-003	0.0000	29.5617

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.4 Paving - 2025****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1100e-003	7.7000e-004	9.4800e-003	3.0000e-005	3.5600e-003	2.0000e-005	3.5800e-003	9.5000e-004	1.0000e-005	9.6000e-004	0.0000	2.6134	2.6134	6.0000e-005	7.0000e-005	2.6355
Total	1.1100e-003	7.7000e-004	9.4800e-003	3.0000e-005	3.5600e-003	2.0000e-005	3.5800e-003	9.5000e-004	1.0000e-005	9.6000e-004	0.0000	2.6134	2.6134	6.0000e-005	7.0000e-005	2.6355

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0136	0.1294	0.2189	3.3000e-004		6.0600e-003	6.0600e-003		5.5700e-003	5.5700e-003	0.0000	29.3246	29.3246	9.4800e-003	0.0000	29.5617
Paving	7.0300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0206	0.1294	0.2189	3.3000e-004		6.0600e-003	6.0600e-003		5.5700e-003	5.5700e-003	0.0000	29.3246	29.3246	9.4800e-003	0.0000	29.5617

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.4 Paving - 2025****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1100e-003	7.7000e-004	9.4800e-003	3.0000e-005	3.5600e-003	2.0000e-005	3.5800e-003	9.5000e-004	1.0000e-005	9.6000e-004	0.0000	2.6134	2.6134	6.0000e-005	7.0000e-005	2.6355
Total	1.1100e-003	7.7000e-004	9.4800e-003	3.0000e-005	3.5600e-003	2.0000e-005	3.5800e-003	9.5000e-004	1.0000e-005	9.6000e-004	0.0000	2.6134	2.6134	6.0000e-005	7.0000e-005	2.6355

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.517894	0.051230	0.167424	0.168335	0.030187	0.007736	0.012128	0.015870	0.000634	0.000470	0.023223	0.001430	0.003440

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Historical Energy Use: N

5.1 Mitigation Measures Energy

[illegible]

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated

[illegible]

Mitigated

[illegible]

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail**6.1 Mitigation Measures Area**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0148	1.0000e-005	1.5700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.0600e-003	3.0600e-003	1.0000e-005	0.0000	3.2600e-003
Unmitigated	0.0148	1.0000e-005	1.5700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.0600e-003	3.0600e-003	1.0000e-005	0.0000	3.2600e-003

6.2 Area by SubCategory**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.5800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0111					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.4000e-004	1.0000e-005	1.5700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.0600e-003	3.0600e-003	1.0000e-005	0.0000	3.2600e-003
Total	0.0148	1.0000e-005	1.5700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.0600e-003	3.0600e-003	1.0000e-005	0.0000	3.2600e-003

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**6.2 Area by SubCategory****Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.5800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0111					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.4000e-004	1.0000e-005	1.5700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.0600e-003	3.0600e-003	1.0000e-005	0.0000	3.2600e-003
Total	0.0148	1.0000e-005	1.5700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.0600e-003	3.0600e-003	1.0000e-005	0.0000	3.2600e-003

7.0 Water Detail**7.1 Mitigation Measures Water**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

Matheny Wastewater Lines - Tulare County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**8.2 Waste by Land Use****Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

Matheny Wastewater Lines - Tulare County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

ATTACHMENT “B”

Biological Evaluation for Self-Help Enterprises Matheny Tract Wastewater Pipeline Project

Biological Evaluation

SELF-HELP ENTERPRISES

MATHENY TRACT WASTEWATER PIPELINE PROJECT

JANUARY 2021

Jacob Rogers, Biologist

Shaylea Stark, Biologist

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I. Introduction

The following technical report, prepared by Provost & Pritchard Consulting Group (Provost & Pritchard), in compliance with the California Environmental Quality Act (CEQA), includes a description of the biological resources present or with potential to occur within the proposed Self-Help Enterprises Matheny Tract Wastewater Pipeline Project (Project) and surrounding areas, and evaluates potential Project-related impacts to those resources.

Project Description

The Project consists of installing new wastewater infrastructure pipeline for the small community of Matheny (Matheny), southwest of the City of Tulare, Tulare County, California (**Figure 1** and **Figure 2**).

Matheny is home to nearly 1,200 residents in over 325 houses and considered a Disadvantaged Community per State Water Resources Control Board definition. The Project is to provide the community with a viable, sustainable solution for their wastewater collection, treatment, and disposal needs. The benefits include eliminating potential groundwater contamination connected with septic system leakage or failure, ending reliance on aging and failing individual septic systems and repair costs, and establishing an affordable and sustainable wastewater disposal system connecting residents to the existing City of Tulare, Domestic Wastewater Treatment Plant (DWWTP).

The Project Area of Potential Effect (APE) is approximately 7,708 linear feet of pipeline and an additional 50-foot buffer around the pipeline. The pipeline route runs west approximately 0.48 mile along Paige Avenue from Road 96 to South West Street, turns north approximately 0.51 mile on South West Street, and turning west approximately 0.49 mile onto an unnamed road on the north side of the existing DWWTP (**Figure 3**). This report is a continuation of previous surveys to provide Matheny with sustainable wastewater infrastructure. For the purpose of this report, this phase of the project will be treated independently.

Report Objectives

Construction activities such as those proposed with the Project could potentially impact biological resources or modify habitats that are crucial for sensitive plant and wildlife species. In cases such as these, development may be regulated by state or federal agencies, subject to provisions of CEQA, National Environmental Policy Act (NEPA), and/or addressed by local regulatory agencies.

This report addresses issues related to the following:

- The presence/absence of sensitive biological resources onsite, or with the potential to occur onsite.
- The federal, state, and local regulations regarding these resources.
- Mitigation measures that may be required to reduce the magnitude of anticipated impacts and/or comply with permit requirements of state and federal resource agencies.

Therefore, the objectives of this report are:

- Summarize all site-specific information related to existing biological resources.
- Make reasonable inferences about the biological resources that could occur onsite based on habitat suitability and the proximity of the site to a species' known range.
- Summarize all state and federal natural resource protection laws that may be relevant to the APE.
- Identify and discuss Project impacts to biological resources likely to occur onsite within the context of CEQA and/or state or federal laws.
- Identify and publish a set of avoidance and mitigation measures that would reduce impacts to a less-than-significant level (as identified by CEQA) and are generally consistent with recommendations of the resource agencies for affected biological resources.

Study Methodology

A reconnaissance-level field survey of the APE (**Figure 3**) and surrounding area was conducted on November 14, 2021, by Provost & Pritchard's biologist Jacob Rogers. The survey consisted of walking and driving through the APE while identifying and noting land uses, biological habitats and communities, and plant and animal species encountered. Furthermore, the APE was assessed for suitable habitats of various wildlife species.

The biologist conducted an analysis of potential Project-related impacts to biological resources based on the resources known to exist or with potential to exist within the APE. Sources of information used in preparation of this analysis included: the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB); the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Vascular Plants of California; CalFlora's online database of California native plants; the Jepson Herbarium online database (Jepson eFlora); United States Fish and Wildlife Service (USFWS) Environmental Conservation Online System (ECOS) and Information for Planning and Consultation (IPaC) system; the NatureServe Explorer online database; the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Plants Database; CDFW California Wildlife Habitat Relationships (CWHR) database; the California Herps online database; and various manuals, reports, and references related to plants and animals of the San Joaquin Valley region.

The field investigation did not include focused surveys for special status species or an aquatic resources delineation. The field survey conducted did include the appropriate level of detail to assess the significance of potential impacts to sensitive biological resources resulting from the Project. Furthermore, the field survey was sufficient to describe those features of the Project that could be subject to the jurisdiction of federal and/or State agencies, such as the United States Army Corps of Engineers (USACE), CDFW, Regional Water Quality Control Board (RWQCB) and State Water Resources Control Board (SWRCB) and used to support CEQA documents.

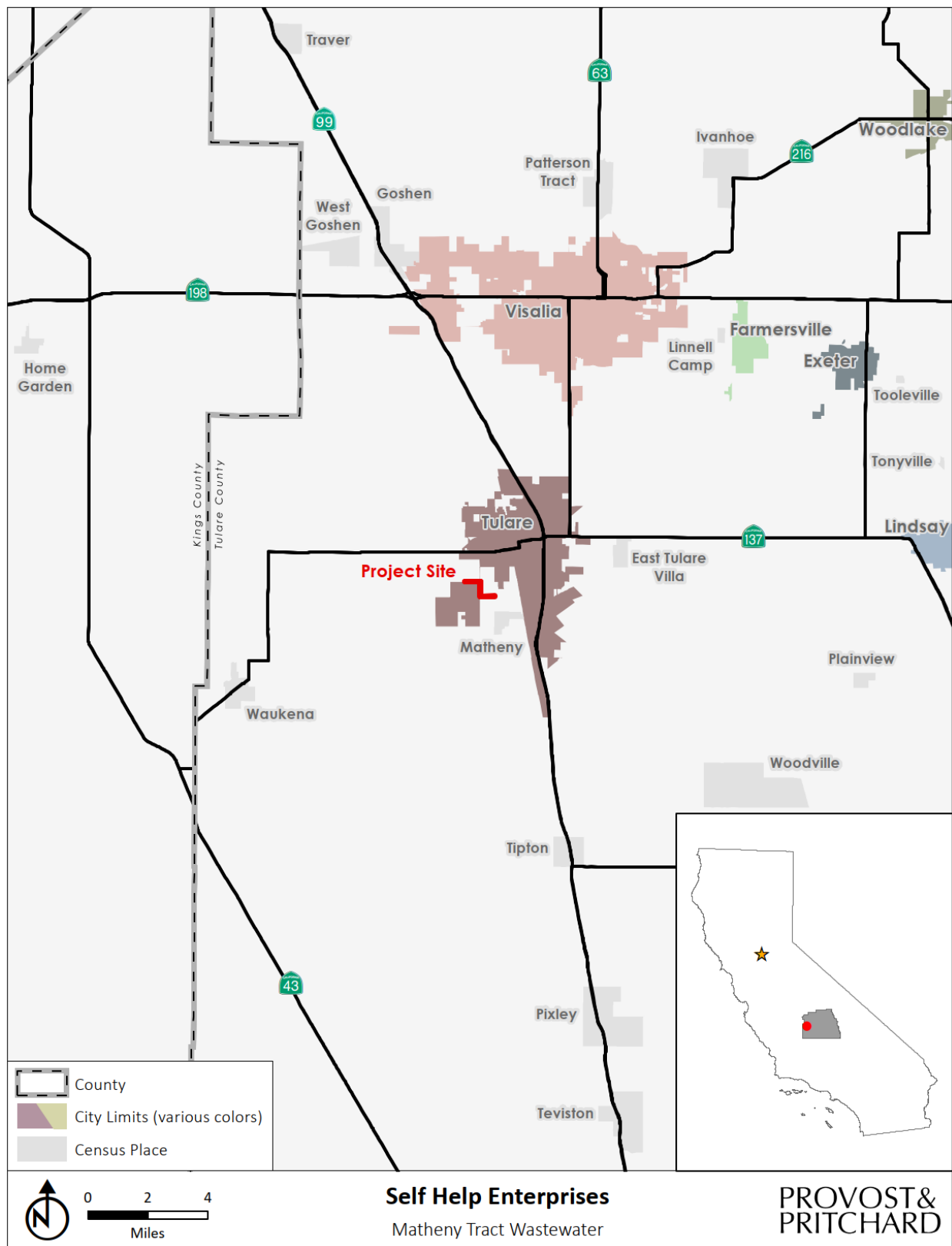


Figure 1. Regional Location

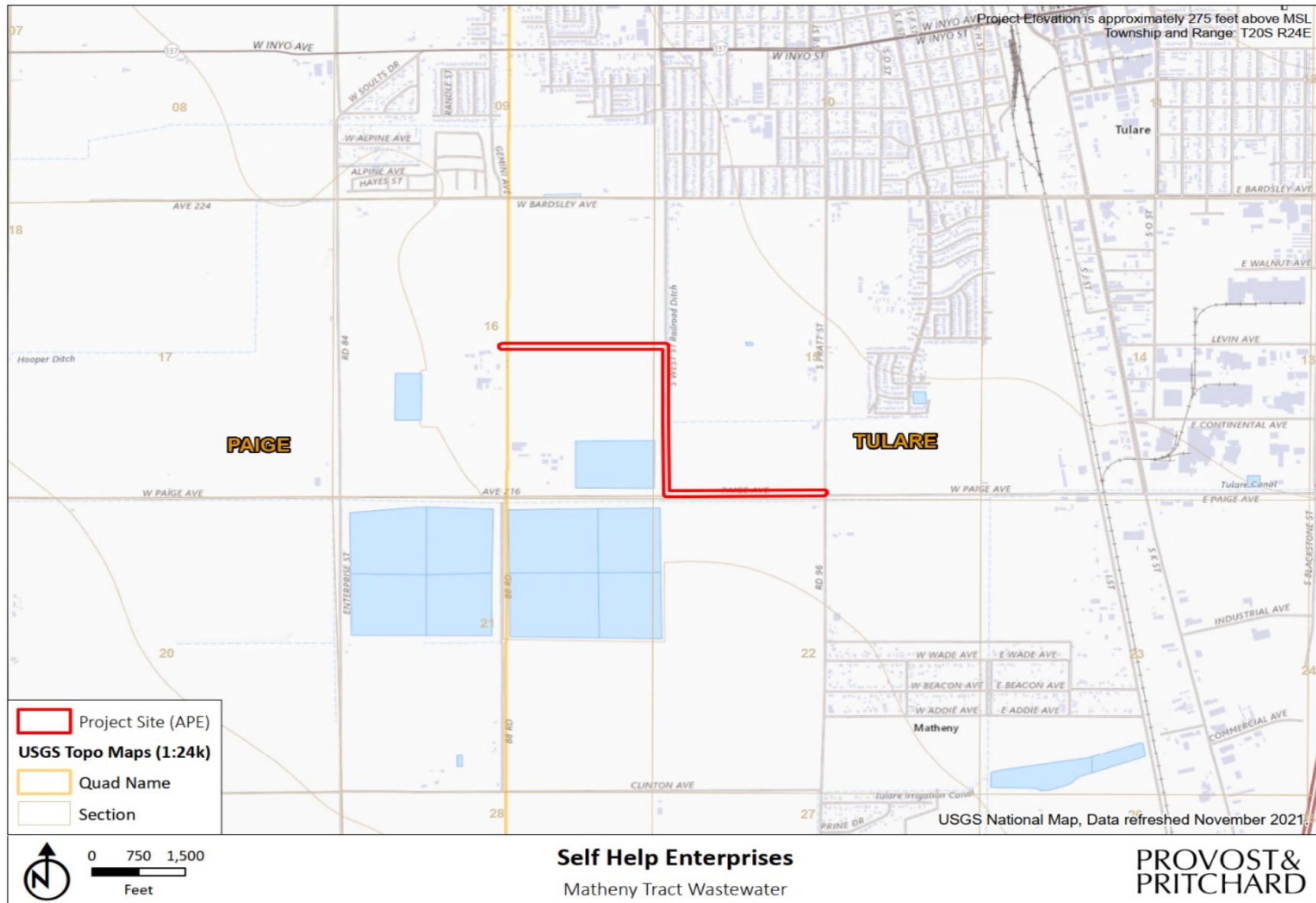


Figure 2. Topographic Quadrangle Map

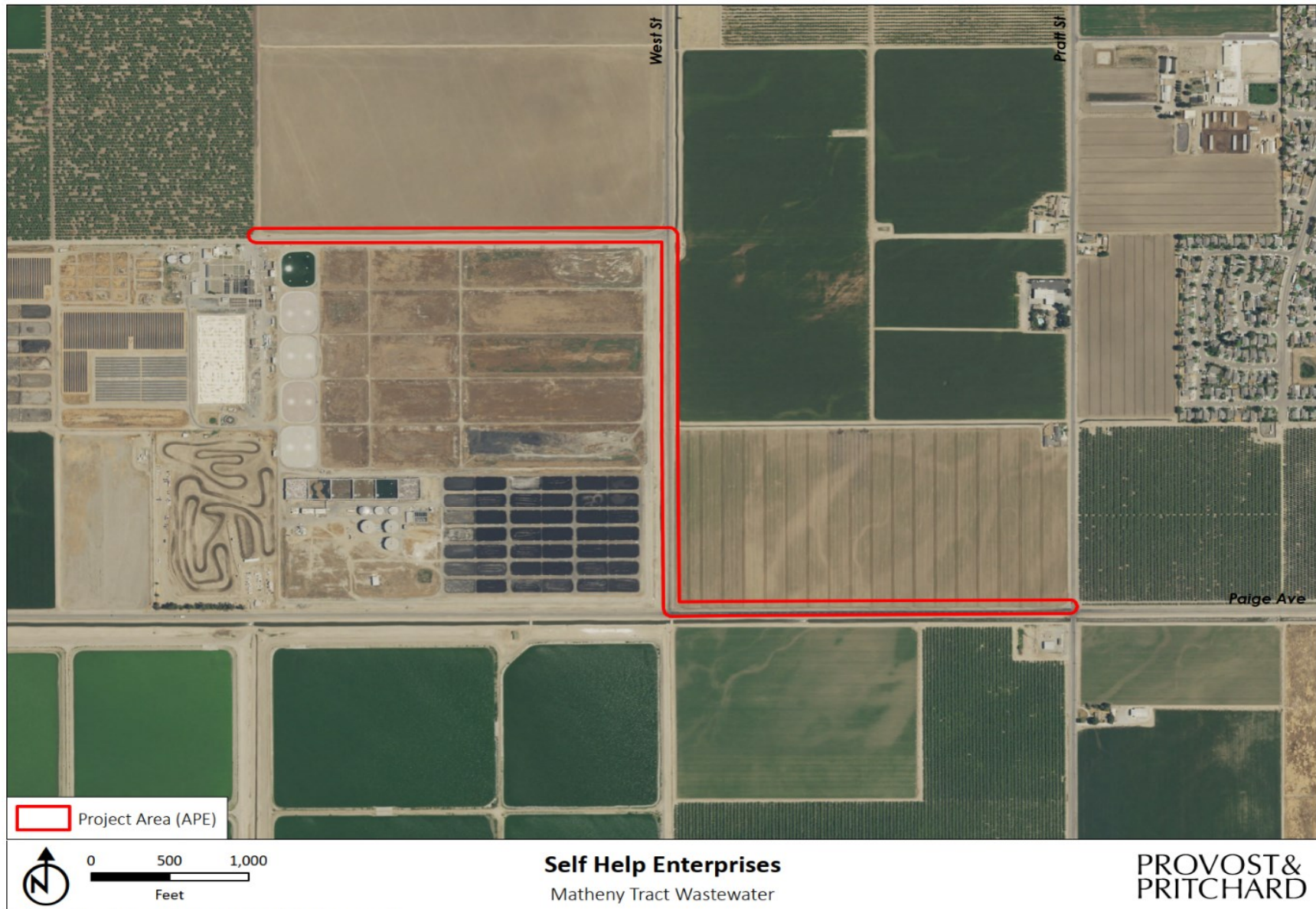


Figure 3. Area of Potential Effect

II. Existing Conditions

Regional Setting

Topography

The APE is in southern Tulare County, California, within the lower San Joaquin Valley ([Valley] **Figure 1**). The Valley is bordered by the Sierra Nevada Mountain Ranges to the east, the Coast Ranges to the west, the Klamath Mountains and Cascade Range to the north, and the Transverse Ranges and Mojave Desert to the south. The APE is relatively flat, with large rural parcels primarily used for agricultural practices.

Climate

Like most of California, the San Joaquin Valley experiences a Mediterranean climate. Warm, dry summers are followed by cool, moist winters. Summer temperatures often reach above 90 degrees Fahrenheit (°F), and the humidity is generally low. Winter temperatures are often below 60°F during the day and rarely exceed 70°F at night. On average, the Matheny area receives approximately 10 inches of precipitation in the form of rainfall yearly, falling mainly from October to April.

Water

The APE lies within the Bates Slough watershed; Hydrologic Unit Code (HUC): 18030060901 and a single subwatershed: Deep Creek subwatershed; HUC: 1803000609. The principal drainage comes from Elk Bayou, located approximately 3 miles south of the APE. Rainfall events from the west slopes of the Sierra Nevada Mountain Range feed into the upper portion of Elk Bayou, which runs south of Matheny, eventually feeding into the Tule River. Irrigation ditches border the areas south of Paige Avenue, and west and east of South West Avenue. All ditches were dry at the time of the survey.

Photographs of the APE and vicinity are available in **Appendix A** at the end of this document.

Soils

Two soil mapping units representing two soil types were identified within the APE based on the Major Land Resource Area of California 19 (MLRA) map area. The soil mapping units are identified as Colpien and Nord soils and are primarily used for agriculture in the form of irrigated cropland and annual pasture; vegetation in uncultivated areas is mainly annual grasses and herbaceous plants.

Table 1. Soils of the Area of Potential Effect

Soil	Soil Map Unit	Percent of APE	Hydric Unit	Hydric Minor Units	Drainage	Permeability	Runoff
Colpien	Loam, 0 to 2 percent slop	44.6%	No	No	Moderately well drained	Moderately slow permeability	Low runoff
Nord	Fine sandy loam, 0 to 2 percent slopes	55.4%	No	Yes	Well drained	Moderate permeability	Negligible runoff

Colpien and Nord soils were not identified as hydric. Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions such that under sufficiently wet conditions, hydrophytic vegetation can be supported.

The complete NRCS Web Soil Survey report is available in **Appendix D** at the end of this document.

Biological Communities

Ruderal/Agricultural

The APE is comprised of mostly rural agricultural fields and paved and dirt public roads with surrounding dry irrigation ditches. The pipeline terminates at the DWWTP, a highly disturbed, fenced, active water pollution treatment facility. The disturbed nature of the roads and the DWWTP provide little value to wildlife and vegetation.

Vegetation within the APE is comprised of agriculture, herbaceous vegetation, and grasses, including Bermuda grass (*Cynodon dactylon*), spikeweed (*Centromadia pungens*), devil's trumpet (*Datura stramonium*), castor bean (*Ricinus communis*), and Russian thistle (*Kali tragus*). Representative photographs of the site at the time of the survey are presented in **Appendix A** at the end of this document.

Wildlife within the APE at the time of the survey resulted in the identification of Mourning Dove (*Zenaida macroura*), American Crow (*Corvus brachyrhynchos*), Black Phoebe (*Sayornis nigricans*), House Sparrow (*Passer domesticus*), European Starling (*Sturnus vulgaris*), White-crowned Sparrow (*Zonotrichia leucophrys*), Turkey Vulture (*Cathartes aura*), Killdeer (*Charadrius vociferus*), and domestic dogs (*Canis familiaris*).

Natural Communities of Special Concern

Natural communities of special concern are those of limited distribution, distinguished by significant biological diversity, or home to special status species. CDFW is responsible for the classification and mapping of all-natural communities in California. Just as the special status plant and animal species, these natural communities of special concern can be found within CNDDDB.

According to CNDDDB, there are no recorded observations of natural communities of special concern with potential to occur within the APE or vicinity. Additionally, no natural communities of special concern were observed during the biological survey.

Designated Critical Habitat of the APE

The USFWS often designates areas of "Critical Habitat" when it lists species as threatened or endangered. Critical Habitat is a specific geographic area that contains features essential for the conservation of a threatened or endangered species and may require special management or protection. According to CNDDDB and IPaC, designated critical habitat is absent from the APE and vicinity.

Wildlife Movement Corridors

Wildlife movement corridors are routes that animals regularly and predictably follow during seasonal migration, dispersal from native ranges, daily travel within home ranges, and inter-population movements. Movement corridors in California are typically associated with valleys, ridgelines, and rivers and creeks supporting riparian vegetation.

The APE does not contain features that would be likely to function as wildlife movement corridors. Further, the Project is in an area often disturbed by traffic, agricultural activities, and loose domestic dogs, which would discourage dispersal and migration. The surrounding areas of the APE are agricultural land which would further discourage wildlife movement.

Special Status Plants and Animals

California contains several “rare” plant and animal species. In this context, rare is defined as species known to have low populations or limited distributions. As the human population grows, resulting in urban expansion, which encroaches on the already limited suitable habitat, these sensitive species become increasingly more vulnerable to extirpation. State and federal regulations have provided the CDFW and the USFWS with a mechanism for conserving and protecting the diversity of plant and animal species native to California. Numerous native plants and animals have been formally designated as “threatened” or “endangered” under state and federal endangered species legislation. Other formal designations include “candidate” for listing or “species of special concern” by CDFW. The CNPS has its list of native plants considered rare, threatened, or endangered. Collectively these plants and animals are referred to as “special status species.”

A thorough search of the CNDDDB for published accounts of special status plant and animal species was conducted for *Tulare* 7.5-minute quadrangle that contains the APE in its entirety, and for the eight surrounding quadrangles: *Visalia*, *Exeter*, *Cairns Corner*, *Woodville*, *Tipton*, *Taylor Weir*, *Paige*, and *Goshen*. These species, and their potential to occur within the APE are listed in **Table 2** and **Table 3**. Raw data obtained from CNDDDB and IPaC is available in **Appendix B** and **Appendix C** at the end of this document. All relevant sources of information, as discussed in the Study Methodology section of this report (above), were used to determine if any special status species are known to be within the APE. **Figure 2** shows the Project’s 7.5-minute quadrangle, according to USGS Topographic Map.

Table 2. List of Special Status Animals with Potential to Occur Onsite and/or in the Vicinity

Species	Status	Habitat	Occurrence on Project Site
American badger <i>(Taxidea taxus)</i>	CSC	Grasslands, savannas, and mountain meadows near timberline are preferred. Most abundant in drier open spaces of shrub and grassland. Burrows in soil.	Unlikely. American badger individuals, sign, or suitable burrows were not observed during the field survey. The APE and surrounding areas are public roads and agricultural lands that are unsuitable for this species. The nearest recorded observation of this species was 27 years ago, approximately 13 miles northwest of the APE.
Blunt-nosed leopard lizard <i>(Gambelia sila)</i>	FE, CE, CFP	Inhabits semi-arid grasslands, alkali flats, low foothills, canyon floors, large washes, and arroyos, usually on sandy, gravelly, or loamy substrate, sometimes on hardpan. Often found where there are abundant rodent burrows in dense vegetation or tall grass. Cannot survive on lands under cultivation. Known to bask on kangaroo rat mounds and often seeks shelter at the base of shrubs, in small mammal burrows, or in rock piles. Adults may excavate shallow burrows but rely on deeper pre-existing rodent burrows for hibernation and reproduction.	Absent. Blunt-nosed leopard lizard individuals or suitable habitat were not observed during the biological survey. The APE and surrounding areas are public roads and agricultural lands that are unsuitable for this species. The last recorded observation of this species was 47 years ago, 9 miles west of the APE.
Burrowing Owl <i>(Athene cunicularia)</i>	CSC	Resides in open, dry annual or perennial grasslands, deserts, and scrublands with low growing vegetation. Nests underground in existing burrows created by mammals, most often ground squirrels.	Unlikely. The disturbed habitats of the APE are unsuitable for this species. Nesting and foraging habitat is absent due to incompatible topography and vegetative cover. At most, a Burrowing Owl individual could potentially pass over or through the site but would not be expected to nest or forage within or adjacent to the APE. There was only one recorded observation of this species, in the Pixley National Wildlife Refuge 14 years ago, 10 miles from the APE.
Crotch bumble bee <i>(Bombus crotchii)</i>	CCE	Occurs throughout coastal California, as well as east to the Sierra-Cascade crest, and south into Mexico. Food plant genera include <i>Antirrhinum</i> , <i>Phacelia</i> , <i>Clarkia</i> , <i>Dendromecon</i> , <i>Eschscholzia</i> , and <i>Eriogonum</i> .	Unlikely. The disturbed habitats of the APE are unsuitable for this species. A crotch bumblebee could potentially pass through the area, but nesting and foraging habitat is absent due to past and current land use. The last recorded observation of this species was 60 years ago, 11 miles northeast of the APE.

Species	Status	Habitat	Occurrence on Project Site
Loggerhead Shrike (<i>Lanius ludovicianus</i>)	CSC	Frequents open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low herbaceous cover. In the Central Valley, nests in riparian areas, desert scrub, and agricultural hedgerows.	Absent. Loggerhead Shrikes or suitable habitat were not observed during the biological survey. The APE and surrounding areas are public roads and agricultural lands that are unsuitable for this species. The last recorded observation of this species was over 100 years ago, 7 miles south of the APE.
Mountain Plover (<i>Charadrius montanus</i>)	CSC	Breeds on open plains at moderate elevations. Winters in short-grass plains and fields, plowed or fallow fields, and sandy deserts. Prefers flat, bare ground with burrowing rodents.	Absent. The APE and surrounding areas are public roads and agricultural lands that are unsuitable for this species. The last recorded observation of this species was over 30 years ago, 8 miles southwest of the APE.
Northern California legless lizard (<i>Anniella pulchra</i>)	CSC	Found primarily underground, burrowing in loose, sandy soil. Forages in loose soil and leaf litter during the day. Occasionally observed on the surface at dusk and night.	Absent. No individuals or suitable habitat were observed during the biological survey. The APE and surrounding areas are public roads and agricultural lands that are unsuitable for this species. The last recorded observation of this species was 6 years ago, 14 miles northeast of the APE.
Pallid bat (<i>Antrozous pallidus</i>)	CSC	Found in grasslands, chaparral, and woodlands, where it feeds on ground- and vegetation-dwelling arthropods, and occasionally takes insects in flight. Prefers to roost in rock crevices, but may also use tree cavities, caves, bridges, and other man-made structures.	Unlikely. The APE and surrounding areas are public roads and agricultural lands that are unsuitable for this species. Roosting habitat is not present within the APE. A flyover is possible, but unlikely. The only recent observation of this species was recorded 17 years ago, 14.5 miles northeast of the APE.
San Joaquin kit fox (<i>Vulpes macrotis mutica</i>)	FE, CT	Underground dens with multiple entrances in alkali sink, valley grassland, and woodland in valleys and adjacent foothills.	Unlikely. There are 25 recorded observations of this species in the vicinity of the Project; however, only one of these observations occurred within the past 30 years, less than 1 mile north of the APE. The APE and surrounding areas are public roads and agricultural lands that are unsuitable for building underground dens.

Species	Status	Habitat	Occurrence on Project Site
Swainson's Hawk (<i>Buteo swainsoni</i>)	CT	Nests in large trees in open areas adjacent to grasslands, grain or alfalfa fields, or livestock pastures suitable for supporting rodent populations.	Unlikely. Swainson's Hawks are relatively common in this portion of the Central Valley. There are 38 recorded observations of this species in the vicinity of the Project and 22 were seen in the last 10 years. Nesting habitat is not present within the APE. It is possible that adjacent agricultural fields are utilized for foraging, but nesting within the APE is extremely unlikely. The nearest recorded observation was 27 years ago, less than 0.5 miles south of the APE. The most recent recorded observation was 4 years ago, 4 miles southwest of the APE.
Tipton kangaroo rat (<i>Dipodomys nitratooides nitratooides</i>)	FE, CE	Burrows in soil. Often found in grassland and shrubland.	Unlikely. Tipton kangaroo rat individuals or signs were not observed during the field survey. The highly disturbed nature of the APE and the surrounding lands are unsuitable for this species. The nearest recorded observation was 78 years ago, 7 miles southeast of the APE. The most recent recorded observation of this species in the vicinity was reported in undisturbed grassland habitats of Pixley National Wildlife Refuge, 36 years ago 13 miles southwest of the APE.
Tricolored Blackbird (<i>Agelaius tricolor</i>)	CT, CSC	Nests colonially near fresh water in dense cattails or tules, or in thickets of riparian shrubs. Forages in grassland and cropland. Large colonies are often found on dairy farm forage fields.	Absent. Tricolored Blackbird individuals were not observed during the field survey. Suitable nesting habitat is absent and foraging habitat is marginal. No water is present within the APE. The nearest recorded observation was 7 years ago, 9 miles southeast of the APE. The most recent recorded observation of this species was 6 years ago and approximately 11 miles southwest of the APE.
Valley elderberry longhorn beetle (<i>Desmocerus californicus dimorphus</i>)	FT	Lives in mature elderberry shrubs of the Central Valley and foothills. Adults are active March to June.	Absent. Valley elderberry longhorn beetle Individuals, suitable habitat, or elderberry bushes were not observed during the field survey. The only recorded observation in the vicinity was 30 years ago, 18 miles northeast of the APE.

Species	Status	Habitat	Occurrence on Project Site
Vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	FT	Occupies vernal pools, clear to tea-colored water, in grass or mud-bottomed swales, and basalt depression pools.	Absent. Vernal pools are absent from the APE. The nearest recorded observation of this species was 26 years ago, 12.5 miles northwest of the APE.
Western mastiff bat (<i>Eumops perotis californicus</i>)	CSC	Found in open, arid to semi-arid habitats, including dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas, where it feeds on insects in flight. Roosts most commonly in crevices in cliff faces but may also use high buildings and tunnels.	Unlikely. The western mastiff bat could fly over the APE and surrounding agricultural fields to forage, but suitable roosting habitat is absent from the APE and surrounding areas. The nearest recorded observation of this species was over 19 years ago, 8.5 miles northeast of the APE.
Western pond turtle (<i>Emys marmorata</i>)	CSC	An aquatic turtle of ponds, marshes, slow-moving rivers, streams, and irrigation ditches with riparian vegetation. Requires adequate basking sites and sandy banks or grassy open fields to deposit eggs.	Absent. No individuals or suitable habitat were observed during the biological survey. The APE and surrounding areas are privately owned public roads and agricultural lands that are unsuitable for this species. The nearest stream is 2.5 miles southeast of the APE. Breeding habitat is absent from the APE and surrounding lands. The last recorded observation of this species was over 140 years ago, 11 miles northeast of the APE.
Western spadefoot (<i>Spea hammondi</i>)	CSC	Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Vernal pools or temporary wetlands, lasting a minimum of three weeks, which do not contain bullfrogs, fish, or crayfish are necessary for breeding.	Absent. The APE and surrounding areas are privately owned public roads and agricultural lands that are unsuitable for this species. The nearest stream is 2.5 miles southeast from the APE and the nearest recorded observation of this species was 11 years ago, 6 miles east of the APE.

Species	Status	Habitat	Occurrence on Project Site
Western Yellow-billed Cuckoo <i>(Coccyzus americanus occidentalis)</i>	FT, CE	<p>Suitable nesting habitat in California includes dense riparian willow-cottonwood and mesquite habitats along a perennial river. Once a common breeding species in riparian habitats of lowland California, this species currently breeds consistently in only two locations in the State: along the Sacramento and South Fork Kern Rivers.</p>	<p>Absent. The APE and surrounding areas are privately owned public roads and agricultural lands that are unsuitable for this species. There is no suitable nesting habitat and the two locations where this species is known to breed is over 190 miles northwest and over 65 miles southeast from the APE. The nearest recorded observation of this species was over 100 years ago, 11 miles northeast of the APE and is presumed to be extirpated.</p>

Table 3. List of Special Status Plants with Potential to Occur Onsite and/or in the Vicinity

Species	Status	Habitat	Occurrence on Project Site
Alkali-sink goldfields <i>(Lasthenia chrysantha)</i>	CNPS 1B	This species is found in vernal pool and wet saline flat habitats. Occurrences are documented in the San Joaquin and Sacramento Valleys at elevations below 656 feet. Bloom period is from February - April.	Absent. Vernal pools are absent from the APE and anthropogenic disturbance makes conditions unsuitable for this species. The nearest recorded observation was over 120 years ago, 1.5 miles northeast and is considered possibly extirpated. The most recent observation was over 23 years ago, 6 miles southeast of the APE.
Brittlescale <i>(Atriplex depressa)</i>	CNPS 1B	This species is found in the San Joaquin Valley and Sacramento Valley in alkaline or clay soils, typically in meadows or annual grassland at elevations below 1050 feet. It is sometimes associated with vernal pools. Bloom period is from June–October.	Absent. Vernal pools and suitable soils are absent from the APE and anthropogenic disturbance makes conditions unsuitable for this species. The only regional observation occurred over 140 years ago, 11 miles northeast of the APE.
California alkali grass <i>(Puccinellia simplex)</i>	CNPS 1B	This species is found in the San Joaquin Valley and other parts of California in saline flats and mineral springs within valley grassland and wetland-riparian communities at elevations below 3000 feet. Bloom period is from March–May.	Absent. Required habitat is absent from the APE and anthropogenic disturbance makes conditions unsuitable for this species. Grassland or wetland-riparian communities are not present. The most recent observation of this species was 23 years ago, 6 miles east of the APE.
California jewelflower <i>(Caulanthus californicus)</i>	FE, CE, CNPS 1B	This species is found in the San Joaquin Valley and Western Transverse Ranges in sandy soils. It occurs on flats and slopes, generally in non-alkaline grassland at elevations between 230 feet and 6100 feet. Bloom period is from February–April.	Absent. Required habitat is absent from the APE and anthropogenic disturbance makes conditions unsuitable for this species. Grassland communities are not present. The only recorded observation of this species in the vicinity was 35 years ago, 1.5 miles northeast of the APE and it is presumed extirpated.
California satintail <i>(Imperata brevifolia)</i>	CNPS 2B	Although this facultative species is equally likely to occur in wetlands and non-wetlands, it is often found in wet springs, meadows, streambanks, and floodplains at elevations below 1600 feet. Bloom period is from September – May.	Absent. Required habitat is absent from the APE and anthropogenic disturbance makes conditions unsuitable for this species. Wetland communities are not present. The only recorded observation of this species in the vicinity was over 125 years ago, 11 miles northeast of the APE.

Species	Status	Habitat	Occurrence on Project Site
Earlimart orache (<i>Atriplex cordulata</i> var. <i>erecticaulis</i>)	CNPS 1B	This species is found in the San Joaquin Valley in saline or alkaline soils, typically within valley and foothill grassland at elevations below 375 feet. Bloom period is from August–September.	Absent. Required soils and habitat are absent from the APE and anthropogenic disturbance makes conditions unsuitable for this species. Grassland communities are not present. The most recent recorded observation was 6 years ago, 6 miles southeast of the APE.
Heartscale (<i>Atriplex cordulata</i> var. <i>cordulata</i>)	CNPS 1B	This species is found in the San Joaquin Valley and Sacramento Valley in saline or alkaline soils within shadscale scrub, valley grassland, and wetland-riparian communities at elevations below 230 feet. Bloom period is from June–July.	Absent. Required soils and habitat are absent from the APE and anthropogenic disturbance makes conditions unsuitable for this species. Grassland and wetland-riparian communities are not present. The only recorded observation in the vicinity was 83 years ago and 12 miles north of the APE.
Lesser saltscale (<i>Atriplex minuscula</i>)	CNPS 1B	This species is found in the San Joaquin Valley in sandy, alkaline soils in alkali scrub, valley and foothill grassland, and alkali sink communities at elevations below 750 feet. Bloom period is from April–October.	Absent. Required habitat and soils are absent from the APE and anthropogenic disturbance makes conditions unsuitable for this species. Grassland and alkali communities are not present. The most recent observation of this species was 11 years ago, 6 miles southeast of the APE.
Recurved larkspur (<i>Delphinium recurvatum</i>)	CNPS 1B	This species occurs in poorly drained, fine, alkaline soils in grassland and alkali scrub communities at elevations between 100 feet and 2600 feet. Bloom period is from March–June.	Absent. Required habitat and soils are absent from the APE and anthropogenic disturbance makes conditions unsuitable for this species. Grassland and alkali communities are not present. The most recent observation of this species was 11 years ago, 6 miles southeast of the APE.
San Joaquin adobe sunburst (<i>Pseudobahia peirsonii</i>)	FT, CE, CNPS 1B	This species is found in the San Joaquin Valley and the Sierra Nevada Foothills in bare dark clay soils in valley and foothill grassland and cismontane woodland communities at elevations between 325 feet and 2950 feet. Bloom period is from March–May.	Absent. Required habitat and soils are absent from the APE and anthropogenic disturbance makes conditions unsuitable for this species. Grassland and woodland communities are not present. The only recorded observation of this species was over 120 years ago, 1.5 miles northeast of the APE and is presumed extirpated.

Species	Status	Habitat	Occurrence on Project Site
Spiny-sepaled button-celery <i>(Eryngium spinosepalum)</i>	CNPS 1B	Found in the Sierra Nevada Foothills and the San Joaquin Valley. Occurs in vernal pools, swales, and roadside ditches. Often associated with clay soils in vernal pools within grassland communities. Occurs at elevations between 50 feet and 4160 feet. Blooms April–July.	Absent. Vernal pools are absent from the APE and anthropogenic disturbance makes conditions unsuitable for this species. The only recorded observation of this species was 29 years ago, 13 miles northeast of the APE and is considered possibly extirpated.
Subtle orache <i>(Atriplex subtilis)</i>	CNPS 1B	This species is found in the San Joaquin Valley in saline depressions in alkaline soils within valley and foothill grassland communities at elevations below 330 feet. Bloom period is from June–October.	Absent. Required habitat and soils are absent from the APE and anthropogenic disturbance makes conditions unsuitable for this species. Grassland and woodland communities are not present. The nearest observation of this species was 22 years ago, 6 miles southeast of the APE.

EXPLANATION OF OCCURRENCE DESIGNATIONS AND STATUS CODES

Present:	Species observed on the site at time of field surveys or during recent past.
Likely:	Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.
Possible:	Species not observed on the site, but it could occur there from time to time.
Unlikely:	Species not observed on the site, and would not be expected to occur there except, perhaps, as a transient.
Absent:	Species not observed on the site, and precluded from occurring there due to absence of suitable habitat.

STATUS CODES

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
FPE	Federally Endangered (Proposed)	CCT	California Threatened (Candidate)
FPT	Federally Threatened (Proposed)	CFP	California Fully Protected
FC	Federal Candidate	CSC	California Species of Concern
		CWL	California Watch List
		CCE	California Endangered (Candidate)
		CR	California Rare

CNPS LISTING

1A	Plants Presumed Extinct in California.	2A	Plants Presumed Extirpated in California, but more common elsewhere.
1B	Plants Rare, Threatened, or Endangered in California and elsewhere.	2B	Plants Rare, Threatened, or Endangered in California, but more common elsewhere.

III. Impacts and Mitigation

Significance Criteria

CEQA

General plans, area plans, and specific projects are subject to the provisions of CEQA. The purpose of CEQA is to assess the impacts of proposed projects on the environment prior to project implementation. Impacts to biological resources are just one type of environmental impact assessed under CEQA and vary from project to project in terms of scope and magnitude. Projects requiring removal of vegetation may result in the mortality or displacement of animals associated with this vegetation. Animals adapted to humans, roads, buildings, and pets may replace those species formerly occurring on a site. Plants and animals that are State and/or federally listed as threatened or endangered may be destroyed or displaced. Sensitive habitats such as wetlands and riparian woodlands may be altered or destroyed. Such impacts may be considered either “significant” or “less than significant” under CEQA. According to CEQA, Statute and Guidelines (AEP 2021), “significant effect on the environment” means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest. Specific project impacts to biological resources may be considered “significant” if they would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Furthermore, CEQA Guidelines Section 15065(a) states that a project may trigger the requirement to make a “mandatory finding of significance” if the project has the potential to:

“Substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop

below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare or threatened species, or eliminate important examples of the major periods of California history or prehistory.”

Relevant Goals, Policies, and Laws

Tulare County General Plan

The Tulare County General Plan 2030 Agriculture and Environmental Resources Management Elements contain the following goals and policies related to the Project:

3. Agriculture

- AG-1.7* Preservation of Agricultural Lands: The County will promote the preservation of its agricultural economic base and open space resources through the implementation of resource management programs such as the Williamson Act, Rural Valley Lands Plan, Foothill Growth Management Plan or similar types of strategies and the identification of growth boundaries for all urban areas located in the County.
- AG-1.17* Agricultural Water Resources: The County will seek to protect and enhance surface water and groundwater resources critical to agriculture.

4. Land Use

C. Environment Component

- Principle 1: Protection Protect the supply and quality of urban, agricultural, and environmental water serving the County.
- Principle 3: Recharge Identify and encourage the development of locations where water recharge systems can be developed to replenish water supplies.

7. Scenic Landscapes

- SL-1.3* Watercourses. The County will protect visual access to, and the character of, Tulare County’s scenic rivers, lakes, and irrigation canals by:
1. Locating and designing new development to minimize visual impacts and obstruction of views of scenic watercourses from public lands and right-of-ways, and
 2. Maintaining the rural and natural character of landscape viewed from trails and watercourses used for public recreation.

Threatened and Endangered Species

Permits may be required from the USFWS and/or CDFW if activities associated with a project have the potential to result in the “take” of a species listed as threatened or endangered under the federal and/or state Endangered Species Acts. Take is defined by the State of California as “to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill” (California Fish and Game Code, Section 86). Take is more broadly defined by the federal Endangered Species Act to include “harm” (16 United States Code (USC), Section 1532(19), 50 Code of Federal Regulations, Section 17.3). CDFW and USFWS are responsible agencies under CEQA and NEPA. Both agencies review CEQA and NEPA documents to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

Designated Critical Habitat

When species are listed as threatened or endangered, the USFWS often designates areas of “Critical Habitat” as defined by section 3(5)(A) of the federal Endangered Species Act (ESA). Critical Habitat is a term defined in the ESA as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical Habitat is a tool that supports the continued conservation of imperiled species by guiding cooperation with the federal government. Designations only affect federal agency actions or federally funded or permitted activities. Critical Habitat does not prevent activities that occur within the designated area. Only activities that involve a federal permit, license, or funding and are likely to destroy or adversely modify Critical Habitat will be affected.

Migratory Birds

The Federal Migratory Bird Treaty Act (MBTA) (16 USC 703-712) prohibits killing, possessing, or trading in any bird species covered in one of four international conventions to which the United States is a party, except in accordance with regulations prescribed by the Secretary of the Interior. The name of the act is misleading, as it covers almost all bird’s native to the United States, even those that are non-migratory. The MBTA encompasses whole birds, parts of birds, and bird nests and eggs. Additionally, California Fish and Game Code makes it unlawful to take or possess any non-game bird covered by the MBTA (Section 3513), as well as any other native non-game bird (Section 3800).

Birds of Prey

Birds of prey are protected in California under provisions of Fish and Game Code (Section 3503.5), which states that it is unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks and eagles) or Strigiformes (owls), as well as their nests and eggs. The bald eagle and golden eagle are afforded additional protection under the federal Bald and Golden Eagle Protection Act (16 USC 668), which makes it unlawful to kill birds or their eggs.

Nesting Birds

In California, protection is afforded to the nests and eggs of all birds. California Fish and Game Code (Section 3503) states that it is “unlawful to take, possess, or needlessly destroy the nest or eggs of any bird except as otherwise provided by this code or any regulation adopted pursuant thereto.” Breeding-

season disturbance that causes nest abandonment and/or loss of reproductive effort is considered a form of “take” by the CDFW.

Wetlands and other “Jurisdictional Waters”

Natural drainage channels and adjacent wetlands may be considered “waters of the United States or “jurisdictional waters” subject to the jurisdiction of the USACE. The extent of jurisdiction has been defined in the Code of Federal Regulations but has also been subject to interpretation of the federal courts. Jurisdictional waters generally include:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- All interstate waters including interstate wetlands;
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce;
- All impoundments of waters otherwise defined as waters of the United States under the definition;
- Tributaries of waters identified in paragraphs (a)(1)-(4) (i.e., the bulleted items above).

As determined by the United States Supreme Court in its 2001 *Solid Waste Agency of Northern Cook County (SWANCC) v. United States Army Corps of Engineers* decision, channels and wetlands isolated from other jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds. Similarly, in its 2006 consolidated *Carabell/Rapanos* decision, the Supreme Court ruled that a significant nexus between a wetland and other navigable waters must exist for the wetland itself to be considered a navigable and therefore jurisdictional water. Furthermore, the Supreme Court clarified that the United States Environmental Protection Agency (USEPA) and the USACE will not assert jurisdiction over ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

The USACE regulates the filling or grading of Waters of the United States under the authority of Section 404 of the Clean Water Act. The extent of jurisdiction within drainage channels is defined by “ordinary high-water marks” on opposing channel banks. All activities that involve the discharge of dredge or fill material into Waters of the United States are subject to the permit requirements of the USACE. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that results in no net loss of wetland functions or values. No permit can be issued until the RWQCB issues a Section 401 Water Quality Certification (or waiver of such certification) verifying that the proposed activity will meet State water quality standards.

Under the Porter-Cologne Water Quality Control Act of 1969, the SWRCB has regulatory authority to protect the water quality of all surface water and groundwater in the State of California (“Waters of the

State”). Nine RWQCBs oversee water quality at the local and regional level. The RWQCB for a given region regulates discharges of fill or pollutants into Waters of the State through the issuance of various permits and orders. Discharges into Waters of the State that are also Waters of the United States require a Section 401 Water Quality Certification from the RWQCB as a prerequisite to obtaining certain federal permits, such as a Section 404 Clean Water Act permit. Discharges into all Waters of the State, even those that are not also Waters of the United States, require Waste Discharge Requirements (WDRs), or waivers of WDRs, from the RWQCB. The RWQCB also administers the Construction Storm Water Program and the federal National Pollution Discharge Elimination System (NPDES) program. Projects that disturb one acre or more of soil must obtain a Construction General Permit under the Construction Storm Water Program. A prerequisite for this permit is the development of a Storm Water Pollution Prevention Plan (SWPPP) by a certified Qualified SWPPP Developer. Projects that discharge wastewater, storm water, or other pollutants into a Water of the United States may require a NPDES permit.

CDFW has jurisdiction over the bed and bank of natural drainages and lakes according to provisions of Section 1601 and 1602 of the California Fish and Game Code. Activities that may substantially modify such waters through the diversion or obstruction of their natural flow, change or use of any material from their bed or bank, or the deposition of debris require a notification of a Lake or Streambed Alteration (LSA). If CDFW determines that the activity may adversely affect fish and wildlife resources, a LSA Agreement will be prepared. Such an agreement typically stipulates that certain measures will be implemented to protect the habitat values of the lake or drainage in question.

Potentially Significant Project-Related Impacts and Mitigation

Species identified as candidate, sensitive, or special status species in local or regional plans, policies, or regulations by CDFW or USFWS that have the potential to be impacted by the Project are identified below with corresponding mitigation measures.

Project-Related Mortality and/or Disturbance of Nesting Raptors, Migratory Birds, and Special Status Birds

The APE contains some suitable nesting and/or foraging habitat for avian species. Ground nesting birds, such as Killdeer, could potentially nest on the bare ground or compacted dirt roads onsite, however, no nests were observed at the time of survey. Trees within and near the APE could potentially host nests of smaller birds such as woodpeckers and perching birds. Birds nesting within the APE during construction may have the potential to be injured or killed by Project-related activities. In addition to the direct “take” of nesting birds, nesting birds within the APE or adjacent areas could be disturbed by Project-related activities resulting in nest abandonment. Projects that adversely affect the nesting success of raptors and migratory birds or result in the mortality of individual birds is considered a violation of state and federal laws and are considered a potentially significant impact under CEQA.

Mitigation. The following measures will be implemented prior to the start of construction:

Mitigation Measure BIO-1 (Avoidance): The Project's construction activities shall occur, if feasible, between September 16 and January 31 (outside of nesting bird season) in an effort to avoid impacts to nesting birds.

Mitigation Measure BIO-2 (Pre-construction Surveys): If activities must occur within nesting bird season (February 1 to September 15), a qualified biologist shall conduct pre-construction for nesting bird survey within 10 days prior to the start of construction. The survey shall include the proposed work area and surrounding lands within 50 feet. All raptor nests will be considered "active" upon the nest-building stage.

Mitigation Measure BIO-3 (Establish Buffers): On discovery of any active nests near work areas, the biologist shall determine appropriate construction setback distances based on applicable CDFW and/or USFWS guidelines and/or the biology of the species in question. Construction buffers shall be identified with flagging, fencing, or other easily visible means, and shall be maintained until the biologist has determined that the nestlings have fledged and are no longer dependent on the nest.

Less Than Significant Project-Related Impacts

Project-Related Impacts to Special Status Animal Species Absent From, or Unlikely to Occur on, the Project Site

Of the 18 regionally occurring special status species, all are considered absent from or unlikely to occur within the APE due to past or ongoing disturbance and/or the absence of suitable habitat. As explained in **Table 2**, the following species were deemed absent from the APE: blunt-nosed leopard lizard, Loggerhead Shrike, Mountain Plover, Northern California legless lizard, Tricolored Blackbird, valley elderberry longhorn beetle, vernal pool fairy shrimp, western pond turtle, western spadefoot, and Western Yellow-billed Cuckoo. The following seven species were deemed unlikely to occur within the APE: American badger, Burrowing Owl, crotch bumble bee, pallid bat, San Joaquin kit fox, Tipton kangaroo rat, and western mastiff bat. Mitigation measures are not warranted.

Project-Related Impacts to Special Status Plant Species

Of the 12 special status plant species which have been documented in the Project vicinity, all are considered absent from or unlikely to occur within the APE due to past or ongoing disturbance and/or the absence of suitable habitat. As explained in **Table 3**, the following species were deemed absent from the APE: alkali-sink goldfields, brittlescale, California alkali grass, California jewelflower, California satintail, Earlimart orache, heartscale, lesser saltscale, recurved larkspur, San Joaquin adobe sunburst, Spiny-sepaled button-celery, and subtle orache. Mitigation measures are not warranted.

Project-Related Impacts to Riparian Habitat and Natural Communities of Special Concern

There are no CNDDDB-designated “natural communities of special concern” recorded within the APE or surrounding lands. Mitigation is not warranted.

Project-Related Impacts to Regulated Waters, Wetlands, and Water Quality

Potential Waters of the United States riparian habitat, typical wetlands, vernal pools, lakes, or streams, and other sensitive natural communities were not observed onsite at the time of the biological survey. There are no naturally flowing waters within the APE with Elk Bayou identified as the nearest water source. Undoubtedly, some native wildlife species use the APE in the absence of preferred habitat. However, because of anthropogenic disturbance the APE represents relatively low-quality habitat for native plants and animals.

The Project proponent may be required to obtain a Construction General Permit under the Construction Storm Water Program administered by the RWQCB. A prerequisite for this permit is the development of a SWPPP to ensure construction activities do not adversely affect water quality.

Project-Related Impacts to Wildlife Movement Corridors and Native Wildlife Nursery Sites

The APE does not contain features that would be likely to function as wildlife movement corridors. Furthermore, the Project is located in an area regularly disturbed by humans and traffic, which would discourage dispersal and migration. Therefore, the Project will have no impact on wildlife movement corridors. Mitigation measures are not warranted.

Project-Related Impacts to Critical Habitat

Designated critical habitat is absent from the APE and surrounding lands. Therefore, there will be no impact to critical habitat, and mitigation measures are not warranted.

Local Policies or Habitat Conservation Plans

The Project is consistent with the goals and policies of the Tulare County General Plan. There are no known Habitat Conservation Plans or Natural Community Conservation Plans in the APE or Project vicinity and mitigation measures are not warranted.

IV. References

- Association of Environmental Professionals. (2021). *2021 California Environmental Quality Act Statute & Guidelines*. Retrieved November 2021
- Baldwin, B., Goldman, D. H., Keil, D., Patterson, R., Rosatti, T., & Wilken, D. (2012). *The Jepson Manual; Vascular Plants of California, second edition*. Berkeley: University of California Press. Retrieved November 2021
- Calflora. (2019). Retrieved November 2021, from Calflora Information on California Plants for Education, Research and Conservation: <http://www.calflora.org/>
- California Department of Fish and Wildlife. (2012). *Staff Report on Burrowing Owl Mitigation*. Retrieved November 2021
- California Department of Fish and Wildlife. (2019, October). *California Natural Diversity Database*. Retrieved November 2021
- California Native Plant Society. (2019, October). Retrieved November 2021, from Inventory of Rare and Endangered Vascular Plants of California: <http://www.rareplants.cnps.org/>
- DWR. (2019, October). Retrieved November 2021, from Groundwater Basin Boundary Assessment Tool (BBAT): <http://gis.water.ca.gov/app/bbat/>
- eBird, Cornell Lab of Ornithology. (2019). Retrieved November 2021, from eBird: An online database of bird distribution and abundance: <https://ebird.org/>
- Jepson Flora Project (eds.). (2019). Retrieved November 2021, from Jepson eFlora: <http://ucjeps.berkeley.edu/eflora/>
- Nafis, G. (2019). Retrieved November 2021, from CaliforniaHerps: A Guide to the Amphibians and Reptiles of California: <http://www.californiaherps.com/>
- National Wetlands Inventory (NWI) map. (2019). Retrieved November 2021, from <http://fws.gov/wetlands/Data/Mapper.html>
- NatureServe Explorer. (2019, September). *An Online Encyclopedia of Life*. Retrieved November 2021, from <http://explorer.natureserve.org/>
- NOAA Habitat Conservation. (2019, October). Essential Fish Habitat Mapper. Retrieved November 2021
- Shuford, W., & Gardali, T. (2008). *California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1*. Camarillo and Sacramento, CA: Western Field Ornithologists and California Department of Fish and Game. Retrieved November 2021

Swainson's Hawk Technical Advisory Committee. (2000, May). Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley. CA: CDFW. Retrieved November 2021

SWRCB. (2019, April 2). State Wetland Definition and Procedures for Discharge of Dredged or Fill Material to Waters of the State. Retrieved November 2021

Tulare County. (2012, August). *Tulare County General Plan*. Retrieved November 2021, from Tulare County, California.

United States Army Corps of Engineers. (1987). *Corps of Engineers Wetlands Delineation Manual*. Department of the Army. Retrieved November 2021

United States Department of Agriculture, Natural Resources Conservation Service. (2019). *The Plants Database*. Retrieved November 2021, from <http://plants.sc.egov.usda.gov/java/>

United States Department of Agriculture, Natural Resources Conservation Service. (2019). *Custom Soil Resources Report, California*. Retrieved November 2021, from <http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>

United States Environmental Protection Agency. (2019, October). Retrieved November 2021, from Waters GeoViewer: <https://www.epa.gov/waterdata/waters-geoviewer>

United States Fish and Wildlife Service. (1998). *Recovery Plan for Upland Species of the San Joaquin Valley, California*. Retrieved November 2021

United States Fish and Wildlife Service. (2017). *Recovery Plan for the Giant Garter Snake (Thamnophis gigas)*. Sacramento: U.S. Fish and Wildlife Service, Pacific Southwest Region. Retrieved November 2021

United States Fish and Wildlife Service. (2019). *Environmental Conservation Online System (ECOS)*. Retrieved November 2021, from <https://ecos.fws.gov/ecp/>

United States Fish and Wildlife Service. (2019). *Information on Planning and Consultation (IPaC)*. Retrieved November 2021, from <https://ecos.fws.gov/ipac/>

Appendix A: Study Area Photos

SELF-HELP ENTERPRISES

MATHENY TRACT WASTEWATER PIPELINE PROJECT



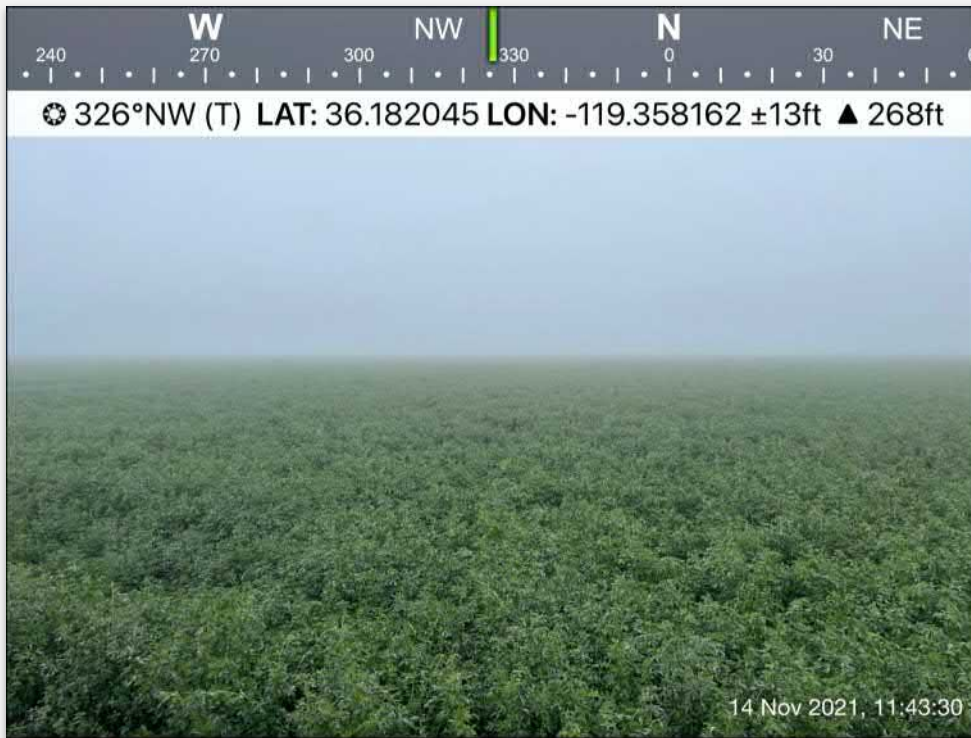
Photograph 1

Example of an irrigation ditch south of West Paige Avenue



Photograph 2

An eastern facing view from the center of West Paige Avenue



Photograph 3

Example of an agricultural lot bordering the APE



Photograph 4

Another example of an agriculture lot bordering the APE



Photograph 5

View from inside of a dry irrigation ditch



Photograph 6

View of the unnamed street bordering agriculture and the Tulare Water Pollution Control Facility



Photograph 7

View of an irrigation canal south of West Paige Avenue



Photograph 8

South facing view from the center of South West Street, showing irrigation pump infrastructure



Photograph 9

Agricultural land north of West Paige Avenue



Photograph 10

The intersection of South West Street and West Paige Avenue

**Photograph 11**

The Tulare Water Pollution Control Facility south of the unnamed road

**Photograph 12**

East facing view of the unnamed road, with Tulare Water Pollution Control Facility to the south

Appendix B: CNDDDB Quad Search

SELF-HELP ENTERPRISES

MATHENY TRACT WASTEWATER PIPELINE PROJECT



Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad> IS > (Paige (3611924)> OR > Goshen (3611934)> OR > Visalia (3611933)> OR > Tulare (3611923)> OR > Tipton (3611913)> OR > Taylor Weir (3611914)> OR > Exeter (3611932)> OR > Cairns Corner (3611922)> OR > Woodville (3611912))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
alkali-sink goldfields <i>Lasthenia chrysantha</i>	PDAST5L030	None	None	G2	S2	1B.1
American badger <i>Taxidea taxus</i>	AMAJF04010	None	None	G5	S3	SSC
An andrenid bee <i>Andrena macswaini</i>	IIHYM35130	None	None	G2	S2	
blunt-nosed leopard lizard <i>Gambelia sila</i>	ARACF07010	Endangered	Endangered	G1	S1	FP
brittlescale <i>Atriplex depressa</i>	PDCHE042L0	None	None	G2	S2	1B.2
burrowing owl <i>Athene cunicularia</i>	ABNSB10010	None	None	G4	S3	SSC
California alkali grass <i>Puccinellia simplex</i>	PMPOA53110	None	None	G3	S2	1B.2
California jewelflower <i>Caulanthus californicus</i>	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
California satintail <i>Imperata brevifolia</i>	PMPOA3D020	None	None	G4	S3	2B.1
Crotch bumble bee <i>Bombus crotchii</i>	IIHYM24480	None	None	G3G4	S1S2	
Earlimart orache <i>Atriplex cordulata</i> var. <i>erecticaulis</i>	PDCHE042V0	None	None	G3T1	S1	1B.2
Great Valley Valley Oak Riparian Forest <i>Great Valley Valley Oak Riparian Forest</i>	CTT61430CA	None	None	G1	S1.1	
heartscale <i>Atriplex cordulata</i> var. <i>cordulata</i>	PDCHE040B0	None	None	G3T2	S2	1B.2
Hopping's blister beetle <i>Lytta hoppingi</i>	IICOL4C010	None	None	G1G2	S1S2	
lesser saltscale <i>Atriplex minuscula</i>	PDCHE042M0	None	None	G2	S2	1B.1
loggerhead shrike <i>Lanius ludovicianus</i>	ABPBR01030	None	None	G4	S4	SSC
Moody's gnaphosid spider <i>Talanites moodyae</i>	ILARA98020	None	None	G1G2	S1S2	
Morrison's blister beetle <i>Lytta morrisoni</i>	IICOL4C040	None	None	G1G2	S1S2	
mountain plover <i>Charadrius montanus</i>	ABNNB03100	None	None	G3	S2S3	SSC



Selected Elements by Common Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Northern California legless lizard <i>Anniella pulchra</i>	ARACC01020	None	None	G3	S3	SSC
pallid bat <i>Antrozous pallidus</i>	AMACC10010	None	None	G4	S3	SSC
recurved larkspur <i>Delphinium recurvatum</i>	PDRAN0B1J0	None	None	G2?	S2?	1B.2
San Joaquin adobe sunburst <i>Pseudobahia peirsonii</i>	PDAST7P030	Threatened	Endangered	G1	S1	1B.1
San Joaquin kit fox <i>Vulpes macrotis mutica</i>	AMAJA03041	Endangered	Threatened	G4T2	S2	
spiny-sepaled button-celery <i>Eryngium spinosepalum</i>	PDAP10Z0Y0	None	None	G2	S2	1B.2
subtle orache <i>Atriplex subtilis</i>	PDCHE042T0	None	None	G1	S1	1B.2
Swainson's hawk <i>Buteo swainsoni</i>	ABNKC19070	None	Threatened	G5	S3	
Tipton kangaroo rat <i>Dipodomys nitratoideus nitratoideus</i>	AMAFD03152	Endangered	Endangered	G3T1T2	S1S2	
tricolored blackbird <i>Agelaius tricolor</i>	ABPBXB0020	None	Threatened	G1G2	S1S2	SSC
valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	IICOL48011	Threatened	None	G3T2	S3	
Valley Sacaton Grassland <i>Valley Sacaton Grassland</i>	CTT42120CA	None	None	G1	S1.1	
vernal pool fairy shrimp <i>Branchinecta lynchi</i>	ICBRA03030	Threatened	None	G3	S3	
western mastiff bat <i>Eumops perotis californicus</i>	AMACD02011	None	None	G4G5T4	S3S4	SSC
western pond turtle <i>Emys marmorata</i>	ARAAD02030	None	None	G3G4	S3	SSC
western spadefoot <i>Spea hammondi</i>	AAABF02020	None	None	G2G3	S3	SSC
western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	ABNRB02022	Threatened	Endangered	G5T2T3	S1	

Record Count: 36

Appendix C: IPaC Search

SELF-HELP ENTERPRISES

MATHENY TRACT WASTEWATER PIPELINE PROJECT



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713



In Reply Refer To:
Consultation Code: 08ESMF00-2022-SLI-0534
Event Code: 08ESMF00-2022-E-01577
Project Name: Matheny Wastewater Pipeline

December 08, 2021

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to

utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at:

<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>;

<http://www.towerkill.com>; and

www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

[http://](http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html)

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2022-SLI-0534

Event Code: Some(08ESMF00-2022-E-01577)

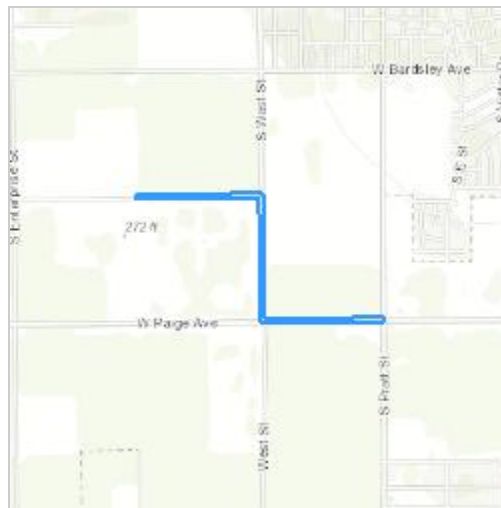
Project Name: Matheny Wastewater Pipeline

Project Type: WASTEWATER PIPELINE

Project Description: Sewering a DAC

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@36.1855905,-119.36640808577522,14z>



Counties: Tulare County, California

Endangered Species Act Species

There is a total of 10 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
San Joaquin Kit Fox <i>Vulpes macrotis mutica</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered
Tipton Kangaroo Rat <i>Dipodomys nitratoide nitratoide</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7247	Endangered

Reptiles

NAME	STATUS
Blunt-nosed Leopard Lizard <i>Gambelia silus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/625	Endangered
Giant Garter Snake <i>Thamnophis gigas</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (Central CA DPS) There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened

Flowering Plants

NAME	STATUS
San Joaquin Adobe Sunburst <i>Pseudobahia peirsonii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2931	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Appendix D: NRCS Soils Report

SELF-HELP ENTERPRISES

MATHENY TRACT WASTEWATER PIPELINE PROJECT



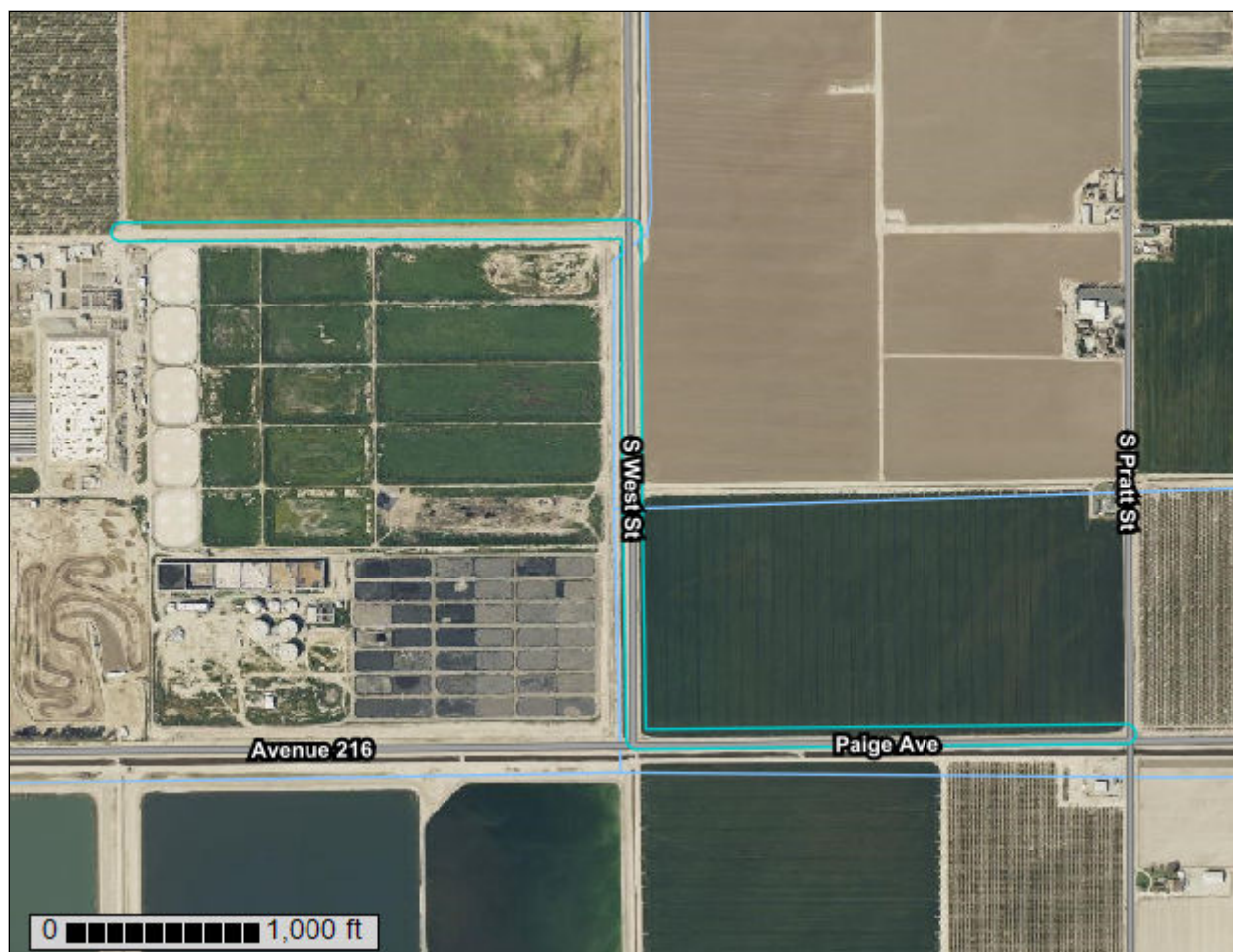
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Tulare County, Western Part, California



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils


 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Tulare County, Western Part, California
Survey Area Data: Version 15, Sep 3, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 17, 2019—Mar 24, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
108	Colpien loam, 0 to 2 percent slopes	8.0	44.6%
130	Nord fine sandy loam, 0 to 2 percent slopes	10.0	55.4%
Totals for Area of Interest		18.0	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Tulare County, Western Part, California

108—Colpien loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hp4b

Elevation: 220 to 550 feet

Mean annual precipitation: 8 to 12 inches

Mean annual air temperature: 63 to 64 degrees F

Frost-free period: 250 to 300 days

Farmland classification: Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Colpien and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Colpien

Setting

Landform: Fan remnants

Landform position (two-dimensional): Shoulder

Landform position (three-dimensional): Side slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from granitic rock sources

Typical profile

Ap - 0 to 6 inches: loam

Bt - 6 to 24 inches: loam

Btk - 24 to 60 inches: loam

C - 60 to 65 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: Rare

Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Maximum salinity: Nonsaline to slightly saline (0.5 to 4.0 mmhos/cm)

Sodium adsorption ratio, maximum: 12.0

Available water supply, 0 to 60 inches: High (about 10.7 inches)

Interpretive groups

Land capability classification (irrigated): 1

Land capability classification (nonirrigated): 4c

Hydrologic Soil Group: C

Ecological site: R017XY906CA - Non-Alkali San Joaquin Valley Desert

Hydric soil rating: No

Minor Components

Biggriz

Percent of map unit: 3 percent

Landform: Fan remnants

Hydric soil rating: No

Hanford

Percent of map unit: 3 percent

Landform: Alluvial fans, flood plains

Hydric soil rating: No

Gambogy

Percent of map unit: 3 percent

Landform: Alluvial fans, flood plains

Hydric soil rating: No

Tujunga

Percent of map unit: 2 percent

Landform: Flood plains

Hydric soil rating: No

Nord

Percent of map unit: 2 percent

Landform: Alluvial fans, flood plains

Hydric soil rating: No

Akers, saline-sodic

Percent of map unit: 2 percent

Landform: Fan remnants

Hydric soil rating: No

130—Nord fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hp51

Elevation: 190 to 520 feet

Mean annual precipitation: 8 to 12 inches

Mean annual air temperature: 61 to 64 degrees F

Frost-free period: 250 to 275 days

Farmland classification: Prime farmland if irrigated and either protected from flooding
or not frequently flooded during the growing season

Map Unit Composition

Nord and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nord

Setting

Landform: Alluvial fans, flood plains
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Convex, linear
Parent material: Alluvium derived from mixed

Typical profile

Ap - 0 to 11 inches: fine sandy loam
C1 - 11 to 38 inches: stratified sandy loam to loam
C2 - 38 to 50 inches: stratified loamy coarse sand to coarse sandy loam
2Btb - 50 to 72 inches: stratified sandy loam to silt loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches; More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Very rare
Frequency of ponding: None
Calcium carbonate, maximum content: 4 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water supply, 0 to 60 inches: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: B
Ecological site: R017XY906CA - Non-Alkali San Joaquin Valley Desert
Hydric soil rating: No

Minor Components

Grangeville, saline-sodic

Percent of map unit: 3 percent
Landform: Alluvial fans, flood plains
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: Yes

Hanford

Percent of map unit: 3 percent
Landform: Alluvial fans, flood plains
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Tujunga

Percent of map unit: 3 percent
Landform: Flood plains
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Custom Soil Resource Report

Tagus

Percent of map unit: 2 percent

Landform: Fan remnants

Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans

Hydric soil rating: No

Akers

Percent of map unit: 2 percent

Landform: Fan remnants

Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans

Hydric soil rating: No

Colpien

Percent of map unit: 2 percent

Landform: Fan remnants

Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans

Hydric soil rating: No

References

- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
- American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.
- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

ATTACHMENT “C”

Phase I Survey/Class III Inventory, PNP Matheny Pipeline Project, Tulare County, California

Sacred Lands File (SLF) Search Results

**PHASE I SURVEY/CLASS III INVENTORY,
PNP MATHENY PIPELINE PROJECT, TULARE
COUNTY, CALIFORNIA**

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PN 36510.07

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MANAGEMENT SUMMARY

An intensive Class III cultural resources inventory/Phase I survey was conducted for the PNP Matheny Pipeline Project, Tulare County, California. The Project area of potential effect (APE) is located immediately southwest of the City of Tulare, in Sections 15 and 16, Township 20 South, Range 24 East (T20S/R24E), Mount Diablo Base and Meridian (M.D.B.M.). ASM Affiliates, Inc. (ASM) conducted this study, with David S. Whitley, Ph.D., RPA, serving as principal investigator. The study was undertaken to assist with compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and the California Environmental Quality Act (CEQA).

A records search of site files and maps was conducted on October 12, 2021, at the Southern San Joaquin Valley Archaeological Information Center (IC), California State University, Bakersfield. A Sacred Lands File search was also received from the Native American Heritage Commission (NAHC) on October 28, 2021. Tribal organizations on the contact list provided by the NAHC were contacted by letter to determine whether tribal cultural resources are present within the study area, with follow-up emails sent later. These investigations determined that a very small portion of the study had been previously surveyed and that no cultural or tribal resources were known to exist within it. An additional four surveys had been conducted within 0.5 mile of the Project APE, with three cultural resources recorded as a result.

The Class III inventory/Phase I survey fieldwork was conducted on November 9, 2021, with parallel transects spaced at 15-meter intervals walked along the entire Project APE. No cultural resources of any kind were encountered during the pedestrian survey. Based on these results, the proposed PNP Matheny Pipeline Project does not have the potential to result in significant impacts or adverse effects to known historical resources or historic properties. The Santa Rosa Rancheria Tachi-Yokut Tribe, however, has responded with a request for Native American monitoring of the Project and that a curation agreement be put into place to help mitigate the potential effects on cultural resources and burials in the area.

1. INTRODUCTION AND REGULATORY CONTEXT

ASM Affiliates, Inc. (ASM) was retained by the Provost and Pritchard Consulting Group to conduct an intensive Class III inventory/Phase I cultural resources survey for the PNP Matheny Pipeline Project (Project), located southwest of the City of Tulare, Tulare County, California (Figure 1). The study was undertaken to assist with compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and the California Environmental Quality Act (CEQA). The investigation was conducted, specifically, to ensure that significant impacts or adverse effects to historic properties or historical resources do not occur as a result of Project construction.

This current study included:

- A background records search and literature review to determine if any known cultural resources were present in the project zone and/or whether the area had been previously and systematically studied by archaeologists;
- An on-foot, intensive inventory of the study area to identify and record previously undiscovered cultural resources and to examine known sites; and
- A preliminary assessment of any such resources found within the subject property.

David S. Whitley, Ph.D., RPA, served as principal investigator and ASM Associate Archaeologist Robert Azpitarte, B.A., conducted the fieldwork.

This document constitutes a report on the Class III inventory/Phase I survey. Subsequent chapters provide background to the investigation including historic context studies, the findings of the archival records search, Native American outreach, a summary of the field surveying techniques employed, and the results of the fieldwork, concluding with management recommendations.

1.1 PROJECT LOCATION

The proposed pipeline Project will serve residents of Matheny, California, a census-designated place (CDP). The proposed Project is within a suburban development located immediately southwest of the City of Tulare limits, but within the City's sphere of influence. The proposed pipeline corridor is mostly undeveloped and is located within existing rights-of-way (ROWs) along Paige Avenue and West Street. Elevation within the APE, which is situated on the open flats of the San Joaquin Valley, ranges from 253 feet (ft.) above mean sea level (amsl) on the west to 265 ft. amsl on the east.

1.2 PROJECT DESCRIPTION AND APE

The proposed Project will involve the construction of an approximately 1.5-mile (mi.) wastewater collection pipeline that will connect the existing infrastructure of Matheny (CDP) and the existing Tulare Water Pollution Control treatment center. The City of Tulare will oversee the proposed water treatment improvements. The horizontal APE will contain all construction, staging, and lay-down areas for the Project. With an applied 50-ft. buffer, the approximately 1.5-mi. pipeline

corridor of roadway ROW totals approximately 20.7 acres. The vertical APE, considered the maximum depth of excavation for the pipelines, is 6 ft.

1.3 REGULATORY CONTEXT

1.3.1 CEQA

CEQA is applicable to discretionary actions by state or local lead agencies. Under CEQA, lead agencies must analyze impacts to cultural resources. Significant impacts under CEQA occur when “historically significant” or “unique” cultural resources are adversely affected, which occurs when such resources could be altered or destroyed through project implementation. Historically significant cultural resources are defined by eligibility for or by listing in the California Register of Historical Resources (CRHR). In practice, the federal NRHP criteria (below) for significance applied under Section 106 are generally (although not entirely) consistent with CRHR criteria (see PRC § 5024.1, Title 14 CCR, Section 4852 and § 15064.5(a)(3)).

Significant cultural resources are those archaeological resources and historical properties that:

- (A) Are associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
- (B) Are associated with the lives of persons important in our past;
- (C) Embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values; or
- (D) Have yielded, or may be likely to yield, information important in prehistory or history.

Unique resources under CEQA, in slight contrast, are those that represent:

An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- (1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
- (2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- (3) Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC § 21083.2(g)).

Preservation in place is the preferred approach under CEQA to mitigating adverse impacts to significant or unique cultural resources.

1.3.2 NHPA Section 106

NHPA Section 106 is applicable to federal undertakings, including projects financed or permitted by federal agencies regardless of whether the activities occur on federally managed or privately owned land. Its purpose is to determine whether adverse effects will occur to significant cultural resources, defined as “historical properties” that are listed in or determined eligible for listing in the National Register of Historic Places (NRHP). The criteria for NRHP eligibility are defined at 36 CFR § 60.4 as follows:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that:

- (A) are associated with events that have made a significant contribution to the broad patterns of our history; or
- (B) are associated with the lives of persons significant in our past; or
- (C) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- (D) have yielded or may be likely to yield, information important in prehistory or history.

There are, however, restrictions on the kinds of historical properties that can be NRHP listed. These have been identified by the Advisory Council on Historic Preservation (ACHP), as follows:

Ordinarily cemeteries, birthplaces, or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years shall not be considered eligible for the National Register. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:

- (a) A religious property deriving primary significance from architectural or artistic distinction or historical importance; or
- (b) A building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or
- (c) A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life.

- (d) A cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or
- (e) A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or
- (f) A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or
- (g) A property achieving significance within the past 50 years if it is of exceptional importance.
(<http://www.achp.gov/nrcriteria.html>)

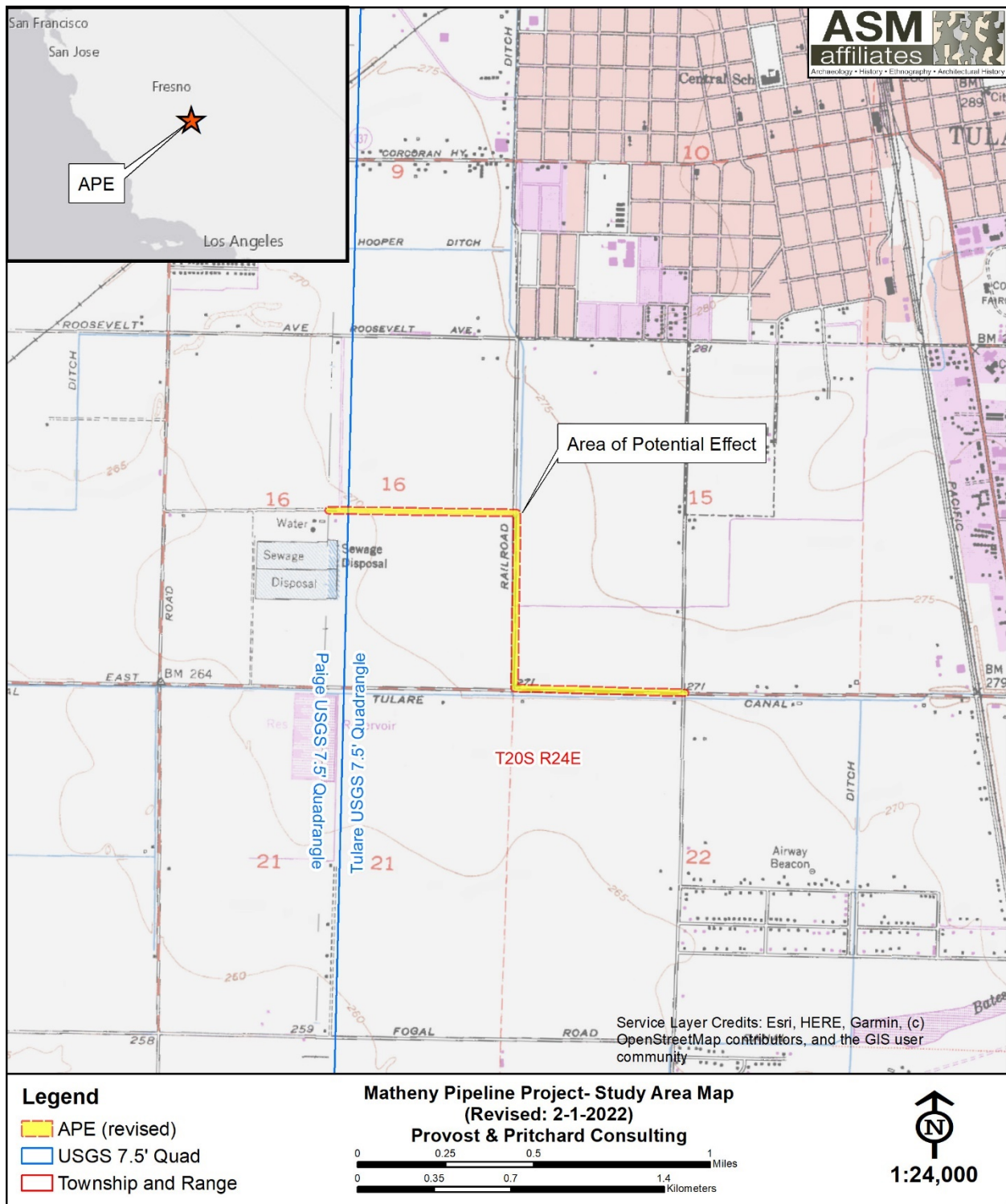


Figure 1. Location of the Matheny Pipeline Project APE, Tulare County, California.

2. ENVIRONMENTAL AND CULTURAL BACKGROUND

2.1 ENVIRONMENTAL BACKGROUND AND GEOARCHAEOLOGICAL SENSITIVITY

As noted above, the proposed Project is located between 253 ft. and 265 ft. amsl, immediately southwest of the City of Tulare on the open flats of the San Joaquin Valley. According to Menafee and Dodge (1913:81), Euro-American settlement of the City of Tulare and immediate environs occurred slightly later than other parts of Tulare County because of the lack of significant surface water, and hence its relatively limited agricultural potential prior to the development of irrigation systems. Before the appearance of agriculture, this location would have been prairie grasslands, grading into tree savannas in the foothills to the east (Preston 1981). The APE and immediate surroundings have been farmed and grazed for many years and no native vegetation is present, with the APE now consisting of suburban development. Perennial bunchgrasses such as purple needlegrass and nodding needlegrass most likely would have been the dominant plant cover in the study region prior to cultivation.

The general study area falls within the far southern extent of the Kaweah Delta. According to the geoarchaeological model developed by Meyer et al. (2010), the study area has a very low potential for buried archaeological deposits. Buried sites and cultural resources are therefore considered to be unlikely within the Project APE.

2.2 ETHNOGRAPHIC BACKGROUND

Penutian-speaking Yokuts tribal groups occupied the southern San Joaquin Valley region and much of the nearby Sierra Nevada. Ethnographic information about the Yokuts was collected primarily by Powers (1971, 1976 [originally 1877]), Kroeber (1925), Gayton (1930, 1948), Driver (1937), Latta (1977) and Harrington (n.d.). For a variety of historical reasons, existing research information emphasizes the central Yokuts tribes who occupied both the valley and particularly the foothills of the Sierra. The northernmost tribes suffered from the influx of Euro-Americans during the Gold Rush and their populations were in substantial decline by the time ethnographic studies began in the early twentieth century. In contrast, the southernmost tribes were partially removed by the Spanish to missions and eventually absorbed into multi-tribal communities on the Sebastian Indian Reservation (on Tejon Ranch), and later the Tule River Reservation and Santa Rosa Rancheria to the north. The result is an unfortunate scarcity of ethnographic detail on southern Valley tribes, especially in relation to the rich information collected from the central foothills tribes where native speakers of the Yokuts dialects are still found. Regardless, the general details of indigenous life-ways were similar across the broad expanse of Yokuts territory, particularly in terms of environmentally influenced subsistence and adaptation and with regard to religion and belief, which were similar everywhere.

Following Kroeber (1925: Plate 47), the City of Tulare region lies in a contact zone between a series of Yokuts tribal groups. Kroeber places the Chunut to the west of the Project APE, along

the Tulare Lake, the Choinok to the south, Wolasi to the north along Cameron Creek, and the Telamni further north, near Visalia. Latta (1977:195) in slight contrast, also has the Chunut to the west, and the Choinok to the southeast, but with the Talumne (Kroeber's Telamni) closest to the Project. No historic villages are recorded for the immediate Project area, per se, by Kroeber (1925) or by Latta (1977).

The Yokuts settlement pattern was largely consistent, regardless of specific tribe involved. Winter villages were typically located along lakeshores and major stream courses (as these existed circa AD 1800), with dispersal phase family camps located at elevated spots on the valley floor and near gathering areas in the foothills.

Most Yokuts groups, again regardless of specific tribal affiliation, were organized as a recognized and distinct tribelet; a circumstance that almost certainly pertained to the tribal groups noted above. Tribelets were land-owning groups organized around a central village and linked by shared territory and descent from a common ancestor. The population of most tribelets ranged from about 150 to 500 peoples (Kroeber 1925).

Each tribelet was headed by a chief who was assisted by a variety of assistants, the most important of whom was the *winatum*, a herald or messenger and assistant chief. A shaman also served as religious officer. While shamans did not have any direct political authority, as Gayton (1930) has illustrated, they maintained substantial influence within their tribelet.

Shamanism is a religious system common to most Native American tribes. It involves a direct and personal relationship between the individual and the supernatural world enacted by entering a trance or hallucinatory state (usually based on the ingestion of psychotropic plants, such as jimsonweed or more typically native tobacco). Shamans were considered individuals with an unusual degree of supernatural power, serving as healers or curers, diviners, and controllers of natural phenomena (such as rain or thunder). Shamans also produced the rock art of this region, depicting the visions they experienced in vision quests believed to represent their spirit helpers and events in the supernatural realm (Whitley 1992, 2000).

The centrality of shamanism to the religious and spiritual life of the Yokuts was demonstrated by the role of shamans in the yearly ceremonial round. The ritual round, performed the same each year, started in the spring with the jimsonweed ceremony, followed by rattlesnake dance and (where appropriate) first salmon ceremony. After returning from seed camps, fall rituals began in the late summer with the mourning ceremony, followed by first seed and acorn rites and then bear dance (Gayton 1930:379). In each case, shamans served as ceremonial officials responsible for specific dances involving a display of their supernatural powers (Kroeber 1925).

Subsistence practices varied from tribelet to tribelet based on the environment of residence. Throughout Native California, and Yokuts territory in general, the acorn was a primary dietary component, along with a variety of gathered seeds. Valley tribes augmented this resource with lacustrine and riverine foods, especially fish and wildfowl. As with many Native California tribes, the settlement and subsistence rounds included the winter aggregation into a few large villages, where stored resources (like acorns) served as staples, followed by dispersal into smaller camps,

often occupied by extended families, where seasonally available resources would be gathered and consumed.

Although population estimates vary and population size was greatly affected by the introduction of Euro-American diseases and social disruption, the Yokuts were one of the largest, most successful groups in Native California. Cook (1978) estimates that the Yokuts region contained 27 percent of the aboriginal population in the state at the time of contact; other estimates are even higher. Many Yokuts people continue to reside in the southern San Joaquin Valley today.

2.3 PRE-CONTACT ARCHAEOLOGICAL BACKGROUND

The southern San Joaquin Valley region has received minimal archaeological attention compared to other areas of the state. In part, this is because the majority of California archaeological work has concentrated in the Sacramento Delta, Santa Barbara Channel, and central Mojave Desert areas (see Moratto 1984). Although knowledge of the region's prehistory is limited, enough is known to determine that the archaeological record is broadly similar to south-central California as a whole (see Gifford and Schenk 1926; Hewes 1941; Wedel 1941; Fenenga 1952; Elsasser 1962; Fredrickson and Grossman 1977; Schiffman and Garfinkel 1981). Based on these sources, the general prehistory of the region can be outlined as follows.

Initial occupation of the region occurred at least as early as the *Paleoindian Period*, or prior to about 10,000 years before present (YBP). Evidence of early use of the region is indicated by characteristic fluted and stemmed points found around the margin of Tulare Lake, in the foothills of the Sierra, and in the Mojave Desert proper.

Both fluted and stemmed points are particularly common around lake margins, suggesting a terminal Pleistocene/early Holocene lakeshore adaptation similar to that found throughout the far west at the same time; little else is known about these earliest peoples. Over 250 fluted points have been recovered from the Witt Site (CA-KIN-32), located along the western shoreline of ancient Tulare Lake, west of the study area, demonstrating the importance of this early occupation in the San Joaquin Valley specifically (see Fenenga 1993). Additional finds consist of a Clovis-like projectile point discovered in a flash-flood cut-bank near White Oak Lodge in 1953 on Tejon Ranch (Glennan 1987a, 1987b). More recently, a similar fluted point was found near Bakersfield (Zimmerman et al. 1989), and a number are known from the Edwards Air Force Base and Boron area of the western Mojave Desert. Although human occupation of the state is well-established during the Late Pleistocene, relatively little can be inferred about the nature and distribution of this occupation with a few exceptions. First, little evidence exists to support the idea that people at that time were big-game hunters, similar to those found on the Great Plains. Second, the western Mojave Desert evidence suggests small, very mobile populations that left a minimal archaeological signature. The evidence from the ancient Tulare Lake shore, in contrast, suggests much more substantial population and settlements which, instead of relying on big game hunting, were tied to the lacustrine lake edge. Variability in subsistence and settlement patterns is thus apparent in California, in contrast to the Great Plains.

Substantial evidence for human occupation across California, however, first occurs during the middle Holocene, roughly 7500 to 4000 YBP. This period is known as the *Early Horizon*, or

alternatively as the Early Millingstone along the Santa Barbara Channel. In the south, populations concentrated along the coast with minimal visible use of inland areas. Adaptation emphasized hard seeds and nuts with tool-kits dominated by mullers and grindstones (manos and metates). Additionally, little evidence for Early Horizon occupation exists in most inland portions of the state, partly due to a severe cold and dry paleoclimatic period occurring at this time, although a site deposit dating to this age has been identified along the ancient Buena Vista shoreline in Kern County to the south (Rosenthal et al. 2007). Regardless of specifics, Early Horizon population density was low with a subsistence adaptation more likely tied to plant food gathering than hunting.

Environmental conditions improved dramatically after about 4000 YBP during the *Middle Horizon* (or Intermediate Period). This period is known climatically as the Holocene Maximum (circa 3800 YBP) and was characterized by significantly warmer and wetter conditions than previously experienced. It was marked archaeologically by large population increase and radiation into new environments along coastal and interior south-central California and the Mojave Desert (Whitley 2000). In the Delta region to the north, this same period of favorable environmental conditions was characterized by the appearance of the Windmill culture which exhibited a high degree of ritual elaboration (especially in burial practices) and perhaps even a rudimentary mound-building tradition (Meighan, personal communication, 1985). Along with ritual elaboration, Middle Horizon times experienced increasing subsistence specialization, perhaps correlating with the appearance of acorn processing technology. Penutian speaking peoples (including the Yokuts) are also posited to have entered the state roughly at the beginning of this period and, perhaps to have brought this technology with them (cf. Moratto 1984). Likewise, it appears the so-called “Shoshonean Wedge” in southern California, the Takic speaking groups that include the Gabrielino/Fernandeño, Tataviam and Kitanemuk, may have moved into the region at that time (Sutton 2009), rather than at about 1500 YBP as first suggested by Kroeber (1925).

Evidence for Middle Horizon occupation of interior south-central California is substantial. For example, in northern Los Angeles County along the upper Santa Clara River, to the south of the San Joaquin Valley, the Agua Dulce village complex indicates occupation extending back to the Intermediate Period, when the population of the village may have been 50 or more people (King et al. n.d.). Similarly, inhabitation of the Hathaway Ranch region near Lake Piru, and the Newhall Ranch near Valencia, appears to date to the Intermediate Period (W&S Consultants 1994). To the west, little or no evidence exists for pre-Middle Horizon occupation in the upper Sisquoc and Cuyama River drainages; populations first appear there at roughly 3500 YBP (Horne 1981). The Carrizo Plain, the valley immediately west of the San Joaquin, experienced a major population expansion during the Middle Horizon (W&S Consultants 2004; Whitley et al. 2007), and recently collected data indicates the Tehachapi Mountains region was first significantly occupied during the Middle Horizon (W&S Consultants 2006). A parallel can be drawn to the inland Ventura County region where a similar pattern has been identified (Whitley and Beaudry 1991), as well as the western Mojave Desert (Sutton 1988a, 1988b), the southern Sierra Nevada (W&S Consultants 1999), and the Coso Range region (Whitley et al. 1988). In all of these areas a major expansion in settlement, the establishment of large site complexes and an increase in the range of environments exploited appear to have occurred sometime roughly around 4,000 years ago. Although most efforts to explain this expansion have focused on local circumstances and events, it is increasingly apparent this was a major southern California-wide occurrence and any explanation must be sought at a larger level of analysis (Whitley 2000). Additionally, evidence from the Carrizo Plain suggests

the origins of the tribelet level of political organization developed during this period (W&S Consultants 2004; Whitley et al. 2007). Whether this same demographic process holds for the southern San Joaquin Valley, including the study area, is yet to be determined.

The beginning of the *Late Horizon* is set variously at 1,500 and 800 YBP, with a growing archaeological consensus for the shorter chronology. Increasing evidence suggests the importance of the Middle-Late Horizons transition (AD 800 to 1200) in the understanding of south-central California prehistory. This corresponds to the so-called Medieval Climatic Anomaly, followed by the Little Ice Age, and this general period of climatic instability extended to about AD 1860. It included major droughts matched by intermittent “mega-floods,” and resulted in demographic disturbances across much of the west (Jones et al. 1999). It is believed to have resulted in major population decline and abandonments across south-central California, involving as much as 90 percent of the interior populations in some regions, including the Carrizo Plain (Whitley et al. 2007). It is not clear whether site abandonment was accompanied by a true reduction in population or an agglomeration of the same numbers of peoples into fewer but larger villages in more favorable locations. Population along the Santa Barbara coast appears to have spiked at about the same time that it collapsed on the Carrizo Plain (Whitley et al. 2007). Along Buena Vista Lake, in Kern County, population appears to have been increasingly concentrated towards the later end of the Medieval Climatic Anomaly (Culleton 2006), and population intensification also appears to have occurred in the well-watered Tehachapi Mountains during this same period (W&S Consultants 2006).

What is then clear is that Middle Period villages and settlements were widely dispersed across the south-central California landscape, including in the Sierras and the Mojave Desert. Many of these sites are found at locations that lack existing or known historical fresh water sources. Late Horizon sites, in contrast, are typically concentrated in areas where fresh water was available during the historical period, if not currently.

One extensively studied site that shows evidence of intensive occupation during the Middle-Late Horizons transition (~1500-500 YBP) is the Redtfeldt Mound (CA-KIN-66/H), located northwest of the current study area, near the north shore of ancient Tulare Lake. There, Siefkin (1999) reported on human burials and a host of artifacts and ecofacts excavated from a modest-sized mound. He found that both Middle Horizon and Middle-Late Horizons transition occupations were more intensive than Late Horizon occupations, which were sporadic and less intensive (Siefkin 1999:110-111).

The Late Horizon can then be understood as a period of recovery from a major demographic collapse. One result is the development of regional archaeological cultures as the precursors to ethnographic Native California; suggesting that ethnographic life-ways recorded by anthropologists extend roughly 800 years into the past.

The position of southern San Joaquin Valley prehistory relative to patterns seen in surrounding areas is still somewhat unknown. The presence of large lake systems in the valley bottoms appears to have mediated some of the desiccation seen elsewhere. But, as the reconstruction of Soda Lake in the nearby Carrizo Plain demonstrates (see Whitley et al. 2007) environmental perturbations had serious impacts on lake systems too. Identifying certain of the prehistoric demographic trends

for the southern San Joaquin Valley, and determining how these trends (if present) correlate with those seen elsewhere, is a current important research objective.

2.4 HISTORICAL BACKGROUND

Spanish explorers first visited the San Joaquin Valley in 1772, but its lengthy distance from the missions and presidios along the Pacific Coast delayed permanent settlement for many years, including during the Mexican period of control over the Californian region. In the 1840s, Mexican rancho owners along the Pacific Coast allowed their cattle to wander and graze in the San Joaquin Valley (JRP Historical Consulting 2009). The Mexican government granted the first ranchos in the southern part of the San Joaquin Valley in the early 1840s, but these did not result in permanent settlement. It was not until the annexation of California in 1848 that the exploitation of the southern San Joaquin Valley began (Pacific Legacy 2006).

The discovery of gold in northern California in 1848 resulted in a dramatic increase of population, consisting in good part of fortune seekers and gold miners, who began to scour other parts of the state. After 1851, when gold was discovered in the Sierra Nevada Mountains in eastern Kern County, the population of the area grew rapidly. Some new immigrants began ranching in the San Joaquin Valley to supply the miners and mining towns. Ranchers grazed cattle and sheep, and farmers dry-farmed or used limited irrigation to grow grain crops, leading to the creation of small agricultural communities throughout the valley (JRP Historical Consulting 2009).

After the American annexation of California, the southern San Joaquin Valley became significant as a center of food production for this new influx of people in California. The expansive unfenced and principally public foothill spaces were well suited for grazing both sheep and cattle (Boyd 1997). As the Sierra Nevada gold rush presented extensive financial opportunities, ranchers introduced new breeds of livestock, consisting of cattle, sheep, and pigs (Boyd 1997).

With the increase of ranching in the southern San Joaquin came the dramatic change in the landscape, as non-native grasses more beneficial for grazing and pasture replaced native flora (Preston 1981). After the passing of the Arkansas Act in 1850, efforts were made to reclaim small tracts of land in order to create more usable spaces for ranching. Eventually, as farming supplanted ranching as a more profitable enterprise, large tracts of land began to be reclaimed for agricultural use, aided in part by the extension of the railroad in the 1870s (Pacific Legacy 2006).

The Santa Fe and Southern Pacific Railroads extended into Tulare County in the 1870s. Deliberations among the major owners of the rail companies resulted in a decision that one large town would be developed in the approximate middle of each San Joaquin Valley county, to serve as county seat and railroad hub. The location of the City of Tulare was one such selected spot, placed at the intersection of the Santa Fe and Southern Pacific Railroads (Preston 1991). Prior to that time, this area had relatively few settlers due to the lack of surface water, with most Euro-Americans settling either further north and east, closer to the main branches of the Kaweah and Kings Rivers, or to the south, along the Tule River (Menafee and Dodge 1913).

The City of Tulare was then established by the Southern Pacific Railroad in 1872, with plats aligned parallel to the tracks. As a rail diversion point, a series of rail company workshops,

including a roundhouse, were constructed. The work force for these facilities attracted additional development and settlement. In addition to the rail yards, by 1876 the town had a general store, drugstore, hardware shop, two blacksmiths, two carpentry shops, a wheelwright, lumberyard and a flour mill (Preston 1991).

Following the passage of statewide 'No-Fence' laws in 1874, ranching practices began to decline, while farming expanded in the San Joaquin Valley in both large land holdings and smaller, subdivided properties. As the farming population grew, so did the demand for irrigation. During the period of reclaiming unproductive land in the southern San Joaquin Valley, grants were given to individuals who had both the resources and the finances to undertake the operation alone.

Three competing partnerships developed during this period which had a great impact on control of water, land reclamation, and ultimately agricultural development in the San Joaquin Valley: Livermore and Chester, Haggin and Carr, and Miller and Lux, perhaps the most famous of the enterprises. Livermore and Chester were responsible, among other things, for developing the large Hollister plow (3 ft. wide by 2 ft. deep), pulled by a 40-mule team, which was used for ditch digging. Haggin and Carr were largely responsible for reclaiming the beds of the Buena Vista and Kern lakes, and for creating the Calloway Canal, which drained through the Rosedale area in Bakersfield to Goose Lake (Morgan 1914). Miller and Lux ultimately became one of the biggest private property holders in the country, controlling the rights to over 22,000 square miles. Miller and Lux's impact extended far beyond Kern County, however. They recognized early on that control of water would have important economic implications, and they played a major role in the water development of the state. They controlled, for example, over 100 mi. of the San Joaquin River with the San Joaquin and Kings River Canal and Irrigation System. They were also embroiled for many years in litigation against Haggin and Carr over control of the water rights to the Kern River. Descendants of Henry Miller continue to play a major role in California water rights, with his great grandson, George Nickel, Jr., the first to develop the concept of water banking, thus creating a system to buy and sell water (Levine 2011).

The controversies associated with these endeavors culminated in the Wright Irrigation Act of 1887, which provided for the ownership of land and water as a unit rather than as separate rights. It further proscribed the creation of irrigation districts comprised of local landowners. The first two such districts in Tulare County were the Alta Irrigation District, on the Kings River, and the Tulare Irrigation District (TID), which includes the Project APE (Preston 1991). The TID was organized September 21, 1889. The original proposal for the formation of an irrigation district covered 219,000 acres. It extended from the Sierra Nevada foothills to Tulare Lake. This was eventually reduced to 32,500 acres. In January 1948, the so-called "Kaweah Lands" (approximately 11,000 acres) were annexed. In October 1948, approximately 31,000 acres previously served by the Packwood Canal Company were annexed to the District (Tulare Irrigation District n.d.).

Initially, \$500,000 in bonds were issued. About half was expended for the construction of diversion works on the St. Johns River, the main canal heading at the river (including a large flume over the river), together with the purchase of water rights of the Kaweah Canal and Irrigation Company, Rocky Ford Canal and Irrigation Company, and Settlers Ditch Company. The remainder was used for canal construction within the original TID boundaries. The financial difficulties of early 1890s caused a setback, exacerbated by questions about the legality of the formation of the TID and its

bonds. By 1895, most of the landowners had begun to default on payment of their TID assessments. For a number of years, the District practically ceased operating, although water was kept running in the canals. During this period, the litigation over the bonds continued, and economic conditions in both Tulare and the surrounding country reached a low ebb (Tulare Irrigation District n.d.).

After negotiations with the bondholder, the bond was retired at approximately \$0.50 on the dollar, and an assessment of 36 percent of the valuation was made for this purpose. The debt was finally cleared by payment of \$273,075 and the bonds were publicly burned on October 17, 1903 (Tulare Irrigation District n.d.). The TID subsequently become a viable entity supporting local agriculture (Menafee and Dodge 1913). The TID today has no bonded indebtedness. For many years after the retirement of the bonds, the District operated on a system of water tolls, but the annual levying of assessments was resumed in 1918 (Tulare Irrigation District n.d.).

A contract with the U.S. Bureau of Reclamation was signed in 1950, providing an annual supply of 30,000 acre-feet of Class 1 water, and up to 141,000 acre-feet of Class 2 water from the Friant-Kern Canal. Subsequently, the TID proceeded with extensive improvements to the existing canal system, and the extension of the canal system to serve annexed areas. This work consisted of enlarging and/or relocating canals, construction of diversion structures, road crossings, check-gates, siphons, installing pipelines, etc. The majority of this work occurred between 1951 and 1964 (Tulare Irrigation District n.d.).

The growth of the town of Tulare received an initial impetus from the railroads, but a series of events slowed this process. Fires swept through the business district in 1883 and 1886, in the first case destroying about 25 businesses and, in the second, 75—virtually all of the town's commercial infrastructure. Although rebuilding occurred in each instance, circumstances worsened significantly when the railroad moved its shops from Tulare to Bakersfield in 1891. This resulted in an exodus of much of the population, and the town's commerce, to the south (Menafee and Dodge 1913).

Since the turn of the century, the development of the City of Tulare and environs has been tied to agriculture. The TID has played an important role in this development. The TID currently covers approximately 74,000 acres surrounding, but not including, the city itself. With the start of the Central Valley Project, the TID initiated a major program of improving and extending the existing canal system, with this work primarily occurring between 1951 and 1964. The TID and the Kaweah Delta Water Conservation District formed the Kaweah River Power Authority (KRPA) in 1982. A 17MW hydroelectric power plant was constructed and went online in 1992, delivering power to the Southern California Edison Company (Tulare Irrigation District n.d.).

2.5 RESEARCH DESIGN

2.5.1 Pre-Contact Archaeology

Previous research and the nature of the pre-contact archaeological record suggest two significant NRHP themes, both of which fall under the general Pre-Contact Archaeology area of significance. These are the Expansion of Pre-Contact Populations and Their Adaptation to New Environments; and Adaptation to Changing Environmental Conditions.

The Expansion of Pre-Contact Populations and Their Adaptation to New Environments theme primarily concerns the Middle Horizon/Holocene Maximum. Its period of significance runs from about 4000 to 1500 YBP. It involves a period during which the prehistoric population appears to have expanded into a variety of new regions, developing new adaptive strategies in the process.

The Adaptation to Changing Environmental Conditions theme is partly related to the Holocene Maximum, but especially to the Medieval Climatic Anomaly. The period of significance for this theme, accordingly, extends from about 4000 to 800 YBP. This theme involves the apparent collapse of many inland populations, presumably with population movements to better environments such as the coast. It is not yet known whether the southern San Joaquin Valley, with its system of lakes, sloughs and swamps, experienced population decline or, more likely, population increase due to the relatively favorable conditions of this region during this period of environmental stress.

The range of site types that are present in this region include:

- Villages, primarily located on or near permanent water sources, occupied by large groups during the winter aggregation season;
- Seasonal camps, again typically located at water sources, occupied during other parts of the year tied to locally and seasonally available food sources;
- Special activity areas, especially plant processing locations containing bedrock mortars (BRMs), commonly (though not exclusively) near existing oak woodlands, and invariably at bedrock outcrops or exposed boulders;
- Stone quarries and tool workshops, occurring in two general contexts: at or below naturally occurring chert exposures on the eastern front of the Temblor Range; and at quartzite cobble exposures, often on hills or ridges;
- Ritual sites, most commonly pictographs (rock art) found at rockshelters or large exposed boulders, and cemeteries, both commonly associated with villages; and
- A variety of small lithic scatters (low density surface scatters of stone tools).

The first requisites in any research design are the definition of site age/chronology and site function. The ability to determine either of these basic kinds of information may vary between survey and test excavation projects, and due to the nature of the sites themselves. BRM sites without associated artifacts, for example, may not be datable beyond the assumption that they post-date the Early Horizon and are thus less than roughly 4,000 years old.

A second fundamental issue involves the place of sites in the settlement system, especially with respect to water sources. Because the locations of the water sources have sometimes changed over time, villages and camps are not exclusively associated with existing (or known historical) water sources (W&S Consultants 2006). The size and locations of the region's lakes, sloughs and delta channels, to cite the most obvious example, changed significantly during the last 12,000 years due to major paleoclimatic shifts. This altered the area's hydrology and thus prehistoric settlement patterns. The western shoreline of Tulare Lake was relatively stable, because it abutted the Kettleman Hills. But the northern, southern, and eastern shorelines comprised the near-flat valley floor. Relatively minor fluctuations up or down in the lake level resulted in very significant

changes in the areal expression of the lake on these three sides, and therefore the locations of villages and camps. Although perhaps not as systematic, similar changes occurred with respect to stream channels and sloughs, and potential site locations associated with them. This circumstance has implications for predicting site locations and archaeological sensitivity. Site sensitivity is then hardest to predict in the open valley floor, where changes in stream courses and lake levels occurred on numerous occasions.

Nonetheless, the position of southern San Joaquin Valley prehistory relative to the changing settlement and demographic patterns seen in surrounding areas is still somewhat unknown (cf. Siefkin 1999), including to the two NRHP themes identified above. The presence of large lake systems in the valley bottoms can be expected to have mediated some of the effects of desiccation seen elsewhere. But, as the reconstruction of Soda Lake in the nearby Carrizo Plain demonstrates (see Whitley et al. 2007), environmental perturbations had serious impacts on lake systems too. Identifying certain of the prehistoric demographic trends and settlement pattern changes for the southern San Joaquin Valley, and determining how these trends (if present) correlate with those seen elsewhere, is another primary regional research objective.

Archaeological sites would primarily be evaluated for NRHP eligibility under Criterion D, research potential.

2.5.2 Historical Archaeology: Native American

Less research has been conducted on the regional historical archaeological record, both Native American and Euro-American. For Native American historical sites, the ethnographic and ethnohistoric periods in the southern San Joaquin Valley extended from first Euro-American contact in 1772 to circa 1900, when tribal populations were first consolidated on reservations. The major significant historic NRHP themes during this period of significance involve the related topics of Historic-Aboriginal Archaeology, and Native American Ethnic Heritage. More specifically, these concern the Adaptation of the Indigenous Population to Euro-American Encroachment and Settlement, and their Acculturation to Western Society. These processes included the impact of missionization on the San Joaquin Valley (circa 1800 to about 1845); the introduction of the horse and the development of a San Joaquin Valley “horse culture,” including raiding onto the coast and Los Angeles Basin (after about 1810); the use of the region as a refuge for mission neophyte escapees (after 1820); responses to epidemics from introduced diseases (especially in the 1830s); armed resistance to Euro-American encroachment (in the 1840s and early 1850s); the origins of the reservation system and the development of new tribal organizations and ethnic identities; and, ultimately, the adoption of the Euro-American society’s economic system and subsistence practices, and acculturation into that society.

Site types that have been identified in the region dating to the ethnographic/ethnohistoric period of significance primarily include villages and habitations, some of which contain cemeteries and rock art (including pictographs and cupules). Dispersed farmsteads, dating specifically from the reservation period or post-1853, would also be expected. The different social processes associated with this historical theme may be manifest in the material cultural record in terms of changing settlement patterns and village organization (from traditional nucleated villages to single family dispersed farmsteads); the breakdown of traditional trading networks with their replacement by

new economic relationships; changing subsistence practices, especially the introduction of agriculture initially via escaped mission neophytes; the use of Euro-American artifacts and materials rather than traditional tools and materials; and, possibly, changing mortuary practices.

Inasmuch as culture change is a primary intellectual interest in archaeology, ethnographic villages and habitations may be NRHP eligible under Criterion D, research potential. Rock art sites, especially pictographs, may be eligible under Criterion C as examples of artistic mastery. They may also be eligible under Criterion A, association with events contributing to broad patterns of history. Ethnographic sites, further, may be NRHP eligible as Traditional Cultural Properties due to potential continued connections to tribal descendants, and their resulting importance in traditional practices and beliefs, including their significance for historical memory, tribal- and self-identity formation, and tribal education.

For Criteria A, C, and D, eligibility requires site integrity (including the ability to convey historical association for Criterion A). These may include intact archaeological deposits for Criterion D, as well as setting and feel for Criteria A and C. Historical properties may lack physical integrity, as normally understood in heritage management, but still retain their significance to Native American tribes as Traditional Cultural Properties if they retain their tribal associations and uses.

2.5.3 Historical Archaeology: Euro-American

Approaches to historical Euro-American archaeological research relevant to the region have been summarized by Caltrans (1999, 2000, 2007, 2008). These concern the general topics of historical landscapes, agriculture and farming, irrigation (water conveyance systems), and mining. Caltrans has also identified a practical evaluation matrix aiding determinations of NRHP/CRHR eligibility. The identified research issues include site structure and land-use (lay-out, land use, feature function); economics (self-sufficiency, consumer behavior, wealth indicators); technology and science (innovations, methods); ethnicity and cultural diversity (religion, race); household composition and lifeways (gender, children); and labor relations. Principles useful for determining the research potential of an individual site or feature are conceptualized in terms of the mnemonic AIMS-R, as follows:

1. *Association* refers to the ability to link an assemblage of artifacts, ecofacts, and other cultural remains with an individual household, an ethnic or socioeconomic group, or a specific activity or property use.
2. *Integrity* addresses the physical condition of the deposit, referring to the intact nature of the archaeological remains. In order for a feature to be most useful, it should be in much the same state as when it was deposited. However, even disturbed deposits can yield important information (e.g., a tightly dated deposit with an unequivocal association).
3. *Materials* refers to the number and variety of artifacts present. Large assemblages provide more secure interpretations as there are more datable items to determine when the deposit was made, and the collection will be more representative of the household, or activity. Likewise, the interpretive potential of a deposit is generally increased with the

diversity of its contents, although the lack of diversity in certain assemblages also may signal important behavioral or consumer patterns.

4. *Stratigraphy* refers to the vertically or horizontally discrete depositional units that are distinguishable. Remains from an archaeological feature with a complex stratigraphic sequence representative of several events over time can have the added advantage of providing an independent chronological check on artifact diagnosis and the interpretation of the sequence of environmental or sociocultural events.

5. *Rarity* refers to remains linked to household types or activities that are uncommon. Because they are scarce, they may have importance even in cases where they otherwise fail to meet other thresholds of importance (Caltrans 2007:209).

For agricultural sites, Caltrans (2007) has identified six themes to guide research: Site Structure and Land Use Pattern; Economic Strategies; Ethnicity and Cultural Adaptation; Agricultural Technology and Science; Household Composition and Lifeways; and Labor History. Expected site types would include farm and ranch homesteads and facilities, line camps, and refuse dumps. In general terms, historical Euro-American archaeological sites would be evaluated for NRHP eligibility under Criterion D, research potential. However, they also potentially could be eligible under Criteria A and B for their associated values with major historical trends or individuals. Historical landscapes might also be considered.

Historical farming structures, which are potentially pertinent to the current study area, are typically evaluated for NRHP eligibility under Criteria A and/or B, for their associated values with major historical trends or individuals, and C for potential design or engineering importance.

In addition, Caltrans (2000) has identified two significant historical themes for San Joaquin Valley irrigation districts:

Theme 1: Development of Irrigated Agriculture in the San Joaquin Valley, 1852-1964

As identified by Caltrans in the *Water Conveyance Systems in California Historic Context Development and Evaluation Procedures*, the “Development of Irrigated Agriculture” is a historically significant theme or event in the history of California and the Central Valley region. In the years following California’s statehood and the gold rush, increasing population created an increasing market for agricultural products. The total irrigated acreage in the state grew from 60,000 acres in 1860 to nearly 400,000 acres by 1880, an increase of more than 650 percent, and the San Joaquin Valley contained the highest percentage of that land (approximately 47 percent) (Caltrans 2000). Private water companies, land colonies, mutual water companies, and irrigation districts were established in the mid- to late nineteenth century to build irrigation systems to further develop the state’s agriculture industry. Irrigation districts became the most influential of these organizations, especially after state legislation—the Wright Act of 1887—causing irrigation districts to grow in number, power, as well as the actual amount of irrigated land throughout the state. Forty-nine irrigation districts were organized between 1887 and 1896, most of them located between Stockton and Bakersfield. However, by the late 1920s, only seven of the original districts were still in existence, among them the Modesto, Turlock, and Tulare irrigation districts (Caltrans

2000). Under the impetus of increased demand during World War I, agricultural production reached a new peak in 1920. Companies like Pacific Gas & Electric and San Joaquin Valley Light and Power helped finance large irrigation reservoirs to feed district canals in return for the power generated. By 1930, there were 94 active districts in California, and the land watered by these agencies mushroomed to 1.6 million acres (Caltrans 2000). Irrigation districts provided more than 90 percent of the surface water used for irrigation in the San Joaquin Valley before the Central Valley Project came on line in the 1940s (Caltrans 2000). Most were located in the San Joaquin Valley, with the most successful in Modesto, Turlock, Merced, and Fresno.

The period of significance for this theme begins with the earliest developments of irrigated agriculture in the San Joaquin Valley, with the construction of the earliest earthen ditches in Visalia in 1852. Irrigated agriculture continues to be an important industry and influence in the Valley. The period of significance ends in 1968 following recommended guidance for closing a period of significance 50 years ago when activities continued to have importance, but no more specific date can be defined to end the historic period, and there is no justification for exceptional significance to extend the period of significance to an end date within the last 50 years (National Register of Historic Places 1997).

Associated Property Types:

Water Conveyance Systems

Following the framework established by Caltrans in *Water Conveyance Systems in California Historic Context Development and Evaluation Procedures*, the water conveyance system is the property type that has the potential to reflect this theme and period. Components and features of water conveyance systems include diversion structures, conduits, flow control devices, cleansing devices, and associated resources and settings. Water Conveyance Systems that are associated with Development of Irrigated Agriculture in the San Joaquin Valley, 1852-1968 would be eligible under NRHP Criterion A/CRHR Criterion 1 for their association with this significant theme if:

- the association with the theme is important--simply because a water conveyance existed during the period of significance is not enough for that system to be eligible;
- the resource retains high overall integrity because of the high number of comparable examples. The property should retain most of the seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association.
- Due to the nature of this type of resource, repairs and modifications are acceptable but not if those modifications substantially modified the resource.

Water Conveyance Systems that are associated with Development of Irrigated Agriculture in the San Joaquin Valley, 1852-1964 will be eligible under NRHP Criterion B/CRHR Criterion 2 for their association with this significant theme if they:

- associated with an important person's productive life **and** the property that is most closely associated with that person;
- the resource retains high overall integrity because of the high number of comparable examples. The property should retain most of the seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association.

- Due to the nature of this type of resource, repairs and modifications are acceptable but not if those modifications substantially modified the resource.

Water conveyance systems will rarely be found eligible under Criterion B. In California notable names for which there might be associations with water planning, construction, or engineering include: Anthony Chabot, George Chaffey, Frederick Eaton, William Mulholland, George Maxwell, Robert Marshall, Elwood Mead and C. E. Grunsky (Caltrans 2000).

Theme 2: Technological Innovation in Irrigated Agriculture in California, 1852-1964

Caltrans clearly defines the historic context for this theme in the “Legacy of Irrigation Canals” section of the context, while ASM has defined a period of significance based on the Caltrans context (Caltrans 2000). The below is a direct excerpt from the context:

The earliest irrigation water conveyances in California were roughly made, earthen ditches to divert water. Techniques used to construct irrigation canals have varied widely during the various periods of California’s history, from the relatively short, hand-dug, early masonry and tile ditches, to horse-scraped and hand-dug earthen irrigation ditches, to the large concrete-lined, machine-formed irrigation canals of the middle decades of the twentieth century. Evidence of these changes in scale, methods of construction, and knowledge of engineering are reflected in the remaining physical resources found on the landscape today. Substantial regional variation exists with respect to the adoption and dissemination of the new technologies, such as where and when concrete replaced wood in the engineering works of major irrigation canals. These regional differences can be explained in part by cultural traditions with respect to water management, ownership of water rights, and environmental factors, but economics, politics, and the formation of particular types of irrigation institutions also played a significant role.

Older canals were often subject to substantial change over time. A common change was to expand the system in order to serve more acreage. Unless pumps are used, irrigation canals rely on gravity to move water, and they can provide service only to land lying below the canal’s water level. As irrigated acreage expanded, water companies frequently consolidated smaller ditch systems, moved the point of diversion upstream, and built a high-line canal to service new acreage. In this manner, pioneer canals were often absorbed into larger systems, frequently by irrigation districts, to pull in more potentially irrigable lands. Segments of earlier irrigation systems might remain largely intact within the larger framework of a new irrigation system, or the changes could be such that the old separate irrigation system would become, in essence, a typical component of a new 1920s irrigation district canal.

Another important factor is that water is notoriously difficult to control; it can be, and frequently is, an engine of destruction. Flood waters, for example, repeatedly overwhelmed the flimsy wooden control structures built on nineteenth and early-twentieth century irrigation systems in the San Joaquin Valley. Canals required periodic maintenance and were also often altered as a result of improvements designed to counteract the normal erosion that occurs from water moving through earth-lined canals. Improvements to stabilize canals ranged from realigning segments of the channel, to lining ditches or putting them in pipe, to replacement of

checks, drops, culverts, or other regulation structures. These improvements were sometimes carried out system-wide, sometimes on a piecemeal basis. In light of the proclivity for change and the wide diversity of canal materials and modes of construction, adequate documentary research is essential to understand the evolution of an important irrigation canal and to assess its integrity.

The period of significance for this theme begins with the earliest developments of irrigated agriculture in the San Joaquin Valley, with the construction of the earliest earthen ditches in Visalia in 1852. Technological innovations in agricultural irrigation are ongoing, but the period of significance ends in 1972 following recommended guidance for closing a period of significance 50 years ago when activities continued to have importance, but no more specific date can be defined to end the historic period, and there is no justification for exceptional significance to extend the period of significance to an end date within the last 50 years (National Register of Historic Places 1997).

Associated Property Types:

Water Conveyance Systems

Following the framework established by Caltrans in *Water Conveyance Systems in California Historic Context Development and Evaluation Procedures*, the water conveyance system is the property type that has the potential to reflect this theme and period. Components and features of water conveyance systems include diversion structures, conduits, flow control devices, cleansing devices, and associated resources and settings. Water Conveyance Systems that are associated with Technological Innovation in Irrigated Agriculture in California, 1852-1968 will be eligible under NRHP Criterion C/CRHR Criterion 3 for their association with this significant theme if they are/have:

- unique values;
- the best or good example of the property type as one that possess distinctive characteristics of the type and through those characteristics clearly illustrates at least one of the following;
 - the pattern of features common to a particular class of resources
 - the individuality or variation of features that occurs within the class;
 - the evolution of that class; or
 - the transition between classes of resources
- the earliest, best preserved, largest, or sole surviving example of particular types of water conveyance systems;
- a design innovation of evolutionary trends in engineering
- designed by a figure of acknowledged greatness in the field or by someone unknown whose workmanship is distinguishable from others by its style and quality **and** be a good example of that designer's work;
- the resource retains high overall integrity because of the high number of comparable examples. The property should retain most of the seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association.

A large water conveyance system with multiple components will often be evaluated as a district rather than as a single property. An eligible historic district must possess a significant concentration or linkage of resources that are united historically or aesthetically by plan or physical development. It should be a significant and distinguishable entity, although its components need not possess individual distinction (Caltrans 2000).

3. ARCHIVAL RECORDS SEARCH

3.1 ARCHIVAL RECORDS SEARCH

In order to determine whether the Project APE had been previously surveyed for cultural resources, and/or whether any such resources were known to exist within or near to it, an archival records search was conducted by the staff of the Southern San Joaquin Valley Information Center (IC) on October 12, 2021. The records search was completed to determine: (i) if prehistoric or historical archaeological sites had previously been recorded within the study area; (ii) if the project area had been systematically surveyed by archaeologists prior to the initiation of this field study; and/or (iii) whether the region of the field project was known to contain archaeological sites and to thereby be archaeologically sensitive. Records examined included archaeological site files and maps, the NRHP, Historic Property Data File, the CRHR, and California Points of Historic Interest. The records search included the Project APE and a 0.5-mi. buffer.

According to the records search conducted by the Southern San Joaquin Valley Information Center, California State University, Bakersfield, one previous linear study included a portion of the Project APE (Table 1), and no cultural resources of any kind have been previously documented within it. An additional four previous studies have been conducted within 0.5 mi. of the Project (Table 2), which resulted in the recordation of three previous resources within the search radius (Table 3).

Table 1. Reports within the Project APE

Report No.	Year	Author (s)/Affiliation	Title
TU-00103	1997	Wickstrom, Brian, and Emily Anderson / KEA Environmental, Inc.	Cultural Resource Survey for the Selma to Bakersfield Fiberoptic Line, Southern San Joaquin Valley, California

Table 2. Reports within 0.5 Mi. of the Project APE

Report No.	Year	Author (s)/Affiliation	Title
TU-01041	2001	Parr, Robert E. / Center for Archaeological Research, California State University, Bakersfield	Cultural Resources Assessment: City of Tulare Wastewater Treatment Facility Expansion Project, Tulare County, California
TU-01059	1987	Kielty, Mary S., and Russell C. Fey / Individual Consultant	City of Tulare Historic Resources Inventory
TU-01425	2010	Schmidt, James J. / Compass Rose Archaeological, Inc	Archaeological Letter Report: Cattle, Tuggle, and Elk 12kV Deteriorated Pole Replacement Projects, Tulare County, California
TU-01591	2010	Parr, Robert E. / Cal Heritage	Cultural Resource Assessment for the Replacement of Seven Deteriorated Power Poles on the Southern California Edison Company Wilbur, Winot, Linder, Aurora, and Tuggle 12kV Circuits, Tulare County, California

Table 3. Resources within 0.5 Mi. of the Project APE

Primary #	Type	Description
P-54-000042	Site	Prehistoric, habitation site (Collected materials in Kern County Historical Museum, Latta Collection and Munger Collection)
P-54-005296	Structure	Tulare Irrigation District Canal
P-54-005358	Structure	Hooper Ditch

ASM also requested a search of the Native American Heritage Commission (NAHC) Sacred Lands File. According to the NAHC records, no sacred sites or tribal cultural resources are known in or near the Project APE. Letters requesting information on any tribal cultural resources were sent to organizations and individuals on the NAHC contact list on November 16, 2021, with follow-up emails sent on December 6, 2021 (Confidential Appendix A). One response has been received to date from the Santa Rosa Rancheria Tachi-Yokut Tribe, which stated that due to Tribal history and knowledge of the Project area, the Tribe has concerns and is requesting to be retained for Native American monitoring of the Project, as well as that a curation agreement be put into place to help mitigate the potential effects on cultural resources and burials in the area. They request an open dialogue for future mitigation policies on this Project.

The earliest aerial images from 1956 show the entire Project area in agricultural use, with the early stages of development of the wastewater treatment facility south of the west end of the alignment already in place at this time. Development of the facility continues into the 2000s and 2010s with the rest of the Project area remaining largely agricultural.

4. METHODS AND RESULTS

4.1 FIELD METHODS

An intensive Class III inventor/Phase I survey of the Project APE was conducted by ASM Associate Archaeologist Robert Azpitarte, B.A. on November 9, 2021. The field methods employed included intensive pedestrian examination of the ground surface for evidence of archaeological sites in the form of artifacts, surface features (such as bedrock mortars, historical mining equipment), and archaeological indicators (e.g., organically enriched midden soil, burnt animal bone); the identification and location of any discovered sites, should they be present; tabulation and recording of surface diagnostic artifacts; site sketch mapping; preliminary evaluation of site integrity; and site recording, following the California Office of Historic Preservation Instructions for Recording Historic Resources and the BLM 8100 Manual, using DPR 523 forms. Parallel survey transects spaced at 15-m apart were employed for the 20.7-acre Project APE.

4.2 SURVEY RESULTS

The APE contains undeveloped land consisting of existing road ROWs and active agricultural fields. Dirt roads, irrigation ditches, active agricultural fields and orchards, and the Tulare Water Pollution Control infrastructure abut the APE (Figures 2 and 3). Surface visibility within the APE was moderate to excellent for Class III/Phase I survey. A light deposit of modern refuse (e.g., plastics, glass, paper, aluminum, clothing) was noted within the proposed pipeline corridor.

No cultural resources of any kind were identified within the proposed Project APE.



Figure 2. Overview of APE, looking east.



Figure 3. Overview of APE, looking south.

5. SUMMARY AND RECOMMENDATIONS

An intensive Class III cultural resources inventory/Phase I survey was conducted for the PNP Matheny Pipeline Project, Tulare County, California. A records search was conducted at the Southern San Joaquin Valley Archaeological Information Center, California State University, Bakersfield, which indicated that a small section of the Project APE had been previously surveyed and that no cultural resources were known to exist within it. A search of the NAHC's Sacred Lands File indicated that no tribal cultural resources are known to be present within the Project APE.

The Class III inventory/Phase I survey fieldwork was conducted on November 9, 2021, with parallel transects spaced at 15-m intervals walked along the entire Project APE; no cultural resources of any kind were identified as a result of the current study.

5.1 RECOMMENDATIONS

No cultural resources of any kind were identified within the proposed PNP Matheny Pipeline Project APE. Based on these results, the Project does not have the potential to result in significant impacts or adverse effects to known historic properties or historical resources. the Santa Rosa Rancheria Tachi-Yokut Tribe however has responded with concerns about the Project area, requesting Native American monitoring of the Project and that a curation agreement be put into place to help mitigate the potential effects on cultural resources and burials in the area.

REFERENCES

Bailey, James

- 2010 National Register of Historic Places Multiple Property Documentation Form Central Valley Project: Planning and Construction of the First Four Divisions, 1935-1956. Prepared by the historian at the U.S. Bureau of Reclamation, February 2010.

Boyd, W.H.

- 1997 *Lower Kern River Country 1850-1950: Wilderness to Empire*. Kings River Press, Lemoore.

Caltrans

- 1999 *General Guidelines for Identifying and Evaluating Historic Landscapes*. Sacramento: Caltrans.
- 2000 *Water Conveyance Systems in California: Historic Context Development and Evaluation Procedures*. Sacramento: Caltrans.
- 2007 *A Historical Context and Archaeological Research Design for Agricultural Properties in California*. Sacramento: Caltrans.
- 2008 *A Historical Context and Archaeological Research Design for Mining Properties in California*. Sacramento: Caltrans.

Christian, D., compiler

- 2009 Tulare County Historical Archives workbook. Manuscript.

Cook, S. F.

- 1978 Historical Demography. In *California*, edited by R.F. Heizer, pp. 91-98. Handbook of North American Indians, Volume 8. Smithsonian Institute, Washington, D.C.

Driver, H.E.

- 1937 Cultural Element Distributions: VI, Southern Sierra Nevada. *University of California Anthropological Records* 1(2):53-154. Berkeley

Elsasser, A.

- 1962 *Indians of Sequoia and Kings Canyon National Parks*. Three Rivers: Sequoia Natural History Association.

Fenenga, F.

- 1952 The Archaeology of the Slick Rock Village, Tulare County, California. *American Antiquity* 17:339-347.

Fredrickson, D.A. and J. Grossman

- 1977 A San Dieguito component at Buena Vista Lake, California. *Journal of California and Great Basin Anthropology* 4:173-190.

Gayton, A.H.

- 1930 Yokuts-Mono Chiefs and Shamans. *University of California Publications in American Archaeology and Ethnology* 24. Berkeley, 361-420.
- 1948 Yokuts and Western Mono Ethnography. *University of California Anthropological Records* 10:1-290. Berkeley.

Gifford, E.W. and W.E. Schenck

- 1926 Archaeology of the Southern San Joaquin Valley. *University of California Publications in American Archaeology and Ethnology* 23(1):1-122.

Grunsky, C.E.

- 1898 Irrigation Near Fresno. *Water-Supply and Irrigation Papers of the United States Geological Survey, No. 18*. Washington, D.C., U.S. Government Printing Office.

Harrington, John Peabody

- n.d. Yokuts ethnographic notes. National Anthropological Archives.

Hewes, G.

- 1941 Archaeological reconnaissance of the central San Joaquin Valley. *American Antiquity* 7:123-133.

Horne, S.P.

- 1981 *The Inland Chumash: Ethnography, Ethnohistory and Archaeology*. Ph.D. dissertation, UCSB. University Microfilms, Ann Arbor.

Jones, T.L., G.M. Brown, L.M. Raab, J.L. McVickar, W.G. Spaulding, D.J. Kennett, A. York, and P.L. Walker

- 1999 Demographic Crisis in Western North America during the Medieval Climatic Anomaly. *Current Anthropology* 40:137-170.

JRP Historical Consulting (JRP)

- 2003 *Historic Context Statement: Roadway Bridges of California: 1936 to 1959*. Prepared for the State of California Department of Transportation Environmental Program, Sacramento, California, January 2003.

King, C., C. Smith, and T. King

- n.d. *Archaeological Report Related to the Interpretation of Archaeological Resources Present at the Vasquez Rocks County Park*. Report on file, South Central Coastal Information Center.

Kroeber, A.L.

- 1925 Handbook of the Indians of California. *Bureau of American Ethnology, Bulletin 78*. Washington, D.C.

Latta, F.F.

- 1977 *Handbook of the Yokuts Indians*. Bear State Books, Santa Cruz.

Levine, Yasha

- 2011 California Class War History: Meet the Oligarch Family That's Been Scamming Taxpayers for 150 Years, and Counting! Available online at: <http://exiledonline.com/california-class-war-history-meet-the-oligarch-family-thats-been-scamming-taxpayers-for-150-years-and-counting>; accessed November 5, 2021.

Meyer, J., D. Craig Young, and Jeffrey S. Rosenthal

- 2010 *Volume I: A Geoarchaeological Overview and Assessment of Caltrans Districts 6 and 9*. Submitted to California Department of Transportation.

Moratto, M.

- 1984 *California Archaeology*. New York: Academic Press.

National Register of Historic Places

- 2007 Multiple Property Documentation Form: *California's Central Valley Project: Historic Engineering Features to 1956*. U.S. Department of the Interior, Bureau of Reclamation, June 2007.

Pacific Legacy, Inc.

- 2006 Southern San Joaquin Valley Oil Fields Comprehensive Study. Manuscript on file, BLM Bakersfield office.

Powers, Stephen

- 1971 The Yokuts Dance for the Dead. In R.F. Heizer and M.A. Whipple, editors, pp. 513-519, *The California Indians: A Source Book* (second edition). Berkeley, University of California Press (original 1877).
- 1976 *Tribes of California*. Berkeley, University of California Press (original 1877).

Preston, William L.

- 1981 *Vanishing Landscapes: Land and Life in the Tulare Lake Basin*. Berkeley, University of California Press.

Schiffman, R.A., and A.P. Garfinkel

- 1981 Prehistory of Kern County: An Overview. *Bakersfield College Publications in Archaeology, Number 1*.

Siefkin, Nelson

- 1999 Archaeology of the Redfeldt Mound (CA-KIN-66), Tulare Basin, California. M.A. Thesis, Department of Sociology and Anthropology, California State University, Bakersfield.

Sutton, M.Q.

- 1988a An Introduction to the Archaeology of the Western Mojave Desert, California. *Archives of California Prehistory, No. 14*. Salinas: Coyote Press.
- 1988b On the Late Prehistory of the Western Mojave Desert. *Pacific Coast Archaeological Society Quarterly* 24(1):22-29.

- 2009 People and Language: Defining the Takic Expansion into the Southern California. *Pacific Coast Archaeological Society Quarterly* 40(2, 3):31-73.

Tulare Irrigation District

- n.d. Tulare Irrigation District History. Available online at: <http://tulareid.org/district-profile>; accessed November 5, 2021.

W&S Consultants

- 2006 *Phase II Test Excavations and Determinations of Significance for the Tejon Mountain Village Project, Kern County, California*. Report on file, Tejon Ranch Company.

Wedel, W.

- 1941 Archaeological Investigations at Buena Vista Lake, Kern County, California. *Bureau of American Ethnology Bulletin* 130.

Whitley, D.S.

- 1992 Shamanism and Rock Art in Far Western North America. *Cambridge Archaeological Journal* 2(1):89-113.
2000 *The Art of the Shaman: Rock Art of California*. Salt Lake City: University of Utah Press.

Whitley, D.S., and M.P. Beaudry

- 1991 Chiefs on the Coast: The Development of Complex Society in the Tiquisate Region in Ethnographic Perspective. *The Development of Complex Civilizations in Southeastern Mesoamerica*, edited by W. Fowler, pp. 101-120. Orlando: CRC Press.

Whitley, D.S., G. Gumerman IV, J. Simon, and E. Rose

- 1988 The Late Prehistoric Period in the Coso Range and Environs. *Pacific Coast Archaeological Society Quarterly* 24(1):2-10.

Whitley, D.S., J. Simon, and J.H.N. Loubser

- 2007 The Carrizo Collapse: Art and Politics in the Past. In *A Festschrift Honoring the Contributions of California Archaeologist Jay von Werlhof*, edited by R.L. Kaldenberg, pp. 199-208. Ridgecrest: Maturango Museum Publication 20.

Zimmerman, K.L., C.L. Pruett, and M.Q. Sutton

- 1989 A Clovis-Like Projectile Point from the Southern Sierra Nevada. *Journal of California and Great Basin Anthropology* 11:89-91.



NATIVE AMERICAN HERITAGE COMMISSION

January 19, 2023

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Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, Matheny Tract Wastewater System Project, Tulare County

Dear Ms. Willis:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

- Any report that may contain site forms, site significance, and suggested mitigation measures.

All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was positive. Please contact the <tribe(s)> on the attached list for more information.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Cameron.vela@nahc.ca.gov.

Sincerely,

Cameron Vela

Cameron Vela
Cultural Resources Analyst

Attachment

**Native American Heritage Commission
Tribal Consultation List
Tulare County
1/19/2023**

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Western Mono Indians***

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Tubatulabal

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Matheny Tract Wastewater System Project, Tulare County.

ATTACHMENT “D”

Addendum to the Feasibility Study

County of Tulare

Matheny Tract Wastewater System

Technical Memorandum No. 2

Addendum to Project Feasibility Report

Tulare County, CA

December 2022

Prepared for:

County of Tulare

Resources Management Agency

5961 South Mooney Boulevard

Visalia, CA 93291

Prepared by:

Provost & Pritchard Consulting Group

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Appendix A.....	Past Completed Reports
Appendix B	Engineer’s Opinion of Probable Construction Cost for All Alternatives
Appendix C	Potential Easement Appraisal

Abbreviations

Capacity Analysis.....	City of Tulare Collection System Capacity Analysis
City	City of Tulare
CWSRF	Clean Water State Revolving Fund
DWWTP	Domestic Wastewater Treatment Plant
HDPE	High Density Polyethylene
PFR	Project Feasibility Report
PVC.....	Polyethylene Vinyl Chloride
RWQCB	Regional Water Quality Control Board
SJVAPCD	San Joaquin Valley Air Pollution Control District
SWRCB.....	State Water Resources Control Board
TM1	Technical Memorandum [No. 1]
TM2	Technical Memorandum No. 2
WWTF.....	Wastewater Treatment Facility

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1 Introduction

The Matheny Tract community, located southwest of the City of Tulare, is a community of approximately 1,137 people within 287 parcels with average size being 0.5 acres; however, many lots have multiple dwellings or mobile homes on the property. The community is unsewered and relies on individual on-site septic systems for wastewater disposal. The average lot size indicates adequate space for septic systems with a community water system; however, as noted above there are many lots with more than one dwelling and which may have more than one septic system on-site or have insufficient space to support efficient and effective septic effluent leaching. Additionally, many parcels have been divided, multiple times in some cases, to sizes as small as 6,000 square feet. Nearly 15 percent of the lots are now less than 12,500 square feet, which is the County of Tulare minimum lot size (see Tulare County Code 7-01-1350) for septic systems with a community water system.

Evaluations of potential solutions to resolve the wastewater disposal concerns for Matheny Tract began, formally, in 2014, culminating in a *Project Feasibility Report* (Provost & Pritchard Consulting Group, 2016), addressing the requirements, at the time, of the State Water Resources Control Board (SWRCB), Clean Water State Revolving Fund (CWSRF) Project Report as presented in the Technical Package of the Financial Assistance Application for the CWSRF.

Following completion of the *Project Feasibility Report*, the City of Tulare (City) prepared a *Collection System Evaluation* (Carollo, 2017) to determine the capacity available in the City's wastewater collection and disposal system and their ability to accept the wastewater flows from the Matheny Tract.

After finalization of the *Collection System Evaluation*, a Technical Memorandum (No. 1 [TM1]), serving as an addendum to the Project Feasibility Report, was prepared to modify and update the alternatives presented in the Project Feasibility Report, resulting in a revised selected alternative (Provost & Pritchard Consulting Group, 2017).

Summaries of these three reports are presented below and the reports are included in their entirety in the **Appendix A** of this Technical Memorandum. The appendices to the past reports have not been included in the Appendix for brevity but can be provided upon request.

The purpose of this Technical Memorandum (No. 2 [TM2]) is to provide a summary of past evaluations completed, update past alternatives, present a new alternative for consideration, and reevaluate the alternatives evaluation, potentially resulting in a revised selected alternative.

1.1 Project Feasibility Report

In March 2016, a Project Feasibility Report was prepared to evaluate the alternatives available to improve or replace on-site septic systems for the Matheny Tract community in Tulare County, adjacent to the City of Tulare. The community is currently unsewered and relies on individual septic systems at each parcel for wastewater treatment and disposal.

The alternatives analyzed included:

- *On-Site Systems with a Septic Maintenance District*: provides replacement of the existing on-site septic systems with systems that denitrify wastewater before discharging it and would provide for continuation of proper maintenance of the systems by creating a Septic Maintenance District.
- *Gravity Collection System, Consolidation with the City of Tulare*: provides construction of a wastewater collection system throughout the community with a main connection to the City of Tulare wastewater collection system and ultimate delivery to the City of Tulare Domestic Wastewater Treatment Plant (DWWTP). This alternative assumes that the City of Tulare will own and operate the Matheny Tract collection system and main connection to the City of Tulare once construction is completed.
- *Gravity Collection System with Community Wastewater Treatment Facility*: provides for construction of a wastewater collection system similar to the one shown in Alternative 2; however, the alternative would also provide for construction of a small, dedicated Wastewater Treatment Facility (WWTF) within or near the Matheny Tract.
- *No Project*: maintains the community in its current condition with no improvement to the existing septic systems.

Based on the analysis presented in the Project Feasibility Report (PFR), the initially selected alternative was *Gravity Collection System, Consolidation with the City of Tulare*. The proposed improvements for the alternative consisted of construction of a wastewater collection system within the Matheny Tract, a lift station located along Pratt Street, a force main in Pratt Street with a connection to the City's existing 27-inch domestic sewer trunk main at the intersection of Paige Avenue and Pratt Street. Implementation of this alternative was contingent upon reaching an agreement between the County and the City to accept the wastewater flows from the Matheny Tract. The City advised they would not allow connection of a domestic wastewater collection system, such as would be constructed within the Matheny Tract, to the industrial wastewater trunk main that exists in Pratt Street.

Following completion and adoption of the PFR, the City provided input that they were uncertain if the capacity of the sewer trunk main in Paige Avenue was sufficient and the City would need to perform an analysis of their collection system to determine if the capacity was available.

1.2 Collection System Evaluation Report

In June 2017, Carollo prepared a report for the City entitled *City of Tulare Collection System Capacity Analysis* (Capacity Analysis) to evaluate the capacity of the City's wastewater collection system, in part to specifically identify if the system had capacity to convey the wastewater flows from the Matheny Tract to the DWWTP, if the DWWTP has capacity to treat the wastewater flows and, if not, what improvements would be necessary to provide the necessary capacity.

1.2.1 Report Findings

The capacity of the 27-inch sewer trunk main in Paige Avenue at Pratt Street was evaluated and found to be operating in a surcharge state in its current configuration without the addition of wastewater flows from Matheny Tract. Adding new flows to this main would worsen the operating condition.

The recommended improvements to resolve this condition include evaluation of two alternatives, (1) install a second¹ domestic sewer trunk main in Paige Avenue from K Street to the DWWTP or (2) limit the level in the DWWTP influent wet well. It was determined both alternatives were needed to fully correct the surcharge condition; however, with construction of the additional trunk main improvements, the flows from Matheny Tract could be accepted by the City without worsening their current operating condition. Three alternatives were evaluated in relation to constructing a new trunk main.

The alternatives evaluated include constructing a 24-inch trunk main, a 27-inch trunk main or a 42-inch trunk main¹. The purpose of each alternative is as follows:

- *Immediate Solution: The 24-inch trunk main would correct the existing deficiencies and provide capacity to serve Matheny Tract.*
- *Near-Term Solution: The 27-inch trunk main would also correct existing deficiencies, provide capacity to serve Matheny Tract and provide capacity to serve previously approved (at the time of the report preparation) development projects from other areas of the City.*
- *Long-Term Solution: The 42-inch trunk main would provide the same service in addition to providing capacity for future build-out flows; 42-inches is the master planned size of the main.*

The necessary improvements to provide service to the Matheny Tract (near-term solution) is constructing the 27-inch trunk main which would correct the existing City wastewater collection system deficiencies, provide the necessary capacity to serve Matheny Tract and previously approved development projects.

Considering that the 27-inch main does not provide sufficient capacity for ultimate City build-out, it would be impractical for the City to construct the 27-inch main only to need another trunk main in the same corridor to accommodate future development. For this reason, the City intends to construct the master planned 42-inch trunk main to provide a long-term solution for the wastewater conveyance.

Despite the City's intention to construct the 42-inch main, the Matheny Tract is responsible for their proportionate share of the hypothetical second 27-inch main, based on flow apportionment. This share is noted as 4.5 percent of the flow to the DWWTP (as shown in Table 14 of the Capacity Analysis). The City will bear responsibility for the remaining percentage of the improvement cost. No modifications of the DWWTP are attributable to the Matheny Tract wastewater flows.

1.3 Technical Memorandum [No. 1]

In September 2017, TM1 was prepared as an addendum to the PFR originally prepared in March 2016. The purpose of TM1 was to update project alternative costs, modify the selected alternative based on the Capacity Analysis, and re-evaluate each alternative to determine the preferred project.

¹ The secondary sewer trunk main would be in addition to the existing sewer trunk main in Paige Avenue, not a replacement of the existing main. Both mains would be in operation to convey wastewater to the DWWTP.

The alternatives analyzed in TM1 included:

- *Alternative No. 1, On-Site Systems with a Septic Maintenance District:* provides replacement of the existing on-site septic systems with systems that denitrify wastewater before discharging it and would provide for continuation of proper maintenance of the systems by creating a Septic Maintenance District.
- *Alternative No. 2a, Onsite Gravity Collection System, 27-inch Trunk Main and Consolidation with the City of Tulare:* provides construction of a wastewater collection system throughout the community with a main connection to the City of Tulare wastewater collection system, installing a 27-inch trunk main in Paige Avenue to the DWWTP and ultimate delivery of wastewater flows to the DWWTP. This alternative assumes that the City of Tulare will own and operate the Matheny Tract collection system and main connection to the City of Tulare once construction is completed.
- *Alternative No. 2b, Gravity Collection System, 42-inch Trunk Main and Consolidation with the City of Tulare:* provides construction of a wastewater collection system throughout the community with a main connection to the City of Tulare wastewater collection system, installing a 42-inch trunk main in Paige Avenue to the DWWTP and ultimate delivery of wastewater flows to the DWWTP. This alternative assumes that the City of Tulare will own and operate the Matheny Tract collection system and main connection to the City of Tulare once construction is completed.
- *Alternative No. 3, Gravity Collection System with Community Wastewater Treatment Facility:* provides for construction of a wastewater collection system contained within the Matheny Tract similar to the system in alternative 2a and 2b; however, it would also provide for construction of a small, dedicated WWTF within or near the Matheny Tract rather than delivery of wastewater flows to the DWWTP.

The preferred project alternative was determined to be Alternative No. 2b, Gravity Collection System, 42-inch Trunk Main and Consolidation with the City of Tulare. Determination of the preferred project alternative was based on concurrence with the City of Tulare Master Plan, Capacity Analysis, and the City of Tulare's desire to continue reliable service to existing customers while upgrading sewer infrastructure and connecting Matheny Tract.

Although Alternative No. 2a, Gravity Collection System, 27-inch Trunk Main and Consolidation with the City of Tulare was the less costly alternative, it was not the preferred alternative due to long term feasibility and the need to construct an additional third main in the future if No. 2a were selected. If the 27-inch main were to be constructed the City would likely be required to remove and replace or construct a third main to meet capacity demands in the future, all of which would be inefficient use of public funds. Project costs associated with the 27-inch trunk main would ultimately increase the total cost of construction, therefore deeming Alternative No. 2a infeasible.

1.4 Technical Memorandum No. 2

Due to total project cost estimates in TM1 being greater than would be fundable through a State or Federal grant, in Summer 2022, the development of an additional alternative, Alternative No. 2c, was identified to be evaluated in this memorandum, TM2. Alternative No. 2c is presented below alongside a summary of past alternatives.

2 Summary of Past Alternatives

The following four sections provide a summary of the alternatives discussed in past reports. The costs of the previously evaluated alternatives have been updated to allow for a fair comparison of alternatives at current costs. **Section 2.2.3** presents a new variation on Alternative No. 2 but utilizing a sewer force main to deliver the wastewater flows from the Matheny Tract to the DWWTP rather than a proportional share of a larger diameter master planned gravity main as discussed in both Alternatives 2a and 2b.

2.1 Alternative No. 1: On-site Septic Systems with Maintenance District

Alternative No. 1 includes the removal and replacement or reconstruction of existing on-site septic systems on each existing residence within the community. This alternative also includes the creation of a Septic Tank Maintenance District that would oversee construction and ongoing maintenance of the new septic systems. Post construction, the newly formed Septic Tank Maintenance District would be responsible for assessing and collecting a pro-rata share of the cost of maintenance from each residence.

This alternative presents two difficult challenges as follows:

- *The Septic Tank Maintenance District would need to meet strict requirements to reduce nitrate levels in the wastewater to below 10mg/L to avoid degrading underlying groundwater. This level of nitrate reduction is potentially reliably unachievable in traditional onsite septic systems.*
- *Installation of new septic treatment systems would be difficult to place with respect to existing septic tank systems and leach lines, resulting in an expensive project.*

Table 2-1. Alternative 1 Total Cost Estimate

Item Description	Subtotal
System Improvements [1]	\$21,033,600
Contingency (20%)	\$4,206,700
Engineering and Construction Observation (18%)	\$3,786,000
Total Project Costs	\$29,026,300
Cost per Month per Connection [2]	\$88
Annual Operations & Maintenance Costs [3]	\$294,400
Present Worth Cost of O&M [4]	\$4,379,900
Total Project Costs + Present Worth Costs	\$33,406,200
Notes: [1] The system improvement cost includes new septic systems and abandoning existing septic systems; see Appendix B for additional details. [2] Includes approximated costs for septic tank pumping every three years, annual inspections, and general maintenance based on other, similar improvements; additional discussion is provided in the PFR. [3] Annual Operations & Maintenance Costs determined by summing the annual pumping, inspection and general maintenance costs based on similar systems. [4] Present Worth Cost determined using 20 years and 3% interest rate (typical for all alternatives).	

2.2 Alternative No. 2: Gravity Collection System and Consolidation with the City of Tulare

The initial PFR included Alternative No. 2 as a gravity collection system within the Matheny Tract Community and consolidation with the City of Tulare by connection to an existing 27-inch sewer main in Paige Avenue. Subsequently, Alternative No. 2 was revised and partitioned into two sub-alternatives, Alternative No. 2a and Alternative No. 2b, described in [Section 2.2.1](#) and [Section 2.2.2](#), respectively. Alternative No. 2c, described in [Section 2.2.3](#), is a new sub-alternative and the catalyst for this memorandum, TM2.

2.2.1 Alternative No. 2a: Paige Avenue 27-inch Sewer Main

Alternative No. 2a includes the construction of a new gravity wastewater collection system with a lift station for the community and consolidation with the City of Tulare. The alternative would include construction of a new collection system within the community, new service connections, a lift station, and proper on-site septic system abandonment. Consolidating with the City of Tulare would include installation of a new sewer force main from the community to Paige Avenue and a new 27-inch transmission main from Pratt Street to the DWWTP. This transmission main would be in addition to the existing 27-inch transmission main and would service Matheny Tract and the City of Tulare. Major project components of this alternative include the following items:

- *New gravity wastewater collection system within the Matheny Tract Community, including new sewer lateral service connections to each existing residence*

- *New lift station at Matheny Tract*
- *Construction of approximately 2,900 feet of 4-inch sewer force main in Pratt Street from Matheny Tract to Paige Avenue*
- *Construction of approximately 7,700 feet of 27-inch sewer transmission main in Paige Avenue, West Avenue, and Levin Avenue Alignment from the intersection of Paige Avenue and Pratt Street to the DWWTP*
- *In-place abandonment of existing septic systems and leach fields*

This alternative presents unique challenges as follows:

- *The City of Tulare Capacity Analysis identified the installation of a new 27-inch sewer trunk main as a “near-term” solution. As such, an additional 42-inch trunk main would need to be installed in the future, duplicating construction, and resulting this alternative being infeasible due to inefficient use of public funds.*
- *The Matheny Tract proportionate flow equates to approximately 4.5 percent of the overall wastewater conveyance to the DWWTP. Subsequently, the Matheny Tract would be scheduled to pay 4.5 percent of the construction cost of any trunk main in Paige Avenue, leaving 95.5 percent allocated to the City of Tulare. The City of Tulare has stated that the City does not have funds encumbered for the master planned trunk main in Paige Avenue.*

2.2.2 Alternative No. 2b: Paige Avenue 42-inch Sewer Main

Alternative No. 2b is identical to Alternative 2a except instead of installing a 27-inch sewer transmission main in Paige Avenue, a 42-inch sewer transmission main would be installed. This transmission main would service Matheny Tract and the City of Tulare. Major project components of this alternative include the following items:

- *New gravity wastewater collection system within the Matheny Tract Community, including new sewer lateral service connections to each existing residence*
- *New lift station at Matheny Tract*
- *Construction of approximately 2,900 feet of 4-inch sewer force main in Pratt Street from Matheny Tract to Paige Avenue*
- *Construction of approximately 7,700 feet of 42-inch sewer transmission main in Paige Avenue, West Avenue, and Levin Avenue Alignment from the intersection of Paige Avenue and Pratt Street to the DWWTP*
- *In-place abandonment of existing septic systems and leach fields*

This alternative presents the following construction challenges:

- *The Matheny Tract proportionate flow equates to approximately 4.5 percent of the overall wastewater conveyance to the DWWTP. Subsequently, the Matheny Tract would be scheduled to pay 4.5 percent of the construction cost of any trunk main in Paige Avenue, leaving 95.5 percent allocated to the City of Tulare. The City of Tulare has stated that the City does not have funds encumbered for the master planned trunk main in Paige Avenue.*
- *The project cost is the most expensive of each alternative compared.*

2.2.2.1 Life Cycle Cost of Alternative

Total project costs are provided in the table below and include present worth life cycle costs in addition to total immediate capital costs; this is an updated version of the table presented in TM1 and include the entire capital costs for the project.

Table 2-2. Alternative 2a and 2b Total Cost Estimate

Item Description	Alternative 2a: 27-inch Trunk Main	Alternative 2b: 42-inch Trunk Main
Matheny Tract Wastewater Collection System and Force Main [1]	\$13,562,600	\$13,562,600
Capacity and Connection Fees [2]	\$1,716,260	\$1,716,260
Contingency (20%)	\$2,712,500	\$2,712,500
Engineering and Construction Observation (18%)	\$2,441,300	\$2,441,300
Paige Avenue Trunk Main Total Cost [3]	\$9,471,900	\$16,762,700
Total Project Costs	\$29,904,560	\$37,195,360
Cost per Month per Connection [4]	\$54	\$54
Annual Operations & Maintenance Costs [5]	\$185,600	\$185,600
Present Worth Cost	\$2,761,300	\$2,761,300
Total Project Costs + Present Worth Costs	\$32,665,860	\$39,956,660
Notes: [1] The collection system cost includes collection mains, a lift station and force main in Pratt Street to Paige Avenue; see Appendix B for additional details. [2] The Capacity and Connection Fees are based on 287 services at \$5,980 per service (typical for Alternatives 2a, 2b, and 2c). This fee would be payable to the City of Tulare upon completion of the project, as discussed in more detail in the PFR. [3] The Paige Avenue cost include contingency, engineering, and construction observation components, as discussed in more detail in the Capacity Analysis and have been increased based on the California Department of General Services, California Construction Cost Index from May 2017 (6455 [per the Capacity Analysis]) to October 2022 (8712). [4] From City of Tulare Resolution 16-15, <i>A Resolution of the of Public Utilities of the City of Tulare rescinding Resolution No. 09-02 and Establishing Wastewater Collection and Treatment Rates</i> , utilizing rates effective October 1, 2020 (typical for Alternatives 2a, 2b, and 2c). [5] Annual Operations & Maintenance Costs determined by summing the total per month, per connection cost: \$54 * 12 * 287 connections (typical for Alternatives 2a, 2b, and 2c).		

Table 2-3 shows a summary of the project cost separated by proportionate share attributable to the Matheny Tract and the remainder attributable to the City, including all improvements to connect to the DWWTP for both the 27-inch and 42-inch options.

Table 2-3. Alternative 2a and 2b Cost Estimate with Proportional Share

Item Description	Alternative 2a: 27-inch Trunk Main	Alternative 2b: 42-inch Trunk Main
Matheny Tract Wastewater Collection System and Force Main	\$13,562,600	\$13,562,600
Capacity and Connection Fees	\$1,716,260	\$1,716,260
Contingency (20%)	\$2,712,500	\$2,712,500
Engineering and Construction Observation (18%)	\$2,441,300	\$2,441,300
Paige Avenue Trunk Main (Matheny Proportional Share)	\$426,236	\$754,322
Total Matheny Tract Proportional Share Subtotal	\$20,858,896	\$21,186,982
Paige Avenue Trunk Main Total Cost (Remainder)	\$9,045,665	\$16,008,379
Total Project Cost	\$29,904,560	\$37,195,360
Cost per Month per Connection	\$54	\$54
Annual Operations & Maintenance Costs	\$185,600	\$185,600
Present Worth Cost	\$2,761,300	\$2,761,300
Total Project Costs + Present Worth Costs	\$32,665,860	\$39,956,660

2.2.3 Alternative No. 2c: Consolidation through 4-inch Sewer Force Main (New)

2.2.3.1 Description of Alternative

Alternative No. 2c includes the construction of a new gravity wastewater collection system with a lift station for the community and consolidation with the City of Tulare. The new sewer collection system would include the construction of a new collection system, new service connections to existing residences, a lift station, and proper septic system abandonment. Consolidating with the City of Tulare would include the installation of a new sewer force main from the community to the DWWTP. The force main would be dedicated to solely serving the Matheny Tract community and run in parallel with existing City of Tulare facilities in the north side of Paige Avenue. Major project components of this alternative include the following:

- *New gravity wastewater collection system within the Matheny Tract Community, including new sewer lateral service connections to each existing residence*
- *New lift station at Matheny Tract*
- *Construction of approximately 10,700 feet of 4-inch high density polyethylene (HDPE) sewer main in Pratt Street, Paige Avenue, West Avenue, and the Levin Avenue Alignment from Matheny Tract to the DWWTP*
- *In-place abandonment of existing septic systems and leach fields*

2.2.3.2 Life Cycle Cost of Alternative

Total project costs are provided in the table below and include present worth life cycle costs in addition to total immediate capital costs.

Table 2-4. Alternative 2c Total Cost Estimate

Item Description	Subtotal
Matheny Tract Wastewater Collection System and Force Main [1]	\$15,301,100
Capacity and Connection Fees	\$1,716,260
Temporary and Permanent Easement Costs	\$11,160
Contingency (20%)	\$3,060,200
Engineering and Construction Observation (18%)	\$2,754,200
Total Project Costs	\$22,842,920
Cost per Month per Connection	\$54
Annual Operations & Maintenance Costs	\$185,600
Present Worth Cost	\$2,761,300
Total Project Costs + Present Worth Costs	\$25,604,220
Notes: [1] The collection system cost includes collection mains, a lift station and force main in Pratt Street to the DWWTP; see Appendix B for additional details.	

2.2.3.3 Advantages and Disadvantages

Advantages and disadvantages of Alternative No. 2c are presented in **Table 2-5**.

Table 2-5. Alternative No. 2c Advantages and Disadvantages

Advantages	Disadvantages
Wastewater collection and treatment becomes a function of the City	Matheny Tract Community loses individual control of ongoing operations and associated costs
RWQCB ² priority for conversion of septic-to-sewer for small, disadvantaged communities is addressed	Matheny Tract Community residents to pay monthly sewer service fee
Project costs are lower than other alternatives	Procurement of easement for pipeline between
Matheny Tract Community can take advantage of certain economies of scale by consolidating with the City as opposed to building and operation stand-alone WWTP	Execution of Tulare County Local Agency Formation Commission (LAFCo) documents and related legal processes associated with Extraterritorial Service Agreements, including associated costs
Monthly flat rate sewer service fee lower than in Alternatives 1 or 3	

2.3 Alternative No. 3: Gravity Collection System with Community Wastewater System

Alternative No. 3 includes the construction of a new wastewater collection system, new sewer service connections to existing residences, and the construction of a localized wastewater treatment plant

² Regional Water Quality Control Board (RWQCB)

(WWTP) capable of producing effluent that meets denitrification discharge requirements. The WWTP would consist of the following components:

- *Influent Lift Station and Headworks*
- *Biological Process to treat wastewater*
- *Sludge Handling and Effluent Disposal*
- *Additional Required Accessory Facilities*

This alternative presents the following challenges:

- *Construction of a new WWTP requires land acquisition*
- *Formation of a Wastewater Services District would be required to facilitate operation of the WWTP and collection of service fees, subject to the Tulare County Local Agency Formation (LAFCo) rules and requirements.*

Table 2-6. Alternative 3 Total Cost Estimate

Item Description	Subtotal
Wastewater Collection System [1]	\$12,926,300
Wastewater Treatment Plant [1]	\$3,737,700
Land Acquisition Costs	\$750,000
Contingency (20%)	\$3,482,800
Engineering and Construction Observation (18%)	\$2,999,500
Total Project Costs	\$23,896,300
Cost per Month per Connection [2]	\$164
Annual Operations & Maintenance Costs [3]	\$565,100
Present Worth Cost	\$8,407,300
Total Project Costs + Present Worth Costs	\$32,303,600
Notes:	
[1] The system improvement cost includes a wastewater collection system and wastewater treatment plan; see Appendix B for additional details.	
[2] Includes approximated costs for septic tank pumping every three years, annual inspections, and general maintenance based on other, similar improvements; additional discussion is provided in the PFR.	
[3] Annual Operations & Maintenance Costs determined by summing the cost of operator staff, chemicals and supplies, electricity costs, and other contracted services to operate the WWTP and new district; costs based on similar systems.	

2.4 Alternative No. 4: No Project

Alternative No. 4 would not include the construction of any project components for the Matheny Tract community. Existing septic systems would remain in place and unimproved, and the stated problems would not be resolved. Although Alternative No. 4 does not include immediate project costs to the Matheny Tract community, ongoing maintenance and replacement costs for existing septic systems would be present. Homeowners would face periodic expenses of approximately \$300 to pump and inspect existing systems, and approximately \$6,000 to \$10,000, per system, to replace failing septic systems.

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3 Evaluation of Alternatives

Alternatives 1 through 3 are compared in the following table. Alternative 4 does not provide a sustainable solution for wastewater disposal in the community, therefore it is not included in the comparison. **Table 3-1** compares the alternatives with respect to cost, construction challenges, and critical concerns.

Table 3-1. Comparison of Alternatives

Comparison Criteria	Alt. No. 1: Onsite Septic Systems with Maintenance District	Alt. No. 2: Collection System with Consolidation with City of Tulare			Alt. No. 3: Community Collection & Treatment System
		Alt. No. 2a: 27-inch Main	Alt. No. 2b: 42- inch Main	Alt. No. 2c: 4- inch Force Main	
Capital Cost	\$29,026,300	\$29,904,560	\$37,195,360	\$22,842,920	\$23,896,300
Annual O&M Cost	\$294,400	\$185,600	\$185,600	\$185,600	\$565,100
Present Worth Cost of O&M	\$4,379,900	\$2,761,300	\$2,761,300	\$2,761,300	\$8,407,300
Project + Present Worth Cost	\$33,406,200	\$32,665,860	\$39,956,660	\$25,604,220	\$32,303,600
Estimated Monthly User Charge	\$88	\$54	\$54	\$54	\$164
Construction Challenges					
Difficulty identifying existing on-site improvements, including location of existing septic systems	X				
Property acquisition for lift station		X	X	X	
Property acquisition for WWTP					X
Easement acquisition for pipeline				X	
Critical Concerns					
Creation of Special District	X				X
Does not address protection of groundwater priorities	X				
Ongoing operation of a small community WWTP					X
Does not address State priority of consolidation of wastewater systems	X				X
Extraterritorial Services Agreement processes and costs		X	X	X	

Each alternative is compared based on capital cost and corresponding estimated monthly user charges, construction challenges, and critical concerns. **Table 3-2** assigns a value of 1 through 5 to each alternative based on relative comparisons. A value of 1 denotes the highest rank, while a value of 5 denotes the lowest rank.

Table 3-2. Ranking of Alternatives

Comparison Criteria	Alternative Ranking				
	Alt. No. 1	Alt. No. 2a	Alt. No. 2b	Alt. No. 2c	Alt. No. 3
Project + Present Worth Cost	\$33,406,200	\$32,665,860	\$39,956,660	\$25,604,220	\$32,303,600
Project + Present Worth Rank	4	3	5	1	2
Estimated Monthly User Charge	4	1	1	1	5
Construction Challenges	1	1	1	2	1
Critical Concerns	3	1	1	1	3
Total Scoring:	12	6	8	5	11

According to the rankings in the table above, Alternative No. 2c is the overall lowest scoring and therefore preferred project alternative.

4 Selected Project

Alternative No. 2c, a gravity collection system and consolidation with the City of Tulare through a 4-inch force main, is the preferred alternative. **Figure 4-1** displays Alternative No. 2c.

4.1.1 Project Description

The preferred alternative includes the construction of a wastewater collection system within Matheny Tract, one lift station located in proximity to Matheny Tract along Pratt Street, and a 4-inch sanitary sewer force main from Matheny Tract to the DWWTP. Furthermore, the preferred alternative includes the following major components:

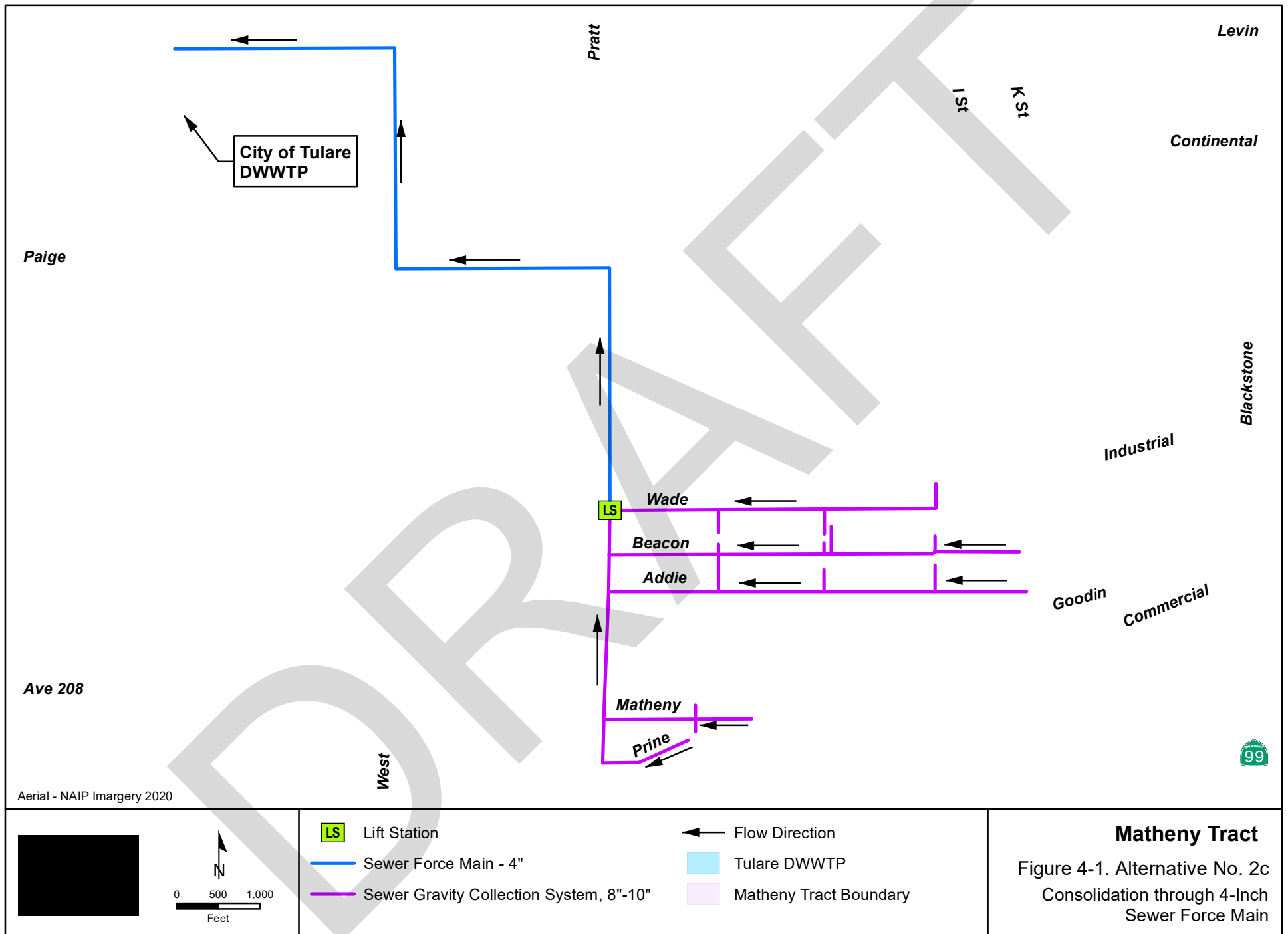
- *New gravity wastewater collection system composed of a combination of 8-inch and 10-inch polyethylene vinyl chloride (PVC) sewer mains within the Matheny Tract Community, including new 4-inch PVC sewer lateral service connections to each existing residence*
- *New lift station in proximity to Matheny Tract along Pratt Street*
- *Construction of approximately 10,700 feet of 4-inch HDPE sewer main in Pratt Street, Paige Avenue, West Avenue, and Levin Avenue Alignment from Matheny Tract to the DWWTP*
- *In-place abandonment of existing septic systems and leach fields*
- *Connection and consolidation of Matheny Tract wastewater system to the City of Tulare*

4.1.2 Basis for Selection

The basis of selection considered four major categories for each alternative. These categories included a present-worth analysis of capital and O&M costs, estimated monthly user charges, construction challenges, and critical issues. Each alternative was ranked against the other four and the alternative with the lowest overall score was chosen to be the preferred alternative.

4.1.3 Useful Life of Project

The system will be designed to utilize two types of piping, PVC, and HDPE, which, when properly maintained, has a useful life of more than 50 years. Lift station components useful lives vary depending on which component is considered. Estimated life for the lift stations range between 20 and 50 years. Components such as pumps and other mechanical apparatus will require replacement long before piping and the actual structure itself. Maintenance to all components is critical and required to obtain the longest useful life possible.



4.1.4 Project Cost Estimate

The total estimated cost of the preferred alternative is provided below.

Table 4-1. Total Project Cost Estimate

Description	Estimated Costs
Construction Costs	\$15,301,100
Capacity and Connection Fees	\$1,716,260
Temporary and Permanent Easement Cost	\$11,160
Contingency (20%)	\$3,060,200
Engineering & Construction Observation (18%)	\$2,754,200
Total:	\$22,842,920

4.1.5 Project Schedule

The project schedule is provided below with an assumed start date of January 2022. **Table 4-2** describes project tasks pertinent to the timely completion of the project.

Table 4-2. Project Tasks

Project Task	Schedule	Notes
Conduct Community Outreach	Ongoing	Community outreach has been initiated and will continue.
Finalize Environmental Documents	February 2023	The environmental documents will be updated with finalization of this Technical Memorandum, anticipated by the end of 2022.
Apply for Construction Funding	March 2023	Construction Funding application submittal is anticipated by 2023. Receipt of funds could be more than a year depending on the funding agency and availability of funds.
Prepare Final Construction Documents	Initiated after receipt of funding agreement: 12-18 months	Preparation of final construction documents can proceed once preliminary construction documents have been completed and construction funding is received. Final construction document preparation includes finalizing design details.
Construction Bidding	Initiated after completion of construction documents: 3 months	Timing provides for actual bidding activities, including bid advertisement, receipt and evaluation of bids, recommendation to the Board of Supervisors and approval to award construction contract.
Construction	Initiated after bidding: 12 – 18 months	Timing is based on construction of comparable size and type of projects.

4.1.6 Permitting Requirements

The project will require permitting during the planning and construction stages. Permitting requirements are tabled below and are associated with a project phase. The list may not be exhaustive and is dependent on the timing of construction and permit requirements at that time.

Table 4-3. Permit Requirements for Selected Project

Permit Name	Approving Agency	Project Phase	Anticipated Timeline (Months)
Indirect Source Review	San Joaquin Valley Air Pollution Control District (SJVAPCD)	Design	4
Report of Waste Discharge	RWQCB	Design	4
Construction Easements	Private Property Owners	Design	4
Encroachment Permit	County of Tulare	Construction	2
Storm Water Pollution Prevention Plan	SWRCB	Construction	2
Fugitive Dust Control Plan	SJVAPCD	Construction	2
Encroachment Permit	Tulare Irrigation District	Construction	2
Title 22 Wastewater Reclamation Report	RWQCB/ SWRCB	Construction	2

5 Future Project Progress

The future of the proposed project hinges on the receptiveness of various stakeholders involved.

5.1 Receptiveness of Stakeholders

5.1.1 City of Tulare

The City of Tulare has indicated receptiveness to consolidating the Matheny Tract community into the City's wastewater collection system. However, the City is not interested in compromising their ability to serve their existing customers or acquire debt or financial obligations through the consolidation project.

Preferred Alternative No. 2c constructs a sewer main for the community of Matheny Tract and utilizes the existing City of Tulare DWWTP, without adversely affecting the existing City infrastructure in Paige Avenue. Therefore, the City would not be required to compromise their existing service and/or acquire financial obligations through construction of this project.

5.1.2 County of Tulare

The County of Tulare desires to reach an equitable agreement between the City, SWRCB, and Matheny Tract with the intention of promoting consolidation of the Matheny Tract community sewer into the City of Tulare. Funding needs to be acquired from the SWRCB, as neither the County nor the residents of Matheny Tract have the financial capacity to fund this project.

5.1.3 Property Owners

Initial community outreach conducted as a part of the 2016 Project Feasibility Report indicated an overwhelming positive response and receptiveness from the Matheny Tract Community. Residents indicated that a consolidation of the sewer into the City of Tulare is desired and necessary. More recent community outreach has indicated a similar positive opinion about the Project.

An easement would be required for the Project along Paige Avenue, to install the force main outside of public right-of-way. There would be two easements required – a temporary, construction easement and a permanent easement for the City to access the pipeline. Eventually, the force main would be within public ROW, as the road ROW for Paige Avenue is planned to expand to the north in the future and would expand farther north than the permanent easement limits. The parcel impacted is:

- *APN 174-030-011 sold to Donald and Joan Clark on October 20, 2020*

Mr. Clark has indicated receptiveness of a potential easement along the southern edge of parcel number APN 174-030-011, if required by the designed alignment of the new sewer main. An appraisal has been conducted (see [Appendix C](#)) and the cost included in the Project estimate discussed in this memorandum.

5.2 Key Issues

Key issues for the project are discussed below.

- *Matheny Tract community Acceptance*
 - *Community outreach has been ongoing and will continue through the course of the project to ensure Matheny Tract community members support the selected project.*
 - *The property owners will be required to complete a wastewater account setup prior to connecting to the proposed wastewater collection system.*
- *City of Tulare Acceptance*
 - *A letter of commitment and a City Council Resolution approving the project will be required prior to receiving construction funding.*
 - *An agreement between the City and County detailing terms and conditions of the sanitary sewer service connection will be required.*
 - *The Matheny Tract will not be annexed into the City of Tulare through this project.*
- *Obtain Construction Funding*
 - *The preferred project alternative has an estimated capital improvement cost of nearly 23 million dollars including connection fees, easement costs, engineering services fees, and contingency. The SWRCB's CWSRF financial assistance program can provide a 100% grant up to \$125,000 per connection for septic to sewer projects (SWRCB, 2022, p. 85). It is anticipated nearly all residents will be supportive of connection to the City's wastewater collection system, yielding a funding limit of nearly \$36 million dollars. At least two-thirds of the community will need to connect to reach the funding needed for the project; alternately, the SWRCB may approve, on a special basis, a higher per connection grant amount.*

6 References

Carollo. (2017). *DWTP and Collection System Capacity Analysis: Collection System Capacity Analysis*.

Provost & Pritchard Consulting Group. (2016). *Project Feasibility Report: Matheny Tract Wastewater System*. Tulare.

Provost & Pritchard Consulting Group. (2017). *Matheny Tract Wastewater System: Technical Memorandum*. Tulare.

SWRCB. (2022). Clean Water State Revolving Fund, Intended Use Plan, State Fiscal Year 2022-23.

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Appendix

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Appendix A: Past Completed Reports

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PROJECT FEASIBILITY REPORT

MATHENY TRACT WASTEWATER SYSTEM

TULARE COUNTY, CALIFORNIA

JUNE 2015

FINAL DRAFT

Prepared for:

County of Tulare
Resource Management Agency
5961 South Mooney Boulevard
Visalia, CA 93291

Prepared by:

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Fresno, California

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ABBREVIATIONS

ac.....	acres
ACS	American Community Survey
bgs.....	below ground surface
CDP	Census Designated Place
CDPH	California Department of Public Health
CSD	Community Services District
CWSRF.....	Clean Water State Revolving Fund
DAC	Disadvantaged Community
DDW	State Water Resources Control Board, Division of Drinking Water (née CDPH)
DWR	Department of Water Resources
fps.....	feet per second
gpcd.....	gallons per capita per day
gpd.....	gallons per day
MCL	Maximum Contaminant Level
MGD	million gallons per day
mg/l.....	milligrams per liter
MHI	Median Household Income
µg/l.....	micrograms per liter
µmhos/cm	micromhos per centimeter
MWC.....	Mutual Water Company
NRCS	US Department of Agriculture Natural Resources Conservation Service
O&M	Operations and Maintenance
PF	Peaking Factor
PFR	Project Feasibility Report
PMWC	Pratt Mutual Water Company
PUD	Public Utility District
RWQCB.....	Regional Water Quality Control Board
SDAC.....	Severely Disadvantaged Community
SSES	Sewer System Evaluation Survey
sf.....	square feet

PROJECT FEASIBILITY REPORT

County of Tulare, Resource Management Agency

SSMP Sewer System Management Plan
SWRCB State Water Resources Control Board
RMA..... County of Tulare Resource Management Agency
RWD Report of Waste Discharge
TID Tulare Irrigation District
WDR Waste Discharge Requirements
WWTF Wastewater Treatment Facility
WWTP Wastewater Treatment Plant

SECTION ONE

PROJECT FEASIBILITY REPORT

1 INTRODUCTION

1.1 Report Purpose

The purpose of the report is to document the feasibility of a community wastewater system, including sewer mains, treatment options, and wastewater disposal options, to replace on-site septic systems for a small disadvantaged community southwest of the City of Tulare, known as the Matheny Tract.

This Project Feasibility Report is written with a goal of producing several deliverables including:

- A recommended project for the Matheny Tract that is based on evaluation of capital and operation costs, community resident impacts, environmental impacts, implementation feasibility and other considerations.
- Upon approval of the recommended project by the County and other affected agencies and with consideration of the wishes of the Matheny Tract, the following components of work may be completed:
 - Environmental Documents for the recommended project
 - Assistance in preparation of documents and applications required to form a new special district or modify an existing district
 - Assistance in preparation of a Clean Water State Revolving Fund (CWSRF) implementation funding grant application for construction of the recommended facilities
 - Preparation of a Sewer System Management Plan document

Throughout the process, public participation will be encouraged and documented.

1.2 Report Structure

The Project Feasibility Report is prepared and structured in consideration of the County of Tulare's Request for Proposal and CWSRF Technical Report requirements. The structure of the report will satisfy both requirements and includes the following sections.

Section One: Introduction This section presents the purpose, goals and structure of the Project Feasibility Report (PFR), a brief background of the community and the considerations that precipitated the report.

Section Two: Project Area This section presents a description of the project area including vicinity features and boundary, existing and proposed land uses, a discussion of the potential system users and the existing and projected community population.

Section Three: Existing Facilities and Current Water Quality This section discusses the existing wastewater facilities, wastewater flow characteristics and the quality of the groundwater in the vicinity of the community.

SECTION ONE

PROJECT FEASIBILITY REPORT

Section Four: Treatment Objectives for Discharge or Reuse This section presents information concerning the objectives and expected benefits of the project, desired efficiency and operational requirements for potential recommended alternatives, anticipated waste discharge requirements, projected flow rates and a summary of the facilities and actions needed.

Section Five: Project Alternative Analysis This section discusses the design parameters to be used in developing the project alternatives before presenting the alternatives and a comparison of the alternatives.

Section Six: Selected Project This section presents the recommended project alternative including public participation needed to move forward, design criteria, useful life of the project, a preliminary opinion of probable cost, the proposed project schedule, permits required for implementation and key issues to be resolved prior to implementation.

1.3 Background

The Matheny Tract community is located southwest of the City of Tulare (see **Figure 1-1**). The community has a population of 1,212 (United States 2010 Census). There are 296 primarily rural residential lots with average size being 0.5 acres; however, many lots have multiple dwellings or mobiles homes on the property.

The Matheny Tract was originally developed in the 1960s as two tracts, the first on the northeast corner of Addie Avenue and Road 96 (Pratt Street) and the second south of the West Oakland Colony Ditch and east of Road 96. The northern portion of the community was developed with predominantly 1-acre or near-1-acre parcels, while the southern portion was developed with mostly 0.5-acre parcels.

The community has potable water supplied through a community water system which is owned and operated by Pratt Mutual Water Company (PMWC); however, PMWC is in process of building a new water system which will include consolidation with the City of Tulare. Once the project is complete, PMWC will be dissolved.

The community is unsewered and relies on individual on-site septic systems for wastewater disposal. The average lot size indicates adequate space for septic systems with a community water system; however, as noted above there are many lots with more than one dwelling and which may have more than one septic system onsite or have insufficient space to support efficient septic effluent leaching. Additionally, many parcels have been divided, multiple times in some cases, to sizes as small as 6,000 square feet. Nearly 15% of the lots are now less than 12,500 square feet, which is the County of Tulare minimum lot size for septic systems with a community water system.

PMWC has received notices of violation for exceedances of nitrate and coliform in its water supply. In 2002, one of PMWC's three wells, Well 2, was condemned due to high nitrate levels. Well 2 is the shallowest well in the community and was likely impacted by septic and agriculture operations in the area.

SECTION ONE

1.4 Agency Coordination

The Matheny Tract shares a common border on the east side of the community with the City of Tulare (City) and also lies entirely within the Tulare Irrigation District (District). As part of the development of this report and the alternatives discussed in Section 5, discussions were held with both agencies.

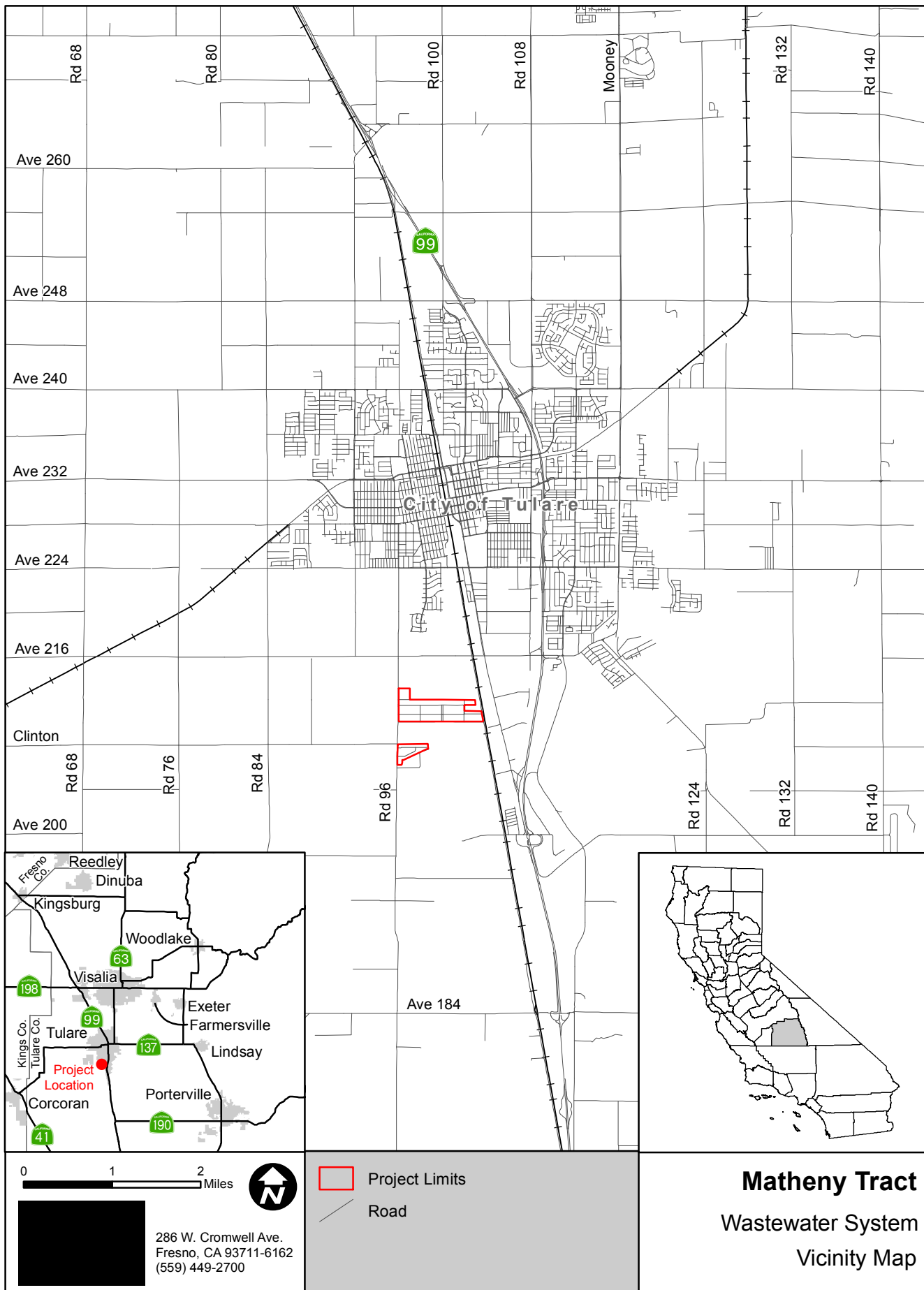
1.4.1 City of Tulare

The City of Tulare, an incorporated city with a population of over 60,000, is included in one of the alternatives presented below. In an effort to develop the alternative sufficiently and accurately, an informational meeting was held with the City to discuss the possible alternative development and to request information on the City's wastewater system and treatment facility. The City indicated they were directing growth away from the southwest area of town in an effort to maintain a buffer around their Wastewater Treatment Facility (WWTF) and would not be supportive of an interconnection with Matheny Tract; however, they also indicated they would provide the information needed to complete the alternative analysis.

In subsequent weeks and months data requests were sent to the City and the majority of the information was provided to the project team. The only major pieces of information that were not provided included the capacity fees the City would charge if the project were to be pursued and a quantification of the WWTF's committed capacity. To compensate for these omissions, the project team used information from the City's municipal code and experience with similar projects in other cities to estimate the capacity fees and the latest published data regarding the remaining capacity of the WWTF was obtained from the City's website.

1.4.2 Tulare Irrigation District

The Tulare Irrigation District (District), an irrigation district encompassing 1,100 acres in the western portion of the County of Tulare, would be impacted by two alternatives presented below. The District was contacted regarding design standards and any additional requirements they may have. The District provided information concerning required crossing depths and common use agreements when crossing the canals; they would also want to review and approve any construction plans prior to beginning construction.



SECTION TWO**2 PROJECT AREA**

The proposed project area is located in Tulare County, within Tulare Irrigation District's boundaries, near the City of Tulare. The site is approximately 60 miles east of the Coast Range Mountains and 25 miles west of the Sierra Nevada Mountain Range. Topographically, the site is at an average elevation of approximately 263 feet above mean sea level and has a general gradual slope from east to west.

All of the Matheny Tract lands are situated in Township 20 South, Range 24 E, MDB&M, in the USGS 7-1/2' (1:24,000) "Tulare" Quadrangle. The northwest portion of the Matheny Tract is within the north half of the southeast quarter of Section 22. The northeast portion of the Matheny Tract is within the north half of the southwest corner of Section 23 and is bounded on the east by the Union Pacific Railroad right-of-way. The southern portion of the Matheny Tract is within the north half of the northeast quarter of Section 27. The majority of that portion is within the northwest quarter of the northeast quarter of Section 27 and a portion is within the northeast quarter of the northeast quarter of Section 27.

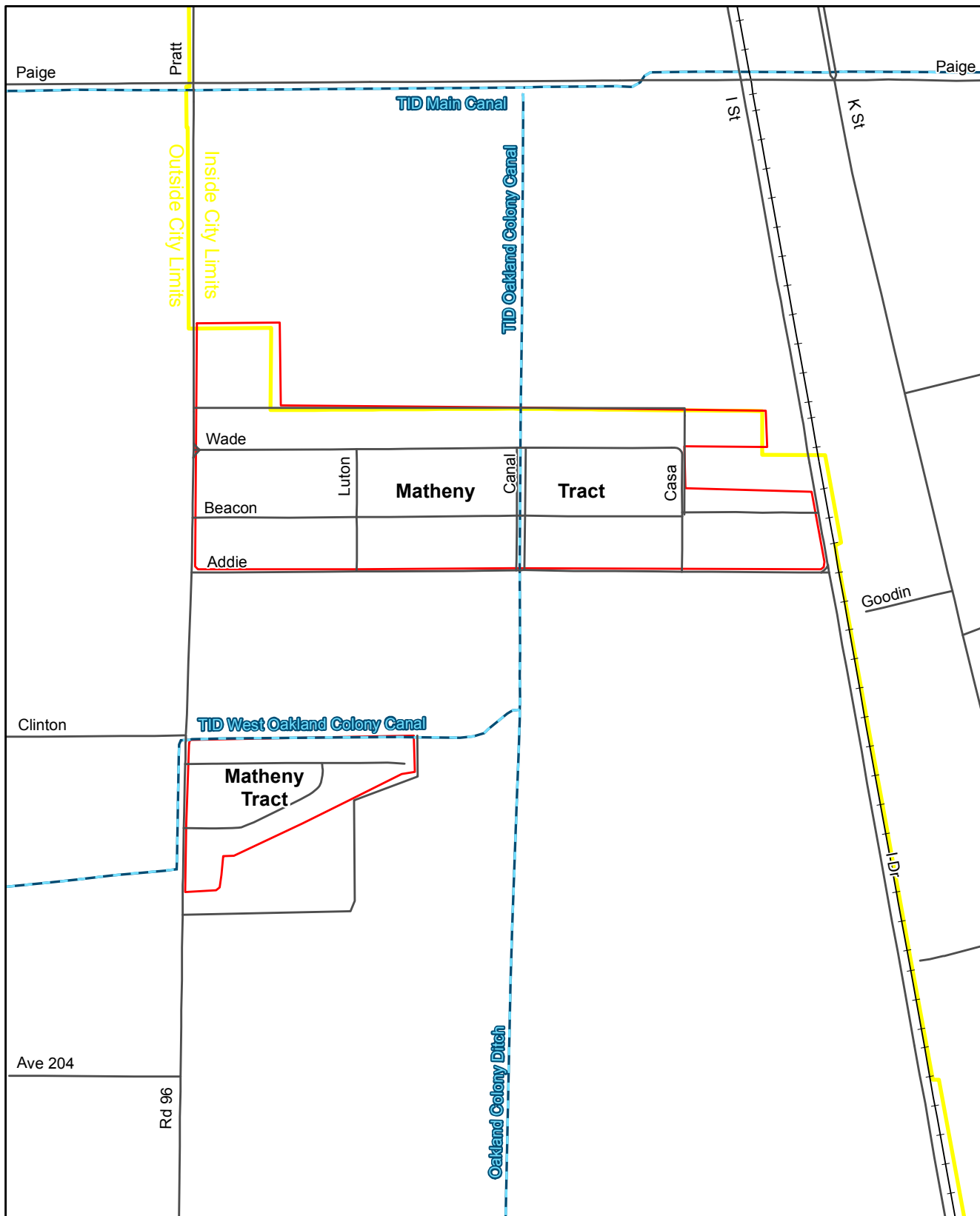
The community overlies Federal Emergency Management Agency – Flood Insurance Rate Map numbers 06107C1262E and 06107C1275E and is located in an area with minimal risk of flooding (see Appendix A).

2.1 Vicinity and Project Boundary**2.1.1 Project Boundary**

As previously mention, the community is separated into two segments, the northern and southern portions (see Figure 2-1).

The northern portion is generally bounded by Road 96 (Pratt Street) and I Street in the east-west directions and Wade and Addie Avenues in the north-south direction. Adjacent to I Street, the Union Pacific Railroad tracks are elevated approximately 10-feet above natural ground surface; these railroad tracks serve as a physical boundary between the City of Tulare and the Matheny Tract.




The southern portion is generally bounded by Road 96 on the west and Prine and Matheny Avenues in the north-south direction. The Matheny Tract is bordered by agriculture lands to the west, north and south; agriculture land also lies between the northern and southern portions of the community.



0 0.125 0.25 Miles



286 W. Cromwell Ave.
Fresno, CA 93711-6162
(559) 449-2700

-  Canal
-  Project Limits
-  City Limits 2012

Matheny Tract

Wastewater System

Project Boundary

SECTION TWO

2.1.2 Existing Features

2.1.2.1 *Hydrological Features*

The Matheny Tract is located within Tulare Irrigation District (TID or District) and has numerous canals around and within its boundaries (as shown on Figure 2-1). North of the project site run TID's Main Canal, bifurcating the northern portion is the Oakland Colony Canal and along the north edge of runs the southern portion the West Oakland Colony Canal. The Main Canal is one of TID's primary canals and is approximately 7 feet deep and 35 feet wide at its top. The Oakland Colony and West Oakland Colony Canals are both smaller canals; the former is approximately 24 feet wide at its top and 5 feet deep while the latter is approximately 11 feet wide and 4 feet deep. Along the eastern boundary of the northern portion there is an out-of-use small ditch, called the Old 99 Ditch. It seldom has water in it and is used primarily for storm drain purposes. There are no other hydrological features within or around the project site.

2.1.2.2 *Geological Features*

There is one soil category within the Matheny Tract area identified by the United States Department of Agriculture Natural Resources Conservation Service (NRCS) as Colpien Loam, 0 to 2 percent slopes (see Appendix B).

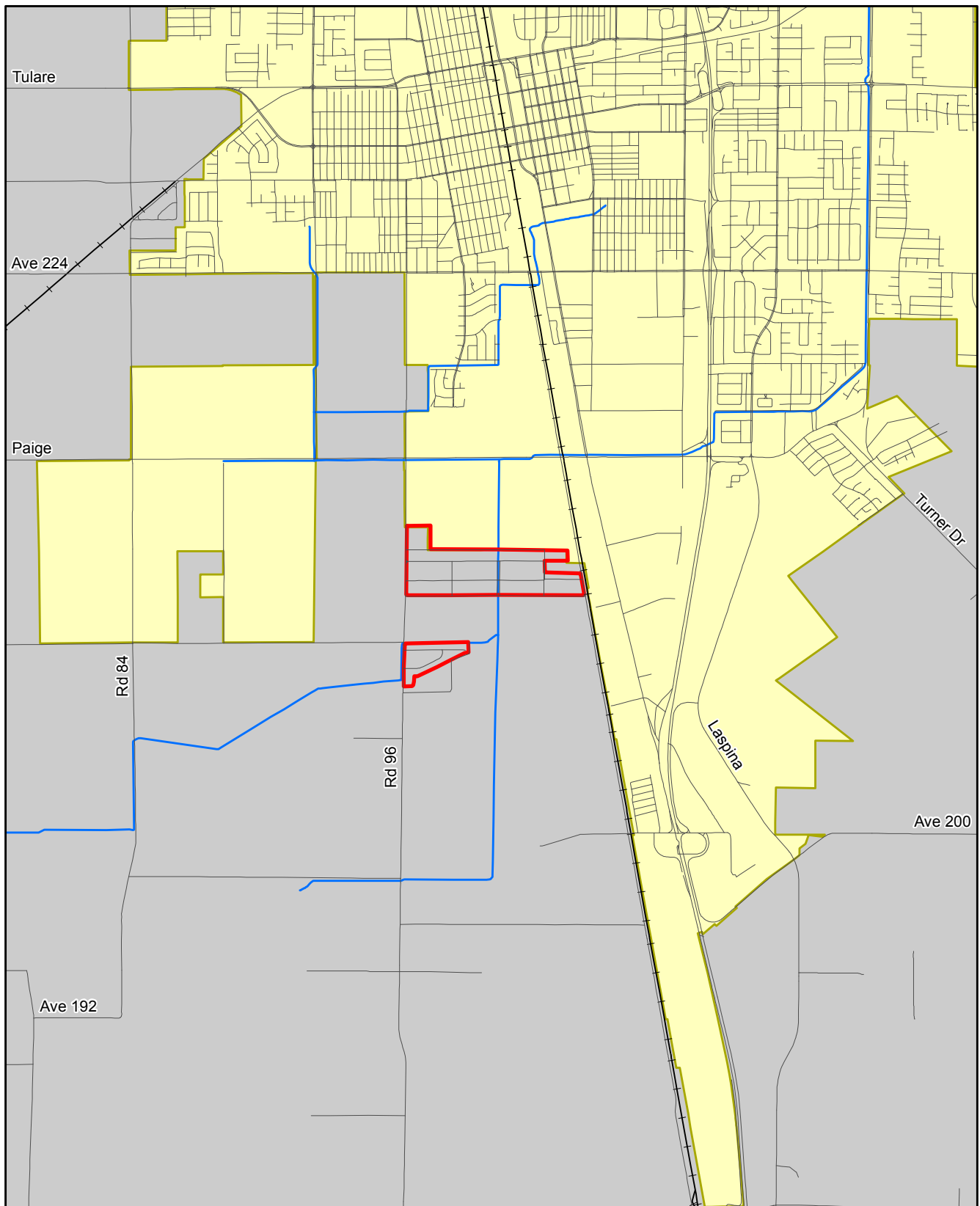
The Colpien Loam consists of very deep, moderately-well-drained soils on terraces that formed in alluvium derived mainly from granitic rocks. These soils are artificially drained. Slopes are 0 to 2 percent. The average annual precipitation is about 10 inches and the average annual temperature is about 63 degrees F. According to the NRCS, a typical soil profile consists of loam between 0 and 60 inches and sandy loam between 60 and 65 inches. The frost-free season is 250 to 300 days. Although Colpien Loam is considered prime farmland if irrigated and protected or free from flooding during growing season, the Matheny Tract is within the City of Tulare's Sphere of Influence. As such, there is no proposed significant impact to the existing soils in the Matheny Tract area.

2.1.2.3 *Topographical Features*

The project site is general flat with approximately 10 feet of downward elevation gradient from east to west. There is a bermed canal that runs through the middle of the northern portion in a north-south direction but otherwise the site is free from significant topographical features.

2.1.2.4 *Agency Boundaries*

The Matheny Tract is located entirely within the County of Tulare, and also entirely within Tulare Irrigation District boundaries. The City of Tulare city limits are located approximately 700 feet of the northern edge of the community and along I Street. The City's sphere of influence, shown in the Public Review Draft of the 2035 General Plan dated November 1, 2013 (see Appendix C), also shows the community within the City's Sphere of Influence. Figure 2-2 shows the project site and relevant agency boundaries.



<p>0 0.5 1 Miles</p> <p>286 W. Cromwell Ave. Fresno, CA 93711-6162 (559) 449-2700</p>	<p> Project Limits</p> <p> Canal</p> <p> City Limits 2012</p>	<p>Matheny Tract</p> <p>Wastewater System</p> <p>Local Agency Boundary</p>
---	---	---

SECTION TWO

2.1.3 Water Resources

2.1.3.1 *Water Supply*

The Matheny Tract's water supply is provided by Pratt Mutual Water Company. PWMC is classified as a community water system and serves a population of 1,212 people. PMWC provides water through two wells on a closed-loop system; the system provides both domestic and fire suppression supplies. The water system is served solely through groundwater.

2.1.3.2 *Ground Water*

The western half of Tulare County is comprised of flat valley lands of the southern San Joaquin Valley, while rolling foothills associated with the Sierra Nevada Mountains characterize its eastern half. Topography consists of flat valley land, gently rolling foothills, and canyons of the Sierra Nevada Mountains. Water bearing units within Tulare County include younger and older alluvium, flood-basin deposits, lacustrine, marsh and continental deposits. The older alluvium is moderately to highly permeable and is the major aquifer for Tulare County. Regional groundwater flow is generally southwestward; however, pumping can affect local groundwater flow direction.¹

Tulare County is located within the San Joaquin Valley Groundwater Basin. The California Department of Water Resources (DWR) Bulletin 118 identifies several groundwater subbasins in Tulare County, including the Kings Subbasin, Kaweah Subbasin and Tule Subbasin. The project is located within the Kaweah Subbasin.

The Kaweah Subbasin underlies central Tulare County west of the Sierra foothills. The major water-bearing units are made up of unconsolidated Pliocene, Pleistocene, and Holocene-age sediments. Continental lacustrine and marsh deposits are found in the western portion of the subbasin, closer to the Tulare Lake bed. Clay beds associated with lacustrine deposits form aquitards that influence the vertical and possibly horizontal movement of local groundwater. The most well-known clay bed is the Corcoran clay, which underlies the western half of the Kaweah Subbasin from 200 to 500 feet below ground surface (bgs). In the western half of the subbasin, where Corcoran Clay is present, the groundwater is confined below the clay. Paleosols or similar oxidized deposits outcrop in the eastern parts of the subbasin closer to the Sierra foothills. The county's population centers of Visalia and Tulare are located within the Kaweah Subbasin. Approximately 44% of the sampled wells were located in the Kaweah Subbasin.

In the Matheny Tract the wells are completed to total depths of 325-feet (Well 1) and 400-feet (Well 3) below ground surface (bgs), possibly beneath the Corcoran Clay layer, though the east edge of the clay is near the Highway 99 alignment and it does not have much if any effect on the hydrogeology at this location. Groundwater recharge in the county occurs through river and stream seepage, percolation of irrigation water, canal seepage, and intentional recharge. Land subsidence of up to 16 feet has occurred due to deep compaction of fine-grained units. This

¹ (State Water Resources Control Board, 2013)

SECTION TWO

subsidence is thought to be due to groundwater withdrawal. The DWR-published ground water contours in the project area are included in Appendix D.

2.1.3.3 Surface Water

The closest surface water ways are the TID canals discussed in Section 2.1.2.1. The Main Canal is approximately 0.5 miles north of the project area and the other referenced canals run through or directly adjacent to the project area.

2.1.3.4 Hazardous Constituents

A review of Identified Hazardous Waste Sites on the EnviroStor Database determined that there are no identified hazardous sites within the Matheny Tract or nearby vicinity.

A review of the Geotracker Database (Appendix E), which is maintained by the California Environmental Protection Agency – State Water Resource Control Board (SWRCB), identifies C&E Feed & Auto Parts (T0610700135), at the northeast corner of Pratt Street and Addie Avenue, as a site with a cleanup status of “Completed- Case Closed” and Curti & Sons, Inc. (T0610700411) at 3235 Avenue 199, as a site with a cleanup status of “Open – Remediation.” The SWRCB defines “Open – Remediation” as an on-going corrective action at a site where the actual construction or implementation activities to accomplish cleanup at the site are in process.

2.2 Land Use

The Matheny Tract is a community primarily comprised of rural residential properties with single-family dwelling units. The area has paved roads which are owned and maintained by the County of Tulare and provide sufficient circulation throughout the community. The County of Tulare is the agency that determines property land use and zoning; however, the area is also considered in the City of Tulare's General Plan.

2.2.1 County of Tulare

The County of Tulare 2030 General Plan, adopted August 2012, identifies the Matheny Tract within the urban development boundary of the City of Tulare (see Appendix F). As discussed previously, the area is characterized primarily by residential lots greater than 12,500 square feet with no lots larger than 5 acres. By County of Tulare definition, the area is a combination of rural residential (1 to 5 acre lots) and low density residential (12,500 square feet to 1 acre lots) land uses².

2.2.2 City of Tulare

The City of Tulare updated its General Plan Land Use Map in 2009; the exhibit identifies the Matheny Tract within the City's Sphere of Influence but outside of the City's Urban Development

² (Tulare County, Resource Management Agency, August 2012)

SECTION TWO

Boundary and with land use designation Suburban Residential. The community is surrounded by land designated as Agriculture on all sides (see Appendix C).

The City is currently updating its General Plan and has released the Public Review Draft (November 2013). The 2035 General Plan, Public Review Draft, shows the Matheny Tract outside of the City limits and the City's Urban Development Boundary; the area does not have a land use designation. The 2035 Land Use Map designates the area directly north of the community as Light Industrial; however, the area surrounding the community on all other sides does not have a land use designation (see Appendix C).

2.3 System Users

2.3.1 Existing System Users

The Matheny Tract is comprised primarily of rural residential parcels with a small number of commercial establishments and churches. There are approximately 1,212 residents in the community with nearly one-third of the community make-up being minors.

There are three commercial businesses within the community: a gas station and convenience store at the northeast corner of Addie Avenue and Road 96 (each would be planned with separate services) and a diesel mechanic shop along Road 96 approximately 500 feet north of Wade Avenue.

There are three churches within the community: New Zion Baptist Church on Beacon Avenue between Canal and Casa Streets, Progressive Missionary Baptist at the southeast corner of Beacon Avenue and Casa Street, and Iglesia Apostólica de la Fe en Cristo Jesus at the southeast corner of Beacon Avenue and Road 96.

2.3.2 Future Users

It is not anticipated that new users will be added to the system in the future. PMWC, in 2003, requested a moratorium to prevent further development due to water supply concerns.

2.4 Project Area Population

2.4.1 Current and Projected Population

According to the 2010 Census data the population of the Matheny Tract is 1,212 people; however the American Community Survey (ACS) updates the housing estimates annually. The following table shows the data from the last three ACS 5-year estimates (prior population data is not available).

SECTION TWO

Table 2-1: Community Population	
Year	Population
2010 [*]	1,212
2011 ^{**}	1,116
2012 ^{***}	1,119
2013 ^{****}	1,130
<i>Notes:</i> [*] 2010 Census ^{**} 2007-2011 ACS 5-year Estimates ^{***} 2008-2012 ACS 5-Year Estimates ^{****} 2009-2013 ACS 5-Year Estimates	

Based on the population estimates shown above and the building moratorium, it is not anticipated that population will grow in the future. For the purposes of this project, it is assumed the population will remain at or near 1,200 individuals. The average household size was shown in the 2010 US Census as 3.79 persons.

2.4.2 Social Economic Characteristics

The 2008-2012 ACS 5-year estimate shows the Median Household Income (MHI) for the Census Designated Place (CDP) of the Matheny Tract to be \$28,750³ (\pm \$2,662 Margin of Error), which is 46.8% of the \$61,400 statewide MHI for the same period. Any community with an MHI less than 80% or 60% of the statewide MHI is identified respectively as a Disadvantaged or Severely Disadvantaged Community (DAC or SDAC); based on the information presented, the Matheny Tract would classify as an SDAC⁴.

The demographics of the population within the community are predominantly Hispanic (73.4%) and largely under age 20 (41.1%).

³ (United States, American Community Survey, 2008-2012)

⁴ (State of California, Public Resource Code)

SECTION THREE

3 EXISTING FACILITIES AND CURRENT WATER QUALITY

3.1 Existing Facilities

3.1.1 Existing System Description

The Matheny Tract residents use septic systems located on each lot to dispose of their effluent discharge. The septic systems mainly consist of a concrete tank providing rudimentary wastewater treatment, which then discharges effluent to a leach field or leach pit. The septic tanks are typically located behind the primary or first residence constructed on the property; leach field locations vary and are not necessarily part of the public record.

3.2 Existing Flow Characteristics

3.2.1 Lot Sizes

As discussed in Section 2, the lot sizes vary broadly from approximately 6,000 square feet (sf) to 4.7 acres (ac). The smaller lots typically have one dwelling, while the larger lots can have as many as three dwellings (often a mixture of fixed houses and mobile homes). Based on visual inspection there are approximately 320 dwellings within the community on 290 residential lots; approximately one-third of the dwellings are mobile homes. The following table identifies how many fixed and mobile homes, churches, and commercial establishments are in the area.

Table 3-1: Dwellings Summary	
Type of Use	Estimated Number of Uses
Dwellings	320
Church	3
Commercial (Small Store)	3

3.2.2 Waste Generation Estimates

The flowrates for the wastewater loading on the new system were estimated by using the typical wastewater flow rates for nearby communities and applying those numbers to the Matheny Tract community (see WDRs for Tipton, Tulare and Woodville in Appendix G). The following table shows the unit flowrates used.

SECTION THREE

Table 3-2: Waste Generation Estimate	
Type of Use	Unit Flowrate
Residential	72 gpcd
Church	8 gal/attendee ⁵
Small Store	10 gal/employee ⁵

As discussed above, there are approximately 1,212 people in the Matheny Tract. By using 50 attendees at church services per church site, once per week, and 4 employees (average) at the local commercial establishments, the community wastewater estimate is 87,500 gallons per day (gpd) or 72 gallons per capita per day (gpcd). This value is well below the threshold of 120 gpcd that would require a Sewer System Evaluation Survey (SSES); an SSES will not be prepared for this project.

Wastewater generation can also be estimated by taking 90 percent of the winter daily water use. Based on water use records, 90 percent of the average winter month (November through February) water use is 107,320 gpd or 89 gpcd.

Based on these methods, the wastewater flow from Matheny is conservatively estimated to be approximately 110,000 gpd; however the plant should be designed to accommodate 130,000 gpd to account for high flows in the summer months.

3.2.3 Wastewater Characteristics

The flow rates from the City of Tulare, Woodville Public Utilities District (PUD) and Tipton Community Service District (CSD) were reviewed (see Appendix G). According to each community's Waste Discharge Requirements, the City of Tulare has a permitted capacity of 6 million gallons per day (MGD), Woodville PUD has a permitted capacity of 0.33 MGD and Tipton CSD has a permitted capacity of 0.4 MGD. The communities all operate below their permitted capacity, with an average waste generation rate of approximately 72 gpcd.

The raw wastewater characteristics from the Matheny Tract to be used for the purposes of this report and design calculations of the selected alternative are shown in the following table. The reference source identified three levels of influent, low, medium and high; the medium characteristics have been selected.

⁵ (Metcalf & Eddy, Inc, 2003), pg 157

SECTION THREE

Table 3-3: Influent Characteristics ⁶	
Constituent	Design Values
BOD, 5 day (mg/l)	350
TSS (mg/l)	400
Total N (mg/l)	70
Ec (µmhos/cm)	Source + 500

3.2.4 Seasonal Variations

The community has seasonal variations due to climatic factors and user impacts. The annual average water use per person in the Matheny Tract is 175 gpcd. During the summer months the average water use is 252 gpcd, while during the winter months the average is 98 gpcd.

During the summer months (May through August), the climate is hot and dry, necessitating more outdoor water usage for irrigation and recreation. Wastewater generation is exacerbated by summer break from school for children, increasing the daily average loading. The community is not home to a school; therefore, during non-summer months, the wastewater generation by school-aged children is not realized in the community for a large portion of each weekday. For design purposes, the dry-weather conditions are used to account for the highest wastewater generation.

3.3 Water Quality

The community is solely reliant on groundwater supply. The drinking water standards specify allowable levels for constituents of concern in the area (Arsenic and Nitrate). The Maximum Contaminant Level (MCL) for Arsenic and Nitrate are 10 µg/L and 45 mg/L, respectively. In addition, the water quality characteristics must meet the Federal and State drinking water standards for other regulated constituents.

3.3.1 Past Water System Violations

PMWC has received several Notices of Violation from the California Department of Public Health (CDPH). In 1999 and 2000, Well 2 was cited several times for exceeding the MCL for nitrate, resulting in the well's condemnation in 2002 by DHS. With the development of the lower 10 µg/L MCL for Arsenic in 2006, the remaining two wells of the water system are now in exceedence.

The presence of Nitrate at levels well above the MCL in Well 2 was attributed to the shallowness of the well; the shallow groundwater has been affected by both septic systems and agricultural uses in the surrounding area.

⁶ (Metcalf & Eddy, Inc, 2003), Table 3-15

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From 2002 to 2010, Pratt MWC conducted 8 and 12 sampling events on Wells 1 and 3, respectively. The average Arsenic concentration was 15.0 µg/L at Well 1 and 11.9 µg/L at Well 3; substantially above the 10 µg/L MCL.⁷

⁷ (State Water Resources Control Board, 2012)

SECTION FOUR**4 TREATMENT OBJECTIVES FOR DISCHARGE OR REUSE****4.1 Purpose, Objectives and Expected Benefits of the Project****4.1.1 Purpose of the Project**

The Matheny Tract is presently unsewered with wastewater disposal provided via individual septic systems that date to the 1960s. The septic systems are failing due to age, lack of maintenance and insufficient percolation capacity of the underlying soils. As discussed previously, it is generally understood the failing septic systems are contributing to the occurrence of locally high nitrate in the shallow aquifer.

Continued use of the existing septic systems without repair or modification is not feasible as the systems can be expected to continue to fail, resulting in an increasing public health problem, as other communities in the area, such as Plainview, have already experienced.

This Report analyzes the wastewater disposal needs of the community, identifies and analyzes four potential alternative solutions and recommends a preferred alternative. Once the preferred alternative has been selected and key issues dealt with in a manner to allow the project to move forward, the environmental documents, construction documents and other related work will be completed. This Report will then serve as the basis for a construction funding application.

4.1.2 Objective /Expected Benefits

The objective of the project is to provide the community with a viable, sustainable solution for their wastewater disposal needs.

The expected benefits of the project include the following:

- Eliminating the continuation of groundwater contamination
- Provide assistance to a Disadvantaged Community
- End reliance on aging and failing individual septic systems
- Eliminate individual exposure to major repair costs
- Establish affordable and stable wastewater disposal charges

4.2 Performance Characteristics for Efficient Treatment

Typically, wastewater treatment and disposal systems for small communities must provide efficient treatment of wastewater generated by the community by exhibiting the following performance characteristics:

- Efficient reduction of levels of BOD and TSS in the influent wastewater.
- Provide cost effective treatment of wastewater that is affordable (both capital and operations costs) to the community.

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- Provide treatment processes that are easily operated and maintained by the community and meet the requirements of the RWQCB's Waste Discharge Requirements for the treatment facility.

4.3 Health-Related Water Characteristics

The wastewater system design must consider several items as they relate to water characteristics and community health including, on-site, operation and discharge requirements.

The wastewater collection system must comply with DDW minimum separation requirements, minimum slope and velocity requirements (discussed in further detail in Section 5), and other relevant system requirements to be further defined with the selection of a recommended alternative.

Operation of a wastewater collection and/or treatment system must comply with RWQCB Waste Discharge Requirements, agency requirements of the jurisdictional agency and County of Tulare requirements. These requirements will also be further defined with the selection of a recommended alternative.

Waste discharge requirements are discussed in the following section.

4.4 Anticipated Waste Discharge Requirements

The community does not have a community wastewater system and therefore does not have Waste Discharge Requirement (WDRs) at this time; however, at such a time that a recommended alternative is defined, an outline of a Report of Waste Discharge (RWD) would be prepared for use when design of facilities is completed. An Antidegradation Analysis would also be required for the evaluation of a new or modified wastewater system, to define the potential degradation of groundwater quality in the area and identify potential measures to mitigate the degradation resulting from installation of the system.

If the recommended alternative is to connect to an existing wastewater system, it is possible that a modified RWD would be required for that facility, together with an explanation of necessary expansion or upgrade to accommodate the added flow from the Matheny Tract.

A community wastewater system would be required to conform to the Basin Plan as regulated by the Central Valley Regional Water Quality Control Board. It is anticipated that the volume or flow and the geographical location of the system would likely result in the disposal of effluent through evaporation/percolation ponds. The anticipated WDRs would include a limit of BOD at 40mg/l, TSS at 40mg/l, and EC the lesser of 1,000 μ hos/cm or 500 μ hos/cm above the source drinking water.

4.5 Operation Requirements

Operation requirements will vary depending on the treatment and disposal process selected. Wastewater treatment and disposal alternatives are presented later in this report and will include a paragraph describing the operation requirements for each alternative presented.

SECTION FOUR**4.6 Projected Future Flow Rates**

As discussed previously, growth is not anticipated in the community, nor is it encouraged. For purposes of this Report, it is assumed the future flow rates will not exceed the present design flow rates.

4.7 Additional Facilities or Actions Needed

Until such a time as the outline of the WDRs or the RWD has been prepared, it will not be known whether additional facilities or actions will be needed; it is anticipated that none will be required. The purpose of Section 6 is to identify and discuss all such potential future facilities and address actions needed.

5 PROJECT ALTERNATIVES ANALYSIS

This section discusses and analyzes four project alternatives:

- Alternative 1: On-Site Systems with a Septic Maintenance District
 - This alternative would provide replacement of the existing on-site septic systems with systems that denitrify wastewater before discharging it, and would provide for continuation of proper maintenance of the systems by creating a Septic Maintenance District.
- Alternative 2: Gravity Collection System, Consolidation with the City of Tulare
 - This alternative would provide construction of a wastewater collection system throughout the community with a main connection to the City of Tulare wastewater collection system and ultimate delivery to the City of Tulare Wastewater Treatment Plant (WWTP). This alternative assumes that the City of Tulare will ultimately own and operate the Matheny Tract collection system and main connection to the City of Tulare.
- Alternative 3: Gravity Collection System with Community Wastewater Treatment Facility
 - This alternative would provide for construction of a wastewater collection system similar to the one shown in Alternative 2; however it would also provide for construction of a small independent Wastewater Treatment Facility (WWTF) within or near the Matheny Tract. This alternative would also require creation of an agency to manage and operate the community WWTP and collection system.
- Alternative 4: No Project
 - This alternative would maintain the community in its current condition with no improvement to the existing septic systems. All operations and maintenance responsibility would remain with the individual property owners.

5.1 Design Parameters

5.1.1 Relevant Design Criteria

The design criteria for the collection system facilities are summarized in **Table 5-1**.

SECTION FIVE**PROJECT FEASIBILITY REPORT****Table 5-1: Collection System Design Criteria**

Parameter	Units	Peaking Factor	Design Value
Average Daily Flow	gpd		130,000
Peak Daily Flow	gpd	1.6	208,000
Peak Hourly Flow	gpd gph*	3.0 ⁸	390,000 16,250
Minimum Separation (from existing Water main)	feet		10
Minimum Cover	feet		4
Minimum Manhole Spacing, maximum	feet		350
Lift Station Depth, maximum	feet		25
Gravity Sewer Velocity	feet per second (fps)		Minimum: 2 (at average daily flow) Maximum: 10
Force Main Velocity,	fps		Minimum: 2 Maximum: 10
Gravity Sewer Slope, minimum	ft/ft		8-inch main: 0.0033 10-inch main: 0.0025 12-inch main: 0.0019

*Notes:**A Daily Peaking Factor (PF) of 1.6 was used**An Hourly PF of 3.0 was used*** gph = gallons per hour*

⁸ The City of Tulare utilizes a Peaking Factor (PF) of 2.1 (Carollo Engineers, 2009); for the purposes of Alternative No. 2 discussed below, the City PF will be used, resulting in a Peak Hourly Flow of 273,000 gpd; Alternative No. 3 will conservatively use the PF of 3 as indicated in Table 5-1.

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The design criteria for the Treatment and Disposal facilities are summarized in **Table 5-2**.

Table 5-2: Treatment and Disposal Design Criteria			
Parameter	Units	Influent	Effluent
Average Dry-Weather Daily Flow (ADWF)	million gallons per day (MGD)	0.13	
Peak Daily Flow	MGD	0.21	
Peak Hourly Flow	MGD	0.39 ⁹	
BOD, 5-day	mg/l	350 ¹⁰	40
TSS	mg/l	400 ¹⁰	40
Total N	mg/l	70 ¹⁰	10
Ec	µmhos/cm	500+source	500+source
<i>Notes:</i> A Daily Peaking Factor of 1.6 was used An Hourly Peaking Factor of 3.0 was used			

5.1.2 Miscellaneous Design Parameters and Assumptions

The following assumptions and other parameters have been identified for use in the Alternative analysis that follows this subsection.

- Cost Index: The cost opinions have been prepared utilizing bid canvasses of past similar projects and the engineer's experience with similar projects. Cost opinions are presented in 2014 dollars
- Discount Rate: 3%
- Useful Life
 - Collection System: 50 years
 - Community Wastewater Treatment Facility
 - Structures: 40 years
 - Equipment: 15-25 years¹¹
- Planning Period: 30 years

5.1.3 State Planning Priorities

All of the following alternatives, with the exception of Alternative No. 4: No Project, will fulfill the first State Planning Priority, which is stated in the Government Code, §65041.1(a):

To promote ... equity by rehabilitating, maintaining, and improving existing infrastructure that supports ... appropriate reuse and redevelopment of previously developed, underutilized land that is presently served by transit,

⁹ Alternative No. 2, discussed below, will use a Peak Hourly Flow of 0.273 MGD (see Table 5-1 and related footnotes for more information.

¹⁰ (Metcalf & Eddy, Inc, 2003), Table 3-15

¹¹ (State Water Resources Control Board, 1998)

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streets, water, sewer, and other essential services, particularly in underserved areas...

Each of these project alternatives provides a sustainable solution for wastewater service in a disadvantaged community already served by water, streets, fire protection, police protection, and dry utility services (power, telephone, cable, gas, etc).

5.1.4 Sustainable Water Resources Management Priorities

Various alternatives, with the exception of Alternative No. 4: No Project, will fulfill the following Sustainability Goals stated in *Opportunities to Advance Sustainability in California's CWSRF Program*¹²:

- Sustainability Goal 5: Encourage a robust analysis of alternatives
 - This Report fulfills the intent of Goal 5 by providing four project alternatives (three construction projects plus “no project”), fully analyzing each and preparing a comparison to identify the preferred alternative.
- Sustainability Goal 6: Encourage project alternative analyses to consider regional solutions
 - Alternative No. 2 fulfills this Goal by presenting and analyzing the potential for consolidation with the City of Tulare.
- Sustainability Goal 8: Consider localized community wastewater treatment solutions to address polluting septic systems and encourage responsible management plans.
 - Alternatives No. 1 and 3 fulfill this Goal by presenting potential solutions which would create a localized wastewater collection and treatment system.

5.2 Alternative 1: On-Site Systems with a Septic Tank Maintenance District

5.2.1 Description of Alternative

This alternative would entail removal and replacement or reconstruction of the existing septic systems on each individual property throughout the community. In order for this option to be feasible, the new septic systems would have to reduce nitrate levels in the wastewater to below 10 mg/l to avoid degrading the underlying groundwater. Such a level of nitrate reduction is difficult to achieve on a reliable basis in a non-mechanized treatment process. Installation of new septic treatment systems would be expensive to accomplish in an existing developed community where locations for the new septic systems and leach fields will be limited and difficult to find.

Construction and maintenance of the new septic systems and leach fields would be carried out by the Septic Tank Maintenance District, which would be formed prior to commencement of project construction. Easements for installation and maintenance for each system would be obtained from each affected property owner. Once construction is completed, the Septic Tank Maintenance District would continue routine maintenance of the septic systems. A monthly rate

¹² (US EPA, 2012)

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would be established and each property owner would pay his or her pro-rata share of the cost of such maintenance on an ongoing basis.

5.2.2 Life Cycle Cost of Alternative

The initial capital costs of this alternative include abandoning all existing septic systems and installing new septic systems throughout the community; the Operations & Maintenance (O&M) costs associated with this project consists of triennial septic tank pumping, annual inspections and general maintenance. An Engineer's Opinion of Probable Construction Cost has been prepared and is included in Appendix H. The costs associated with this alternative are briefly summarized in **Table 5-3**.

Table 5-3: Alternative No. 1 Total Cost Estimate	
Item Description	Subtotal
System Improvements	\$14,027,000
Contingency	\$2,805,400
Engineering	\$1,402,700
Total Project Costs	\$18,235,100
Annual Operations & Maintenance Costs	\$263,300
Cost per Month per Connection	\$74
Present Worth Cost	\$3,917,239
Total Project Costs + Present Worth Costs	\$22,152,339

The total project costs equate to a monthly cost of \$74 per property, which is approximately 3.1% of the community's MHI. A commonly referenced affordability level for sewer service as being is 1.5% of the community MHI; the monthly cost associated with this alternative would exceed the affordability level.

5.2.2.1 *Replacement Costs*

At the end of the septic system useful life, the replacement costs would be the same as installation costs plus inflation, generally at a rate of 3 percent and would be borne entirely by each property owner as the system fails; however, with proper maintenance, the septic systems will have a useful life beyond the planning horizon of this Report.

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5.2.3 Advantages and Disadvantages

The advantages and disadvantages of this alternative are presented in **Table 5-4**.

Table 5-4: Alternative No. 1 Advantages and Disadvantages	
Advantages	Disadvantages
Maintains local control of wastewater treatment.	High capital and O&M costs
	Difficulty denitrifying wastewater consistently
	Requires creation of new Special District
	Assessment of a fee on properties within the community
	Approximately 15% of lots within the community are below the 12,500 sf minimum lot size for individual septic systems. Implementing this alternative would require a variance to Tulare County's minimum lot size requirements. It is not clear how the County would make the required findings of necessity in order to approve the variance.
	Many lots within the community have limited space for a new septic system due to existing improvements (multiple buildings/dwellings). Tulare County typically requires an area set aside to provide for replacement in the event that the septic system fails. This requirement could be possibly waived for existing housing.

5.2.4 Climate Changes

This Alternative would not have an effect on climate change and would, at most, be minimally affected by climate change. If a drought persists in the area and water use is curtailed, there could potentially be a lower liquid to sludge ratio in the septic systems, which may lead to the need for more frequent pump-outs or maintenance costs.

5.3 **Alternative 2: Gravity Collection System and Consolidation with the City of Tulare**

5.3.1 Description of Alternative

This alternative consists of constructing a new gravity wastewater collection system, likely with at least one lift station, and connection to the City of Tulare's wastewater collection system. New

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sewer services and onsite plumbing would be required to connect each property to the new wastewater collection system and the existing septic systems would require proper abandonment.

5.3.1.1 *Project Components*

The components of this project alternative would entail the following items:

- Construction of
 - new gravity wastewater collection system throughout the Matheny Tract
 - one or more lift stations, including new points of electric service
 - sewer laterals from each property, with connection to each existing residence
- Connection to the City of Tulare's existing 27-inch sewer main at Paige Avenue and K Street
 - Construction of 2,900 feet of 12-inch sewer main in Pratt Street from Matheny Tract to Paige Avenue.
- In-place abandonment of existing septic systems and leach fields
- Conduct a Proposition 218 Election
- New utility account setup for all residents with the City of Tulare
- Payment of capacity fees to the City for each property
- Modifications to the City's existing Sewer System Management Plan (SSMP)
- Update the City's Report of Waste Discharge (RWD)

The City of Tulare has indicated the existing 27-inch sewer trunk main in Paige Avenue at Pratt Street is at 70 percent capacity and would be able to accommodate an additional 0.36 MGD. As discussed in Section 5.1, when utilizing the City's Peaking Factor of 2.1, the capacity needed for the project is 0.27 MGD; therefore the new improvements could make use of the existing 27-inch sewer main

A preliminary layout of the Matheny Tract collection system is shown in Appendix I. The layout includes 8-inch PVC sewer mains within the community and 8- to 12-inch sewer mains in Pratt Street, flowing north to the intersection of Paige Avenue and Pratt Street. Four-inch sewer service house branches would be provided to each residential property and six-inch sewer services would be provided to the churches and commercial establishments.

5.3.1.2 *Willingness of Neighboring System*

The City of Tulare was contacted to determine a willingness to be a participant in this study to identify alternative; the City indicated it was willing to be identified in the Report and would cooperate with requests for information to facilitate the analysis of the alternative. Willingness to be identified in the Report does not indicate willingness to approve the alternative, if it is identified as the preferred alternative. Early discussions with the City of Tulare have indicated the City is reluctant to extend wastewater service into the community as the City feels doing so would not be consistent with its General Plan or the City's growth objectives. Additional discussions and review of the alternative analysis by the City, as well as positive action by the

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City Council to approve the consolidation, would be required prior to acceptance of the alternative.

5.3.1.3 *Capacity of Neighboring System*

The City of Tulare's WWTP has two components, a Domestic Plant and an Industrial Plant.

The Domestic Plant has a permitted capacity of 6.0 MGD, with a plan to increase the capacity to 8 MGD in the future. Of the current 6.0 MGD capacity, existing development within the City uses 4.9 MGD and approved future development will utilize 0.2 MGD, for a total committed capacity of 5.1 MGD, some 85% of the total permitted capacity. Of the remaining 0.9 MGD capacity, the Matheny Tract use would be 0.13 MGD, bringing the plant to 87% of available capacity.

The Industrial Plant has a permitted capacity of 12.0 MGD with a total committed capacity of 7.6 MGD, approximately 65% of the permitted capacity.

The RWQCB begins to look for applications for plant and permit expansion when ADWF exceeds 80% of available capacity. The City filed a Report of Waste Discharge in support of phased increases in discharge flow including a future increase to 8.0 MGD; in the meantime, the City intends to postpone capital expenditures for the Domestic Plant upgrade by using the available treatment capacity of the Industrial Plant to treat the excess Domestic Plant influent.

The Matheny Tract would not be the trigger for the expansion of the domestic WWTP, since it is already in the window where planning for expansion must begin. However, the community should be required to pay its pro-rata share of the cost of the needed improvements at the WWTP. The project would be required to compensate the City for the capacity used by paying capacity and possibly Development Impact fees in an amount to be determined. An estimation of \$2,500 per equivalent dwelling unit has been included based on experience with similar, nearby communities, and can only be expected to rise with additional funding obligations.

5.3.2 Life Cycle Cost of Alternative

The initial capital costs of this alternative include constructing a wastewater collection system, abandonment of the existing septic systems, permitting fees and connection/ Development Impact fees. An Engineer's Opinion of Probable Construction Cost has been prepared and is included in Appendix J. The capital, operation and maintenance costs are briefly summarized in **Table 5-5**.

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Table 5-5: Alternative No. 2 Total Cost Estimate	
Item Description	Subtotal
Wastewater Collection System	\$4,897,340
Connection to City of Tulare	\$1,896,460
Contingency	\$1,358,760
Engineering	\$679,380
Total Project Costs	\$8,831,940
Annual Operations & Maintenance Costs	\$150,200
Cost per Month per Connection, minimum	\$42
Present Worth Cost	\$2,234,478
Total Project Costs + Present Worth Costs	\$11,066,418

The ongoing responsibility for Operation & Maintenance (O&M) costs and Replacement costs of the project would be borne by the City; the funding for those expenses would be built into the sewer rates paid by the residents of the Matheny Tract.

The City's current sewer rate is \$42 per account on a monthly basis; this would be the minimum monthly cost per connection and could be higher if special fees were assessed for the Matheny Tract customers. Possible special fees could include Out of Service Area fees or loan repayment costs. The current sewer rate is approximately 1.75% of the community's MHI. While this exceeds the lowest affordability level for sewer service (1.5%), it is within an acceptable range (1.5%-2.5%); the monthly rate would be considered appropriate for the community and would not be considered overly burdensome.

5.3.3 Advantages and Disadvantages

The advantages and disadvantages of Alternative 2 are presented in **Table 5-6**.

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Table 5-6: Alternative No. 2 Advantages and Disadvantages	
Advantages	Disadvantages
Wastewater collection and treatment becomes a City function	The local community may have little input into the ongoing operation of the system and perceive loss of control.
The costs to own and operate an individual wastewater treatment facility are avoided; the community would benefit from certain economies of larger-scale operation.	Reluctance of the City to provide wastewater service in this area.
The City receives additional operating revenues to operate and maintain their WWTP	
Lowest monthly operations costs of the alternatives considered	
Capital expenditure may be eligible for grant funding	
New special district formation is avoided	

5.3.4 Climate Changes

This Alternative would have an effect on climate change due to increased electricity consumption by the WWTP. This impact would be minimized by the use of high-efficiency electrical equipment and control strategies to minimize electricity use. Additionally, if a drought persists in the area and water use is curtailed, there could potentially be a lower liquid-to-sludge ratio in the wastewater treatment system, which could lead to operational adjustments at the City's WWTP; however, the City is already contending with this situation with its existing users due to the current drought.

5.4 Alternative 3: Gravity Collection System with Community Wastewater System**5.4.1 Description of Alternative**

This option would be similar to Alternative 2 in that a new collection system would be constructed to provide wastewater collection. Instead of connecting to the City of Tulare, a new wastewater treatment plant, designed to produce denitrified secondary effluent, would be constructed adjacent to the community. After treatment, the effluent would be discharged to evaporation/percolation ponds located at the treatment plant site. The plant would consist of the following components:

- **Influent Lift Station and Headworks:** In addition to lift stations located in the collection system, the plant will require an influent lift station located on the plant site. This lift station would discharge through an influent flow meter to an at-grade inclined auger,

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auto-cleaning fine screen to remove large solids. Grit removal would also be provided to avoid grit buildup in the downstream treatment processes.

- **Biological Process:** A number of candidate biological processes exist for treating wastewater. These include:
 - Sequencing batch reactor
 - Complete-Mix Activated Sludge (CMAS)
 - Extended Aeration Activated Sludge (ExAAS) Oxidation Ditch
 - ExAAS Biolac™
 - ExAAS Aeromod Sequox®
 - STM Aerotor™
 - Membrane Bioreactor (MBR)

For small communities constructing new wastewater collection and treatment facilities, the Biolac™ process has proven to be cost-effective and easy to operate, providing a reliable treatment system without the need of significant operator attention. There are a number of installations in California including the communities and cities of Orange Cove, Caruthers, Willows and Windsor. Effluent quality is good and the process can reliably denitrify wastewater to less than 10 mg/l.

The Biolac™ process consists of an aeration basin, clarifiers, sludge pumping and blowers. Layout of the proposed plant would be similar to the exhibit included as Appendix K, which was developed for a similarly-sized facility.

- **Sludge Handling:** Waste activated sludge (WAS) from the treatment process would be dried on sludge drying beds. The dried product could be disposed of at a bioenergy facility, composting facility or at a landfill.
- **Effluent Disposal:** Effluent would be applied to evaporation/percolation ponds located adjacent to the WWTP.
- **Other Facilities and Equipment:** Water for plant operation would be provided by the community's potable water system. Storm drainage runoff would be retained in an onsite retention pond. An emergency generator would be provided in the event of power failure. An office/lab building would be provided.
- **Disinfection of the effluent** is not required by the RWQCB for plants of this type when disposal is to evaporation and percolation.

5.4.2 Life-Cycle Cost of Alternative

The initial capital costs of this alternative include construction of a wastewater collection system, abandonment of the existing septic systems, construction of a new wastewater treatment facility and evaporation/percolation ponds for effluent disposal, permitting fees and connection fees. An

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Engineer's Opinion of Probable Construction Cost has been prepared and is included in Appendix L. The costs are briefly summarized in **Table 5-7**.

Table 5-7: Alternative No. 3 Capital and Operations Cost Estimate	
Item Description	Subtotal
Wastewater Collection System	\$4,897,340
Wastewater Treatment Plant	\$2,915,700
Contingency	\$1,562,608
Engineering	\$1,171,956
Total Project Costs	\$10,547,604
Annual Operations & Maintenance Costs	\$460,000
Cost per Month per Connection ¹³	\$129
Present Worth Cost	\$6,844,092
Total Project Costs + Present Worth Costs	\$17,391,696

The ongoing Operation & Maintenance (O&M) costs and Replacement costs of the project would be borne by the community. A public entity would likely need to take over operation and management of the collection and treatment facilities. This entity could be Tulare County or a special district formed for this purpose. Actual operation could be by employees of the operating entity, or operations could be contracted out to a private firm specializing in such services. A detailed estimate of O&M costs is included in the Engineer's Opinion of Probable Construction Cost for this alternative in Appendix L.

The residential sewer rate calculated above is \$129 per month for residential users, which is approximately 5.4% of the community's MHI; this rate would far exceed the 1.5% affordability level for sewer service.

5.4.3 Advantages and Disadvantages

The advantages and disadvantages of this alternative are presented in **Table 5-8**.

¹³ The monthly cost does not include any debt service component. The funding source may award 100% grant to a community that shows inability to repay a loan; it is anticipated the community could demonstrate a loan would be an excessive burden, eliminating any loan for the community to bear.

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Table 5-8: Alternative No. 3 Advantages and Disadvantages	
Advantages	Disadvantages
Maintains local control of wastewater collection and treatment.	Relatively high capital expenditures required
Capital expenditures eligible for grant funding	The costs to own and operate a community wastewater treatment facility are borne solely by the community, no economies of scale.
	Special district formation is required for funding and permitting.
	Does not conform to the RWQCB's policy opposing the proliferation of small wastewater treatment plants when consolidation with another agency is a viable option.

5.4.4 Climate Changes

This Alternative would have an effect on climate change due to increased electricity consumption by the WWTP. This impact would be minimized by the use of high efficiency electrical equipment and control strategies to minimize electricity use. Additionally, if a drought persists in the area and water use is curtailed, there could potentially be a lower liquid to sludge ratio in the wastewater treatment system.

5.5 Alternative 4: No Project**5.5.1 Description of Alternative**

This alternative would entail no improvements to the community; the existing septic systems would remain unimproved. As existing septic systems fail, they would be likely replaced with similar systems, which would continue to impact the groundwater quality in the area.

5.5.2 Life Cycle Cost of Alternative

There are no capital or periodic O&M or replacement costs associated with this alternative. However, individual homeowners will be faced with replacing existing septic systems at some point, at a cost of \$6,000 to \$10,000 per household. Additionally, existing septic systems should be pumped and inspected on average every three years at an estimated cost of \$300 per incident. However, the equivalent monthly cost of these expenses would be significantly less than any of the other alternatives.

5.5.3 Advantages and Disadvantages

The advantages and disadvantages of this alternative are presented in **Table 5-9**.

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Table 5-9: Alternative No. 4 Advantages and Disadvantages	
Advantages	Disadvantages
No capital expenditure required	Not a solution to the wastewater problems within the community
	Existing septic systems within the community will continue to degrade and fail, and the cost of the replacement would be entirely borne by the homeowner
	As septic systems continue to fail, potential public health effects may increase
	Degradation of the shallow groundwater table will continue

5.6 Comparison of Alternatives

Alternatives 1 through 3 are compared in various ways in the following section. Alternative 4 is not considered a viable alternative as it does not accomplish the main goal of the project, which is to provide a sustainable solution for the wastewater disposal in the community.

5.6.1 Cost Analysis

The costs of each alternative are summarized in the following **Table 5-10**. This data shows Alternative 2 as the lowest-cost alternative.

Table 5-10: Comparison of Cost Analyses			
Cost Category	Alt No. 1 – Onsite Septic Systems with District	Alt No. 2 – Connection to the City of Tulare	Alt No. 3 – Community Collection & Treatment System
Capital Cost	\$18,235,100	\$8,831,940	\$10,547,604
Annual O&M Cost	\$263,300	\$150,192	\$460,030
Estimated Monthly User Fee	\$74	\$42	\$129
Present Worth Cost	\$22,152,339	\$11,066,418	\$17,391,696
Ranking Based on Present Worth Costs	3	1	2
Ranking Based on Monthly User Fees	2	1	3

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5.6.2 Construction Challenges

The alternatives that involve construction of improvements share some construction challenges while some pose unique ones. The challenges are presented in the following **Table 5-11** and which alternative each applies to is shown.

Table 5-11: Comparison of Construction Challenges			
Potential Challenge	Alt 1	Alt 2	Alt 3
Difficulty identifying existing onsite improvements, including location of existing septic systems for purposes of constructing new septic system improvements	X		
Possible interconnection of onsite wastewater infrastructure similar to the conditions found during the Pratt MWC Water System Improvement project	X	X	X
Identifying and purchasing property for constructing a WWTP			X

Alternative 2 has the least anticipated construction challenges, due in part to the consideration given to the placement of the new PMWC water main to allow for a future sewer main.

5.6.3 Critical Concerns

Each alternative has one or more critical concerns to be weighed in the comparison of alternatives identified in the following table.

Table 5-12: Comparison of Critical Concerns		
Alternative 1	Alternative 2	Alternative 3
Creation of a Special District	City of Tulare Agreement to Proceed With Consolidation	Creation of a Special District
Does not address state priorities regarding protection of groundwater and centralized wastewater treatment		Ongoing operation of a collection system and a WWTP
		Does not address RWQCB priorities for consolidation of WWTP's

The County of Tulare has indicated their preference to avoid creation of any new special districts as they are often unsustainable and challenging to manage.

Consolidation with the City of Tulare will be challenging; the City has indicated concern over any possible consolidations and extensive discussions will be required. Ultimately, without agreement from the City to accommodate Alternative 2, the potential project is infeasible.

SECTION FIVE**5.6.4 Summary of Comparison**

Table 5-13: Summary of Comparisons			
Comparison Category	Alternative Rank		
	Alt 1	Alt 2	Alt 3
Present Worth Cost	\$22,152,339	\$11,066,418	\$17,391,696
Present Cost Ranking	3	1	2
Monthly User Fees	2	1	3
Construction Challenges	2	1	2
Critical Concerns	1	2	3
Total Scoring	8	5	10

Alternative 2 is the least expensive option as well as the alternative with the least number of construction challenges and critical concerns. It is also the most preferred alternative by the County for several reasons:

- Alternative 2 capitalizes on the economies of scale associated with consolidation of two communities, particularly a very small community and a larger agency;
- Alternative 2 is the most viable from technical, fiscal, managerial and regulatory perspectives;
- Protection of the groundwater supplies is paramount, continued operation of septic systems particularly at the density in Matheny Tract, as discussed in Alternative 1, would continue to endanger groundwater quality.
- Establishing a new entity to govern a new wastewater system would be required by the Alternative 3 including agency formation, LAFCo approval;

Assuming discussions with the City of Tulare progress positively, Alternative 2 is identified as the preferred alternative. It is noted that lack of concurrence from the City is a fatal flaw to Alternative 2. Alternative 1, Onsite Septic Systems would be the next preferred alternative; however, for the purposes of this report, Alternative 2 is presented as the preferred alternative.

6 SELECT PROJECT

6.1 Recommended Project Alternative

6.1.1 Project Description

Alternative No. 2 is the preferred alternative. This alternative includes construction of a wastewater collection system within the Matheny Tract, at least one lift station located near Pratt Street, and a combination of 8-, 10- and 12-inch PVC sewer mains with manholes spaced at 350 feet.

6.1.2 Basis For Selection

The basis of selection considered a present-worth analysis of capital and O&M costs, construction concerns, and critical issues for each alternative. Once each area of comparison was discussed, each alternative was ranked against the other three and the alternative with the lowest 'score' was identified as the preferred alternative.

6.1.3 Community Outreach

There is a community organization within the Matheny Tract, self-identified as the Matheny Neighborhood Committee. The MNC holds semi-regular meetings to discuss concerns within the community; on April 17, 2014, two representatives from the Matheny Tract Wastewater Study team attended the committee meeting to discuss the initiation of this Study. During the meeting some of the alternatives and design criteria were discussed; the community members present mostly were receptive to hearing about the Study and are interested in seeing the preferred alternative. With the exception of two individuals who voiced concerns about becoming City customers and losing recent investment costs on improvements to their septic system, all in attendance seemed pleased to hear that a wastewater and water quality solution for the community was being considered.

6.1.4 Agency Receptiveness

Preliminary discussions with the City of Tulare have indicated the City is hesitant about endorsing the project. The City's Draft General Plan focuses growth in the northern portion of town and protects a green buffer around the WWTP; the City's concern is that a potential consolidation with the Matheny Tract could allow for growth in this area. Discussions between the County and City of Tulare are ongoing.

6.2 Design Criteria and Useful Life of the Project

The design criteria for the project were defined previously and are summarized in the following **Table 6-1**. The system will be designed to utilize PVC pipe, which will have a useful life of more than 50 years if properly maintained. The lift station(s) will have useful lives of 20-50 years, depending on which components are considered. The pumps and other mechanical

SECTION SIX

components will require replacement long before the piping and lift station structures, although maintenance to surface coatings will be periodically needed.

Table 6-1: Collection System Design Criteria

Parameter	Units	Peaking Factor	Design Value
Average Dry-Weather Flow	gpd		130,000
Peak Daily Flow	gpd	1.6	208,000
Peak Hourly Flow	gpd gph	2.1 ¹⁴	273,000 11,375
Minimum Separation (from existing Water main)	feet		10
Minimum Cover	feet		4
Manhole Spacing, maximum	feet		350
Lift Station Depth, maximum	feet		25
Gravity Sewer Velocity	feet per second (fps)		Minimum: 2 Maximum: 10
Force Main Velocity,	fps		Minimum: 2 Maximum: 10
Gravity Sewer Slope, minimum [1]	ft/ft		8-inch main: 0.0033 10-inch main: 0.0024 12-inch main: 0.0019
Notes: [1] Identified minimum sewer slopes are specified in the City of Tulare Standards and Specifications			

6.3 Project Cost Estimate

A detailed Engineer's Opinion of Probable Construction Cost, including O&M present worth calculation, is included in Appendix J. A summary of those costs is provided in the following **Table 6-2**.

¹⁴ The City of Tulare utilizes a Peaking Factor of 2.1 (Carollo Engineers, 2009); for the purposes of the preferred alternative, the Peak Hourly Flow will be 273,000 gpd.

SECTION SIX

Table 6-2: Project Cost Estimate	
Item Description	Subtotal
Wastewater Collection System	\$4,897,340
Connection to City of Tulare	\$1,896,460
Contingency	\$1,358,760
Engineering	\$679,380
Total Project Costs	\$8,831,940
Annual Operations & Maintenance Costs	\$150,200
Cost per Month per Connection	\$42
Present Worth Cost	\$2,234,478
Total Project Costs + Present Worth Costs	\$11,066,418

6.4 Project Schedule

The project schedule is provided by duration, without identifying a start date, in **Table 6-3**.

Table 6-3: Selected Alternative Project Schedule		
Project Task	Duration	Notes
Prepare Environmental Documents	6 months	Can commence once preferred alternative is selected and necessary agreements are in place
Conduct Proposition 218 Election	6 months	Will begin once Project Feasibility Report is approved and necessary agreements are in place
Prepare Construction Documents	6 months	Will proceed concurrently with the Proposition 218 Election
Apply for Construction Funding	3 months	Duration is for preparation of the funding application; receipt of funds may take several years depending on the funding agency
Construction Bidding	6 months	Timing provides for preparation of bidding documents and actual bidding phase
Construction	12 months	Timing is based on construction of similar size and type of projects

SECTION SIX**PROJECT FEASIBILITY REPORT****6.5 Permits Required for Implementation**

The project will require permitting during the planning stage as well as construction permits. **Table 6-4** lists the permits that will be required and what phase of the project they will be required during; this list may not be exhaustive depending on the timing of construction and permit requirements at that time.

Table 6-4: Selected Alternative Required Permitting		
Permit Name	Approving Agency	Project Phase
CEQA	County of Tulare	Planning
Indirect Source Review	San Joaquin Valley Air Pollution Control District	Planning
Storm Water Pollution Prevention Plan	SWRCB	Design
Common Use Agreement	Tulare Irrigation District	Design
Report of Waste Discharge	Regional Water Quality Control Board	Design
Encroachment Permit	County of Tulare	Construction

6.6 Key Issues

The key issues for this alternative include:

- County of Tulare Acceptance
 - The County will have to approve the selection of this alternative prior to moving forward with discussions with the City
- The Matheny Tract Acceptance
 - Further community outreach and discussion must be held to ensure the community residents support the solution
 - A vote may be required to obtain necessary majority approval to substantiate implementing a County ordinance that requires connection to the new wastewater collection system
- City of Tulare Acceptance
 - A letter of commitment backed by a City Council Resolution will be required prior to receiving funding
 - An agreement between the City and County will be required, detailing all of the terms and conditions of sewer service provision
- Obtain Construction Funding
 - The selected alternative has a capital improvement cost of \$11.1M including Contingency, Engineering and Construction Services (Inspection, Staking, Construction Engineer, etc)

SECTION SIX**PROJECT FEASIBILITY REPORT**

- 100% grant, up to \$4M is allowable for projects benefitting an SDAC with a wastewater rate between 1.5% and 2% of the community's MHI. The SWRCB may increase grant percentage to 100% with special approval.
- Entire project cost could be awarded as grant with special approval from the funding agency
- A loan could be required on the remaining project costs. Terms would include repayment over 30 years at an interest rate of half the general obligation rate. If loan repayment is required it would necessitate creation of a Special Assessment District for the Matheny Tract residences and businesses.

WORKS CITED

Metcalf & Eddy, Inc. (2003). *Wastewater Engineering: Treatment and Reuse, 4th Edition*. McGraw-Hill.

Carollo Engineers. (2009). *City of Tulare, Sewer System Master Plan*.

Department of Water Resources. (n.d.). *California's Groundwater*. Retrieved July 2014, from <http://www.water.ca.gov/groundwater/bulletin118/bulletin118update2003.cfm>

State of California, Public Resource Code. (n.d.). Retrieved July 2014, from <http://codes.lp.findlaw.com/cacode/PRC/1/d43/1/s75005>

State Water Resources Control Board. (2012). *Communities That Rely on Contaminated Groundwater*.

State Water Resources Control Board. (2013, August). *Groundwater Ambient Monitoring and Assessment*. Retrieved July 2014, from <http://www.swrcb.ca.gov/gama/docs/tularesummaryreport.pdf>

State Water Resources Control Board. (1998). *Policy for Implementing the State Revolving Fund for Construction of Wastewater Treatment Facilities*.

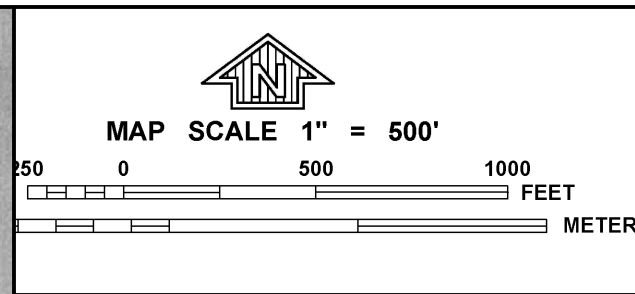
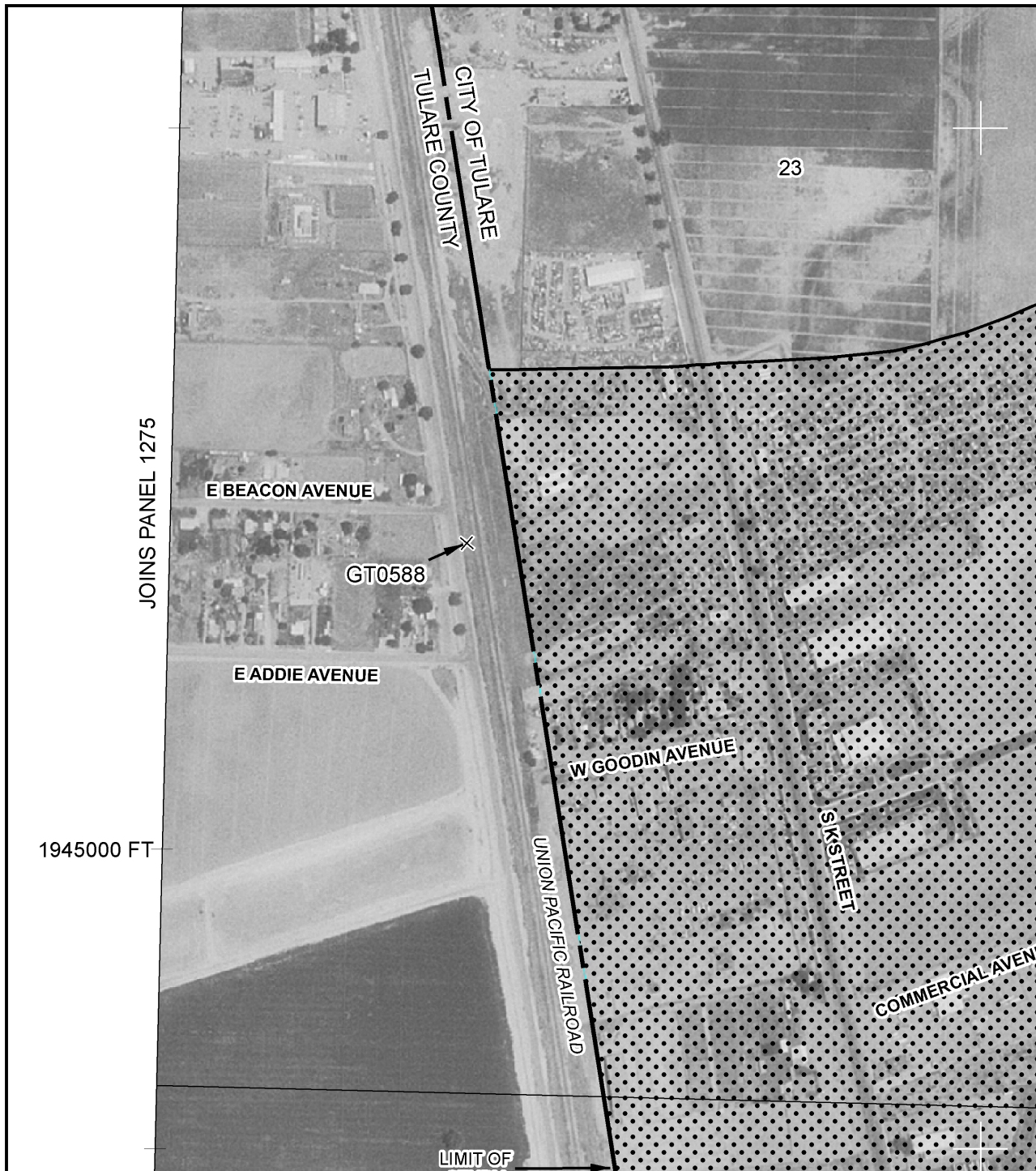
Tulare County, Resource Management Agency. (August 2012). *2030 General Plan, Part 1*.

United States 2010 Census. (n.d.). *American Factfinder*. Retrieved July 2014, from http://factfinder2.census.gov/faces/nav/jsf/pages/community_facts.xhtml

United States, American Community Survey. (2008-2012). *American Factfinder*. Retrieved July 2014, from http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_12_5YR_DP03

US EPA. (2012). *Opportunities to Advance Sustainability in California's Clean Water State Revolving Fund Program*.

Appendix A
FEMA – Firm Exhibits



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 1262E

FIRM
FLOOD INSURANCE RATE MAP
TULARE COUNTY,
CALIFORNIA
AND INCORPORATED AREAS

PANEL 1262 OF 2550
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

<u>COMMUNITY</u>	<u>NUMBER</u>	<u>PANEL</u>	<u>SUFFIX</u>
TULARE COUNTY	065066	1262	E
TULARE, CITY OF	065065	1262	E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

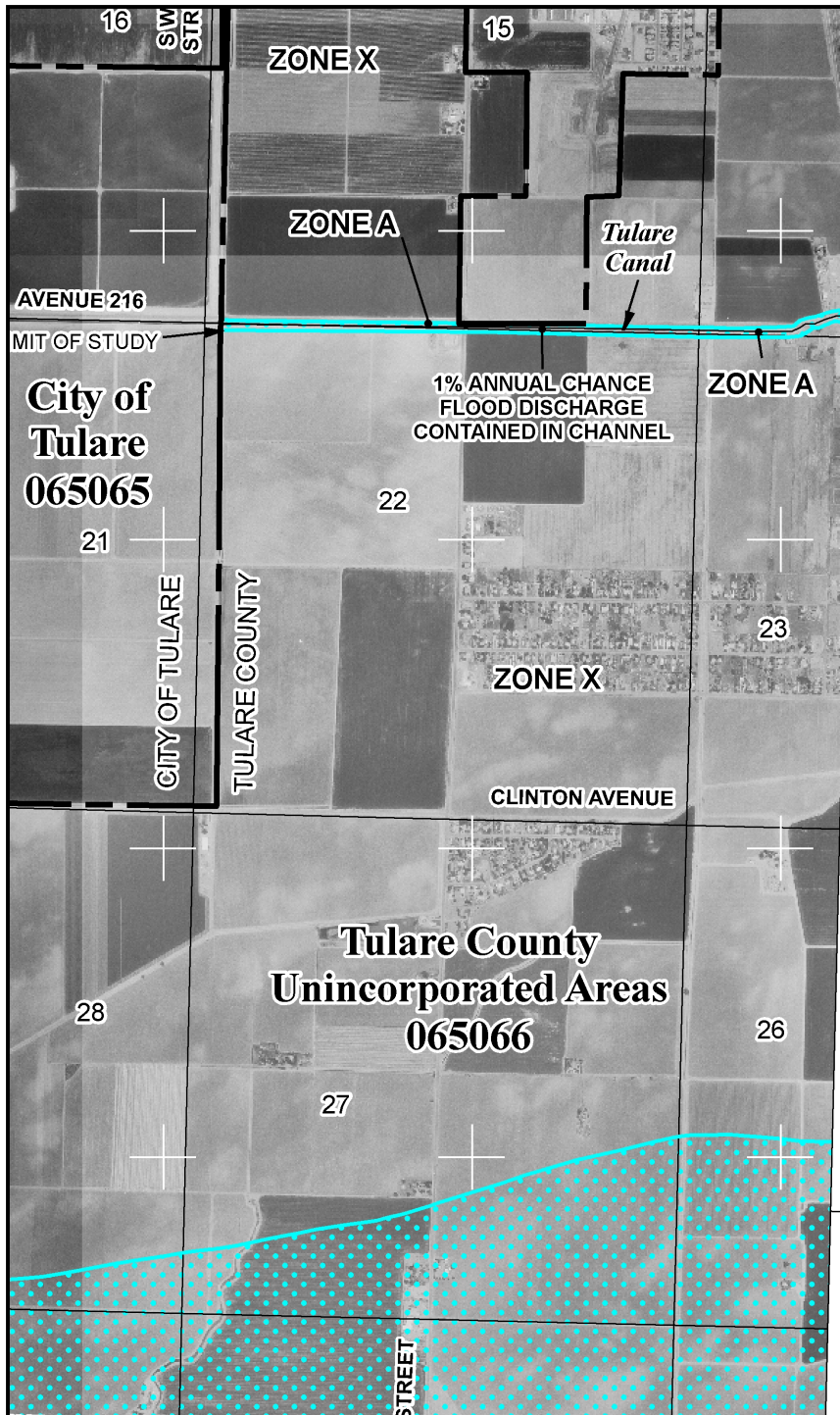


MAP NUMBER
06107C1262E

EFFECTIVE DATE
JUNE 16, 2009


Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



2 90 000m E

THIS AREA SHOWN ON MAP NUMBER



MAP SCALE 1" = 2000'

0 2000 4000
FEET

0 2000 4000
METER

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 1275E

FIRM
FLOOD INSURANCE RATE MAP


**TULARE COUNTY,
CALIFORNIA
AND INCORPORATED AREAS**

PANEL 1275 OF 2550
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

<u>COMMUNITY</u>	<u>NUMBER</u>	<u>PANEL</u>	<u>SUFFIX</u>
TULARE COUNTY	065066	1275	E
TULARE, CITY OF	065065	1275	E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



MAP NUMBER
06107C1275E

EFFECTIVE DATE
JUNE 16, 2009

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Appendix B

NRCS Soils Map and Description

Tulare County, Western Part, California

108—Colpien loam, 0 to 2 percent slopes

Map Unit Setting

Elevation: 220 to 550 feet

Mean annual precipitation: 8 to 12 inches

Mean annual air temperature: 63 to 64 degrees F

Frost-free period: 250 to 300 days

Map Unit Composition

Colpien and similar soils: 85 percent

Minor components: 15 percent

Description of Colpien

Setting

Landform: Fan remnants

Landform position (two-dimensional): Shoulder

Landform position (three-dimensional): Side slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from granitic rock sources

Typical profile

Ap - 0 to 6 inches: loam

Bt - 6 to 24 inches: loam

Btk - 24 to 60 inches: loam

C - 60 to 65 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat):

Moderately high (0.20 to 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: Rare

Frequency of ponding: None

Calcium carbonate, maximum in profile: 5 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 4.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 12.0

Available water storage in profile: High (about 10.7 inches)

Interpretive groups

Farmland classification: Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

Land capability classification (irrigated): 1

Land capability classification (nonirrigated): 4c

Hydrologic Soil Group: C

Minor Components

Biggriz

Percent of map unit: 3 percent

Landform: Fan remnants

Hanford

Percent of map unit: 3 percent

Landform: Flood plains, alluvial fans

Gambogy

Percent of map unit: 3 percent

Landform: Flood plains, alluvial fans

Tujunga

Percent of map unit: 2 percent

Landform: Flood plains

Nord

Percent of map unit: 2 percent

Landform: Flood plains, alluvial fans

Akers, saline-sodic

Percent of map unit: 2 percent

Landform: Fan remnants

Data Source Information

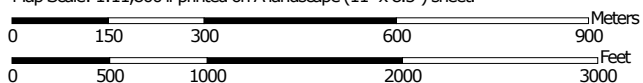
Soil Survey Area: Tulare County, Western Part, California

Survey Area Data: Version 7, Dec 6, 2013

Soil Map—Tulare County, Western Part, California (Matheny Tract)



Map Scale: 1:11,800 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84



**Natural Resources
Conservation Service**


Web Soil Survey
National Cooperative Soil Survey

8/1/2014
Page 1 of 3

Soil Map—Tulare County, Western Part, California
(Matheny Tract)

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Tulare County, Western Part, California
Survey Area Data: Version 7, Dec 6, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 27, 2010—Jul 3, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

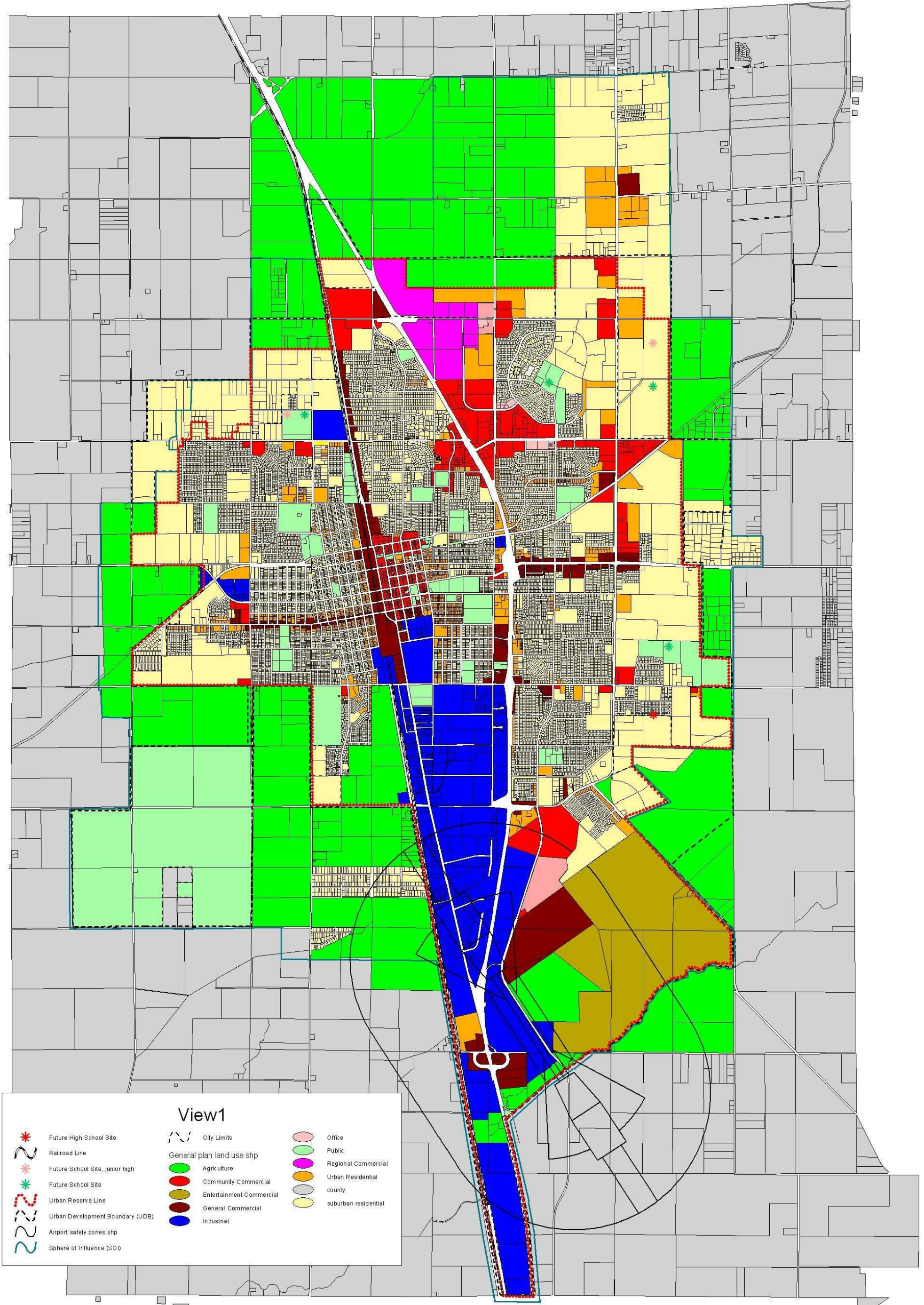
Map Unit Legend

Tulare County, Western Part, California (CA659)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
108	Colpien loam, 0 to 2 percent slopes	249.4	100.0%
Totals for Area of Interest		249.4	100.0%

Appendix C

City of Tulare General Plan Land Use Maps

1993 General Plan land use map

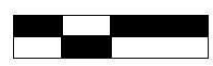


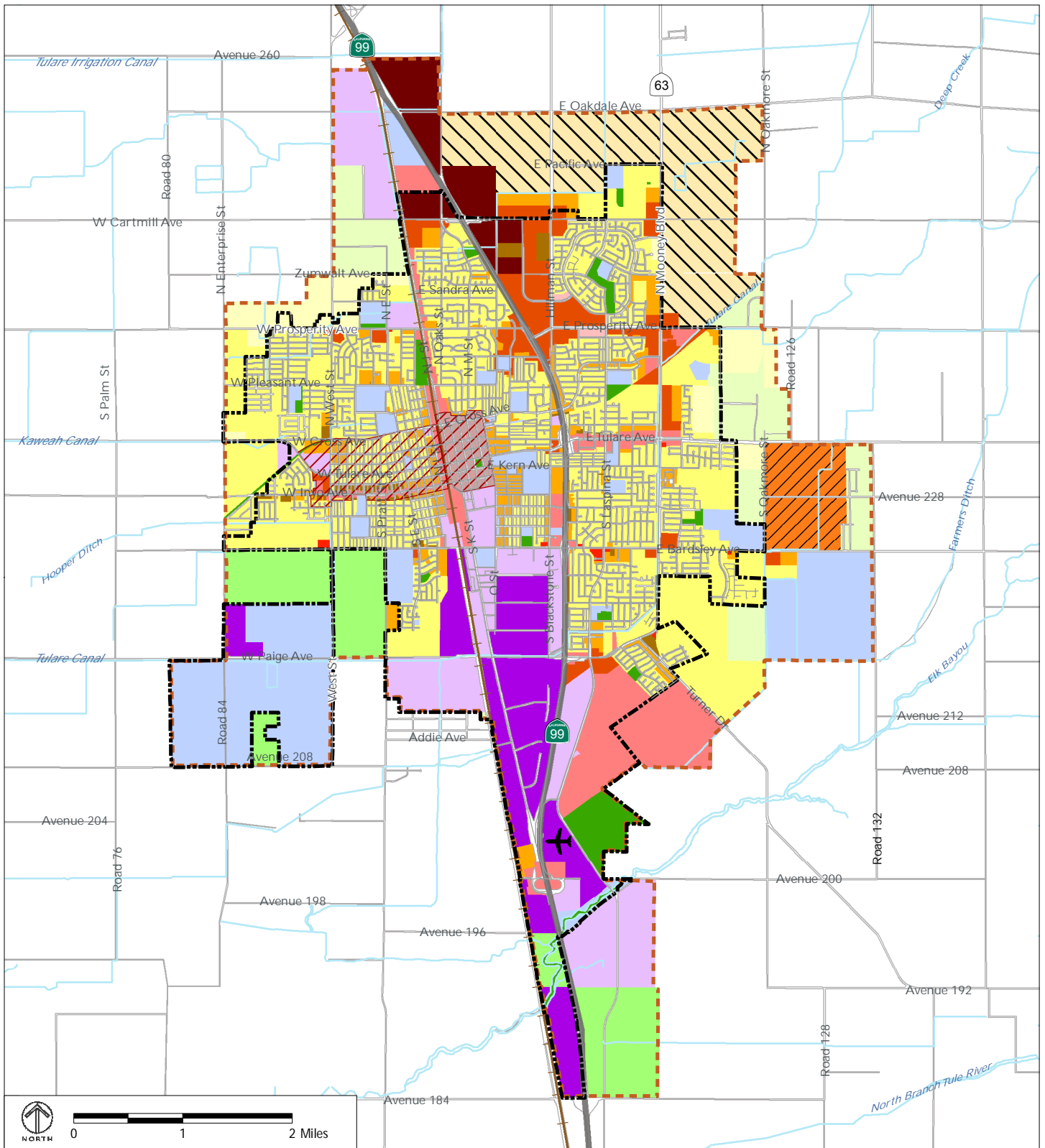
View1

- | | | |
|----------------------------------|--------------------------|----------------------|
| Future High School Site | City Limits | Office |
| Railroad Line | Agriculture | Public |
| Future School Site, junior high | Community Commercial | Regional Commercial |
| Future School Site | Entertainment Commercial | Urban Residential |
| Urban Reserve Line | General Commercial | county |
| Urban Development Boundary (UDB) | Industrial | suburban residential |
| Airport safety zones.shp | | |
| Sphere of Influence (SOI) | | |

JUNE 2009

2000 0 2000 Feet





Source: City of Tulare, Tulare County, and The Planning Center | DC&E.

- | | | |
|-----------------------------------|---------------------------|------------------------|
| City Limit | Neighborhood Commercial | Heavy Industrial |
| 2035 Urban Development Boundary | Community Commercial | Public/Quasi-Public |
| Rural Residential 0-2 | Regional Commercial | Parks & Recreation |
| Residential Estate 2.1-3 | Service Commercial | Open Space/Agriculture |
| Low Density Residential 3.1-7 | Central Business District | Village* |
| Medium Density Residential 7.1-14 | Office Commercial | COS North TOD |
| High Density Residential 14.1-29 | Light Industrial | TOD Overlay |

*Village areas require a Specific Plan and a General Plan Amendment prior to development.

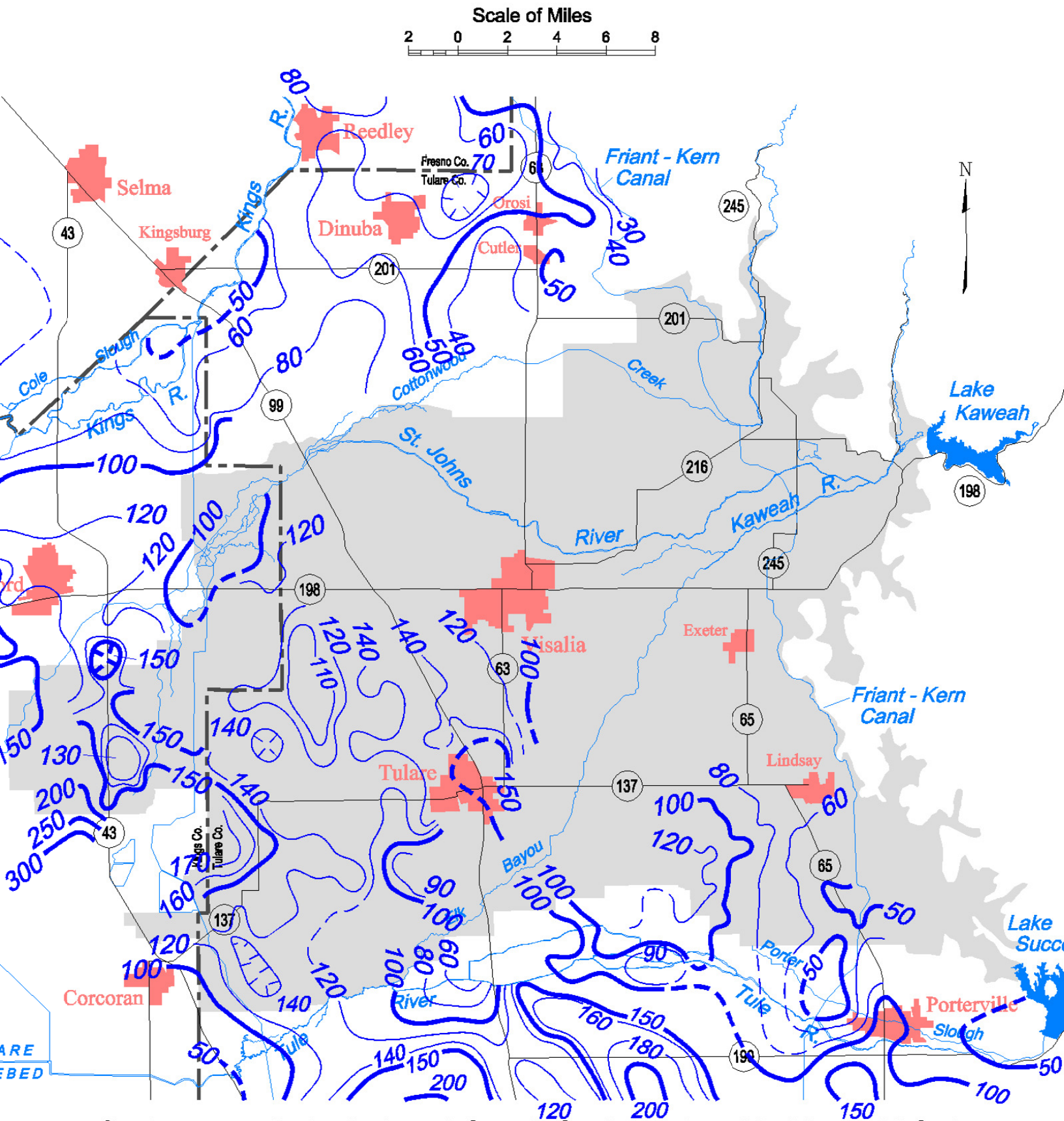
FIGURE 2-2
2035 GENERAL PLAN
LAND USE MAP

Appendix D

DWR Groundwater Contours

Kaweah Groundwater Basin

Spring 2010, Lines of Equal Depth to
Water in Wells, Unconfined Aquifer



Contours are dashed where inferred. Contour interval is 10 and 20 feet.

Appendix E

Geotracker Data

[LINK TO THIS MAP](#)

GEOTRACKER

LAYERS
☒ SIGNIFIES A CLOSED SITE
☒ Leaking Underground Tank (LUST) Cleanup Sites
☒ Other Cleanup Sites
☒ Land Disposal Sites
☒ Military Sites
☒ WDR Sites
☒ Irrigated Lands Regulatory Program
☐ Permitted Underground Storage Tank (UST) Facilities
☒ Monitoring Wells*
* ZOOM IN TO SEE MWS
☐ DTSC Cleanup Sites
☐ DTSC Haz Waste Permit

MAP SIZE
640x480

OPTIONS
☒ Site List - [EXPORT TO EXCEL](#)

2 Sites

Google
[Measure a Distance](#)

200 m

[Report a map error](#)

☐ SHOW SITES WITHIN 1000 FEET OF THE FOLLOWING ADDRESS:

Go

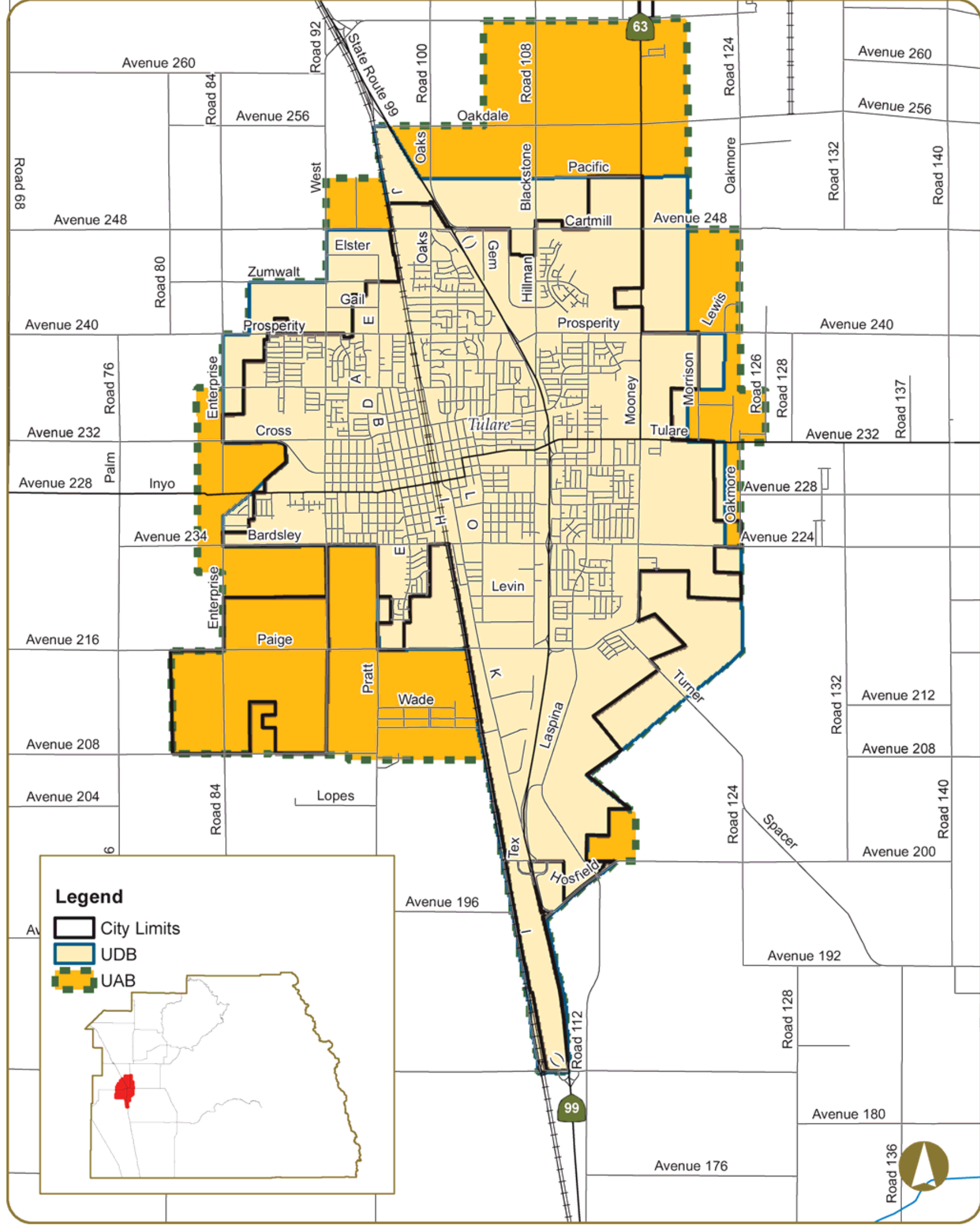
SITE LIST

SITE NAME	GLOBAL ID	STATUS	ADDRESS	CITY
<input checked="" type="checkbox"/> C & E FEED & AUTO PARTS	T0610700135	COMPLETED - CASE CLOSED	3878 PRATT S	TULARE
<input checked="" type="checkbox"/> CURTI & SONS, INC.	T0610700411	OPEN - REMEDIATION	3235 AVENUE 199	WAUKENA

MAP AN ADDRESS:

Go!

Appendix F
County of Tulare Land Use Map



City of Tulare | Figure 2.4-7

Appendix G

Referenced Waste Discharge Requirements

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. 85-170

WASTE DISCHARGE REQUIREMENTS
FOR
TIPTON COMMUNITY SERVICES DISTRICT
WASTEWATER TREATMENT FACILITY
TULARE COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Board) finds that:

1. The Board, on 24 January 1975, adopted Order No. 75-009 which prescribed requirements for a discharge of domestic wastes from a wastewater treatment facility operated by Tipton Community Services District (hereafter Discharger). The facility is in the NE 1/4 of Section 36, T21S, R24E, MDB&M.
2. Waste discharge requirements established by Order No. 75-009 are being updated to be consistent with current plans and policies of the Board.
3. Existing treatment facilities consist of a clarigester and a trickling filter with an estimated design capacity of 0.48 mgd (21 l/sec).
4. Effluent waters from the trickling filter flow into two one-acre (0.4 ha) evaporation/percolation ponds. Pond effluent is used to flood irrigate 40 acres (16 ha) of land owned and controlled by the Discharger.
5. The current wastewater flow at the facility is approximately 320,000 gallons per day (14 l/sec).
6. The beneficial uses of the ground water are municipal, industrial, and agricultural supply.
7. The Board, on 25 July 1975, adopted a Water Quality Control Plan for the Tulare Lake Basin (5D) which contains water quality objectives. These requirements are consistent with that Plan.
8. The action to update waste discharge requirements for this existing facility is exempt from the provisions of the California Environmental Quality Act, in accordance with Section 15301, Title 14, California Administrative Code.
9. The Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge.
10. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

WASTE DISCHARGE REQUIREMENTS
TIPTON COMMUNITY SERVICES DISTRICT
WASTEWATER TREATMENT FACILITY
TULARE COUNTY

-2-

IT IS HEREBY ORDERED that Order No. 75-009 be rescinded and Tipton Community Services District, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. Discharge Prohibitions:

1. The direct discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. The by-pass or overflow of untreated or partially treated waste is prohibited.
3. Milking animals are prohibited on the pasture area used for waste disposal.
4. Public access to the disposal area shall be prohibited.

B. Discharge Specifications:

1. Neither the treatment nor the discharge shall cause a pollution or nuisance as defined by the California Water Code, Section 13050.
2. The discharge shall not cause degradation of any water supply.
3. The discharge shall remain within the designated disposal area at all times.
4. The ~~30~~-day average daily dry weather discharge flow shall not exceed ~~0.4~~ million gallons (18 l/sec).
5. The discharge from the oxidation pond shall not contain constituents in excess of the following limits:

<u>Constituents</u>	<u>Units</u>	<u>30-Day Average</u>	<u>Maximum</u>
BOD ₅ ^{1/}	mg/l	40	80
Settleable Solids	ml/l		0.5

^{1/} Five-day, 20° Celsius biochemical oxygen demand.

6. Collected screenings, sludges, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer.

WASTE DISCHARGE REQUIREMENTS
TIPTON COMMUNITY SERVICES DISTRICT
WASTEWATER TREATMENT FACILITY
TULARE COUNTY

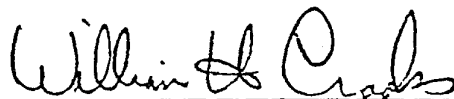
-3-

7. Reclaimed wastewater shall meet the criteria contained in Title 22, Division 4, California Administrative Code (Section 60301, et seq.).
8. The dissolved oxygen content of holding ponds shall not be less than 1.0 mg/l for 16 hours in any 24-hour period.

C. Provisions:

1. The Discharger may be required to submit technical or monitoring reports as directed by the Executive Officer.
2. The Discharger shall comply with the attached Monitoring and Reporting Program No. 85-170.
3. A copy of these waste discharge requirements shall be maintained at the treatment facility and be available at all times to plant operating personnel.
4. The Discharger shall comply with the Standard Provisions and Reporting Requirements, dated 1 October 1983, which are a part of this Order.
5. The Discharger shall report promptly to the Board any material change or proposed change in the character, locations, or volume of the discharge.
6. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be forwarded to this office.
7. The Board will review this Order periodically and may revise requirements when necessary.

I, WILLIAM H. CROOKS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 28 June 1985.



WILLIAM H. CROOKS, Executive Officer

MM:bro:4/8/85

Attachments

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. 85-170

FOR
TIPTON COMMUNITY SERVICES DISTRICT
WASTEWATER TREATMENT FACILITY
TULARE COUNTY

EFFLUENT MONITORING

Effluent samples shall be collected from the discharge pipe from the oxidation pond to the pasture, except as otherwise noted. The following shall constitute the effluent monitoring program.

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Frequency</u>
BOD ₅ ^{1/}	mg/l	Grab	Quarterly 90/80
Settleable Solids	ml/l	Grab	Weekly 0.5
Dissolved Oxygen ^{2/}	mg/l	Grab	Weekly ≥ 1.0

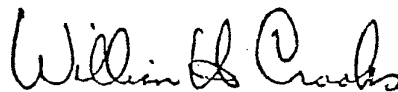
^{1/} Five-day, 20° Celsius biochemical oxygen demand.

^{2/} To be collected from the pond near the outlet
between the hours of 0800 and 0900.

REPORTING

Quarterly monitoring reports shall be submitted to the Board by the 15th day of the month following the calendar quarter. In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly the compliance with waste discharge requirements.

Ordered by



WILLIAM H. CROOKS, Executive Officer

28 June 1985

(Date)

MM:bro

4/8/85

INFORMATION SHEET

TIPTON COMMUNITY SERVICES DISTRICT
WASTEWATER TREATMENT FACILITY
TULARE COUNTY

Tipton Community Services District operates a sewage treatment and disposal system in the NE 1/4 of Section 36, T21S, R24E, MDB&M, approximately 1/4 mile (0.4 km) west of the City of Tipton. The present service population is approximately 1,500 with industrial connections limited to employee restrooms.

Treatment facilities consist of a clarigester and gravity-feed trickling filter. Disposal is accomplished by two evaporation/percolation ponds; pond effluent is used to flood irrigate 40 acres (16 ha) of land owned and controlled by the City.

Local soils are alluvial fan deposits composed of poorly sorted silts, sands, and gravels, with occasional clay lenses. Due to the loose nature of the material, permeability is generally high.

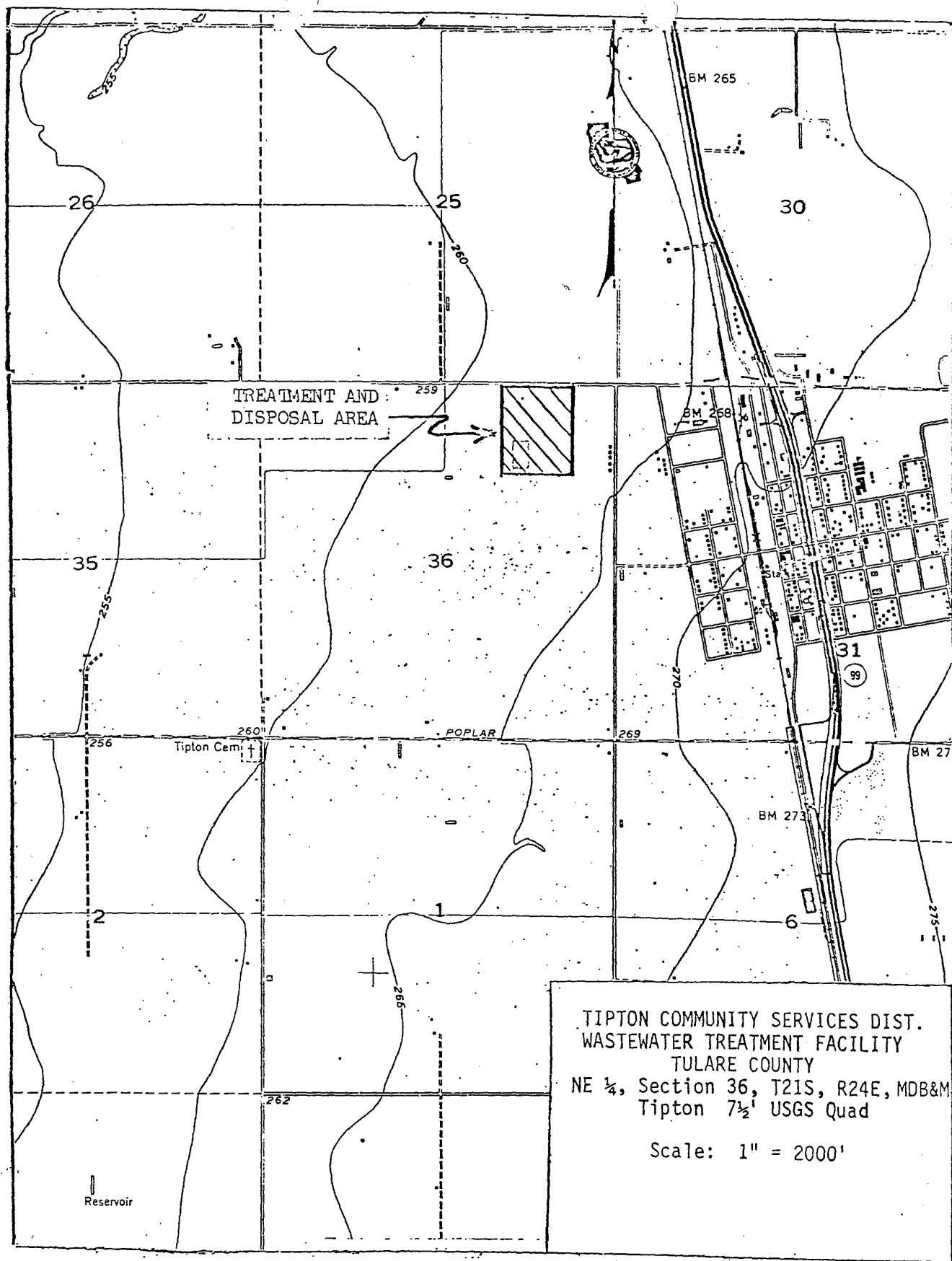
Ground water occurs at a depth of approximately 60 feet (18 m) and is of excellent quality with a specific conductance of 300 micromhos. This water is unconfined and moves in a southwesterly direction.

Average annual rainfall is approximately 8 inches (20 cm) and the average annual evaporation is approximately 80 inches (200 cm). During the 1968-69 flood season, which is considered equivalent to a 100-year flood, no rain flooding occurred in the vicinity of the treatment plant.

This is an existing facility and the action to update waste discharge requirements for this facility is exempt from the provisions of the California Environmental Quality Act, in accordance with Section 15301, Title 14, California Administrative Code.

MM:bro

4/8/85



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2013-0019

WASTE DISCHARGE REQUIREMENTS
AND
MASTER RECYCLING PERMIT
FOR
CITY OF TULARE
WASTEWATER TREATMENT FACILITY
TULARE COUNTY

The California Regional Water Quality Control Board, Central Valley Region (hereafter Central Valley Water Board or Board) finds that:

1. The City of Tulare (hereafter City or Discharger) owns and operates a wastewater collection, treatment, and disposal system that provides sewage service for industry and about 60,000 residents. The Wastewater Treatment Facility (WWTF) and associated discharge locations are about seven miles southwest of the center of the City within Sections 15, 16, 17, 20, 21, 22, 27, 28, 29, 32, 33, and 34, T20S, R24E, MDB&M, as shown on Attachment A, a part of this Order.
2. The WWTF includes two separate wastewater treatment plants (Plants): one for domestic wastes (hereafter Domestic Plant), the other for primarily industrial wastes (hereafter Industrial Plant). The Domestic and Industrial discharges are combined (hereafter commingled discharge) in an aerated mixing box and discharged to about 245 acres of ponds for disposal by evaporation and percolation. A portion of the effluent discharged to ponds is recycled on about 2,620 acres of nearby farmland (hereafter, Use Areas), of which the Discharger owns 530 acres.
3. The Discharger submitted a Report of Waste Discharge (RWD), dated 24 June 2009, in support of phased increases in discharge flow. The phases include an increase in discharge flow in the Domestic Plant to 6 mgd and then 8 mgd in the future, and in the Industrial Plant to 9 mgd and then 12 mgd. The RWD includes detailed water and nitrogen balance calculations for each phase of implementation of proposed changes. The most significant changes consist of increased flow, additional treatment (including nitrogen removal), expanded recycling areas, and improved biosolids management facilities.
4. Waste Discharge Requirements (WDRs) Order R5-2002-0185, adopted 18 October 2002 for the Discharger, prescribes requirements for a monthly average commingled discharge not to exceed 9.39 mgd (4.39 mgd industrial and 5.0 mgd domestic) and includes water recycling requirements. Cease and Desist Order (CDO) R5-2002-0186, also adopted 18 October 2002, addresses the City's failure to comply with previous WDRs Order 91-133.
5. Order R5-2002-0185 does not reflect the current WWTF. The purpose of this Order is to rescind the previous Order and update waste discharge requirements, in part, to ensure the discharge is consistent with water quality plans and policies, to prescribe requirements that are effective in protecting existing and potential beneficial uses of receiving waters, and to reflect the Discharger's proposed ongoing expansion. This Order also includes a Master Recycling Permit to regulate recycled water projects that beneficially reuse WWTF effluent.

Domestic Discharge

6. The expanded Domestic Plant is an activated sludge plant designed to treat 6.0 mgd. It includes headworks with mechanical screens and an aerated grit chamber, primary and secondary sedimentation, biofiltration, denitrification; and sludge thickening, digestion, and drying. Attachments B and C, a part of this Order, depict a partial plan view of the WWTF and a process flow diagram for the Domestic Plant, respectively.
7. The collection system for the Domestic Plant includes residential and commercial connections. The City completed an Industrial Waste Survey in February 2012. The survey identifies five significant industrial users (SIUs) connected to the Domestic Plant, one of which has since closed. Findings 50 through 61 provide details about the City's Industrial Pretreatment Program.
8. Cease and Desist Order R5-2002-0186 finds that excessive nitrogen in the discharge resulted in groundwater nitrate concentrations exceeding the Maximum Contaminant Level (MCL) of 10 mg/L as nitrogen. In 2006, the Discharger completed a project to upgrade the Domestic Plant with plug flow anoxic basins designed for nitrogen removal to 10 mg/L or less at a flow rate of 6 mgd. The 2009 RWD examines the potential for ongoing groundwater degradation/pollution with nitrogen compounds and compliance with the 2002 CDO, and proposes as a remedy, achieving sufficient nitrogen removal in each Plant for commingled effluent total nitrogen of 10 mg/L or less.
9. In its current configuration, nitrogen removal in the Domestic Plant has fluctuated. In cold weather, effluent total nitrogen concentrations have generally been above the average for the year. For example, from December 2011 through the end of February 2012, concentrations ranged from about 9 mg/L to 19 mg/L with an average of 12 mg/L, while total nitrogen concentrations from July 2011 through September 2011 ranged from 4.4 mg/L to 11 mg/L with an average of 7.8 mg/L. The design firm responsible for the existing 6-mgd design, Carollo Engineers, Inc., asserts that the nitrogen removal in the winter months is related to the mixed liquor suspended solids concentration (MLSS). The MLSS was 102% and 108% of the annual average MLSS. Data for December 2012 and January 2013 show the domestic effluent TN to be below 10 mg/L with the MLSS increased to 113% and 112% of the annual average to compensate for the colder weather. Therefore, an increase in the MLSS to above 112% of the annual average would keep the plant below 10 mg/L TN. Increasing the MLSS in cold months is a common practice at activated sludge plants.
10. A technical report entitled, *Preliminary Design Report for Domestic Wastewater Treatment Plant Upgrade & Expansion, June 2009* (Domestic Plant Design Report), prepared for the City by Parsons Corporation, characterizes the capacity of the Domestic Plant and recommends specific upgrades required to achieve the City's planned expansion. The Domestic Plant Design Report describes multiple factors that limit the capability of the Domestic Plant to reliably produce effluent with 10 mg/L nitrogen or less. The report indicates that the most limiting factors in the design are the blowers, secondary clarifiers, and aeration basins, which are significantly undersized (for as low as 3.5 mgd capacity) for a 6-mgd design.

11. The design firm responsible for the existing 6-mgd design, Carollo Engineers, Inc., asserts that a comprehensive review of the process biology was not possible during preparation of the Domestic Plant Design Report because the Domestic Plant was not operating in a full denitrification mode at the time of the assessment. The nitrogen removal treatment deficiencies noted in the Domestic Plant Design Report may be overstated, given that the average Domestic Plant effluent total nitrogen concentration was 7.6 mg/L in 2012 while the average flow was 4.9 mgd and the City reportedly used no more than two thirds of the available aeration capacity at any time.
12. The Domestic Plant Design Report recommends that the Discharger implement a Modified Ludzack-Ettinger activated sludge system. The Modified Ludzack-Ettinger would make use of the existing treatment units, though it would still require significant changes to the Plant at an estimated cost of \$31 million for the 6.0-mgd design or \$46.5 million for the 8-mgd design. The report also recommends upgraded headworks and removal of the biofiltration unit, which is potentially counterproductive in terms of nitrogen removal.
13. The City issued a request for proposals on the upgrade project, which was divided into three phases. The City approved funds for the first phase, which was for upgraded headworks. The new headworks at the Domestic Plant, implemented on 16 December 2011, includes mechanical screens and grit removal for up to 8 mgd, with a wastewater transfer system that allows metered diversion of Domestic Plant influent to the Industrial Plant. Contingent upon the results of the technical reports required by Provision I.14 and I.15 of this Order, the Domestic Plant may need to be upgraded to consistently achieve its design effluent total nitrogen concentrations. In the meantime, the City intends to postpone capital expenditures for Domestic Plant upgrades by using the available treatment capacity of the Industrial Plant to treat excess Domestic Plant influent.
14. The Discharger's self-monitoring reports characterize the annual average Domestic Plant effluent in recent years as follows:

Parameter	Units	2009	2010	2011	2012
Flows	mgd	4.26	4.24	4.26	4.89
Total dissolved solids (TDS)	mg/L	244	231	244	214
Electrical conductivity (EC)	umhos/cm	528	502	497	466
Biochemical Oxygen Demand (BOD)	mg/L	9.2	10.2	10.5	13
Nitrate (as N)	mg/L	4.9	4.0	4.4	2.4
Ammonia (as N)	mg/L	3.2	2.7	3.4	2.2
Total Kjeldahl Nitrogen	mg/L	5.7	5.9	6.0	4.9
Total Nitrogen	mg/L	10.6	9.7	10.6	7.6

15. Analytical results from influent samples collected in January and July 2012 had average sodium and chloride concentrations of 65 mg/L and 41 mg/L, respectively. In terms of

dissolved inorganic salts, effluent character is not expected to be significantly different than influent. The RWD estimates Domestic Plant effluent sodium to be about 65 mg/L.

16. Discharger self-monitoring reports from 2010 through 2012 indicate that winter flows to the Domestic Plant are not significantly higher than summer flows, indicating that inflow and infiltration in general are not a problem for the Domestic Plant. However, large changes in flow on the order of 0.5 mgd to 1.0 mgd over the course of three to six months have been occurring since about January 2010.

Industrial Discharge

17. The collection system for the Industrial Plant includes commercial and industrial connections. Findings 50 through 61 describe the City's Industrial Pretreatment Program and sources of industrial wastewater.
18. Two gravity sewer mains flow into the Industrial Plant. One extends north from Levin Avenue to Cross Avenue. The other gravity main extends southeast along 'K' Street, serving the area from Levin Avenue to Avenue 200 and flows to the WWTF along Paige Avenue. A force main from the Kraft Cheese Company connects to the newly-constructed South Tulare Industrial Sewer, which extends south from Paige Avenue along Pratt Street to Avenue 196, where it turns east and crosses State Highway 99.
19. Relative to the domestic influent stream, the industrial influent is high strength in terms of organic material and nitrogen, with BOD and total nitrogen concentrations typically in excess of 1,400 mg/L and 50 mg/L, respectively. In addition to discharges from the City's dairy processing plants (e.g., cooling water, clean-in-place wastewater, and wash-down wastewater), discharges to the Industrial Plant include storm water, some domestic wastewater, septage, and sludge supernatant.
20. The Industrial Plant consists of: headworks with screening and grit removal; fats, oils, and grease (FOG) removal by dissolved air flotation (DAF); anaerobic digestion in the bulk volume fermenter (Fermenter); about 26 million gallons of flow equalization in five aerated basins; six sequencing batch reactors (SBRs); six denitrifying filters; two DAF units for thickening solids generated in the SBRs; three anaerobic digesters; and approximately 25 acres of sludge drying beds. Attachments B and D, a part of this Order, depict a partial plan view of the WWTF and a process flow diagram for the Industrial Plant, respectively.
21. Consistent with the time schedule for compliance in the 2002 CDO, the Discharger completed improvements to the Industrial Plant in November 2009. Until that time, the Industrial Plant did not consistently remove sufficient BOD to comply with WDRs Order R5-2002-0185. Immediately following the improvements, average effluent BOD dropped to less than 10 mg/L and BOD removal has met the effluent limits.
22. The aerated ponds north of the new SBRs are no longer in service. In 2004, the pond bottoms were compacted, sand lenses removed, and clay materials added where directed by a geotechnical engineer to minimize percolation. Geotechnical analysis of samples taken from the compacted pond bottoms demonstrated permeability less than 10^{-6} cm/second. The ponds

still contain residual settled solids that have potential to degrade groundwater and a time schedule to remove the settled solids from the ponds is appropriate.

23. The Fermenter produces methane from organic material in the industrial wastewater stream. The City collects the methane to generate electricity for the WWTF in onsite fuel cells. The Fermenter has a rated 65 to 75 percent BOD₅ removal treatment capacity for average monthly flows of 4.39 mgd and peak hourly flows up to 7.0 mgd. According to design documents, the average Fermenter influent chemical oxygen demand (COD) loading rate is not to exceed 135,000 lbs/day, and pH, alkalinity, and temperature must be within optimal ranges for treatment to perform as designed.
24. The SBRs are designed for BOD removal to 40 mg/L or less and nitrogen removal to 10 mg/L or less on a 30-day average basis. Nitrogen removal in the SBRs and denitrifying filters requires sufficient carbon to support denitrification. In order to maintain an adequate carbon to nitrogen ratio, the City limits flow through the Fermenter, by-passes treatment in the DAF unit, and allows a portion of the industrial wastewater to by-pass the aeration ponds. In September 2010, the City began to reduce the flow through the Fermenter from about 4.3 mgd to an average of 2.2 mgd in December 2010. It has continued to reduce flows through the Fermenter. The average flow was 1.7 mgd in the first half of 2012.

25. The Discharger's self-monitoring reports characterize the average Industrial Plant effluent in recent years as follows:

Parameter	Units	2009	2010	2011	2012
Flows	mgd	6.80	6.96	7.05	7.12
Total dissolved solids (TDS)	mg/L	501	434	425	378
Electrical conductivity (EC)	umhos/cm	1,398	822	774	737
Biochemical Oxygen Demand (BOD)	mg/L	127	39	4.6	9.2
Nitrate (as N)	mg/L	9.2	16	5.0	4.6
Ammonia (as N)	mg/L	74	2.4	0.7	0.9
Total Kjeldahl Nitrogen	mg/L	107	14	4.2	4.3
Total Nitrogen	mg/L	115	30	9.7	9.3

26. Analytical results from Industrial Plant influent samples collected in January and July 2012 had average sodium and chloride concentrations of 99 mg/L and 59 mg/L, respectively. In terms of dissolved inorganic salts, effluent character is not expected to be significantly different than influent. However, based on recent commingled effluent and Domestic Plant sample results, weighted by flow, Industrial Plant effluent sodium concentrations have been estimated to average 140 mg/L.

Commingled Discharge

27. The commingled discharge is currently comprised of about 60 percent Industrial Plant effluent and 40 percent Domestic Plant effluent.
28. The Discharger's self-monitoring reports characterize the average commingled effluent in recent years as follows:

Parameter	Units	2009	2010	2011	2012
Flows	mgd	11.1	11.2	11.3	12.0
Total dissolved solids (TDS)	mg/L	424	350	336	306
Electrical conductivity (EC)	umhos/cm	1,104	690	633	611
Biochemical Oxygen Demand (BOD)	mg/L	50	21	8.9	11.1
Nitrate (as N)	mg/L	7.8	13	4.7	3.5
Ammonia (as N)	mg/L	50	3.8	2.0	1.3
Total Kjeldahl Nitrogen	mg/L	65	9.6	5.4	4.0
Total Nitrogen	mg/L	73	21	10.5	8.1

29. WDRs Order R5-2002-0185 requires the City to perform regular commingled effluent monitoring and reporting. Analytical results from commingled effluent samples collected quarterly from 2011 through 2012 are generally consistent with previous sampling events. The results show average sodium and chloride concentrations of 110 mg/L and 68 mg/L, respectively.
30. The 2009 RWD indicates that, based on the design specifications for each Plant, commingled effluent total nitrogen will not exceed 10 mg/L.

Recycled Water

31. Recycled water is defined in Water Code section 13050 and in California Code of Regulations Title 22 section 60301.900. Based on the level of treatment at the WWTF, effluent delivered to recycled water users (Users) is "undisinfected secondary recycled water." Recycled water will be stored in unlined ponds and applied to Use Areas cropped with animal feed and fodder crops. For the purpose of this Order, "Use Area" means an area with defined boundaries where recycled water is used or discharged (Cal. Code. Regs., title 22, § 60301.920.).
32. Undisinfected secondary recycled water (domestic wastewater) contains human pathogens that are typically measured using total or fecal coliform organism as indicator organisms. The California Department of Public Health (Department of Public Health), which has primary statewide responsibility for protecting public health, has established statewide criteria for the use of recycled water (Cal. Code. Regs., title 22, § 60301 et seq.).

33. The Discharger's projected water balance depends heavily on proposed recycled water projects for disposal of effluent, which is a limiting factor for expansion. To allow the Discharger flexibility in changing the size and use of land areas for recycled water storage or land application, this Order includes a Master Recycling Permit, as described in Water Code section 13523.1(b).
34. In accordance with the statute, this Order includes WDRs and requires the Discharger to: comply with uniform statewide recycling criteria; establish and enforce rules and regulations for Users in accordance with statewide recycling criteria; submit quarterly reports summarizing reclaimed water use; and conduct periodic inspections of the recycled water use sites. The City submitted a draft Recycled Water Ordinance with the June 2009 RWD, but has not adopted the Ordinance. Provision I.22 requires the City to establish and have the authority to enforce rules and/or regulations for recycled water, in accordance with statewide recycling criteria. Attachment E, attached hereto and made a part of this Order by reference, summarizes requirements of the uniform recycled water criteria. However, the City and Users will need to consult the California Code of Regulations, the Health and Safety Code, and the Water Code directly to ensure compliance with the statutes and regulations.
35. A 1996 Memorandum of Agreement (MOA) between the Department of Public Health and the State Water Board on the use of recycled water establishes basic principles relative to the agencies and the regional water boards. In addition, the MOA allocates primary areas of responsibility and authority between these agencies, and provides for methods and mechanisms necessary to assure ongoing, continuous future coordination of activities relative to the use of recycled water in California. This Order implements the applicable portions of the Title 22 water recycling regulation in accordance with the MOA.
36. On 8 January 2003, the Department of Public Health distributed a memorandum to all regional water quality control boards recommending that orchard and vineyard crops be irrigated with water that meets, at minimum, the requirements for disinfected secondary-2.2 recycled water, as defined in section 60302.220 of Title 22.
37. On 3 February 2009, the State Water Board adopted Resolution 2009-0011, *Adoption of a Policy for Water Quality Control for Recycled Water* (Recycled Water Policy). The Recycled Water Policy promotes the use of recycled water to achieve sustainable local water supplies and reduce greenhouse gas emissions.
38. On 23 April 2009, the Central Valley Water Board adopted Resolution R5-2009-0028, *In Support of Regionalization, Reclamation, Recycling and Conservation for Wastewater Treatment Plants* (the "Regionalization Resolution"). The Regionalization Resolution encourages water recycling, water conservation, and the regionalization of wastewater treatment facilities. It requires dischargers to document:
 - a. Efforts to promote new or expanded wastewater recycling opportunities and programs;
 - b. Water conservation measures; and
 - c. Regional wastewater management opportunities and solutions (e.g. regionalization).

Recycling of effluent by the Discharger is consistent with the intent of the State Water Board's Recycled Water Policy and the Central Valley Water Board's Regionalization Resolution.

39. The City currently discharges commingled effluent from the WWTF to eight large ponds (2,640 acre-ft total) for disposal and storage. According to evaporation estimates and Use Area recycled water application rates from the City's Annual Land Management Report for 2011, an average of approximately 3.3 mgd (29 percent) percolates to groundwater, 0.8 mgd (6.9 percent) evaporates, and recycled water projects account for the remaining 7.2 mgd (64 percent).
40. At the time of adoption, WDRs Order R5-2002-0185 authorized the discharge of up to 9.39 mgd of commingled effluent to 200 acres of disposal and storage ponds, with approximately 1,330 acres of recycled water application areas (Use Areas) available. The Use Areas consisted of about 800 acres of City-owned land and 530 acres owned by Thomas and Ronald Clark (hereafter Clarklind Farms).
41. Water Reclamation Requirements Orders 90-058 and 90-059 regulate the Clarklind Farms Use Areas. Clarklind Farms has authorized the City to perform required monitoring and reporting tasks required by the Water Reclamation Requirements.
42. Since adoption of WDRs Order R5-2002-0185, the City has prepared additional Title 22 engineering reports and submitted supporting RWDs (or reports of water reclamation). The total land area of proposed recycled water projects for the City is about 4,000 gross acres. However, some of the Use Areas have been removed or otherwise taken out of service, including about 150 acres of Clarklind Farms land dedicated to pistachios, 160 acres of City land converted to percolation ponds, about 160 acres of land now used for application of dairy wastewater, and other properties that were not included in the 2009 RWD or subsequent documents. Attachment F, a part of this Order, is a map of the recycled water Use Areas.
43. For the purpose of water and nutrient balance calculations, the RWD assumes that 90 percent of each Use Area will be used for recycling on crops, with an irrigation efficiency of 70 percent. The RWD uses published reference evapotranspiration and crop coefficients to estimate irrigation water requirements.
44. The table below presents the Use Areas by owner, as described in the RWD and subsequent documents (updated in August 2012). For each Use Area, the table indicates the estimated acreage that will receive wastewater (typically 90 percent of gross parcel acreage). The Department of Public Health has approved a recycled water Title 22 engineering report for each of the listed recycled water projects. The gross land area of the proposed Use Area properties totals about 2,920 acres, of which about 2,620 acres is available for application of recycled water.

<u>Owner</u>	<u>Project Name</u>	<u>Acres</u>
City of Tulare	City Property	533
Clark, Thomas and Ronald	Clarklind Farms Property	313

<u>Owner</u>	<u>Project Name</u>	<u>Acres</u>
Colson, Patricia	Heitz Ranch Property	95
Walter Colson Admin. Trust	Colson Property	221
De Azevedo-Anker, Filomena	De Azevedo Property	45
Eddy, Jack and Mary	Eddy Property	417
Faria, Raymond and Letha	Faria Property	68
Heiskell Family Farms	Hillman Property	178
Martin, Mary	Mello-Martin Property	616
Wilbur Family Trust	Wilbur Property	138

45. Recycled water projects are limited to areas for which the Department of Public Health has approved a Title 22 engineering report and for which prerequisites to discharge listed in the Water Code (Wat. Code, § 13264, subd. (a).) have been met. The Department of Public Health issued a letter on 3 August 2012 approving the Title 22 engineering reports for all the recycled water projects listed in Finding 44.
46. The Discharger submitted a letter on 28 August 2012 updating the 2009 RWD with the current effluent disposal capacity. The letter includes water and nutrient balance calculations prepared by a civil engineer indicating that, with the existing effluent storage ponds and the Use Areas listed above, the Discharger has disposal capacity for a flow of up to 16.0 mgd. On 26 March 2013, the City's contract civil engineer informed the Central Valley Water Board that the disposal capacity for the WWTF is now limited to 16.0 mgd because the Lopes Property (a 148-acre Use Area) has changed ownership and will not receive effluent from the WWTF.
47. The Discharger submitted a draft Recycled Water Ordinance as part of the RWD. Once it has adopted a Recycled Water Ordinance, or otherwise establishes the authority to enforce rules and/or regulations for Users governing the design and construction of recycled water use facilities and the use of recycled water, the City may issue water recycling permits to Users of WWTF effluent. In the meantime, the proposed recycled water projects appear to meet the statutory prerequisites to discharge (Wat. Code, § 13264, subd. (a).).
48. Water balances in the 2009 RWD demonstrate the pond storage and Use Area acreage requirements to accommodate multiple discharge flow scenarios, including commingled effluent flows of 15 mgd, 18 mgd, and 20 mgd. From the RWD, the approximate effluent storage capacity and Use Area acreage required for each scenario is listed below.

	<u>Units</u>	<u>Scenario 1</u>	<u>Scenario 2</u>	<u>Scenario 3</u>
Commingled Effluent Flow	mgd	15	18	20
Farmland Required (gross)	acres	2,300	3,000	3,300
Effluent Storage Required	acre-ft	2,700	3,000	3,300

49. The immediately applicable commingled effluent flow limitation in this Order is based on the existing effluent disposal capacity. Under the conditions of the Master Recycling Permit, the

Discharger may expand the Use Areas. The commingled effluent flow limit may incrementally increase with Executive Officer approval, according to Provision I.17 and Provision I.18, up to the treatment capacity of the WWTF (20 mgd maximum).

Pretreatment

50. Pursuant to California Code of Regulations, title 23, section 2233, the Discharger is required to establish a pretreatment program to protect the WWTF from upset as well as protect sludge quality and groundwater quality underlying the WWTF and Use Areas.
51. The 2002 WDRs found that the City's pretreatment program was inadequate. Most of the Significant Industrial Users (SIUs) in the City were not compliant with local limits, but the City had not performed any enforcement activity. The 2002 CDO required the City to implement an Industrial Pretreatment Program conforming to Title 40, Code of Federal Regulations (C.F.R.), part 403. The City modified its Sanitary Sewer Ordinance to implement significant changes to its Industrial Pretreatment Program. On 30 January 2004, the Central Valley Water Board adopted Resolution R5-2004-0019, approving the City's updated Industrial Pretreatment Program.
52. In January 2010, Central Valley Water Board staff and a contractor for the United States Environmental Protection Agency conducted a pretreatment compliance inspection. The Pretreatment Compliance Inspection Report, transmitted 26 August 2011, revealed numerous industrial pretreatment program-related violations of WDRs Order R5-2002-0185, including failure to implement a system of progressive enforcement against industrial users that violated pretreatment limits. Central Valley Water Board staff requested a written description of measures the City has or would implement to resolve the pretreatment program deficiencies identified in the report.
53. The City's historic lack of a proper pretreatment program and failure to enforce the program it had in place resulted in long-term discharge to the collection system of high strength wastewater. The high strength of the industrial influent appears to have caused (either directly or indirectly) violations of effluent and groundwater limits of WDRs Order R5-2002-0185. Violations have included exceedances of groundwater limits for EC, sodium, and nitrate, and effluent limits for EC and biochemical oxygen demand. Findings 93 through 95 summarize the City's past compliance issues.
54. The City stopped issuing penalties for EC violations in August 2009, to allow SIUs to adjust wastewater pH, which the City reportedly expected would aide in startup of the new Industrial Plant improvements in November 2009.
55. The dairy processing wastewater that dominates Industrial Plant influent flow has relatively low pH and high BOD and nitrogen concentrations. The City uses biological treatment processes to remove BOD and nitrogen, which requires a relatively narrow pH range. Fluctuations in pH, exacerbated by the failure of industrial sewer users to comply with local limits for pH, require the City to adjust influent wastewater pH to sustain the Plant microbes. The City's continuous influent pH monitoring data shows wide and rapid fluctuations in pH, including a three-hour period in August 2010 when the pH changed from 4.5 to 10.5. In the past, the City used

various inorganic chemical means to stabilize pH, including sodium hydroxide and magnesium oxide, which increased the salinity of the discharge. Since about 2006, the City has adjusted the pH of influent industrial wastewater with ammonia. Until the City made over \$85 million in Industrial Plant upgrades, primarily to improve treatment for removal of nitrogen, Industrial Plant effluent nitrogen often exceeded 100 mg/L. The City discharged commingled effluent with an average total nitrogen concentration of 85 mg/L as nitrogen as recently as 2008. Total nitrogen concentrations dropped significantly, to near 10 mg/L, once construction projects were completed and operational improvements were implemented.

56. On 6 March 2012, the City adopted a revised Sanitary Sewer Ordinance that includes significant changes to the Industrial Pretreatment Program. The changes, intended to address the deficiencies noted in the 26 August 2011 Pretreatment Compliance Inspection Report, include updates for consistency with streamlining regulations, clarification of violation definitions and enforcement protocols, and supporting technical justification for BOD/TSS limits and changes to salinity/pH limits. The work included preparation of an Enforcement Response Plan, which details how, and the circumstances under which, the City will pursue enforcement.
57. Changes to local limits for salinity and pH in the revised Industrial Pretreatment Program incorporate allowances for elevated EC when there is sufficient evidence to show that the excess EC is due to nitrate or ammonia in the wastewater. The Ordinance specifically credits the SIU 4.0 umhos/cm for each milligram per liter of nitrate or ammonia in the discharge to the sewer. The City reports that the theoretical relationships with EC are about 5.1 umhos/cm per mg/L nitrate and 5.3 umhos/cm per mg/L ammonia. The City expects the credit to encourage SIUs to comply with local limits for pH by addition of nitric acid and ammonia, rather than with inorganic acids and bases. Nitrogen removal treatment in the Industrial Plant can remove nitrate and ammonia, but inorganic acids and bases add salts that pass through the Plant, resulting in excessive discharge salinity.
58. The revised Industrial Pretreatment Program updates the local limits for discharges to the sewer collection system. The changes consist of a broader allowable pH range of 5 to 11 rather than 6 to 11, and the EC "credit" described in Finding 57. The local limits apply to all dischargers to the sewer collection system. Through its Industrial Pretreatment Program, the City also has the authority to set more stringent local limits for Categorical Industrial Users consistent with federal industrial pretreatment regulations (e.g. 40 C.F.R. § 405.).
59. On 15 March 2012, the City submitted an evaluation of the Industrial BOD and TSS limits certified by a licensed civil engineer. The evaluation includes calculated BOD and TSS loading rates for each significant industrial user permitted to discharge to the sewer. According to the evaluation, while the average Industrial Plant influent flow is about 59 percent of the hydraulic capacity, the average mass loading to the Industrial Plant of about 95,000 pounds of BOD per day is 43 percent of the design treatment capacity.
60. On 15 March 2012, the City submitted an updated Industrial User Survey it completed in February 2012. Eight SIUs discharge to the Industrial Plant. The majority of wastewater flow is from processors of cheese, butter and whey, and other dairy-based products, including Land O'Lakes, Kraft Cheese Company, Saputo Cheese Company, Morningstar Foods (formerly

Tulare Culture Specialists), and Dreyers Grand Ice Cream (formerly Ice Cream Partners and Haagen Dazs). The SIUs connected to the Industrial Plant that are not dairy processors include Ruiz Food Service (food processing) and a food transportation company with truck washout operations. Four SIUs discharge to the Domestic Plant, including food transportation companies with truck washout operations, and Corpak, Inc. (cardboard manufacturing).

61. Further technical and legal review is necessary to determine whether the revised Industrial Pretreatment Program meets all applicable State and federal requirements. Approval of the Industrial Pretreatment Program will occur by separate order once these reviews are complete.

Wastewater Collection System

62. On 2 May 2006, the State Water Resources Control Board (hereafter State Water Board) adopted a General Sanitary Sewer System Order (State Water Board Water Quality Order 2006-0003-DWQ, *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems*) (the "General Order"). The General Order requires that all public agencies that own or operate sanitary sewers systems greater than one mile in length comply with the General Order. The Discharger's collection system is greater than one mile in length. The Discharger submitted a Notice of Intent (NOI) for coverage under the general permit to the State Water Resources Control Board in July 2006 and is covered under the General Order.
63. The Discharger has reported 9 sanitary sewer spills in 2011 and 2012. Most of the spills were reportedly caused by obstruction of wastewater flow by grease deposition in the sewer. Three spills were reported as violations of the General Order. No spills occurred to surface water, but were reportedly all confined to land. All the reported spills were cleaned up and disinfected within 24 hours. The spills do not appear to be recurring.

Biosolids

64. The 2002 CDO found that the Discharger's use of unlined sludge drying beds may have caused groundwater to exceed groundwater limitations in the 2002 WDRs, and threatened to violate Sludge Specifications. The 2002 CDO required improvements to sludge management that would comply with WDRs, specifically the requirement that treatment or storage of sludge, solid waste, and biosolids on the property of the WWTF must be temporary and controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate groundwater limitations.
65. When the City proposed to line the existing sludge drying beds with soil cement, Central Valley Water Board staff expressed concern about the long-term reliability and performance of soil cement as a liner material. In partnership with 13 other cities in the Tulare Lake Basin, the City hired a consultant to prepare a technical report supporting the technology. Central Valley Water Board staff reviewed a draft version of the report, entitled *Soil-Cement Lining of Sludge Drying Beds Best Practicable Treatment and Control for Solar Drying of Municipal Wastewater Sludge*. In a 24 July 2003 meeting with the City of Tulare, Central Valley Water Board staff provisionally accepted the report's premise that soil cement may be considered an acceptable technology to line remote sludge drying beds.

66. Key conditions of acceptance of soil cement lined sludge drying beds include: comprehensive design criteria, stringent construction quality assurance and quality control, periodic maintenance, and effective monitoring of containment integrity. Municipalities are expected to discontinue use of the soil cement lined beds, implement an alternative method of sludge drying, and implement groundwater remediation measures if they cannot demonstrate containment is sufficiently protective of groundwater.
67. The Discharger completed construction of approximately 12 acres of soil cement lined sludge drying beds for Domestic Plant sludge in 2005. The sludge drying beds include one demonstration bed that incorporates a leachate collection and recovery system. All the beds feature a 14-inch soil cement liner. The demonstration bed also includes a continuous 30-mil polyvinyl chloride (PVC) liner underlying the soil cement. A gravel bed between the liners drains to a sump. The City of Porterville submitted the results of a hydraulic conductivity study at the City of Tulare soil cement lined sludge drying beds in a technical report dated September 2006. The study concludes that, at less than 10^{-6} cm/s, the hydraulic conductivity of the soil cement liner will sufficiently limit percolation to minimize impacts to groundwater. The study does not present leachate water quality data or assess potential groundwater degradation. The City completed construction of 25 acres of soil cement lined sludge drying beds of the same design for Industrial Plant sludge in 2009.
68. Upon inspection in early 2010, both the Domestic Plant and Industrial Plant sludge drying beds appeared to be significantly weathered. At least the top 6 inches of liner material was friable in the sludge drying beds inspected at each Plant. The City's consulting engineers assert that even if the liner had lost several inches of material at the surface, the remaining liner thickness should allow continued operation for years with minimal seepage due to very low hydraulic conductivity. The state of the soil cement lined sludge drying beds has not been fully characterized; the ongoing performance of the soil cement lined drying beds needs to be reevaluated. Provision I.21 of this Order requires the Discharger to submit a Sludge Drying Bed Assessment Report to characterize the discharge to the sludge drying beds and assess the potential groundwater degradation associated with the beds based on estimated mass loading of waste constituents to groundwater.
69. After the sludge drying beds were constructed, the City used them only for a few days in 2006 and a few days in 2010 before initiating daily use of the beds beginning in 2012. In an attempt to maximize gas production and treatment performance, all the biosolids from both Plants were directed to the Fermenter at the Industrial Plant during that period. Sludge taken offsite is sent to a McCarthy Family Farms, Inc. facility in Corcoran. McCarthy Family Farms, Inc. is enrolled under WDRs Order 95-140, *Waste Discharge Requirements General Order for Reuse of Biosolids and Septage on Agricultural, Forest, and Reclamation Sites*.

Site-Specific Conditions

70. The WWTF and Use Area lie within the Tulare Lake Basin. The ground surface in the vicinity of the WWTF slopes gently (10 feet/mile) toward the southwest. Surface water drainage is to Deep Creek, a Valley Floor Water that drains to the Tulare Lake Bed. The Discharger is not required to obtain coverage under a National Pollutant Discharge Elimination System General

Industrial Storm Water Permit for the discharge because all storm water runoff from the WWTF property is diverted into existing storm water retention basins, kept separate from the wastewater stream, and does not discharge to a water of the United States.

71. The City's potable water supply originates from 28 groundwater wells and is of good mineral quality (i.e., its quality is better than necessary to meet established water quality objectives). The City's 2011 Annual Water Quality Report characterizes the source water concentration ranges for select constituents as follows:

<u>Constituent / Parameter</u>	<u>Units</u>	<u>Low</u>	<u>High</u>	<u>Average</u>
EC	umhos/cm	140	470	240
Total Dissolved Solids	mg/L	84	270	147
Sodium	mg/L	22	95	34
Chloride	mg/L	3.6	44	9.7
Nitrate (as N)	mg/L	nondetect	8.6	3.8
Arsenic	ug/L	nondetect	9.4	5.4

72. The discharge area is in an arid climate characterized by hot dry summers and mild winters. The rainy season generally extends from November through March. Occasional rains occur during the spring and fall months, but summer months are dry. According to information published by the California Department of Water Resources, average annual precipitation, pan evaporation, and reference evapotranspiration in the discharge area are about 10 inches, 61 inches, and 51 inches, respectively.
73. According to the United States Department of Agriculture Soil Conservation Service, Soil Survey of Tulare County, California, Western Part (draft), the soils of the Kaweah River alluvial fan near the WWTF consist of fine sandy loams and silty clay loams and are considered moderately permeable. The dominant sediments are silt, fine sands, and clay, according to logs of wells drilled in the area. A clay layer called the 'E' Clay of the Tulare Formation occurs at a depth of about 250 feet below ground surface (bgs). The 'E' Clay, which is reportedly 20 to 50 feet thick in the area, divides underlying groundwater into an upper unconfined and lower confined aquifers.
74. The WWTF is about seven miles southwest of the center of the City of Tulare. Land use in the area between the WWTF and the City is predominantly irrigated agriculture and rural residential. Land use to the north, west, and south of the WWTF primarily consists of irrigated agriculture, rural residential, and at least 10 dairies within a two-mile radius of the WWTF and Use Area. Crops grown within a five mile radius of the WWTF include, but are not limited to, alfalfa, corn, cotton, grapes, almonds, walnuts, sudan grass, dry beans, and pistachios, according to the California Department of Water Resources land use data published in 1999. This data generally agrees with pesticide use permit records for 2011 from the Tulare County Agricultural Commissioner's Office.

75. The Tulare Irrigation District Water Management Plan for 2010 estimates that it delivers water to about 76,000 acres of irrigated crops in the District, with about 71,000 acres of flood/furrow irrigation, about 3,800 acres of low-volume (e.g., drip) irrigation systems, and 825 acres of sprinkler irrigation. Discharge from the WWTF will also influence groundwater underlying areas outside the Tulare Irrigation District.
76. The Tulare Irrigation District supplies excellent quality (EC less than 50 umhos/cm) surface water from the Kaweah and Saint Johns Rivers, and from the Central Valley Project (Friant-Kern Canal). Water deliveries fluctuate widely from year to year according to precipitation. According to information published by the Tulare Irrigation District, for the period of 1949 through 2003, annual crop requirements in the area exceeded available surface water deliveries more than 40 percent of the time. During dry years, farmers supplement their water supply with groundwater wells, or as necessary, rely exclusively on groundwater wells for irrigation water supply. During wet years, the Tulare Irrigation District intentionally uses excess water to recharge groundwater. District data indicate that since 1949, groundwater elevations within the District have fallen about 30 feet. This continuing groundwater decline illustrates: (1) District farmers rely heavily on groundwater for crop irrigation; and (2) District surface water supplies are not sufficient to offset groundwater use.
77. Tulare Canal is an unlined irrigation canal that conveys surface water to farmland within the Tulare Irrigation District. It borders the WWTF's southern boundary, adjacent to the north side of the effluent ponds, traverses Use Areas along Paige Road, and terminates in the Lakeland Canal approximately 12 miles southwest of the WWTF. Attachment F, a part of this Order, depicts the Tulare Canal and other Tulare Irrigation District canals.

Groundwater Considerations

78. Groundwater flow in the unconfined aquifer of the Kaweah subbasin is generally to the southwest, toward the trough of the valley. According to *Lines of Equal Elevation of Water in Wells, Unconfined Aquifer*, published by the California Department of Water Resources for the Kaweah Groundwater Basin, pumping activity in and around the City appears to have induced a groundwater depression in the vicinity that gives groundwater at the City-wide scale a westerly gradient. At the scale of the WWTF, quarterly self-monitoring reports from the City show groundwater flow is generally away from the WWTF effluent ponds with a gradient of about 3 feet per 1000 feet. Groundwater in the unconfined aquifer is first encountered at depths of about 65 to 85 feet bgs in the vicinity of the WWTF and Use Areas. The area does not appear to include significant confining layers above the 'E' Clay.
79. Sources of groundwater recharge in the area include precipitation, land application of wastewater (including numerous dairies), and good quality water sourced from the Kaweah River. As noted above in Findings 75 through 77, the Tulare Irrigation District is responsible for a significant amount of recharge in the area, primarily through recharge basins and unlined canals in widespread use for irrigated agriculture. Elk Bayou, flowing southwest from Outside Creek, is within about a mile of the southernmost Use Areas and has been indicated by water level maps to be a significant source of recharge.

80. The City maintains a groundwater monitoring well network to monitor the groundwater. Attachment F presents approximate well locations. The City installed 13 additional groundwater monitoring wells since the 2002 WDRs, for a total of 29 wells. However, groundwater levels have dropped below the screened interval of 12 wells. Of the remaining 17, only seven of the wells are screened across the groundwater surface and monitor first-encountered groundwater. The other 10 were constructed 30 to 50 feet below the groundwater surface to monitor the vertical extent of groundwater degradation. No functional monitoring wells exist to monitor first-encountered groundwater downgradient from the Domestic or Industrial sludge drying beds, or downgradient from the majority of the recycled water Use Areas. The single upgradient well generally appears to represent upgradient groundwater quality, but is not screened across the groundwater surface and is not sufficient for the large discharge area. The City is limited in its ability to assess upgradient groundwater conditions and groundwater degradation because its groundwater monitoring well network is inadequate.
81. The 2002 WDRs note that groundwater monitoring wells MW-1, MW-2 and MW-12, designed to monitor groundwater upgradient of the discharge, are likely being influenced by seepage from a Tulare Irrigation District canal. The City installed two additional upgradient monitoring wells in 2006: MW-31 and MW-32. MW-32, installed with a screened interval between 65 and 90 feet below ground surface (bgs), was intended to monitor first-encountered groundwater, while MW-31 was screened from 125 to 150 feet bgs to monitor deeper groundwater. Groundwater has reportedly never risen to a level in MW-32 that would allow the City to collect a sample. The groundwater surface elevation during 2012 monitoring was about 15 feet above the well screen in MW-31.
82. The 2009 RWD characterizes background groundwater quality with the data below. This characterization is a summary of analytical results for samples from MW-31 for five quarterly sampling events from 2006 through 2007. The City characterizes MW-31 as a "deep" well, but suggests that since the aquifer is coarse-grained material with no significant confining layers, its character represents first-encountered groundwater.

<u>Constituent / Parameter</u>	<u>Units</u>	<u>Range</u>
Nitrate (as N)	mg/L	14 - 15
Total Dissolved Solids	mg/L	290 - 320
EC	umhos/cm	400 - 479
Sodium	mg/L	47.5 - 55
Manganese	ug/L	< 10

83. The California Department of Water Resources and the United States Geological Survey publish information about groundwater quality. Data that is pertinent to characterizing first-encountered groundwater is limited due to wide variability in the screened interval of wells, sampling dates, and constituents monitored. Samples from two upgradient wells and one downgradient well collected in the 1950s and 1960s (screened above 150 feet bgs) had nitrate as nitrogen less than 5 mg/L, EC of less than 400 umhos/cm, chloride of less than 20 mg/L, and sodium less than 65 mg/L. Naturally occurring groundwater is of good quality. Published

data generally agree with the characterization in the RWD, with the exception of nitrate concentrations, which appear to be higher in the City's upgradient well (Finding 82).

84. The Central Valley Water Board found in Waste Discharge Requirements Order R5-2002-0185 that the Discharger had caused a condition of groundwater pollution with nitrate, iron, and manganese, and caused excessive groundwater degradation with salts. Cease and Desist Order R5-2002-0186 requires the City to determine the vertical and horizontal distribution and extent of waste constituents in the soil profile and groundwater beneath and beyond the WWTF and Use Area to the extent influence by the discharge. It also requires the Discharger to prepare and implement a work plan for groundwater clean-up.
85. Central Valley Water Board staff approved a report from the Discharger characterizing onsite soils. The report summarizes the results of soil sampling, recommends that the City continue required annual soils monitoring, and notes that a groundwater assessment will be submitted under separate cover. The Discharger did not collect soil samples, as required by Monitoring and Reporting Program R5-2002-0186, until 2011. The Discharger has submitted multiple groundwater assessments, but the full vertical and horizontal distribution and extent of WWTF-related waste constituents in groundwater is still not defined.
86. As part of its RWD, the Discharger makes the case that implementing a groundwater clean-up project would not be cost effective. As an alternative, it proposes to cease discharge of high strength waste, which would lead to improved groundwater quality over time by dilution of degraded groundwater with better quality effluent and other sources of good quality recharge.
87. The table below presents average analytical results for the period of July 2011 through April 2012 for each groundwater monitoring well that contained enough water to collect a sample.

	<u>Nitrate</u> as <u>Nitrogen</u> mg/L	<u>EC</u> umhos/cm	<u>Sodium</u> mg/L	<u>Chloride</u> mg/L	<u>Iron</u> ug/L	<u>Manganese</u> ug/L	<u>Organic Carbon</u> mg/L
Upgradient							
MW-2	0.3	89	5.0	2.0	< 5	< 1	0.3
MW-31	19	551	53	34	< 5	1.7	0.4
Downgradient of Effluent Ponds							
MW-18	10	1,290	175	90	< 5	1.7	0.8
MW-19	2.1	928	177	81	32	< 1	1.4
MW-20	3.2	552	45	14	< 5	< 1	0.4
MW-25	0.2	900	130	80	< 5	96	2.1
MW-26	2.8	1,011	145	85	5.9	6.2	1.7
MW-27	0.9	840	101	84	4.3	13	1.0
Downgradient of Use Areas							
MW-11A	32	1,347	150	107	< 5	< 1	0.6
MW-15A	29	967	61	60	< 5	< 1	0.5

	Nitrate as <u>Nitrogen</u> mg/L	<u>EC</u> umhos/cm	<u>Sodium</u> mg/L	<u>Chloride</u> mg/L	<u>Iron</u> ug/L	<u>Manganese</u> ug/L	<u>Organic Carbon</u> mg/L
MW-16	14	549	22	32	4.4	< 1	0.6
MW-24	7	900	88	74	< 5	20	0.7
MW-28	30	1,140	107	102	< 5	10	0.6
MW-30	45	1,440	138	123	< 5	2.6	0.8
MW-34	32	1,225	98	93	< 5	1.6	0.5
MW-35	14	891	128	98	< 5	< 1	0.6
Downgradient or Cross-gradient from WWTF							
MW-23	9.0	979	80	68	6.1	1.3	0.4
Far Down Gradient							
MW-33	22	771	99	42	< 5	1.2	0.5

88. The groundwater surface elevation has dropped below the screened interval of some monitoring wells, limiting data available for groundwater assessment. However, wells near the effluent ponds (MW-18, MW-19, MW-25, MW-26, and MW-27) provide enough data to determine that groundwater influenced by percolating effluent has improved over conditions at the time of adoption of the 2002 WDRs. For example, EC has dropped in MW-19 from as high as 2,500 umhos/cm to less than 1,000 umhos/cm. MW-27 still shows the ongoing trend of degradation, likely because it is a deeper well at the edge of the ponds and does not yet represent groundwater influenced by better quality effluent.
89. Iron and manganese concentrations in MW-18, near the effluent ponds, went up (manganese up to 120 ug/L) during the period from about 2005 to 2007 as total nitrogen decreased to below detection limits; a sign of reducing conditions in the soil. As iron and manganese concentrations have decreased to near undetectable levels in recent years, total nitrogen has increased from less than 1.0 mg/L to around 10 mg/L, but much less than the highest groundwater total nitrogen concentration in MW-18 of 50 mg/L in 2002. Monitoring of shallow well MW-26 for 2011 and 2012 in the center of the pond area shows low concentrations of iron (7 ug/L), manganese (6 ug/L), and nitrate (2.6 mg/L as nitrogen). The four samples collected from deeper well MW-25, since 2008, show manganese concentrations are still above the secondary MCL of 50 ug/L, but the concentrations are dropping. The data show reducing conditions, and associated denitrification, continue to occur to a limited extent beneath the ponds, but the rate of mobilization of iron and manganese has significantly decreased.
90. Three groundwater monitoring wells (MW-15A, MW-16, and MW-30) provide water quality data for first-encountered groundwater underlying the Use Areas. The data generally shows groundwater quality has been degraded by past discharges of WWTF effluent (e.g., nitrate concentrations increased from roughly 20 mg/L to 30 mg/L as nitrogen in MW-15A from 1996 to 2008). Groundwater degradation with nitrate and salinity appears to be associated with the higher strength of effluent prior to recent WWTF improvements. Deeper wells in the Use Areas (MW-11A, MW-28, MW-34, and MW-35) generally show a similar trend of degradation.

91. The table below presents the reported maximum loading rate for a single parcel and average annual Use Area nitrogen loading rates by year. The table shows the effect of WWTF improvements on the nitrogen loading rate in the Use Areas. Future trends in groundwater quality underlying the Use Areas are expected to reflect the improved loading rates. Alfalfa crops in the Use Area have potential to remove up to 480 pounds of nitrogen per acre.

	<u>2009</u>	<u>2010</u>	<u>2011</u>
	lb/acre	lb/acre	lb/acre
Maximum Nitrogen Loading	2,390	437	223
Average Nitrogen Loading	1,200	215	122

92. In general, the discharge is now significantly better quality than existing groundwater quality. Groundwater quality data for wells influenced by effluent percolation from ponds appears to already reflect improvements in WWTF effluent quality. However, based on the analysis of lateral groundwater flow in the RWD, the Discharger estimates it would take about 4 years following changes in effluent quality to measurably influence groundwater quality a half mile from the ponds. The RWD states that it will theoretically take 9 years and 17 years to measure changes in groundwater 1 mile and 2 miles downgradient, respectively. The estimated times do not consider effluent application on the Use Areas, which the RWD says will mask the effects on groundwater of improved discharge quality.

Compliance and Enforcement Considerations

93. In 2002, the Central Valley Water Board adopted WDRs R5-2002-0185 and CDO R5-2002-0186. The Orders included provisions to address multiple ongoing issues with the discharge. The issues are summarized in the list below.
- The WWTF had inadequate capacity to treat the strength and flow of wastewater it was accepting. It was exceeding flow limits and effluent water quality limits for EC, BOD, and TSS.
 - The City's Industrial Pretreatment Program and its implementation were inadequate.
 - The City had insufficient land to dispose of its effluent and was applying effluent to reclamation areas in excess of agronomic rates. Effluent was over-applied to the point that it spilled over onto neighboring properties and into irrigation canals.
 - The City was discharging high strength wastes to unlined treatment ponds and unlined sludge drying beds.
 - The City's groundwater monitoring well network was inadequate.
 - Operators bypassed treatment units, resulting in discharge of partially treated waste.

- g. Storm events resulted in excessive volumes of pollutant-free wastewater entering the collection system.
- h. The City caused groundwater degradation and pollution over a large area underlying its percolation ponds and use areas. Groundwater was degraded with numerous constituents including chloride, sulfate, boron, organic carbon, and increased alkalinity and hardness. Degradation exceeded water quality objectives (caused pollution) for nitrate, EC, TDS, sodium, iron, and manganese.

94. The Discharger has worked to address the issues presented above, generally as required by the 2002 Orders. The list below summarizes the efforts the City has made with respect to each issue listed above in Finding 93.

- a. In the Industrial Plant, the City installed a dissolved air flotation (DAF) unit to remove fats, oils, and grease (FOG) from wastewater that bypasses the Fermenter. The City constructed six sequencing batch reactors (SBRs), six denitrifying filters, two DAF units for thickening solids generated in the SBRs, and three anaerobic digesters.

In 2006, the City constructed a plug-flow anoxic basin in the Domestic Plant to improve nitrogen removal. On 18 November 2004, the City submitted a Salinity Control Plan, as required by the 2002 CDO.

- b. The City made changes to its Industrial Pretreatment Program, implemented by changes to its Sewer Ordinance, at the end of 2003. The Central Valley Water Board adopted a resolution approving the Industrial Pretreatment Program in January 2004.
- c. The City now owns 590 acres of the Use Area and has contracts for reclamation on over 2,000 acres of land owned by other parties. The Use Area lands total more than 1,500 additional acres since adoption of the 2002 WDRs. The City proposed that the WDRs should include a Master Recycling Permit to allow the City to authorize new recycled water users and reclamation areas.
- d. At the Industrial Plant, the City lined the first pond of each aerated pond series with concrete (shotcrete) and compacted the remaining cell bottoms in 2004. When the City began using the SBRs at the end of 2009, it began phasing out use of the aerated ponds. It now uses only the initial concrete-lined ponds (aerated equalization basins) in the aerated pond series. The City also lined its domestic sludge drying beds with soil cement and constructed soil cement lined sludge drying beds of similar design for sludge from its Industrial Plant.
- e. The City installed 13 additional groundwater monitoring wells in 2006. However, one of the key additional wells installed in 2006 (upgradient well MW-32) has never produced enough water to collect a sample, and others are also dry. Expanded Use Areas have no representative monitoring wells and upgradient groundwater data is limited. The monitoring well network is improved, but still inadequate.

- f. Operators use controlled bypass of certain treatment units to optimize carbon to nitrogen ratios and improve performance of the WWTF.
 - g. The City has been pursuing projects to remove direct storm water connections to the sewer system, including a project completed in 2010 that involved construction of a dedicated dairy processing wastewater line in place of a large storm drain that had been used to connect to the sewer.
 - h. In the 2009 RWD, the City proposes to rely on natural attenuation and dilution to address groundwater pollution from its previous discharges.
95. As noted above, improvements to the WWTF have generally resulted in ongoing compliance with the 2002 WDRs and satisfied the purpose of the 2002 CDO. CDO R5-2002-0186 will be rescinded by a separate order. However, another enforcement order (e.g. Cleanup and Abatement Order) may be appropriate to direct ongoing groundwater plume assessment and remediation.

Basin Plan, Beneficial Uses, and Water Quality Objectives

96. The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition, revised January 2004* (the "Basin Plan") designates beneficial uses, establishes narrative and numerical water quality objectives, contains implementation plans and policies for protecting all waters of the Basin, and incorporates, by reference, plans and policies of the State Water Board. In accordance with Water Code section 13263(a), these waste discharge requirements implement the Basin Plan.
97. The Basin Plan specifies that municipal and domestic wastewater dischargers will be required to reclaim and reuse wastewater whenever reclamation is feasible.
98. The WWTF is in Detailed Analysis Unit (DAU) No. 242, within the Kaweah Basin hydrologic unit. The Basin Plan identifies the beneficial uses of groundwater in the DAU as municipal and domestic supply, agricultural supply, industrial service and industrial process supply, and water contact and non-contact water recreation.
99. The WWTF is in the Kaweah Delta Hydrologic Area (No. 558.10) of the South Valley Floor Hydrologic Unit, as depicted on hydrologic maps prepared by State Water Resources Control Board in August 1986.
100. The Basin Plan includes a water quality objective for chemical constituents that, at a minimum, requires waters designated as domestic or municipal supply to meet the MCLs specified in Title 22. The Basin Plan recognizes that the Central Valley Water Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
101. The Basin Plan establishes narrative water quality objectives for Chemical Constituents, Taste and Odors, and Toxicity. The Toxicity objective, in summary, requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological

responses in human, plant, animal, or aquatic life associated with designated beneficial uses. Quantifying a narrative water quality objective requires a site-specific evaluation of those constituents that have the potential to impact water quality and beneficial uses.

102. The Basin Plan identifies the greatest long-term problem facing the entire Tulare Lake Basin as the increase in salinity in groundwater, which has accelerated due to the intensive use of soil and water resources by irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until there is a long-term solution to the salt imbalance. Until then, the Basin Plan establishes several salt management requirements, including:
 - a. The incremental increase in salts from use and treatment must be controlled to the extent possible. The maximum EC of the effluent discharged to land shall not exceed the EC of the source water plus 500 umhos/cm. When the source water is from more than one source, the EC shall be a weighted average of all sources.
 - b. Discharges to areas that may recharge good quality groundwater shall not exceed an EC of 1,000 umhos/cm, a chloride content of 175 mg/L, or boron content of 1.0 mg/L.
103. The Basin Plan requires municipal WWTFs that discharge to land to comply with treatment performance standards for BOD₅ and TSS. WWTFs that preclude public access and are greater than 1 mgd must provide removal of 80 percent or reduction to 40 mg/L, whichever is more restrictive, for both BOD₅ and TSS.
104. The Basin Plan requires that all publicly owned treatment works (POTWs) with a design flow greater than 5.0 million gallons per day must comply with 40 CFR 403, the federal pretreatment program requirements. All industrial users that discharge to POTWs must comply with the National Pretreatment Standards (including 40 CFR 405 for dairy processing wastewater).

Antidegradation Analysis

105. State Water Board Resolution 68-16 (*"Policy with Respect to Maintaining High Quality Water of the State"*) (the "Antidegradation Policy") prohibits degradation of high-quality groundwater unless it has been shown that:
 - a. The degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives;
 - b. The degradation will not unreasonably affect present and anticipated future beneficial uses;
 - c. The Discharger employs Best Practicable Treatment or Control (BPTC) to minimize degradation; and
 - d. The degradation is consistent with the maximum benefit to the people of the state.

106. Whether groundwater is considered “high-quality water” is based on a consideration of the best water quality achieved since the adoption of the Antidegradation Policy by the State Water Resources Control Board in 1968. The Central Valley Water Board analyzes the amount of degradation allowed by these WDRs after considering whether the groundwater is considered a high-quality water for a particular constituent, and after considering the amount of degradation that was previously allowed under prior permits. The Board had previously authorized degradation of groundwater pursuant to WDRs Order R5-2002-0185, which this Order will supersede. The discharges authorized by these WDRs will maintain the current level of water quality protection, and will not allow further degradation, except with respect to sodium. For sodium, this Order imposes a time schedule to ensure that any degradation is ultimately limited so that the discharges are fully protective of the agricultural supply beneficial use, regardless of whether the Basin Plan is amended to alter the way in which the Board ensures protection of this use. With respect to salts, nitrogen, total organic carbon, pathogens, and anthropogenic chemical constituents, these WDRs will limit degradation as described below:
- a. For salinity, the Basin Plan contains effluent limits of 500 umhos/cm plus the EC of source water, and 1,000 umhos/cm maximum for discharges to areas that may recharge to good quality groundwater. As the Tulare Lake Basin is a closed basin, these limits are designed to control the rate of groundwater degradation with respect to salinity. With a source water EC of about 200 umhos/cm, the average discharge EC of about 630 umhos/cm meets the Basin Plan limits of 1,000 umhos/cm or source water plus 500 umhos/cm (700 umhos/cm). Findings 82 and 83 characterize background groundwater as having EC less than 500 umhos/cm. Degradation of groundwater with saline waste constituents may occur as a result of the discharge. However, the discharge is not expected to increase groundwater salinity to the extent that it would adversely affect beneficial uses.
 - b. For sodium and chloride, there are currently no numeric standards in the Basin Plan for protecting groundwater designated as supporting the agricultural supply beneficial use. Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) is a collaborative basin planning effort aimed at developing and implementing a comprehensive salinity and nitrate management program. Until the program is developed, the Central Valley Water Board interprets narrative water quality objectives (e.g., the Toxicity Objective) on a case-by-case basis. WDRs Order R5-2002-0185 established groundwater limits at 69 mg/L for sodium and 106 mg/L for chloride. This Order carries over the same limits for groundwater, with a compliance date for the sodium limit of 11 April 2021. Until the 2021 date, the effective groundwater limit for sodium is 110 mg/L.

Concentrations of sodium and chloride in first encountered groundwater unaffected by the discharge are less than 65 mg/L and 20 mg/L, respectively. Because the discharge contains both sodium and chloride in concentrations over 65 mg/L (e.g., over 100 mg/L sodium), the discharge may cause degradation for these constituents. However, the discharge is not expected to cause groundwater chloride concentrations to exceed 106 mg/L. In terms of sodium, the discharge will generally improve groundwater quality in areas that have been affected by previous discharges.

- c. Both treatment Plants at the WWTF include nitrogen removal treatment, with a design effluent of 10 mg/L or less. The average commingled effluent total nitrogen concentration is near 10 mg/L. The crops grown in the Use Areas will take up nitrogen before it percolates to deeper groundwater. Samples from the groundwater underlying effluent ponds consistently shows that the crops uptake a significant amount of the nitrogen (more than 25 percent) in the discharge. This Order limits the discharge to no more than 13 mg/L total nitrogen. Degradation of groundwater with nitrate is not expected to exceed water quality objectives protective of the beneficial uses.
- d. For total organic carbon, WDRs Order R5-2002-0185 notes that the discharge had occasionally caused degradation, which likely caused the reducing conditions in groundwater responsible for mobilizing iron and manganese in concentrations above water quality objectives.

There is currently no established numerical water quality objective for total organic carbon in groundwater. The nitrogen removal processes the City has implemented in recent years consume large amounts of carbon. The average commingled effluent concentration of carbonaceous BOD was 5 mg/L for 2011 to 2012, compared to 33 mg/L for 2008 to 2009. Because the carbonaceous BOD is so low, degradation of groundwater with total organic carbon is not expected to adversely impact the beneficial uses of groundwater.

- e. Regarding pathogens, the WWTF does not include treatment units specifically designed to remove pathogens. Discharge from the WWTF is undisinfected secondary treated effluent. Pathogens will generally be removed by passage through the soil within inches of the surface upon land application and more than 60 feet of soil exists between application and groundwater. Land application is considered a treatment and control measure for pathogens. This Order limits coliform in groundwater to the Basin Plan water quality objective of less than 2.2 MPN/100 mL (essentially non-detect) over any 7-day period. This Order implements rules and regulations regarding use of recycled water consistent with California Code of Regulations, Title 22, and guidance from the California Department of Public Health. Degradation of groundwater with pathogens is not expected.
- f. Municipal wastewater contains anthropogenic chemical constituents related to commercial and industrial waste discharged to the sewer system. The Industrial Pretreatment Program prohibits discharges to the sewer system that could cause WWTF upset or pass-through that would result in violation of WDRs, including acids, metals, toxics, etc. In addition, the activated sludge processes in both treatment Plants of the WWTF rapidly remove volatile and biodegradable wastes. The discharge is not expected to cause significant groundwater degradation with industrial and commercial anthropogenic chemical waste constituents.
- g. Regarding other constituents, taste or odor-producing constituents, toxic substances, and other constituents are limited to concentrations such that they do not cause nuisance or adversely affect beneficial uses of groundwater.

107. The WWTF will provide treatment and control of the discharge that incorporates:

- a. Secondary treatment of wastewater with nitrogen removal;
- b. Sludge hauled off-site;
- c. Recycling of wastewater for crop irrigation;
- d. An operation and maintenance manual;
- e. Implementation of an Industrial Pretreatment Program;
- f. Implementation of an updated Salinity Management Plan;
- g. Implementation of a nutrient management plan;
- h. Certified operators to ensure proper operation and maintenance; and
- i. Source water, discharge, and groundwater monitoring.

The Board finds that the preceding treatment and control measures may be considered BPTC for this discharge.

108. Generally, limited degradation of groundwater by some of the typical waste constituents of concern (e.g., EC and nitrate) discharged from a municipal wastewater utility after effective source control, treatment, and control is consistent with maximum benefit to the people of the state. The technology, energy, and waste management advantages of municipal utility service far exceed any benefits derived from a community otherwise reliant on numerous concentrated individual wastewater systems, and the impacts on water quality will be substantially less. The economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State, and therefore provides sufficient reason to accommodate planned growth and allow for very limited groundwater degradation.
109. This Order requires extensive monitoring to evaluate any groundwater impacts from the discharge and to confirm that the treatment and control measures are sufficiently protective of groundwater.
110. This Order establishes terms and conditions to ensure that the discharge will not unreasonably affect present and anticipated beneficial uses of groundwater or result in groundwater quality less than that prescribed in state and regional policies. The treatment and control measures described above in Finding 107 are equivalent or better than those employed by similarly-situated dischargers, and are a significant improvement over measures employed by the Discharger in previous years, and therefore represent BPTC. The degradation authorized by this Order is also consistent with the maximum benefit of the people of the state, as explained in Finding 108. Therefore, the degradation authorized by this Order is consistent with the Antidegradation Policy.

CEQA

111. The City certified an Environmental Impact Report (EIR) on 7 August 2001 that analyzed the expansion of the Domestic Plant to 6 mgd and the Industrial Plant to 8 mgd. The project scope included additional Use Area lands for recycled water projects within about a 36-square-mile area bounded by Road 44 (California Avenue) to the west, Road 96 (Pratt Street) to the east, Avenue 176 to the south, and Avenue 224 (Bardsley Avenue) to the north.
112. On 20 July 2006, the City certified an Initial Study and Mitigated Negative Declaration for the expansion of the Domestic Plant and Industrial Plant to 8 mgd and 12 mgd, respectively. Mitigation measures were included to minimize air pollution, nesting birds impacts, light pollution, noise pollution, and impacts to cultural resources.
113. The City certified a Final EIR for an update to its General Plan on 18 March 2008 that discussed the fact that the City will be pursuing options for water reclamation and acquiring surface water rather than solely relying on groundwater for its water supply.
114. Following the General Plan Update, the City circulated a draft of another Mitigated Negative Declaration for the expansion of the Domestic Plant to 8 mgd. The Central Valley Water Board commented as a responsible agency that the CEQA analysis needed to include design details and assess resulting water quality impacts. The City responded by sending electronic copies of technical reports to the Central Valley Water Board, including an engineering assessment of required upgrades, the Domestic Plant Design Report (Findings 10 through 12). On 7 October 2010, the City certified the Mitigated Negative Declaration.
115. Consistent with the role of responsible agency, Central Valley Water Board staff reviewed and commented on the draft CEQA documents circulated by the lead agencies. The lead agencies ultimately approved the CEQA documents for the City WWTF's expansions. This Order imposes regulatory requirements on a project that has already undergone multiple environmental reviews pursuant to CEQA, and no additional CEQA analysis is required.

Other Regulatory Considerations

116. Based on the threat and complexity of the discharge, the WWTF is determined to be classified as 1A as defined below:
 - a. Category 1 threat to water quality: "Those discharges of waste that could cause the long-term loss of a designated beneficial use of the receiving water. Examples of long-term loss of a beneficial use include the loss of drinking water supply, the closure of an area used for water contact recreation, or the posting of an area used for spawning or growth of aquatic resources, including shellfish and migratory fish.
 - b. Category A complexity, defined as: "Any discharge of toxic wastes; any small volume discharge containing toxic waste; any facility having numerous discharge points and groundwater monitoring; or any Class 1 waste management unit."

117. Title 27 of the California Code of Regulations (hereafter Title 27) contains regulatory requirements for the treatment, storage, processing, and disposal of solid waste. However, Title 27 exempts certain activities from its provisions. Discharges regulated by this Order are exempt from Title 27 pursuant to provisions that exempt wastewater and reuse. Title 27, section 20090 states in part:

The following activities shall be exempt from the SWRCB-promulgated provisions of this subdivision, so long as the activity meets, and continues to meet, all preconditions listed:

...

(b) Wastewater – Discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or subsurface leachfields if the following conditions are met:

- (1) The applicable regional water quality control board has issued WDRs, recycling requirements, or waived such issuance;
- (2) The discharge is in compliance with applicable water quality control plan; and
- (3) The wastewater does not need to be managed according to Chapter 11, Division 4.5, Title 22 of this code as a hazardous waste.

118. The discharge authorized herein is exempt from the requirements of Title 27 in accordance with Title 27, section 20090(b) because:

- a. The Central Valley Water Board is issuing WDRs.
- b. The discharge is in compliance with the Basin Plan, and;
- c. The treated effluent discharged to the ponds and Use Areas does not need to be managed as hazardous waste.

119. Water Code section 13267(b) states:

In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposes to discharge within its region ... shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

The technical reports required by this Order and the attached Monitoring and Reporting Program R5-2013-0019 are necessary to ensure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges the waste subject to this Order.

120. The United States Environmental Protection Agency (EPA) has promulgated biosolids reuse regulations in 40 CFR 503, *Standard for the Use or Disposal of Sewage Sludge*, which establishes management criteria for protection of ground and surface waters, sets application rates for heavy metals, and establishes stabilization and disinfection criteria.
121. The Central Valley Water Board is using the Standards in 40 CFR 503 as guidelines in establishing this Order, but the Central Valley Water Board is not the implementing agency for 40 CFR 503 regulations. The Discharger may have separate and/or additional compliance, reporting, and permitting responsibilities to the EPA.
122. Pursuant to Water Code section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.
123. The California Department of Water Resources set standards for the construction and destruction of groundwater wells, as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 94-81* (December 1981). These standards, and any more stringent standards adopted by the State or county pursuant to Water Code Section 13801, apply to all monitoring wells.

Public Notice

124. All the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the conditions of discharge of this Order.
125. The Discharger and interested agencies and persons have been notified of the intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
126. All comments pertaining to the discharge were heard and considered in a public meeting.

IT IS HEREBY ORDERED that Waste Discharge Requirements Order R5-2002-0185 is rescinded and that, pursuant to Water Code sections 13263, 13267, and 13523.1, the City of Tulare, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted thereunder, shall comply with the following:

A. Prohibitions

1. Discharge of waste to wetlands, surface waters, or surface water drainage courses is prohibited.
2. Bypass or overflow of untreated wastes, except as allowed by Standard Provisions E.2 in *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991, is prohibited.

3. Discharge of waste classified as “hazardous”, as defined in California Code of Regulations, title 23, section 2521(a), is prohibited. Discharge of waste classified as “designated”, as defined in Water Code section 13173, in a manner that causes violation of groundwater limitations, is prohibited.
4. Except as authorized by Recycling Specification F.11, discharges of recycled water, including windblown spray and runoff of recycled water applied to lands for irrigation for which valid recycling requirements are not in force, are prohibited.
5. Discharge of wastewater in a manner other than that described herein or in the Report of Waste Discharge is prohibited.

B. General Discharge Specifications

1. No waste constituent shall be released, discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of Groundwater Limitations of this Order.
2. Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.
3. The discharge shall remain within the permitted waste treatment/containment structures and land application areas at all times.
4. The Discharger shall operate all systems and equipment to optimize the quality of the discharge.
5. The Discharger shall maintain reliability features consistent with Title 22 sections 60335, 60337, 60343 through 60351, and 60355, including alarms and back-up power systems.
6. All conveyance, treatment, storage, and disposal units shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
7. Public contact with effluent (treatment works, percolation ponds) shall be precluded through such means as fences, signs, or acceptable alternatives.
8. Objectionable odors shall not be perceivable beyond the limits of the WWTF property at an intensity that creates or threatens to create nuisance conditions.
9. The treatment, storage, and disposal ponds or structures shall have sufficient capacity to accommodate allowable wastewater flow, design seasonal precipitation, and ancillary inflow and infiltration during the winter while ensuring continuous compliance with all requirements of this Order. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.

10. On or about **1 October** of each year, available capacity shall at least equal the volume necessary to comply with General Discharge Specification B.9.
11. All ponds shall be managed to prevent breeding of mosquitoes. In particular,
 - a. An erosion control plan should assure that coves and irregularities are not created around the perimeter of the water surface.
 - b. Weeds shall be minimized through control of water depth, harvesting, and herbicides.
 - c. Dead algae, vegetation and other debris shall not accumulate on the water surface.
 - d. The Discharger shall consult and coordinate with the local Mosquito Abatement District to minimize the potential for mosquito breeding as needed to supplement the above measures.
12. The Discharger shall monitor sludge accumulation in the wastewater treatment/storage units at least every five years beginning in 1 July 2013, and shall periodically remove sludge as necessary to maintain adequate treatment and storage capacity.

C. Domestic Discharge Specifications

1. The monthly average Domestic Plant effluent flow shall not exceed the following:
 - a. 5.0 mgd, until the requirements of Provision I.15 are satisfied;
 - b. 6.0 mgd after the requirements of Provision I.15 are satisfied, until the requirements of Provision I.16 are satisfied; and
 - c. 8.0 mgd after Provision I.16 is satisfied.
2. Domestic Plant effluent shall not exceed the following limitations:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
BOD ₅ ¹	mg/L	40	80
TSS ²	mg/L	40	80

¹ Five-day biochemical oxygen demand

² Total suspended solids

3. The arithmetic mean of BOD₅ and TSS in effluent samples collected over a monthly period shall not exceed 20 percent of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period (80 percent removal).

D. Industrial Discharge Specifications

1. The monthly average Industrial Plant effluent flow shall not exceed 12 mgd.
2. Industrial Plant effluent shall not exceed the following limitations:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
BOD ₅ ¹	mg/L	40	80
TSS ²	mg/L	40	80

- ³ Five-day biochemical oxygen demand
⁴ Total suspended solids

3. The arithmetic mean of BOD₅ and TSS in effluent samples collected over a monthly period shall not exceed 20 percent of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period (80 percent removal).

E. Commingled Discharge Specifications

1. The monthly average commingled effluent flow shall not exceed the following:
 - a. 16.0 mgd until the requirements of Provision I.17 are satisfied;
 - b. 18 mgd after the requirements of Provision I.17 are satisfied, until the requirements of Provision I.18 are satisfied; and
 - c. 20 mgd after the requirements of Provision I.18 are satisfied.
2. Effluent shall not exceed the following limitations:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
BOD ₅ ¹	mg/L	40	80
TSS ²	mg/L	40	80
Total Nitrogen	mg/L	13	
Chloride	mg/L		175
Boron	mg/L		1.0

- ⁵ Five-day biochemical oxygen demand
⁶ Total suspended solids

3. The arithmetic mean of BOD₅ and TSS in effluent samples collected over a monthly period shall not exceed 20 percent of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period (80 percent removal).

4. The 12-month rolling average EC of the discharge shall not exceed the 12-month rolling average EC of the source water plus 500 umhos/cm or a maximum of 1,000 umhos/cm, whichever is more stringent. Compliance with this effluent limitation shall be determined monthly. When source water is from more than one source, the EC shall be a weighted average of all sources.

F. Recycling Specifications

1. Application of recycled water shall be confined to the approved WWTF effluent storage pond sites and Use Areas as defined in this Order, or new recycled water projects under the conditions of Provisions I.22 and I.23.
2. Notwithstanding the following requirements, the production, distribution, and use of recycled water shall conform to an Engineering Report prepared pursuant to Title 22, section 60323 and approved by the California Department of Public Health.
3. The use of recycled water shall not cause pollution or nuisance, as defined by Water Code section 13050.
4. No person other than the City shall deliver recycled water to a Use Area.
5. The recycled water shall be at least undisinfected secondary recycled water as defined by Title 22, section 60301.
6. Recycled water shall be used in compliance with Title 22, section 60304. Regarding particular agricultural uses, recycled water shall be applied in compliance with the following:
 - a. Undisinfected recycled water shall not be discharged to orchard or vineyard crops;
 - b. No recycled water used for irrigation, or soil that has been irrigated with recycled water, shall come into contact with the edible portion of food crops that may be eaten raw by humans;
 - c. Non food-bearing trees, seed crops not eaten by humans, food crops that must undergo commercial pathogen-destroying processing before being consumed by humans, and ornamental nursery stock and sod farms (provided no irrigation with recycled water occurs for a period of 14 days prior to harvesting, retail sale, or allowing access by the general public) may be irrigated with recycled water; and
 - d. Grazing of milking animals within the Use Areas is prohibited.
7. Irrigation of the Use Areas shall occur only when appropriately trained personnel are on duty.

8. Irrigation with recycled water shall not be performed within 24 hours of a forecasted storm, during or within 24 hours after any precipitation event, nor when the ground is saturated.
9. The Use Area parcels shall be graded to prevent ponding along public roads or other public areas and prevent runoff onto adjacent properties.
10. The Use Areas shall be managed to prevent breeding of mosquitoes. In particular:
 - a. There shall be no standing water 48 hours after irrigation ceases;
 - b. Tailwater ditches shall be maintained essentially free of emergent, marginal, and floating vegetation; and
 - c. Low-pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store recycled water.
11. Tailwater runoff and spray of recycled water shall not be discharged outside of the use areas except in minor, incidental amounts that cannot reasonably be eliminated by implementation and good maintenance of best management practices.
12. Recycled water spray, mist, or runoff shall not enter dwellings, designated outdoor eating areas, or food handling facilities. Drinking water fountains shall be protected against contact with recycled water spray, mist, or runoff.
13. Use Areas and recycled water impoundments shall be designed, maintained, and operated to comply with the following setback requirements:

<u>Setback Definition</u>	<u>Minimum Irrigation Setback (feet)</u>
Edge of Use Area to property boundary	25
Edge of Use Area to public road right of way	30
Edge of Use Area to manmade or natural surface water drainage course ¹	50
Edge of Use Area to domestic water supply well	150
Toe of recycled water impoundment berm to domestic water supply well	150

¹ Excluding ditches used exclusively for tailwater return from the land application area and land application areas separated by levees or other permanent physical barriers from surface waters or drainage courses.

14. There shall be at least a ten-foot horizontal and a one-foot vertical separation between all pipelines transporting recycled water and those transporting domestic supply, and the domestic supply pipeline shall be located above the recycled water pipeline.

15. A public water supply or auxiliary water supply shall not be used as backup or supplemental source of water for a recycled water system unless the connection between the two systems is protected by a backflow preventer (e.g., an air gap separation) which complies with the requirements of California Code of Regulations, title 17, sections 7601 through 7604.
16. Any backflow prevention device installed to protect a public water system shall be inspected and maintained in accordance with Title 17, section 7605. The recycled water system shall be tested for possible cross connections at least once every four years. The inspections and the testing shall be performed by a cross connection control specialist certified by the California-Nevada section of the American Water Works Association or an organization with equivalent certification requirements.
17. All recycling equipment, pumps, piping, valves, and outlets shall be marked to differentiate them from potable water facilities. All recycled water piping (above and below ground) and appurtenances in new installations and in retrofit installations shall be colored purple or distinctively wrapped with purple tape in accordance with California Health and Safety Code section 116815.
18. Recycled water controllers, valves, and similar appurtenances shall be affixed with recycled water warning signs, and shall be equipped with removable handles or locking mechanisms to prevent public access or tampering.
19. Quick couplers, if used, shall be different than those used in potable water systems.
20. Hose bibs and unlocked valves, if used, shall not be used in areas accessible to the public.
21. Public contact with recycled water shall be controlled using fences, signs, and/or other appropriate means. Signs of a size no less than four inches high by eight inches wide with proper wording (shown below) shall be placed at all areas of public access and around the perimeter of all areas used for effluent disposal or conveyance to alert the public of the use of recycled water. The size and content of these signs shall be as described in section 60310(g) of Title 22. All signs shall display an international symbol similar to that shown in Attachment G, which is attached hereto and a part of this Order, and present the following wording:

“RECYCLED WATER – DO NOT DRINK”
“AGUA DE DESPERDICIO RECLAMADA – NO TOME”
22. Workers shall be educated regarding proper hygienic procedures to ensure personal and public safety.
23. The annual nutrient loading of the Use Area, including the nutritive value of organic and chemical fertilizers and recycled water, shall not exceed crop demand.

24. Hydraulic and nutrient loading of recycled water and supplemental irrigation water shall be at reasonable agronomic rates designed to :
 - a. Maximize crop nutrient uptake;
 - b. Maximize breakdown of organic waste constituents in the root zone;
 - c. Minimize the percolation of waste constituents; and
 - d. Minimize erosion within the Use Areas.
25. Use Areas shall be inspected as frequently as necessary to ensure continuous compliance with the requirements of this Order.
26. A copy of the User Agreement and the Discharger's rules and regulations governing the distribution and use of recycled water shall be maintained at the User's facilities and be available at all times for inspection by Central Valley Water Board staff, the Discharger, and Department of Public Health staff.

G. Solids Disposal Specifications

1. Sludge in this document means the solid, semisolid, and liquid residues removed during primary, secondary, or advance wastewater treatment processes. Solid waste refers to grit and screening material generated during preliminary treatment. Residual sludge means sludge that will not be subject to further treatment at the WWTF. Biosolids refers to sludge that has been treated and tested and shown to be capable of being beneficially used as soil amendment for agriculture, silviculture, horticulture, and land reclamation activities pursuant to federal and state regulations.
2. Sludge and solid waste shall be removed from screens, sumps, aeration basins, ponds, clarifiers, etc., as needed to ensure optimal plant operation.
3. Any handling and storage of residual sludge, solid waste, and biosolids on property of the WWTF shall be temporary (i.e., no longer than two years) and controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate the groundwater limitations of this Order.
4. Residual sludge, solid waste, and biosolids shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27. Removal for further treatment, disposal, or reuse at sites (i.e., landfill, composting sites, and soil amendment sites) operated in accordance with valid waste discharge requirements will satisfy this specification.
5. Use of biosolids as a soil amendment shall comply with valid waste discharge requirements issued by a regional water board or the State Water Board or a local (e.g., county) program authorized by a regional water board. In most cases, this

means the General Biosolids Order (State Water Board Water Quality Order 2004-12-DWQ, “*General Waste Discharge Requirements for the Discharge of Biosolids to Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities*”). For a biosolids use project to be authorized by the General Biosolids Order, the Discharger must file a complete Notice of Applicability for each project.

6. Use and disposal of biosolids shall comply with the self-implementing Federal biosolids regulations (40 C.F.R. § 503.), which are subject to enforcement by the USEPA, not the Central Valley Water Board. If during the life of this Order, the State accepts primacy for implementation of Federal biosolids regulations, the Board may also initiate enforcement where appropriate.
7. Any proposed change in sludge use or disposal practice shall be reported in writing to the Executive Officer at least 90 days in advance of the change.

H. Groundwater Limitations

1. Release of waste constituents from any treatment, recycling or storage component associated with the discharge shall not cause or contribute to groundwater:
 - a. Containing constituent concentrations in excess of the concentrations specified below or natural background quality, whichever is greater:

<u>Parameter</u>	<u>Units</u>	<u>Limitation</u>
EC	umhos/cm	900
Total Dissolved Solids	mg/L	500
Nitrate (as Nitrogen)	mg/L	10
Boron	mg/L	0.7
Chloride	mg/L	106
Sodium	mg/L	69 ¹
Total Coliform Organisms	MPN/100 mL	2.2 ²

¹ Compliance shall be determined based on the conditions described in Provision I.26.

² Equal to or greater than 2.2 MPN/100mL over any 7-day period.

- b. For constituents identified in Title 22, the MCLs quantified therein.
 - c. Containing taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that cause nuisance or adversely affect beneficial uses.

I. Provisions

1. The Discharger shall comply with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991 (Standard Provisions), which are part of this Order.
2. The Discharger shall comply with MRP R5-2013-0019, which is part of this Order, and any revisions thereto as adopted by the Central Valley Water Board or approved by the Executive Officer.
3. The Discharger shall report promptly to the Central Valley Water Board any material change or proposed change in the character, location, or volume of the discharge.
4. The Discharger shall keep at the WWTF a copy of this Order, including its MRP, Information Sheet, attachments, and Standard Provisions, for reference by operating personnel. Key operating personnel shall be familiar with its contents.
5. The Discharger shall not allow pollutant-free wastewater to be discharged into the WWTF collection, treatment, and disposal systems in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means storm water (i.e., inflow), groundwater (i.e., infiltration), cooling waters, and condensates that are essentially free of pollutants.
6. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Accordingly, the Discharger shall submit to the Central Valley Water Board on or before each report due date the specified document or, if an action is specified, a written report detailing evidence of compliance with the date and task. If noncompliance is being reported, the reasons for such noncompliance shall be stated, plus an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board by letter when it returns to compliance with the time schedule. Violations may result in enforcement action, including Central Valley Water Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.
7. The Discharger must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also include adequate laboratory controls and appropriate quality assurance procedures. This Provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by the Discharger only when the operation is necessary to achieve compliance with the conditions of this Order.
8. The Discharger shall report to the Central Valley Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days

of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986."

9. As a means of discerning compliance with General Discharge Specification B.8, the dissolved oxygen (DO) content in the upper one foot of any wastewater pond (other than those that require an anoxic or anaerobic environment for the design treatment) shall not be less than 1.0 mg/L for three consecutive weekly sampling events. If the DO in any single pond is below 1.0 mg/L for three consecutive sampling events, the discharger shall report the findings to the Central Valley Water Board in writing within 10 days and shall include a specific plan to resolve the low DO results within 30 days.
10. The Discharger shall maintain and operate surface impoundments in a manner that protects the integrity of containment levees and prevents overtopping or overflows. Unless a California registered civil engineer certifies (based on design, construction, and conditions of operation and maintenance) that less freeboard is adequate, the operating freeboard shall never be less than two feet (measured vertically). As a means of management and to discern compliance with this Provision, the Discharger shall install and maintain a permanent marker with calibration that indicates the water level at the design capacity and enables determination of available operational freeboard.
11. The Discharger shall submit the technical reports and work plans required by this Order for Central Valley Water Board staff consideration and incorporate comments they may have in a timely manner, as appropriate. The Discharger shall proceed with all work required by the following provisions by the due dates specified.
12. All technical reports and work plans required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1. As required by these laws, completed technical reports and work plans must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work. All reports required herein are required pursuant to Water Code section 13267.
13. The Discharger shall continue to maintain coverage under, and comply with Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order 2006-0003-DWQ and any revisions thereto as adopted by the State Water Board.
14. **By 30 September 2013**, the Discharger shall submit for Executive Officer approval a technical report, prepared in accordance with Provision I.12, describing a proposed time schedule for upgrade of the Domestic Plant to at least 5.0 mgd. The technical report must detail how the Discharger intends to address the deficiencies described in the Domestic Plant Design Report and in Findings 9 through 13, including design parameters, funding sources, and an implementation schedule. The report must assess influent flow and provide an explanation for the fluctuations noted in Finding 16.

15. **Prior to increasing flow at the Domestic Plant to more than 5.0 mgd and no later than 30 June 2014**, the Discharger shall obtain written approval from the Executive Officer documenting that it has technically justified that it can treat and dispose of 6.0 mgd from the Domestic Plant and all authorized flow from the Industrial Plant in compliance with all applicable specifications, limitations, and provisions of this Order. The Discharger shall submit a technical report prepared in accordance with Provision I.12 at least 60 days prior to the expected approval.
16. **Prior to increasing flow at the Domestic Plant to more than 6.0 mgd**, the Discharger shall obtain written approval from the Executive Officer documenting that it has technically justified that it can treat and dispose of 8.0 mgd from the Domestic Plant and all authorized flow from the Industrial Plant in compliance with all applicable specifications, limitations, and provisions of this Order. The Discharger shall submit a technical report prepared in accordance with Provision I.12 at least 60 days prior to the expected approval.
17. **Prior to increasing commingled effluent flow at the WWTF to more than 16.0 mgd**, the Discharger shall obtain written approval from the Executive Officer documenting that it has technically justified that it can treat and dispose of 18 mgd in compliance with all applicable specifications, limitations, and provisions of this Order. The Discharger shall submit a technical report prepared in accordance with Provision I.12 at least 60 days prior to the expected approval. This Provision does not supersede or otherwise alter the limitations of Domestic Discharge Specification C.1.
18. **Prior to increasing commingled effluent flow at the WWTF to more than 18 mgd**, the Discharger shall obtain written approval from the Executive Officer documenting that it has technically justified that it can dispose of 20 mgd in compliance with all applicable specifications, limitations, and provisions of this Order. The Discharger shall submit a technical report prepared in accordance with Provision I.12 at least 60 days prior to the expected approval. This Provision does not supersede or otherwise alter the limitations of Domestic Discharge Specification C.1.
19. **By 30 September 2013**, the Discharger shall submit a Salinity Management Plan, with updated salinity source reduction goals and an implementation schedule for Executive Officer approval. The Salinity Management Plan shall assess the effectiveness of the existing Salinity Control Plan. The Salinity Management Plan must include an estimate of load reductions that may be attained through the methods identified, and provide a description of the tasks, cost, and time required to investigate and implement various elements in the plan. The Discharger shall implement the Salinity Management Plan in accordance with the approved schedule.
20. The Discharger shall establish and maintain a representative groundwater monitoring well network according to the following schedule:
 - a. **By 30 September 2013**, the Discharger shall submit a Groundwater Monitoring Well Work Plan. The work plan shall propose appropriate locations for new

background wells, and for new wells to monitor groundwater degradation downgradient of sludge drying beds and of Use Areas that are not represented by the existing well network. The work plan shall describe the criteria that will be used to determine whether a monitoring well can be considered to provide reliable groundwater quality data and describe how each well in the network compares with the criteria. The work plan shall include rationale for the construction and location of each monitoring well, and make appropriate conclusions and recommendations. The work proposed shall be consistent with applicable well standards described in Finding 123, and shall comply with *Standard Requirements for Monitoring Well Installation Work Plans and Monitoring Well Installation Reports*, a part of this Order.

- b. **By 29 October 2014**, the Discharger shall submit a Groundwater Monitoring Well Installation Report. The installation report shall describe well construction details for each new well, including the location, ground surface elevation, reference point elevation, water surface elevation, geologic logs, and other details, including filter pack and screened interval, surface completion, etc. The report shall include narrative description of well locations with respect to landmarks, as well as three-dimensional coordinates with respect to a known datum (prepared by a licensed land surveyor or civil engineer).
21. **By 29 October 2013**, the Discharger shall submit a Sludge Drying Bed Assessment Report. The assessment report shall characterize the discharge to the sludge drying beds and assess the potential groundwater degradation associated with the beds based on estimated mass loading of waste constituents to groundwater. The report shall characterize the biosolids and liners of the sludge drying beds serving the Domestic Plant and Industrial Plant independently, as appropriate. The report shall be based on analyses calibrated with site-specific, empirical data, including:
- a. An assessment of liner integrity that considers the results of empirical testing and field observations of representative liner areas. The liner integrity assessment shall include hydraulic conductivity, remaining liner thickness, moisture content, density, and extent of weathering (i.e., desiccation cracking depth and width).
 - b. A biosolids characterization that considers flow (influent wet biosolids, supernatant return, percolation, and evaporation) and characterization of waste constituent concentrations, including volatile suspended solids, total suspended solids, biochemical oxygen demand, chemical oxygen demand, total organic carbon, forms of nitrogen, total dissolved solids, Metals and General Minerals (as described in the Monitoring and Reporting Program).
 - c. Water quality data (total organic carbon, forms of nitrogen, total dissolved solids, Metals and General Minerals as described in the Monitoring and Reporting Program) for samples collected from nearby groundwater monitoring wells (if available) and from the witness sump of the leachate collection and recovery system installed in the Domestic Plant sludge drying beds.

22. **By 30 August 2013**, and prior to conveying recycled water to any User not identified in Finding 44 of this Order, the City shall complete the following:
- a. Establish and have the authority to enforce rules and/or regulations (a recycled water program) for Users governing the design and construction of recycled water use facilities and the use of recycled water in accordance with the water recycling criteria established in Title 22, California Code of Regulations and this Order;
 - b. Submit a copy of the rules and/or regulations and the adopted recycled water ordinance authorizing the rules and/or regulations to the Central Valley Water Board for Executive Officer approval;
 - c. Develop and submit the administrative procedures and User agreements requiring compliance with the Discharger's rules and/or regulations to the Central Valley Water Board for Executive Officer approval;
 - d. Provide the California Department of Public Health with copies of the items required by b. and c.

Upon Executive Officer approval of the Discharger's rules and/or regulations, recycled water ordinance, administrative procedures, and User agreement, the Discharger may authorize specific reclamation projects on a case-by-case basis in accordance with the approved water recycling program.

23. **At least 30 days prior** to conveying recycled water to any Use Area not described in this Order, the Discharger shall submit a User Report to the Central Valley Water Board and the California Department of Public Health. The User Report shall include the following:
- a. The site location including a map showing the specific boundaries of the use site and the County Assessor's Parcel Number(s) (if appropriate, if Parcel Number(s) are not appropriate to accurately describe the site location, the Discharger shall provide the Central Valley Water Board with enough information for the Central Valley Water Board to accurately determine the location of the proposed reclamation activities);
 - b. The name of the Use Area property owner and contact information;
 - c. The name of the User and contact information;
 - d. The specific use to be made of the recycled water, the Use Area acreage, the type of vegetation/crops to which the recycled water will be applied, and the anticipated volume of recycled water to be used;

- e. Identification of the on-site supervisor who is responsible for operation of the recycled water system;
- f. Description of the recycled water management facilities and operations plan;
- g. Plans and specifications that include the following:
 - i. Pipe locations of the recycled, potable, and auxiliary non-potable water systems;
 - ii. Type and location of the outlets and plumbing fixtures that will be accessible to the public;
 - iii. The methods and devices to be used to prevent backflow of recycled water into the public water system; and
 - iv. Plan notes relating to recycled water specific installation and use requirements.
- h. Certification that the new Use Area conforms to the Discharger's rules and regulations;
- i. A copy of the signed User agreement; and
- j. The results of the cross-connection control test performed in accordance with the American Water Works Association and California Department of Public Health guidelines (Cal. Code Regs., tit. 17, § 7605). The results shall include a certification that the California Department of Public Health was notified of the initial cross-connection control test and was provided an opportunity to be present.

A copy of the User agreement and the Discharger's rules and regulations governing the distribution and use of recycled water shall be maintained at the User's facilities and be available at all times for inspection by Regional Water Board staff, the Discharger, and DPH staff.

If, in the opinion of the Executive Officer, reclamation at a proposed new use site cannot be adequately regulated under the Master Recycling Permit, a Report of Waste Discharge may be requested and individual Water Recycling Requirements may be adopted.

24. **Prior to commencing irrigation with recycled water** on any Use Area not described in this Order, the City shall submit documentation that the California Department of Public Health has approved a Title 22 engineering report for the project and documentation of compliance with CEQA.

25. **By 29 October 2013**, the Discharger shall submit a Biosolids Removal Plan detailing the City's proposed plan for decommissioning the approximately 90-acre area previously operated as aeration ponds for the Industrial Plant. The Biosolids Removal Plan shall include residual solids removal, a demonstration of consistency with the Antidegradation Policy (including a characterization of liner integrity), and a time schedule for the work to be completed.
26. **Until 11 April 2021**, release of waste constituents from any treatment, recycling or storage component associated with the discharge shall not cause or contribute to groundwater sodium concentrations in excess of 110 mg/L or natural background quality, whichever is greater. On or before 11 April 2021, the Discharger shall either:
- Modify wastewater treatment operations or effect control measures to ensure compliance with the groundwater limit for sodium listed in Groundwater Limitation H.1(a); or
 - Comply with a revised groundwater limit for sodium consistent with the recommendations of Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) and adopted by the Central Valley Water Board.

The City shall not rely exclusively upon an expectation that the Board will amend the Basin Plan's water quality objectives relating to sodium by 2021, and shall take all reasonable and appropriate measures to ensure that the discharge will meet whatever water quality objectives relating to sodium are applicable to the discharge by 2021.

27. In the event of any change in control or ownership of land or waste treatment and storage facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.
28. To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the address and telephone number of the persons responsible for contact with the Central Valley Water Board and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the Water Code. If approved by the Executive Officer, the transfer request will be submitted to the Central Valley Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.
29. If the Central Valley Water Board determines that waste constituents in the discharge have reasonable potential to cause or contribute to an exceedance of an objective for groundwater, this Order may be reopened for consideration of addition or revision of appropriate numerical effluent or groundwater limitations for potential constituents.

30. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order may result in the assessment of Administrative Civil Liability of up to \$10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, section 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filling petitions may be found on the Internet at:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality/

or will be provided upon request.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 11 April 2013.

Original signed by:

PAMELA C. CREEDON, Executive Officer

Order Attachments:

- A Vicinity Map
 - B Site Plan
 - C Process Flow Diagram, Domestic Plant
 - D Process Flow Diagram, Industrial Plant
 - E Recycled Water Statutes and Regulations
 - F Recycled Water Use Area Map
 - G Recycled Water Signage
- Monitoring and Reporting Program R5-2013-0019
Information Sheet
Standard Provisions (1 March 1991)
Standard Requirements for Monitoring Well Installation Work Plans
and Monitoring Well Installation Reports

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2013-0019
FOR
CITY OF TULARE
WASTEWATER TREATMENT FACILITY
TULARE COUNTY

This monitoring and Reporting Program (MRP) is required pursuant to Water Code section 13267.

The Discharger shall not implement any changes to this MRP unless and until the Central Valley Water Board adopts or the Executive Officer issues a revised MRP. Changes to sample location shall be established with concurrence of Central Valley Water Board staff, and a description of the revised stations shall be submitted for approval by the Executive Officer. All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. All analyses shall be performed in accordance with ***Standard Provisions and Reporting Requirements for Waste Discharge Requirements***, dated 1 March 1991 (Standard Provisions).

Field test instruments (such as pH) may be used provided that the operator is trained in the proper use of the instrument and each instrument is serviced and/or calibrated at the recommended frequency by the manufacturer and in accordance with manufacturer instructions.

Analytical procedures shall comply with the methods and holding times specified in the following: *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* (EPA); *Test Methods for Evaluating Solid Waste* (EPA); *Methods for Chemical Analysis of Water and Wastes* (EPA); *Methods for Determination of Inorganic Substances in Environmental Samples* (EPA); *Standard Methods for the Examination of Water and Wastewater* (APHA/AWWA/WEF); and *Soil, Plant and Water Reference Methods for the Western Region* (WREP 125). Approved editions shall be those that are approved for use by the United States Environmental Protection Agency or the California Department of Public Health's Environmental Laboratory Accreditation Program. The Discharger may propose alternative methods for approval by the Executive Officer.

If monitoring consistently shows no significant variation in magnitude of a constituent concentration or parameter after at least 12 months of monitoring, the Discharger may request the MRP be revised to reduce monitoring frequency. The proposal must include adequate technical justification for the requested reduction in monitoring frequency.

A glossary of terms used within this MRP is included on page and a list of the constituents required for the monitoring of Priority Pollutants is included in Table 1, which is on page 14.

INDUSTRIAL PLANT INFLUENT MONITORING

Samples shall be collected of the waste stream immediately before it enters the headworks of the Industrial Plant. The samples must be representative of the volume and character of influent wastewater. Time of collection of a grab sample shall be recorded. Industrial Plant influent monitoring shall include the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Continuous	Flow	mgd	Meter
Continuous ¹	pH	pH Units	Grab
Daily	EC	umhos/cm	24-Hour Composite
Twice weekly	TSS	mg/L	24-Hour Composite
Twice weekly	BOD	mg/L	24-Hour Composite
Twice weekly	COD	mg/L	24-Hour Composite
Weekly	Oil and Grease	mg/L	24-Hour Composite
Weekly	Alkalinity	mg/L	24-Hour Composite
Weekly	Nitrate	mg/L (as N)	24-Hour Composite
Weekly	TKN	mg/L (as N)	24-Hour Composite
Weekly	Ammonia	mg/L (as N)	Grab
Weekly	Total Nitrogen	mg/L	Calculated

¹ The Discharger shall also collect a grab sample on a daily basis.

INDUSTRIAL PLANT FERMENTER EFFLUENT MONITORING

Samples shall be collected of the waste stream directly following the Fermenter but before discharge to the SBRs and before mixing with DAF effluent. Fermenter effluent samples must be representative of the wastewater following Fermenter treatment. Time of collection of a grab sample shall be recorded. Industrial Fermenter effluent monitoring shall include the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Continuous	Flow	mgd	Meter
Daily	pH	pH Units	Grab
Daily	EC	umhos/cm	24-Hour Composite
Daily	Ammonia Feed Rate ¹	lbs/day (as N)	Meter
Weekly ²	Alkalinity	mg/L	24-Hour Composite
Weekly ²	Nitrate	mg/L (as N)	24-Hour Composite
Weekly ²	TKN	mg/L (as N)	24-Hour Composite
Weekly ²	Ammonia	mg/L (as N)	Grab
Weekly ²	Total Nitrogen	mg/L	Calculated

¹ The average rate of ammonia addition to the Fermenter.

² With Executive Officer approval, the monitoring frequency may be reduced following one year of monitoring.

INDUSTRIAL PLANT EFFLUENT MONITORING

Samples shall be collected of the industrial wastewater stream following the final treatment unit, immediately before discharge to the commingled effluent mixing box. The samples must be representative of the volume and character of Industrial Plant effluent. Time of collection of a grab sample shall be recorded. Industrial Plant effluent monitoring shall include the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Daily	pH	pH Units	Grab
Daily	EC	umhos/cm	24-Hour Composite
Twice weekly	TSS	mg/L	24-Hour Composite
Twice weekly	BOD	mg/L	24-Hour Composite
Twice weekly	COD	mg/L	24-Hour Composite
Weekly	Oil and Grease	mg/L	24-Hour Composite
Weekly	Alkalinity	mg/L	24-Hour Composite
Weekly	Nitrate	mg/L (as N)	24-Hour Composite
Weekly	TKN	mg/L (as N)	24-Hour Composite
Weekly	Ammonia	mg/L (as N)	Grab
Weekly	Total Nitrogen	mg/L	Calculated
Weekly	Sodium	mg/L	24-Hour Composite
Annually	General Minerals	mg/L	24-Hour Composite

DOMESTIC PLANT INFLUENT MONITORING

Samples shall be collected of the waste stream immediately before it enters the headworks of the Domestic Plant. The samples must be representative of the volume and nature of the influent wastewater. Time of collection of a grab sample shall be recorded. Domestic Plant influent monitoring shall include the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Continuous	Flow	mgd	Meter
Daily	pH	pH Units	Grab
Daily	EC	umhos/cm	24-Hour Composite
Twice weekly	TSS	mg/L	24-Hour Composite
Twice weekly	BOD	mg/L	24-Hour Composite
Twice weekly	COD	mg/L	24-Hour Composite
Weekly	Oil and Grease	mg/L	24-Hour Composite
Weekly	Alkalinity	mg/L	24-Hour Composite
Weekly	Nitrate	mg/L (as N)	24-Hour Composite
Weekly	TKN	mg/L (as N)	24-Hour Composite

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Weekly	Ammonia	mg/L (as N)	Grab
Weekly	Total Nitrogen	mg/L	Calculated

DOMESTIC PLANT EFFLUENT MONITORING

Samples shall be collected of the domestic wastewater stream following the final treatment unit, immediately before discharge to the commingled effluent mixing box. The samples must be representative of the volume and character of Domestic Plant effluent. Time of collection of a grab sample shall be recorded. Domestic Plant effluent monitoring shall include the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Daily	pH	pH Units	Grab
Daily	EC	umhos/cm	24-Hour Composite
Twice weekly	TSS	mg/L	24-Hour Composite
Twice weekly	BOD	mg/L	24-Hour Composite
Twice weekly	COD	mg/L	24-Hour Composite
Twice weekly	Oil and Grease	mg/L	24-Hour Composite
Weekly	Alkalinity	mg/L	24-Hour Composite
Weekly	Nitrate	mg/L (as N)	24-Hour Composite
Weekly	TKN	mg/L (as N)	24-Hour Composite
Weekly	Ammonia	mg/L (as N)	Grab
Weekly	Total Nitrogen	mg/L	Calculated
Annually	General Minerals	mg/L	24-Hour Composite

COMMINGLED EFFLUENT MONITORING

Effluent samples shall be collected at a point in the system following the last treatment unit, after the commingled effluent mixing box and before discharge to the effluent ponds. Time of collection of a grab sample shall be recorded. Commingled effluent monitoring shall include the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Continuous	Flow	mgd	Calculated
Daily	pH	pH Units	Grab
Daily	EC	umhos/cm	24-Hour Composite
Twice weekly	TSS	mg/L	24-Hour Composite
Twice weekly	BOD	mg/L	24-Hour Composite
Twice weekly	COD	mg/L	24-Hour Composite
Twice weekly	Oil and Grease	mg/L	24-Hour Composite
Weekly	Alkalinity	mg/L	24-Hour Composite

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Weekly	Nitrate	mg/L (as N)	24-Hour Composite
Weekly	TKN	mg/L (as N)	24-Hour Composite
Weekly	Ammonia	mg/L (as N)	Grab
Weekly	Total Nitrogen	mg/L	Calculated
Monthly	General Minerals	mg/L	24-Hour Composite
Annually	Priority Pollutants ¹	mg/L	24-Hour Composite

¹ Monitoring shall include, at a minimum, the constituents listed in Table 1 on page 14. Reporting shall conform with *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California Reporting Requirements*, section 2.4 et seq.

POND MONITORING

Permanent markers (e.g., staff gages) shall be placed in all ponds. The markers shall have calibrations indicating water level at the design capacity and available operational freeboard. Wastewater pond monitoring shall include at least the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
As required ¹	DO	mg/L	Grab
Weekly	Freeboard	feet ²	Grab

¹ If offensive odor is detected by or brought to the attention of WWTF personnel, the Discharger shall monitor the potential source pond(s) at least daily until dissolved oxygen > 1.0 mg/L, and weekly (between 8am and 9am) for a minimum of two weeks following, consistent with Provision I.9.

² To nearest tenth of a foot.

The Discharger shall inspect the condition of each wastewater pond weekly and record visual observations in a bound logbook. Notations shall include observations of whether weeds are developing in the water or along the bank, and their location; whether grease, dead algae, vegetation, scum, or debris are accumulating on the pond surface and their location; whether burrowing animals or insects are present; and the color of the reservoirs (e.g., dark green, dull green, yellow, gray, tan, brown, etc.). A summary of the entries made in the log shall be included in the subsequent monitoring report.

INDUSTRIAL PRETREATMENT PROGRAM MONITORING

The Discharger shall submit an annual report to the Regional Water Board, with copies to the EPA Regional Administrator and the State Water Resources Control Board, describing the Discharger's pretreatment activities over the previous 12 months. In the event that the Discharger is not in compliance with any conditions or requirements of this Order, the Discharger shall include the reasons for noncompliance and state how and when the Discharger shall comply with such conditions and requirements. This annual report shall be submitted by **28 February** and shall contain, but not be limited to items E.7.a through E.7.j of Standard Provisions dated 1 March 1991 (Standard Provisions).

In addition to the information required in the annual report, the Discharger shall report quarterly the information in E.7.d (1) through E.7.d (7) of Standard Provisions. Quarterly reports shall also describe

progress towards compliance with audit or pretreatment compliance inspection requirements. Quarterly reports shall be submitted by **1st day of the second month following the end of each quarter**. At a minimum, the Discharger must submit a letter certifying that all industries are in compliance and no violations or changes to the pretreatment program have occurred during the quarter. The fourth quarterly report may be included as part of the annual report.

USE AREA MONITORING

The Discharger shall perform routine monitoring and loading calculations for each discrete irrigation area within the Use Area. Data shall be collected and presented in tabular format in accordance with Table 2 on page 15 of this MRP.

In addition, the Discharger shall inspect the Use Areas receiving recycled water on a weekly basis and record visual observations in a bound logbook. Notations shall include evidence of erosion, field saturation, runoff, or the presence of nuisance conditions (i.e., flies, ponding, etc.). A summary of the entries made in the log shall be included in the subsequent quarterly monitoring report.

SOURCE WATER MONITORING

For each source (either well or surface water supply), the Discharger shall calculate the flow-weighted average concentrations for the specified constituents utilizing monthly flow data and the most recent chemical analysis conducted in accordance with Title 22 drinking water requirements.

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Continuous	Flow	mgd	Meter
Monthly	EC	umhos/cm	Grab
Annually	General Minerals	mg/L	Grab

GROUNDWATER MONITORING

After measuring water levels and prior to collecting samples, each monitoring well shall be adequately purged to remove water that has been standing within the well screen and casing that may not be chemically representative of formation water. Depending on the hydraulic conductivity of the geologic setting, the volume removed during purging is typically from 3 to 5 volumes of standing water within the well casing and screen, or additionally the filter pack pore volume.

The Discharger shall monitor all wells in its Groundwater Monitoring Network, and any additional wells installed pursuant to this Order, for the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Semiannually ¹	Depth to groundwater	feet ²	Measured
Semiannually ¹	Groundwater Elevation	feet ³	Computed

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Semiannually ¹	pH	pH Units	Grab
Semiannually ¹	EC	umhos/cm	Grab
Semiannually ¹	Nitrate	mg/L (as N)	Grab
Semiannually ¹	Ammonia	mg/L (as N)	Grab
Semiannually ¹	TKN	mg/L	Grab
Semiannually ¹	Total Nitrogen	mg/L	Calculated
Semiannually ¹	EC	mg/L	Grab
Semiannually ¹	TDS	mg/L	Grab
Semiannually ¹	SAR	mg/L	Calculated
Semiannually ¹	General Minerals	mg/L	Grab
Annually ⁴	Metals ⁵	mg/L	Grab

¹ Monitoring frequency for each well shall be quarterly for new wells until at least 12 quarterly sample results have been reported, at which time the Discharger may reduce the monitoring frequency to semiannually.

² To nearest tenth of a foot.

³ To nearest tenth of a foot above Mean Sea Level.

⁴ Starting July 2013.

⁵ Including uranium and the metals listed under "Inorganics" in Table 1 of this MRP.

BIOSOLIDS/SLUDGE MONITORING

Sludge shall be sampled for the following constituents:

Arsenic	Copper	Nickel
Cadmium	Lead	Selenium
Molybdenum	Mercury	Zinc

Monitoring shall be conducted: using the methods in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (SW-846) and updates thereto, as required in Title 40 of the Code of Federal Regulations (40 CFR), Part 503.8(b)(4). The constituents listed above shall be monitored at the following frequency, depending on volume generated:

<u>Volume Generated (dry metric tons/year)</u>	<u>Frequency</u>
0 to 290	Annually
290 to 1,500	Quarterly
1,500 to 15,000	Bimonthly (six samples per year)
Greater than 15,000	Monthly

The Discharger shall demonstrate that treated sludge (i.e., biosolids) meets Class A or Class B pathogens reduction levels by one of the methods listed in 40 CFR, Part 503.32. The Discharger shall track and keep records of the operational parameters used to achieve Vector Attraction Reduction requirements in 40 CFR, Part 503.33(b).

REPORTING

All monitoring results shall be reported in **Quarterly Monitoring Reports** which are due by the first day of the second month after the calendar quarter. Therefore, monitoring reports are due as follows:

First Quarter Monitoring Report:	1 May
Second Quarter Monitoring Report:	1 August
Third Quarter Monitoring Report:	1 November
Fourth Quarter Monitoring Report:	1 February

A transmittal letter shall accompany each monitoring report. The transmittal letter shall discuss any violations that occurred during the reporting period and all actions taken or planned for correcting violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions or a time schedule for implementing the corrective actions, reference to the previous correspondence is satisfactory.

The following information is to be included on all monitoring and annual reports, as well as report transmittal letters, submitted to the Central Valley Water Board:

City of Tulare
Tulare City Wastewater Treatment Facility
MRP R5-2013-0019
Contact Information (telephone number and email)

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner that illustrates clearly, whether the Discharger complies with waste discharge requirements.

In addition to the details specified in Standard Provision C.3, monitoring information shall include the method detection limit (MDL) and the reporting limit (RL) or practical quantitation limit (PQL). If the regulatory limit for a given constituent is less than the RL (or PQL), then any analytical results for that constituent that are below the RL (or PQL) but above the MDL shall be reported and flagged as estimated.

Laboratory analysis reports do not need to be included in the monitoring reports; however, the laboratory reports must be retained for a minimum of three years in accordance with Standard Provision C.3.

All monitoring reports shall comply with the signatory requirements in Standard Provision B.3. Monitoring data or discussions submitted concerning WWTF performance must also be signed and certified by the chief plant operator. If the chief plant operator is not in direct line of supervision of the laboratory function for a Discharger conducting any of its own analyses, reports must also be signed and certified by the chief of the laboratory.

All monitoring reports that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1.

At any time henceforth, the State or Central Valley Regional Water Board may notify the Discharger to electronically submit monitoring reports using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (<http://www.waterboards.ca.gov/ciwqs/index.html>) or similar system. Until such notification is given, the Discharger shall submit hard copy monitoring reports with tabulated electronic data on attached digital media (e.g., compact disc).

A. All Quarterly Monitoring Reports shall include the following:

Wastewater Reporting

1. The results of Industrial Plant and Domestic Plant Influent Monitoring, Industrial Plant Fermenter Monitoring, Industrial Plant and Domestic Plant Effluent Monitoring, Commingled Effluent Monitoring, Pond Monitoring, Industrial Pretreatment Program Monitoring, and Use Area Monitoring specified on pages 2 through 6.
2. For each month of the quarter, calculation of the maximum daily flow and the monthly average flow.
3. For each of the quarters, calculation of the 12-month rolling average EC of the discharge using the EC values for that month averaged with EC values for the previous 11 months.
4. For each month of the quarter and each Plant (Industrial and Domestic), calculation of the monthly average effluent BOD₅ and TSS concentrations, and calculation of the percent removal of BOD₅ and TSS compared to the influent.
5. A summary of the notations made in the Pond Monitoring Log and Use Area Monitoring Log during each quarter. Paper copies of log pages covering the quarterly reporting period shall not be submitted unless requested by Central Valley Water Board staff.

Groundwater Reporting

1. The results of Groundwater Monitoring specified on pages 6 and 7.
2. For each monitoring well, a table showing constituent concentrations for at least five previous years, if available, up through the current sampling period.
3. A groundwater contour map based on groundwater elevations for that sampling event. The map shall show the gradient and direction of groundwater flow under/around the facility and/or effluent disposal area(s). The map shall also include the locations of monitoring wells and wastewater discharge areas. The map shall be certified by a licensed professional engineer or geologist.

Source Water Reporting

1. The results of Source Water Monitoring specified on page 6.
2. For each month of the quarter, calculation of the flow-weighted 12-month rolling average EC of the source water using monthly flow data and the source water EC values for the most recent four quarters.

B. Fourth Quarter Monitoring Reports, in addition to the above, shall include the following:

Wastewater Treatment Facility Information

1. The names, certificate grades, and general responsibilities of all persons in charge of wastewater treatment and disposal.
2. The names and telephone numbers of persons to contact regarding the WWTF for emergency and routine situations.
3. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibrations (Standard Provision C.4).
4. A statement whether the current operation and maintenance manual, sampling plan, and contingency plan, reflect the WWTF as currently constructed and operated, and the dates when these documents were last reviewed for adequacy.
5. The results of an annual evaluation conducted pursuant to Standard Provision E.4 and a figure depicting monthly average discharge flow for the previous five calendar years.
6. A summary and discussion of the compliance record for the reporting period. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with this Order.

Biosolids/Sludge Monitoring

1. Annual production totals in dry tons or cubic yards.
2. A description of disposal methods, including the following information related to the disposal methods used. If more than one method is used, include the percentage disposed of by each method.
 - a. For landfill disposal, include: the name and location of the landfill, and the Order number of WDRs that regulate it.

- b. For land application, include: the location of the site, and the Order number of any WDRs that regulate it.
- c. For incineration, include: the name and location of the site where incineration occurs, the Order number of WDRs that regulate the site, the disposal method of ash, and the name and location of the facility receiving ash (if applicable).
- d. For composting, include: the location of the site, and the Order number of any WDRs that regulate it.

Use Area Reporting

- 1. The type of crop(s) grown in the Use Areas, planting and harvest dates, and the quantified nitrogen and total dissolved solids uptakes (as estimated by technical references or, preferably, determined by representative plant tissue analysis).
- 2. The monthly and annual discharge volumes during the reporting year expressed as million gallons and inches.
- 3. A monthly water balance for the reporting year that includes:
 - a. Monthly average ETo (reference evapotranspiration) – Information sources include California Irrigation Management Information System (CIMIS)
<http://www.cimis.water.ca.gov/>
 - b. Monthly crop uptake
 - i. Crop water utilization rates are available from a variety of publications available from the local University of California Davis extension office.
 - ii. Irrigation efficiency – Frequently, engineers include a factor for irrigation efficiency such that the application rate is slightly greater than the crop utilization rate. A conservative design does not include this value.
 - c. Monthly average precipitation – this data is available at <http://www.cimis.water.ca.gov/> or at <http://www.ncdc.noaa.gov/oa/climate/online/ccd/nrmlprcp.html>.
 - d. Monthly average and annual average discharge flow rate.
 - e. Monthly estimates of the amount of wastewater percolating below the root zone (i.e., amount of wastewater applied in excess of crop requirements).
- 4. The total pounds of nitrogen applied to the Use Areas, as calculated from the sum of the monthly loadings, and the total annual nitrogen loading to the Use Areas in lbs/acre-year.

5. The total pounds of total dissolved solids (TDS) that have been applied to the Use Areas, as calculated from the sum of the monthly loadings, and the total annual TDS loading to the Use Areas in lbs/acre-year.
6. A summary of the notations made in the Use Area monitoring log during the year. The entire contents of the log do not need to be submitted.
7. A scaled map depicting all the Use Areas available to the Discharger for application of WWTF effluent. The map shall include the effluent distribution system with key features (air gap devices, major control valves, pumps, recycled water public notice signs, etc.) labeled. The map shall identify the owner of each Use Area.

The Discharger shall implement the above monitoring program on the first day of the month following adoption of this Order.

Original signed by:
Ordered by: _____
PAMELA C. CREEDON, Executive Officer

11 April 2013

(Date)

GLOSSARY

BOD ₅	Five-day biochemical oxygen demand
CBOD	Carbonaceous BOD
DO	Dissolved oxygen
EC	Electrical conductivity at 25° C
FDS	Fixed dissolved solids
NTU	Nephelometric turbidity unit
TKN	Total Kjeldahl nitrogen
TDS	Total dissolved solids
TSS	Total suspended solids
Continuous	The specified parameter shall be measured by a meter continuously.
24-Hour Composite	Samples shall be a flow-proportioned composite consisting of at least eight aliquots.
Daily	Samples shall be collected at least every day.
Twice Weekly	Samples shall be collected at least twice per week on non-consecutive days.
Weekly	Samples shall be collected at least once per week.
Twice Monthly	Samples shall be collected at least twice per month during non-consecutive weeks.
Monthly	Samples shall be collected at least once per month.
Bimonthly	Samples shall be collected at least once every two months (i.e., six times per year) during non-consecutive months.
Quarterly	Samples shall be collected at least once per calendar quarter. Unless otherwise specified or approved, samples shall be collected in January, April, July, and October.
Semiannually	Samples shall be collected at least once every six months (i.e., two times per year). Unless otherwise specified or approved, samples shall be collected in April and October.
Annually	Samples shall be collected at least once per year. Unless otherwise specified or approved, samples shall be collected in October.
mg/L	Milligrams per liter
mL/L	milliliters [of solids] per liter
ug/L	Micrograms per liter
umhos/cm	Micromhos per centimeter
mgd	Million gallons per day
MPN/100 mL	Most probable number [of organisms] per 100 milliliters
General Minerals	Analysis for General Minerals shall include at least the following:
	Alkalinity Chloride Sodium
	Bicarbonate Hardness Sulfate
	Calcium Magnesium TDS
	Carbonate Potassium Nitrate
	General Minerals analyses shall be accompanied by documentation of cation/anion balance.

Table 1. Priority Pollutant Scan

<u>Inorganics</u> ¹	<u>Organics</u>		
Antimony	Acrolein	3-Methyl-4-Chlorophenol	Hexachlorobenzene
Arsenic	Acrylonitrile	Pentachlorophenol	Hexachlorobutadiene
Beryllium	Benzene	Phenol	Hexachlorocyclopentadiene
Cadmium	Bromoform	2,4,6-Trichlorophenol	Hexachloroethane
Chromium (III)	Carbon tetrachloride	Acenaphthene	Indeno(1,2,3-c,d)pyrene
Chromium (VI)	Chlorobenzene	Acenaphthylene	Isophorone
Copper	Chlorodibromomethane	Anthracene	Naphthalene
Lead	Chloroethane	Benzidine	Nitrobenzene
Mercury	2-Chloroethylvinyl Ether	Benzo(a)Anthracene	N-Nitrosodimethylamine
Nickel	Chloroform	Benzo(a)pyrene	N-Nitrosodi-n-Propylamine
Selenium	Dichlorobromomethane	Benzo(b)fluoranthene	N-Nitrosodiphenylamine
Silver	1,1-Dichloroethane	Benzo(g,h,i)perylene	Phenanthrene
Thallium	1,2-Dichloroethane	Benzo(k)fluoranthene	Pyrene
Zinc	1,1-Dichloroethylene	Bis(2-chloroethoxy) methane	1,2,4-Trichlorobenzene
Cyanide	1,2-Dichloropropane	Bis(2-chloroethyl) ether	
Asbestos	1,3-Dichloropropylene	Bis(2-chloroisopropyl) ether	<u>Pesticides</u>
	Ethylbenzene	Bis(2-Ethylhexyl)phthalate	Aldrin
	Methyl Bromide	4-Bromophenyl phenyl ether	alpha-BHC
<u>Dioxin Congeners</u>		Butylbenzyl Phthalate	beta-BHC
2,3,7,8-TCDD	Methyl Chloride	2-Chloronaphthalene	gamma-BHC (Lindane)
1,2,3,7,8-PentaCDD	Methylene Chloride	4-Chlorophenyl Phenyl Ether	delta-BHC
1,2,3,4,7,8-HexaCDD	1,1,2,2-Tetrachloroethane	Chrysene	Chlordane
1,2,3,6,7,8-HexaCDD	Tetrachloroethylene (PCE)	Dibenzo(a,h)Anthracene	4,4'-DDT
1,2,3,7,8,9-HexaCDD	Toluene	1,2-Dichlorobenzene	4,4'-DDE
1,2,3,4,6,7,8-HeptaCDD	1,2-Trans-Dichloroethylene	1,3-Dichlorobenzene	4,4'-DDD
OctaCDD	1,1,1-Trichloroethane	1,4-Dichlorobenzene	Dieldrin
2,3,7,8-TetraCDF	1,1,2-Trichloroethane	3,3'-Dichlorobenzidine	alpha-Endosulfan
1,2,3,7,8-PentaCDF	Trichloroethylene (TCE)	Diethyl phthalate	beta-Endosulfan
2,3,4,7,8-PentaCDF	Vinyl chloride	Dimethyl phthalate	Endosulfan Sulfate
1,2,3,4,7,8-HexaCDF	2-Chlorophenol	Di-n-Butyl Phthalate	Endrin
1,2,3,6,7,8-HexaCDF	2,4-Dichlorophenol	2,4-Dinitrotoluene	Endrin Aldehyde
1,2,3,7,8,9-HexaCDF	2,4-Dimethylphenol	2,6-Dinitrotoluene	Heptachlor
2,3,4,6,7,8-HexaCDF	2-Methyl-4,6-Dinitrophenol	Di-n-Octyl Phthalate	Heptachlor epoxide
1,2,3,4,6,7,8-HeptaCDF	2,4-Dinitrophenol	1,2-Diphenylhydrazine	Polychlorinated biphenyls
1,2,3,4,7,8,9-HeptaCDF	2-Nitrophenol	Fluoranthene	Toxaphene
OctaCDF	4-Nitrophenol	Fluorene	

¹ With the exception of wastewater samples, samples for metals analysis must first be filtered. If filtering in the field is not feasible, samples shall be collected in unpreserved containers and submitted to the laboratory within 24 hours with a request (on the chain of custody form) to immediately filter then preserve the sample.

² Samples to be analyzed for volatile compounds and phthalate esters shall be grab samples; the remainder shall be 24-hour composite samples.

Table 2. Use Area Monitoring

Recycled Water Monitoring Data For Year: _____								
Parcel No. _____ of _____ acres								
		Water application				Nitrogen application		
		Water required	Effluent used	Other water used	Total irrigation water	As fertilizer	As effluent*	Total nitrogen applied
Month	Crop	(AF)	(AF)	(AF)	(AF)	(lbs/acre)	(lbs/acre)	(lbs/acre)
October								
November								
December								
Subtotal:								
January								
February								
March								
Subtotal:								
April								
May								
June								
Subtotal:								
July								
August								
September								
Subtotal:								
Annual Total:								
* calculated as (AF effluent/acre) x (2.72) x (X mg/l total nitrogen) = lbs nitrogen/acre								

INFORMATION SHEET

INFORMATION SHEET-ORDER R5-2013-0019
CITY OF TULARE
WASTEWATER TREATMENT FACILITY
TULARE COUNTY

Background

The City of Tulare Wastewater Treatment Facility (WWTF) consists of two wastewater treatment plants (Plants), the Domestic Plant and Industrial Plant. Waste Discharge Requirements (WDRs) Order R5-2002-0185 authorizes discharge of up to 9.39 mgd of commingled effluent from the two treatment plants, with provisions for conditional increase in the limit to as much as 14 mgd. The WWTF receives domestic wastewater (which includes commercial and some industrial wastewater) from the City's approximately 60,000 residents, and, in a segregated stream, industrial wastewater mainly from six large dairy processing plants, including from what is reportedly the nation's largest dairy processing complex, a Land O'Lakes facility. Each treatment plant provides secondary treatment before the effluent is mixed and discharged to unlined ponds for storage, percolation, and evaporation. The City delivers undisinfected effluent to nearby lands via subsurface purple pipe for recycled water projects. The designated recycled water application areas (Use Areas) consist of City-owned land and other farms growing feed crops not for human consumption. McCarthy Family Farms, Inc. discharges sludge from the WWTF at its facility in Corcoran as an enrollee under WDRs Order 95-140, *Waste Discharge Requirements General Order for Reuse of Biosolids and Septage on Agricultural, Forest, and Reclamation Sites*.

In 2002, the Central Valley Water Board found that the City had polluted groundwater with nitrate, iron, manganese, and salts. Concurrent with the WDRs, the Central Valley Water Board adopted Cease and Desist Order (CDO) R5-2002-0186 to address groundwater degradation and other compliance issues.

The 2002 WDRs set groundwater limits and include a time schedule for the City to demonstrate compliance with the State's Antidegradation Policy. To demonstrate consistency with the Antidegradation Policy, the WDRs require the City to:

1. Determine background groundwater quality;
2. Conduct a Best Practicable Treatment or Control (BPTC) analysis; and
3. Submit proposed specific numeric groundwater quality limitations reflecting implementation of BPTC and compliance with applicable water quality objectives, interpreted as described in the Tulare Lake Basin Plan section entitled "Application of Water Quality Objectives."

The 2002 CDO was adopted because the City had failed to comply with numerous items in its previous WDRs, including effluent and groundwater limits, and it would immediately violate the 2002 WDRs. The CDO requires the City to:

1. Prepare a facilities plan (assessing flow, disposal, pollutant free waste, sludge handling, etc.);
2. Revise its Industrial Pretreatment Program (IPP);
3. Implement salinity control;
4. Conduct groundwater and soils investigations; and

5. Cleanup groundwater.

The City installed additional groundwater monitoring wells, submitted a Facilities Plan, a Salinity Source Control Plan, groundwater assessments, and implemented changes to its Industrial Pretreatment Program. The City has completed significant modifications to the WWTF, including:

- In 2006, it added an anoxic basin to the 6.0-mgd Domestic Plant for nitrogen removal.
- In 2006, the City constructed soil cement-lined sludge drying beds for domestic sludge.
- In 2009, the City completed the improvements listed below to upgrade the Industrial Plant to a 12.0-mgd sequential batch reactor (SBR) plant:
 - a dissolved air flotation (DAF) unit to remove fats, oils, and grease (FOG) from wastewater that bypasses the bulk volume fermenter (Fermenter);
 - six sequencing batch reactors (SBRs);
 - six denitrifying filters;
 - two DAF units for thickening solids generated in the SBRs;
 - three anaerobic digesters; and
 - 25 acres of soil cement-lined sludge drying beds.
- In 2009, the City completed four additional unlined effluent storage and percolation ponds. The new ponds increased storage capacity approximately 915 acre-ft for a total of 2,700 acre-feet of commingled effluent storage.
- Since 2002, the City negotiated contracts and installed pipelines to deliver treated effluent to nearby farmland for reclamation on about 1,600 additional acres for a total of approximately 2,920 acres (estimated 2,620 acres to receive effluent) of Use Areas.

The City submitted a Report of Waste Discharge in June 2009 describing the changes the City has made and intends to make to the WWTF. The WWTF is designed to meet BOD limits and the anticipated effluent limit of 10 mg/L total nitrogen. The Report of Waste Discharge includes an Antidegradation Analysis, which is the culmination of multiple studies and reports required by the 2002 WDRs, including a BPTC evaluation for which the City conducted a thorough assessment of waste constituents in commingled effluent and compared the results to a similar assessment of waste constituents in select groundwater wells. The BPTC reports progressively narrow the list of constituents of concern (COCs) to sodium, TDS, EC, manganese, and nitrate, for each of which the RWD proposes treatment (for nitrate only) or control measures.

The current WDRs do not address changes the City has made to the WWTF and do not reflect updated information now available to Central Valley Water Board staff. The City has made significant progress in addressing issues raised in the 2002 WDRs and CDO. The WDRs need to be updated, and the CDO is no longer reflective of the current conditions of the WWTF and should be rescinded. Pending further Central Valley Water Board staff assessment, a separate enforcement order may be appropriate for groundwater degradation due to historic discharges from the WWTF.

Water Recycling Requirements

As part of its RWD, the City requested that the Central Valley Water Board adopt a Master Recycling Permit that authorizes the City to administer its own recycled water program as part of updated Waste Discharge Requirements. The City's projected water balance depends heavily on proposed recycled water projects for disposal of effluent. This Order includes a Master Recycling Permit, as described in Water Code section 13523.1(b).

The California Department of Public Health (formerly Department of Health Services) has established uniform statewide recycled water criteria in Title 22, California Code of Regulations, Section 60301 et seq., (hereafter Title 22) for the use of recycled water and has developed guidelines for specific uses. The most recent revisions to recycled water-related statutes were made effective 1 January 2011. Attachment E, a part of this Order, summarizes requirements of the uniform recycled water criteria. However, the City and Users will need to consult the California Code of Regulations, the Health and Safety Code, and the Water Code directly to ensure compliance with the statutes and regulations.

The City will treat the wastewater to the standards required in Title 22 for irrigation with secondary undisinfected domestic effluent of animal feed crops not for human consumption. As the responsible party named in the Master Recycling Permit, the City is responsible for the operation and maintenance of transport facilities and associated appurtenances used to distribute the secondary undisinfected recycled water. The City shall hold its Users responsible for the application and use of recycled water on the designated Use Areas and associated operations and maintenance in accordance with all applicable Title 22 requirements and this Order. The Order, as proposed, includes requirements for the City to establish and enforce rules and regulations for recycled water users in accordance with uniform statewide recycling criteria, and for its Users to conduct periodic inspections of the recycled water use sites.

The City will be responsible for administering User agreements and informing individual owners regarding the use and application of recycled water as well as obtaining recorded covenants for land dedicated for effluent disposal to ensure unrestricted availability of land for disposal of effluent.

This Order as proposed would require the City as the Distributor of recycled water to implement and enforce specific measures relating to the use of recycled water. These include: (a) posting of appropriate warning signs around Use Areas, (b) maintaining setback distances, (c) ensuring distribution and delivery systems are well maintained and operational, and (d) requiring that recycled water be applied at agronomic rates.

The proposed Order would require the City and/or User to monitor its application in accordance with the proposed Monitoring and Reporting Program. Specifically, the proposed Order would require the City and/or its User to report the amounts of recycled water applied to the Use Areas, calculate nitrogen and salt loading to individual Use Areas, inspect the Use Areas on at least a monthly basis to ensure that water recycling is in compliance with the proposed Order; and submit required annual monitoring reports to the Central Valley Water Board.

The Use Areas may contain topography that would promote runoff unless closely managed during irrigation. Runoff has potential to enter drainage channels or surface water. Such runoff cannot occur except under an NPDES permit, and the City and/or its Users are required to provide all runoff controls necessary to keep effluent irrigation runoff out of drainage channels or surface waters. However, minor amounts of incidental runoff or over-spray cannot be completely prevented. The proposed Order requires that incidental runoff or over-spray be minimized to the extent practicable through operational strategies.

Groundwater Conditions

Groundwater flow in the unconfined aquifer of the Kaweah subbasin is generally to the southwest, toward the trough of the valley. Localized variations due to pumping and recharge result in a more westerly gradient near the City of Tulare. The City's discharge of WWTF effluent results in some groundwater mounding in the vicinity of the effluent ponds. The mound alters groundwater flow direction near the WWTF, but lateral flow underlying the Use Areas appears to be to the west, consistent with outlying areas. Groundwater in the unconfined aquifer is first encountered at depths of about 65 to 85 feet bgs in the vicinity of the WWTF and Use Areas.

Sources of groundwater recharge in the area include precipitation, land application of wastewater (including numerous dairies), and excellent quality surface water. Recharge from surface water occurs through natural waterways (the Kaweah River and its distributaries), irrigation, and groundwater recharge projects. The Tulare Irrigation District delivers water from the Kaweah and Saint Johns Rivers and from the Friant-Kern Canal to area growers. The Tulare Irrigation District maintains multiple groundwater recharge basins and unlined canals designed to recharge groundwater for use during drought years. Recycled water users receive Tulare Irrigation District water deliveries and maintain irrigation supply wells for irrigation. Elk Bayou, flowing southwest from Outside Creek, is within about a mile of the southernmost Use Areas.

The City maintains a groundwater monitoring well network of 29 wells. Groundwater levels have dropped below the screened interval of 12 wells. Of the remaining 17, seven of the wells are screened across the groundwater surface. The other 10 were constructed 30 to 50 feet below the groundwater surface to monitor the vertical extent of groundwater degradation. No functional monitoring wells exist to monitor first-encountered groundwater downgradient from the Domestic or Industrial sludge drying beds, or downgradient from the majority of the recycled water Use Areas. The single upgradient well generally appears to represent upgradient groundwater quality, but is not screened across the groundwater surface and is not sufficient for the large discharge area. The City is limited in its ability to assess upgradient groundwater conditions and groundwater degradation because its groundwater monitoring well network is inadequate.

The 2009 RWD includes estimated background groundwater constituent concentrations based on MW-31. Two upgradient California Department of Water Resources wells of depth comparable to MW-31 had chloride concentrations from 5 mg/L to 12 mg/L and a nitrate concentration of 3.8 mg/L as nitrogen in 1956. A slightly deeper (136 feet) downgradient well in 1956 had similar results for chloride and 0.2 mg/L nitrate with an EC of about 290 umhos/cm. Groundwater unaffected by the discharge has an EC of less than 500 umhos/cm, chloride of less than 20 mg/L, and total nitrogen less than 10 mg/L as nitrogen. The published data generally agrees with the characterization in the RWD (MW-31), with the exception of nitrate, which the RWD reports to be about 15 mg/L as nitrogen.

The table below summarizes pertinent data for each well in the City's groundwater monitoring well network. The wells are listed according to the area the well is intended to represent.

	<u>Construction Date</u>	<u>Top of Casing Elevation ft AMSL</u>	<u>Ground Elevation ft AMSL</u>	<u>Well Diameter inches</u>	<u>Screened Interval ft bgs</u>	<u>Depth to Water ft bgs</u>
Upgradient						
MW-1	Jun 1990	267.58	267.88	2	55-75	Dry
MW-2	Aug 1989	270.53	269.20	2	60-80	Dry
MW-12	Jun 1990	272.73	273.18	2	65-85	Dry
MW-31	Mar 2006	277.47	-	6	125-150	112
MW-32	Mar 2006	277.37	-	6	65-90	Dry
Downgradient of Effluent Ponds						
MW-18	Mar 2001	263.50	264.70	4	50-75	68
MW-19	Mar 2001	261.50	262.40	4	60-85	66
MW-20	Mar 2001	264.06	264.00	4	60-85	76
MW-21	Mar 2001	263.63	264.13	4	55-80	Dry
MW-25	Mar 2006	270.86	271.10	6	120-140	73
MW-26	Mar 2006	270.99	271.39	6	70-95	69
MW-27	Mar 2006	262.27	262.67	6	135-150	67
Downgradient of Use Areas						
MW-3	Aug 1989	259.81	260.21	2	55-75	70
MW-10	Aug 1989	252.56	252.86	2	63-83	Dry
MW-11A	May 1991	252.77	251.67	2	100-140*	85
MW-15A	Jul 1990	256.28	254.84	2	55-75	66
MW-16	Aug 1990	254.99	254.24	2	56-76	66
MW-24	Mar 2006	264.57	264.97	6	102-127	86
MW-28	Mar 2006	252.03	252.43	6	140-155	83
MW-29	Mar 2006	251.99	252.39	6	60-90	Dry
MW-30	Mar 2006	251.46	251.86	6	80-110	85
MW-34	Apr 2006	253.25	253.65	6	130-155	82
MW-35	Apr 2006	260.00	260.30	6	130-155	70
Downgradient of Domestic Sludge Drying Beds						
MW-22	Mar 2001	262.11	262.81	4	65-90	Dry
Downgradient or Cross-gradient from WWTF						
MW-6	Sep 1989	263.94	262.51	2	60-80	Dry
MW-23	Mar 2006	264.32	263.37	6	128-148	90
Far Downgradient						
MW-14	Jul 1990	240.67	239.12	2	71-91	Dry
MW-15B	Aug 1990	246.61	244.66	2	59-79	Dry
MW-33	Mar 2006	241.62	242.02	6	130-155	103

Wells MW-1, MW-2, MW-12, MW-16, MW-20, and MW-24 appear to be strongly influenced by intermittent seepage of excellent quality surface water from the Tulare Irrigation District. Samples from MW-16 have been fluctuating from an EC of about 200 umhos/cm to about 1,200 umhos/cm. The City has recently questioned the value of monitoring wells MW-1, MW-2, and MW-12. MW-1 and MW-12 have not had water sufficient water to collect a sample for years. Well MW-2 reportedly only contains water when the adjacent canal contains water, suggesting the annular seal has failed and the well needs to be properly destroyed to prevent transport of waste to groundwater.

Basin Plan, Beneficial Uses, and Regulatory Considerations

The Basin Plan identifies the greatest long-term water quality problem facing the entire Tulare Lake Basin as increasing salinity in groundwater, a process accelerated by man's activities and particularly affected by intensive irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until there is a long-term solution to the salt imbalance. Until then, the Basin Plan establishes several salt management requirements, including the following limits:

- a. The incremental increase in salts from use and treatment must be controlled to the extent possible. The maximum EC of the effluent discharged to land shall not exceed the EC of the source water plus 500 umhos/cm. When the source water is from more than one source, the EC shall be a weighted average of all sources.
- b. Discharges to areas that may recharge good quality groundwater shall not exceed an EC of 1,000 umhos/cm, a chloride content of 175 mg/L, or boron content of 1.0 mg/L.

The Basin Plan establishes numeric and narrative water quality objectives for surface waters and groundwater within the basin. Numeric water quality objectives quantify the maximum degradation that will not adversely affect the beneficial use of the water. Narrative water quality objectives are an unquantified expression of the maximum degradation that will not adversely affect the beneficial use of the water. For example, the toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, or animals. The chemical constituent objective states that groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use.

The Basin Plan requires municipal WWTFs that discharge to land to comply with treatment performance standards for BOD₅ and TSS. WWTFs that preclude public access and are greater than 1 mgd must provide removal of 80 percent or reduction to 40 mg/L, whichever is more restrictive, for both BOD₅ and TSS.

Antidegradation

State Water Board Resolution 68-16 (*"Policy with Respect to Maintaining High Quality Water of the State"*) (the "Antidegradation Policy") prohibits degradation of groundwater unless it has been shown that: the degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives; the degradation will not unreasonably affect present and anticipated future beneficial uses; the Discharger employs Best Practicable Treatment or Control (BPTC) to minimize degradation; and the degradation is consistent with the maximum benefit to the people of the state.

WDRs Order R5-2002-0185 was intended to be the first phase of a two-phased approach to ensure that the discharge will be fully consistent with water quality plans and policies. The 2002 WDRs established groundwater limitations consistent with water quality objectives determined from discharge-specific information available at the time. The 2002 WDRs suggest that, pending the completion of certain tasks to upgrade the WWTF and accumulate more site-specific information in accordance with a time schedule, the Board may adopt, in updated WDRs (Phase 2), revised groundwater limitations based on a more complete assessment of applicable water quality objectives.

The quality of the discharge has greatly improved since the 2002 WDRs, resulting in a reduction in anticipated groundwater degradation. The discharge is better quality in terms of essentially all constituents of concern, including salts, nitrogen, total organic carbon, and chemical constituents related to commercial and industrial waste discharged to the sewer system.

The City has reduced the overall salinity of the discharge through a combination of source reduction on the part of industrial sewer users and upgraded treatment at the WWTF. The City submitted a Salinity Control Plan in November 2004 characterizing sources of salinity. The Salinity Control Plan estimates that about 40 percent of discharge salinity at the time was from industrial sources and nearly 30 percent was added at the WWTF for pH stabilization with magnesium oxide. Particularly through strategic use of ammonia in place of inorganic compounds for added alkalinity, the City has been able to remove the majority of added salinity at the WWTF.

For sodium, chloride, and EC, there are currently no promulgated numeric standards to ensure the protection of waters designated as supporting the agricultural supply beneficial use. The average discharge EC of about 630 umhos/cm meets the Basin Plan limits of 1,000 umhos/cm and source water plus 500 umhos/cm (about 700 umhos/cm). Since groundwater unaffected by discharges has an EC less than 500 umhos/cm, limited degradation may occur, but the discharge is not expected to increase groundwater salinity to the extent that it would adversely affect beneficial uses.

As part of its 2009 RWD, the City submitted *Evaluation of interim groundwater quality limits (EC, TDS, B, Cl and Na) posed on POTWs for protection of irrigated agriculture in the Central/Southern San Joaquin Valley* by Dr. Stephen Grattan of UC Davis. Dr. Grattan prepared the report for 18 communities in the Tulare Lake Basin in 2004. The Grattan report proposes a methodology for setting numerical water quality goals for groundwater that would result in less stringent groundwater limits. For the City of Tulare, the Grattan report proposes groundwater limits for sodium of 115 mg/L, chloride of 175 mg/L, and EC of 1,000 umhos/cm.

Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) is a collaborative basin planning effort aimed at developing and implementing a comprehensive salinity and nitrate management program. Part of the CV-SALTS process involves assessing the far-reaching implications of various methodologies, like that proposed in the Grattan report, for establishing numeric water quality limits that would be protective of the agricultural supply beneficial use. Until the program is developed, the Central Valley Water Board establishes groundwater limits to implement narrative water quality objectives (e.g., the Toxicity Objective) on a case-by-case basis. WDRs Order R5-2002-0185 established groundwater limits at 69 mg/L for sodium and 106 mg/L for chloride. The justification for imposing these limits in WDRs Order R5-2002-0185 is consistent with the current implementation policies in the Basin Plan, and therefore this Order carries over the same groundwater limits. However, since CV-SALTS is expected to address some of the ambiguities regarding the

protection of beneficial uses in the next few years (e.g., 69 mg/L is considered to be a very conservative value under most conditions), this Order implements a performance-based groundwater limit of 110 mg/L for 8 years. In this timeframe, if the CV-SALTS process does not result in modifications to the Basin Plan's implementation provisions, then the City will have time to design treatment alternatives. The average commingled effluent sodium concentrations, based on four samples collected in 2012, is about 110 mg/L. Groundwater data for MW-26, the shallow well centrally located in the effluent pond area, shows sodium concentrations of 140 mg/L, 120 mg/L, 110 mg/L, and 110 mg/L in quarterly samples collected in January, April, July, and October 2012, respectively.

For nitrogen, the City adds large amounts of ammonia to stabilize the pH of influent industrial wastewater. Failure to remove the added nitrogen, in addition to relatively high influent nitrogen concentrations, could result in large amounts of nitrogen percolating to groundwater, potentially causing significant degradation that could lead to pollution with nitrate. However, both Plants at the WWTF include nitrogen removal treatment, with a design effluent of 10 mg/L or less. In a report entitled *Preliminary Design Report for City of Tulare Industrial Wastewater Treatment Plant Expansion*, Parsons Corporation established the design effluent total nitrogen concentration of 10 mg/L or less as a monthly average, apparently to achieve a groundwater nitrate concentration of no more than 10 mg/L as nitrogen.

The City has demonstrated, with water and nitrogen balance calculations, that discharges to the Use Areas, where crops will take up nitrogen, is not expected to result in significant groundwater degradation with nitrate. Regarding discharges from the effluent ponds, the City requested that Central Valley Water Board staff consider that the Water Quality Control Plan for the Santa Ana River Basin adjusts discharge limits up based on a minimum 25 percent removal of total inorganic nitrogen from effluent percolated from ponds. Water quality data from the City's groundwater monitoring well network suggest significant denitrification (more than 25 percent) occurs beneath the effluent ponds. A commingled effluent limit of 13 mg/L (the approximate effluent total nitrogen expected to result in groundwater nitrate of no more than 10 mg/L as nitrogen after 25 percent removal) is appropriate. The commingled effluent total nitrogen concentration is near 10 mg/L (8.1 mg/L on average for 2012). The monthly average commingled effluent total nitrogen exceeded 10 mg/L three times in 2012, but did not exceed 12 mg/L. The discharge, as authorized by this Order, is not expected to cause degradation of groundwater with nitrate that would exceed water quality objectives or adversely affect beneficial uses.

Regarding other constituents, groundwater degradation to the point of exceedance of water quality objectives or adverse impacts to beneficial uses are not expected. Particularly since the City has improved BOD removal at the WWTF, the anticipated degradation of groundwater with total organic carbon is less than from discharges from similar facilities authorized by the Central Valley Water Board and is not expected to adversely impact the beneficial use of groundwater. Land application is considered a form of treatment and control of treated domestic waste that contains pathogens. Regarding anthropogenic chemical constituents related to commercial and industrial waste discharged to the sewer system, the City implements a revised Industrial Pretreatment Program and activated sludge in the WWTF is expected to remove volatile and biodegradable wastes.

The WWTF will provide treatment and control of the discharge that incorporates: secondary treatment of wastewater with nitrogen removal; sludge hauled off-site; recycling of wastewater for crop irrigation;

an operation and maintenance manual; implementation of an Industrial Pretreatment Program; implementation of a Salinity Management Plan; implementation of a nutrient management plan; certified operators to ensure proper operation and maintenance; and source water, discharge, and groundwater monitoring.

Generally, limited degradation of groundwater by some of the typical waste constituents of concern (e.g., EC and nitrate) released with discharge from a municipal wastewater utility after effective source control, treatment, and control is consistent with maximum benefit to the people of the State. This Order establishes terms and conditions to ensure that the discharge will not unreasonably affect present and anticipated beneficial uses of groundwater or result in groundwater quality less than that prescribed in state and regional policies. The treatment and control measures are equivalent or better than those employed by similarly-situated dischargers, and are a significant improvement over measures employed by the Discharger in previous years, and therefore represent BPTC. Therefore, the degradation authorized by this Order is consistent with the Antidegradation Policy.

CEQA

The City has acted as lead agency for each expansion project associated with the WWTF pursuant to the California Environmental Quality Act (CEQA). The table below lists CEQA documents for projects that pertain to the discharge this Order regulates.

<u>Date</u>	<u>Document</u>	<u>Description</u>
7 Dec 1993	Program EIR for the General Plan	Includes mitigation measures to increase sewer connection fees to provide adequate funds for future WWTF projects.
16 Nov 1995	Resolution No. 95-480	Establishes that the City's plan to increase the Domestic Plant treatment capacity from 4.0 to 8.0 mgd was within the scope of the 1993 Program EIR.
7 Aug 2001	EIR for WWTF	For Domestic and Industrial Plant expansion to 6 mgd and 8 mgd, respectively. Identifies a large region available for potential Use Areas. Does not identify particular impacts to water quality resulting from the increased discharge. Notes that compliance with existing laws and regulations would mitigate adverse impacts from the WWTF expansion project.
18 Oct 2002	2002 WDRs	Describes 2001 EIR inadequacies. Cites some of its provisions as new mitigation measures.
20 Jul 2006	Mitigated Negative Declaration	For expansion of the Industrial Plant and Domestic Plant to 12 mgd and 8 mgd, respectively.
18 Mar 2008	EIR for General Plan Update	Final Environmental Impact Report for the City of Tulare General Plan Update.
7 Oct 2010	Mitigated Negative Declaration	Another mitigated negative declaration for expansion of the Domestic Plant to 8 mgd. The City submitted a

<u>Date</u>	<u>Document</u>	<u>Description</u>
		Domestic Plant Design Report by email in response to Central Valley Water Board staff comments.

Consistent with the role of responsible agency, Central Valley Water Board staff reviewed and commented on the draft CEQA documents circulated by City, which has acted as the lead agency for all of the above environmental approvals. The City ultimately approved the CEQA documents for the City WWTF's expansions. This Order imposes regulatory requirements on a project that has already undergone multiple environmental reviews pursuant to CEQA, and no additional CEQA analysis is required.

Title 27

Unless the Board finds that the discharge of designated waste is exempt from Title 27 of the California Code of Regulations, the release of designated waste is subject to full containment requirements. Here, the discharge is exempt from the requirements of Title 27 pursuant to the wastewater exemption found at Title 27, section 20090 (b).

Proposed Order Terms and Conditions

Discharge Prohibitions, Specifications and Provisions

The proposed Order prohibits the discharge of waste to surface waters and to surface water drainage courses, and prohibits the cross connection between potable water and well piping with recycled water piping.

The proposed Order restricts the Discharger to a monthly average Domestic Plant effluent flow limit of 5.0 mgd until the Discharger can demonstrate the Domestic Plant can treat a monthly average flow of 6.0 mgd, or 8.0 mgd. The proposed Order restricts the Discharger to a monthly average Industrial Plant effluent flow limit of 12.0 mgd. The proposed Order also restricts the Discharger to a monthly average commingled effluent flow limit of 16.0 mgd until the Discharger can demonstrate the disposal capacity to accommodate 18.0 mgd, or 20.0 mgd.

This Order sets effluent limits for BOD₅ and TSS of 40 mg/L as monthly average and 80 mg/L as daily maximum. These limitations are based on Basin Plan minimum performance standards for municipal facilities. This Order also limits commingled effluent total nitrogen to 13 mg/L or less.

The proposed Order's provisions regarding storage pond dissolved oxygen and freeboard are consistent with Central Valley Water Board policies for the prevention of nuisance conditions, and are applied to all similarly-situated facilities. Additional provisions include conditional increases in effluent flow limitations and requirements to submit multiple technical reports, including a Salinity Management Plan, Groundwater Monitoring Well Work Plan, Groundwater Monitoring Well Installation Report, and a Sludge Drying Bed Assessment Report.

The proposed Order is also a Master Recycling Permit with requirements consistent with Water Code section 13523.1, including the requirement to establish and have the authority to enforce rules and/or regulations for recycled water Users governing the design and construction of recycled water use facilities and the use of recycled water in accordance with water recycling criteria established in Title 22, California Code of Regulations and this Order.

The proposed Order prescribes groundwater limitations that ensure the discharge does not affect present and anticipated future beneficial uses of groundwater.

Monitoring Requirements

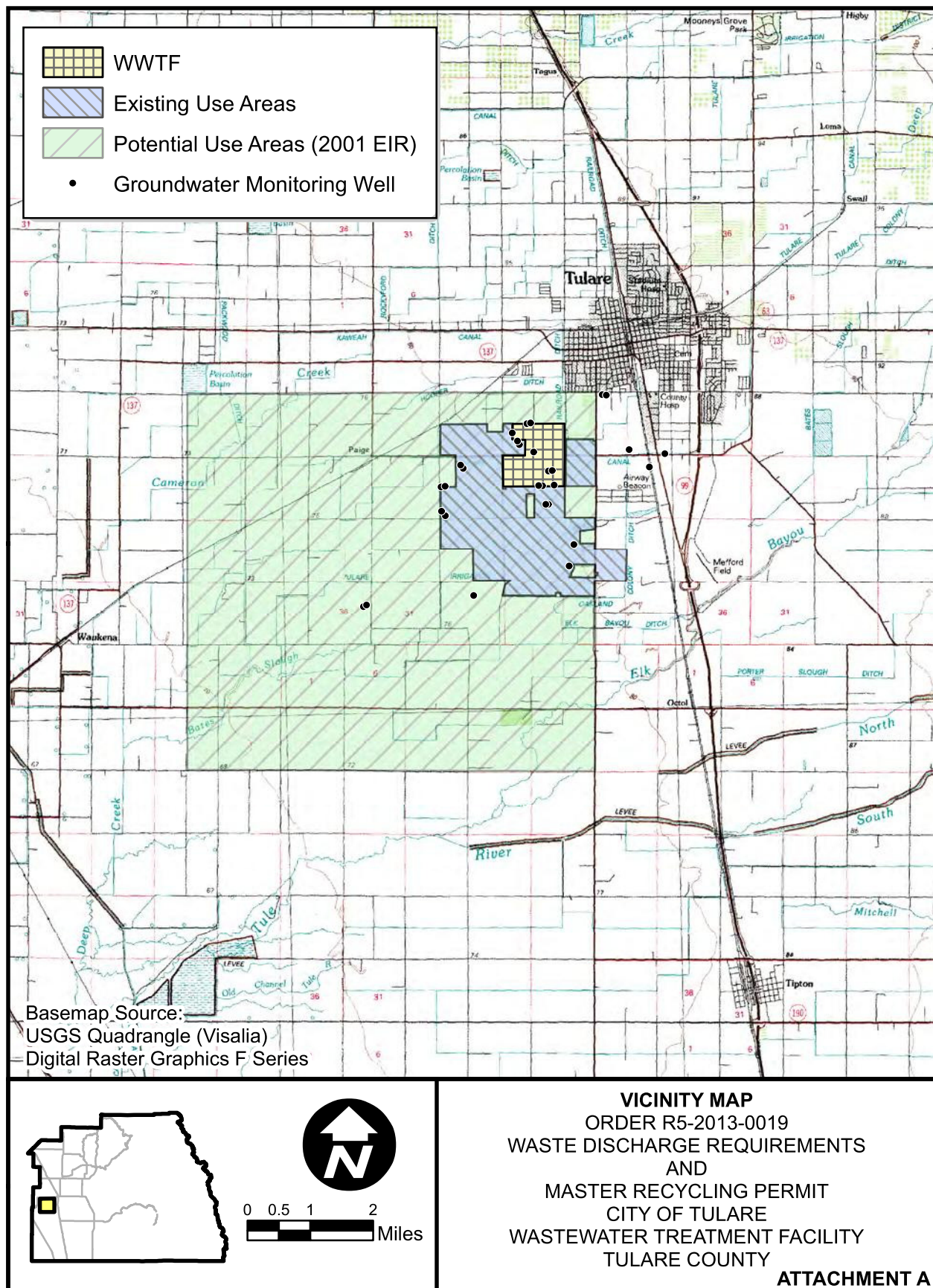
Section 13267 of the Water Code authorizes the Central Valley Water Board to require the Discharger to submit monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the State. In recent years, there has been an increased emphasis on obtaining all necessary information, assuring the information is timely as well as representative and accurate, and thereby improving dischargers' accountability for meeting the conditions of discharge. Section 13268 of the Water Code authorizes assessment of administrative civil when appropriate.

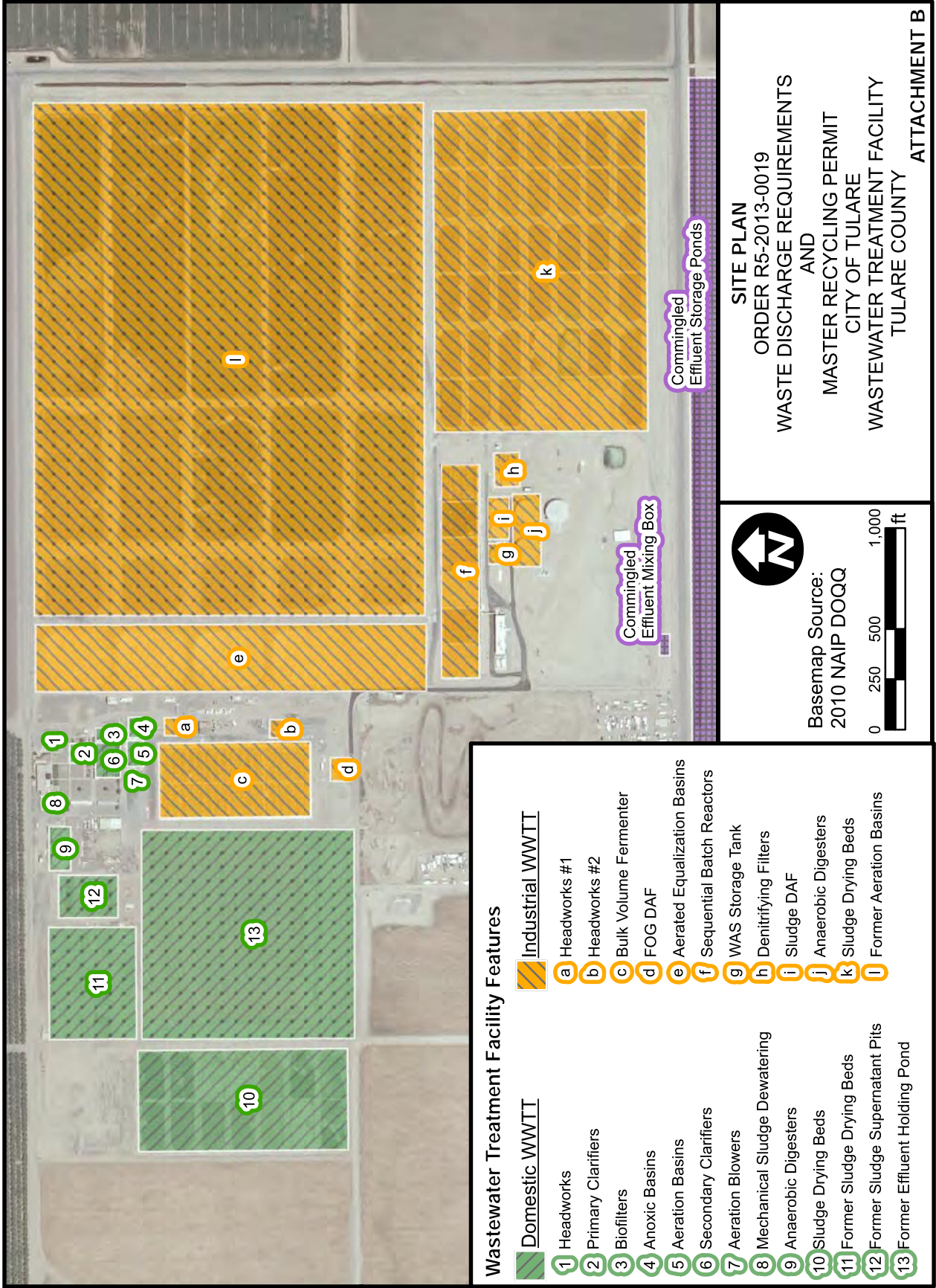
The proposed Order includes influent and effluent monitoring requirements, Fermenter monitoring (primarily to document the source and effects of aqueous ammonia addition at the WWTF), pond monitoring, source water monitoring, sludge monitoring, Use Area monitoring, and groundwater monitoring. This monitoring is necessary to characterize the discharge, evaluate compliance with effluent limitations prescribed by the Order, and evaluate groundwater quality and the extent of degradation caused by the discharge.

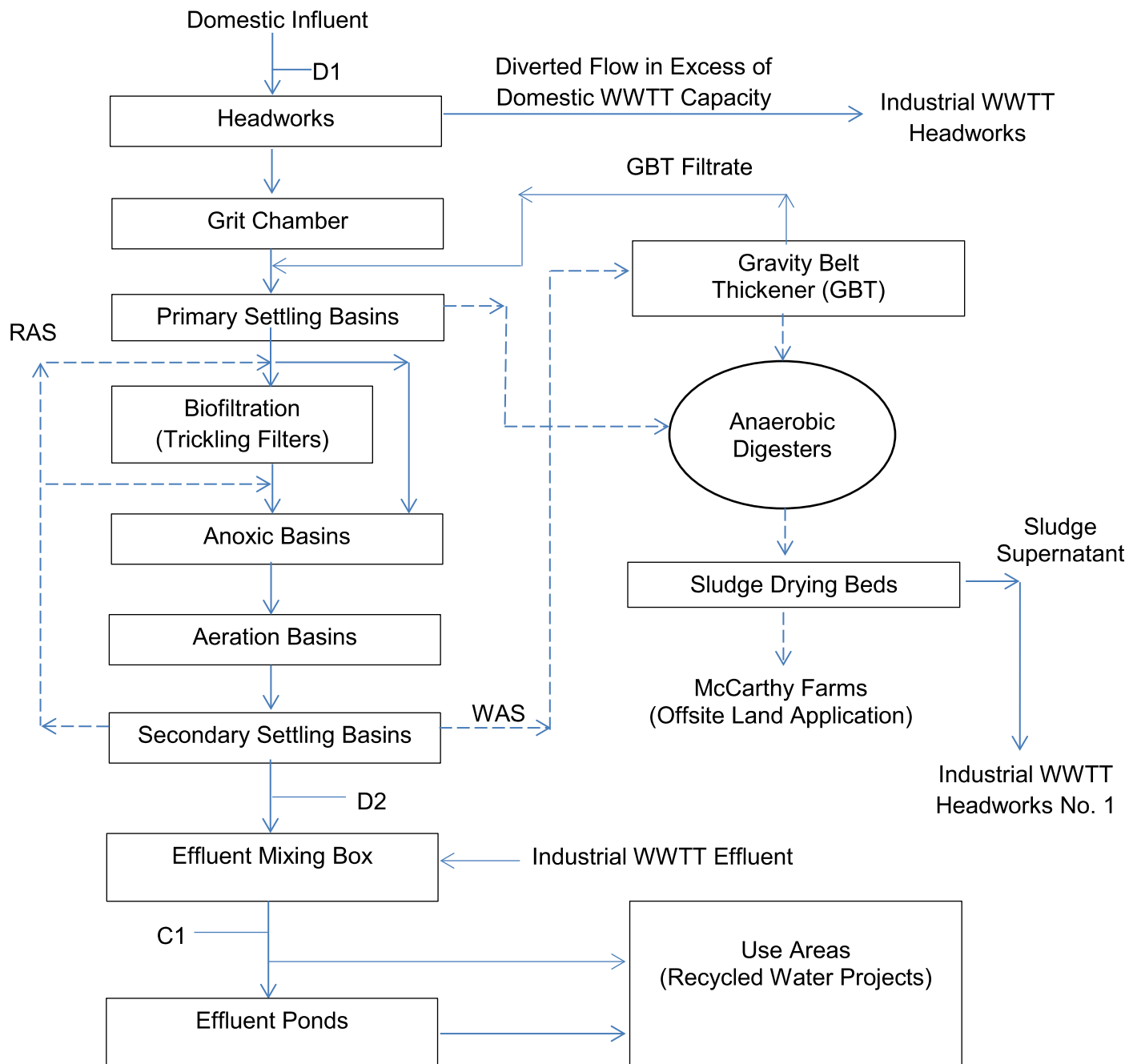
As described in the proposed Order and earlier in this Information Sheet, the existing groundwater monitoring well network is inadequate because no functional wells monitor first-encountered groundwater downgradient of sludge drying beds or most Use Areas, and the single upgradient well is insufficient for the large discharge area. Provision I.20, which requires the City to prepare and implement a work plan for construction of additional wells, is intended to provide data necessary to evaluate groundwater quality and the extent of degradation caused by the discharge. Central Valley Water Board staff will work with the City to identify groundwater monitoring needs to minimize costs, which will bear a reasonable relationship to the need for groundwater monitoring reports (Wat. Code, § 13267.).

Reopener

The conditions of discharge in the proposed Order were developed based on currently available technical information and applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. It may be appropriate to reopen the Order if new technical information is received or if applicable laws and regulations change.







NOT TO SCALE

Symbol



Description

Wastewater
Sludge

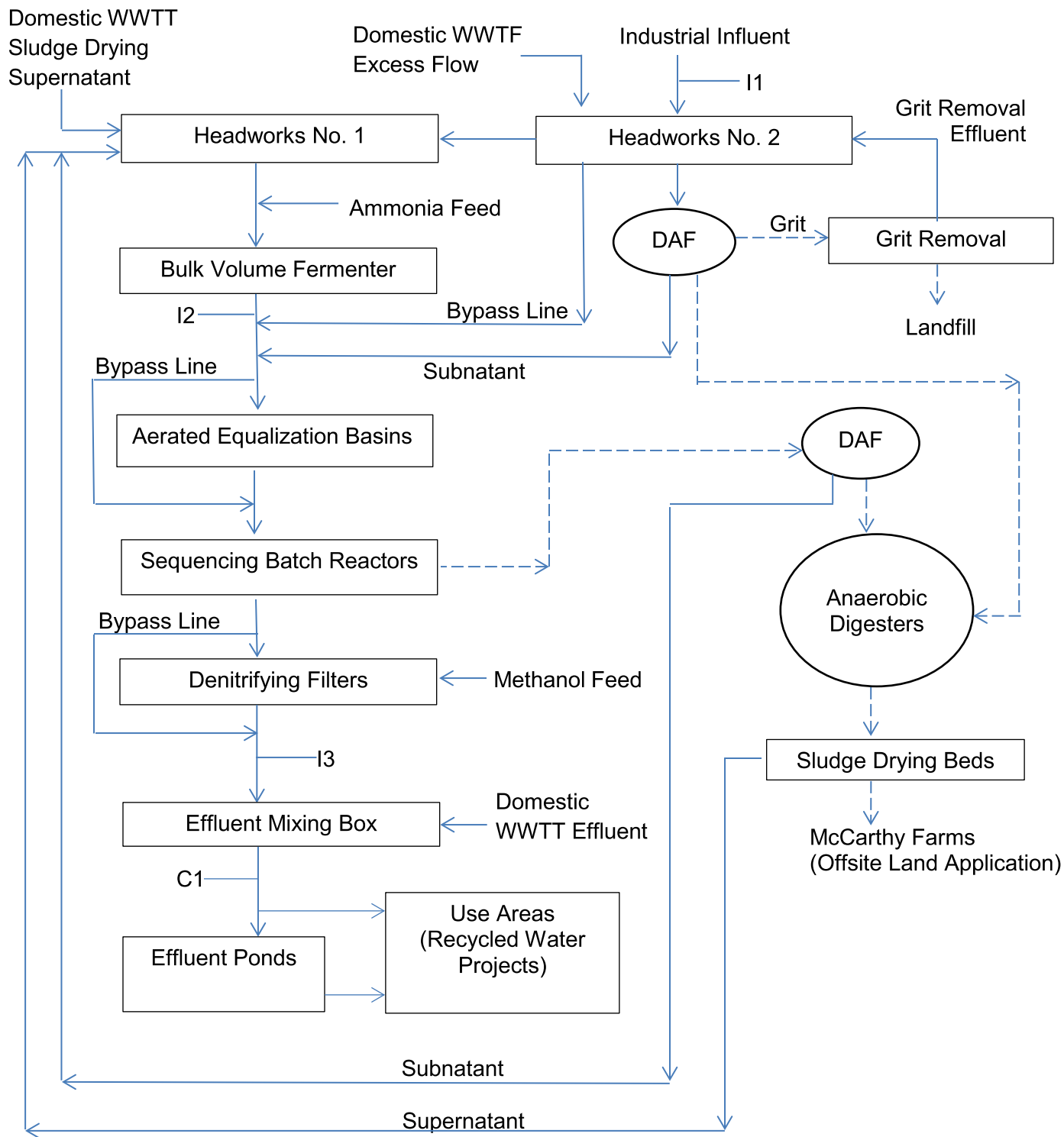
Sampling Points

D1 Domestic Influent
D2 Domestic Effluent
C1 Commingled Effluent



**PROCESS FLOW DIAGRAM
DOMESTIC PLANT**

ORDER R5-2013-0019
WASTE DISCHARGE REQUIREMENTS
AND
MASTER RECYCLING PERMIT
FOR
CITY OF TULARE WWTF

ATTACHMENT C



NOT TO SCALE

Symbol	Description
	Wastewater
	Sludge
Sampling Points	
I1	Industrial Influent
I2	BVF Effluent
I3	Industrial Effluent
C1	Commingled Effluent

**PROCESS FLOW DIAGRAM
INDUSTRIAL PLANT**

ORDER R5-2013-0019
WASTE DISCHARGE REQUIREMENTS
AND
MASTER RECYCLING PERMIT
FOR
CITY OF TULARE WWTF

ATTACHMENT E

ORDER R5-2013-0019

WASTE DISCHARGE REQUIREMENTS AND MASTER RECYCLING PERMIT CITY OF TULARE WASTEWATER TREATMENT FACILITY TULARE COUNTY

RULES AND REGULATIONS FOR RECYCLED WATER USE PROJECTS

Pursuant to California Water Code (Water Code) section 13523.1 (b)(3), this Order requires the City of Tulare to establish and to enforce rules and regulations governing the design, construction and use of recycled water distribution and disposal systems by its customers. The rules and regulations shall be consistent with the following criteria:

- Health and Safety Code, Division 6, Part 1, Chapter 4, Article 1;
- Health and Safety Code, Division 104, Part 12, Chapter 4, Article 7;
- Health and Safety Code, Division 104, Part 12, Chapter 5, Article 2;
- Water Code, Division 7, Chapter 7;
- California Code of Regulations, Title 22, Division 4, Chapter 3;
- California Code of Regulations, Title 17, Division 1, Chapter 5, Group 4, Articles 1 & 2;
- and
- Any measures that are deemed necessary for protection of public health, such as guidelines from the California Department of Public Health and from agencies like the American Water Works Association.

At a minimum, the City shall implement rules and regulations requiring, and notify recycled water users that:

1. The use of recycled water shall not cause pollution, contamination, or nuisance, as defined by section 13050 of the Water Code.
2. **Prior to commencing irrigation with recycled water** on any Use Area not described in this Order, the City shall submit documentation that the California Department of Public Health has approved a Title 22 engineering report for the project and documentation of compliance with the California Environmental Quality Act (CEQA).
3. If, in the opinion of the Executive Officer, reclamation at a proposed new use site cannot be adequately regulated under the Master Recycling Permit, a Report of Waste Discharge may be requested and individual Water Recycling Requirements may be adopted.
4. **At least 30 days prior** to conveying recycled water to any Use Area not described in this Order, the Discharger shall submit a User Report to the Central Valley Water Board and the California Department of Public Health. The User Report shall include the following:
 - a. The site location including a map showing the specific boundaries of the use site and the County Assessor's Parcel Number(s) (if appropriate, if Parcel Number(s) are not appropriate to accurately describe the site location, the Discharger shall provide the

Central Valley Water Board with enough information for the Central Valley Water Board to accurately determine the location of the proposed reclamation activities);

- b. The name of the Use Area property owner and contact information;
 - c. The name of the User and contact information;
 - d. The specific use to be made of the recycled water, the Use Area acreage, the type of vegetation/crops to which the recycled water will be applied, and the anticipated volume of recycled water to be used;
 - e. Identification of the on-site supervisor who is responsible for operation of the recycled water system;
 - f. Description of the recycled water management facilities and operations plan;
 - g. Plans and specifications that include the following:
 - i. Pipe locations of the recycled, potable, and auxiliary non-potable water systems;
 - ii. Type and location of the outlets and plumbing fixtures that will be accessible to the public;
 - iii. The methods and devices to be used to prevent backflow of recycled water into the public water system; and
 - iv. Plan notes relating to recycled water specific installation and use requirements.
 - h. Certification that the new Use Area conforms to the Discharger's rules and regulations;
 - i. A copy of the signed User Agreement; and
 - j. The results of the cross-connection control test performed in accordance with the American Water Works Association and California Department of Public Health guidelines (Cal. Code Regs., tit. 17, § 7605). The results shall include a certification that the California Department of Public Health was notified of the initial cross-connection control test and was provided an opportunity to be present.
5. **Prior to commencing irrigation with recycled water** on any Use Area not described in this Order, the City shall submit documentation that the California Department of Public Health has approved a Title 22 engineering report for the project and documentation of compliance with CEQA. The Title 22 engineering report shall be consistent with the Department of Public Health guidance document entitled, *Preparation of an Engineering Report for the Production, Distribution and Use of Recycled Water*.
6. In the event of any change in control or ownership of land or waste treatment and storage facilities presently owned or controlled by the Discharger, the Discharger shall notify the

succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.

7. No person other than the City shall deliver recycled water to a Use Area.
8. The City may terminate service to a User who uses, transports, or stores such water in violation of the City's rules and regulations.
9. The Central Valley Water Board may initiate enforcement action against any recycled water user, including but not limited to the termination of the recycled water supply, who:
 - a. Discharges recycled water in violation of any applicable discharge requirement prescribed by the Central Valley Water Board or in a manner which creates or threatens to create conditions of pollution, contamination, or nuisance, as defined in Water Code section 13050.
 - b. Uses, transports, or stores such water in violation of the rules and regulations governing the design, construction and use of recycled water distribution and disposal systems issued by the recycled water distribution and disposal systems issued by the City in accordance with this attachment; or in a manner which creates or threatens to create conditions of pollution, contamination, or nuisance, as defined in Water Code section 13050.
10. All recycled water storage facilities shall be protected against erosion, overland runoff, and other impacts resulting from a 100-year, 24-hour frequency storm to the extent practicable unless the Central Valley Water Board Executive Officer approves relaxed storm protection measures for the facility.
11. The recycled water shall be at least undisinfected secondary recycled water as defined by Title 22, section 60301.
12. Recycled water shall be used in compliance with Title 22, section 60304. Regarding particular agricultural uses, recycled water shall be applied in compliance with the following:
 - a. Undisinfected recycled water shall not be discharged to orchard or vineyard crops;
 - b. No recycled water used for irrigation, or soil that has been irrigated with recycled water, shall come into contact with the edible portion of food crops that may be eaten raw by humans;
 - c. Non food-bearing trees, seed crops not eaten by humans, food crops that must undergo commercial pathogen-destroying processing before being consumed by humans, and ornamental nursery stock and sod farms (provided no irrigation with recycled water occurs for a period of 14 days prior to harvesting, retail sale, or allowing access by the general public) may be irrigated with recycled water; and
 - d. Grazing of milking animals within the Use Areas is prohibited.

13. Irrigation of the Use Areas shall occur only when appropriately trained personnel are on duty.
14. Irrigation with recycled water shall not be performed within 24 hours of a forecasted storm, during or within 24 hours after any precipitation event, nor when the ground is saturated.
15. The Use Area parcels shall be graded to prevent ponding along public roads or other public areas and prevent runoff onto adjacent properties.
16. The Use Areas shall be managed to prevent breeding of mosquitoes. In particular:
17. There shall be no standing water 48 hours after irrigation ceases;
18. Tailwater ditches shall be maintained essentially free of emergent, marginal, and floating vegetation; and
19. Low-pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store recycled water.
20. Tailwater runoff and spray of recycled water shall not be discharged outside of the use areas except in minor, incidental amounts that cannot reasonably be eliminated by implementation and good maintenance of best management practices.
21. Recycled water spray, mist, or runoff shall not enter dwellings, designated outdoor eating areas, or food handling facilities. Drinking water fountains shall be protected against contact with recycled water spray, mist, or runoff.
22. Use Areas and recycled water impoundments shall be designed, maintained, and operated to comply with the following setback requirements:

<u>Setback Definition</u>	<u>Minimum Irrigation Setback (feet)</u>
Edge of Use Area to property boundary	25
Edge of Use Area to public road right of way	30
Edge of Use Area to manmade or natural surface water drainage course ¹	50
Edge of Use Area to domestic water supply well	150
Toe of recycled water impoundment berm to domestic water supply well	150

¹ Excluding ditches used exclusively for tailwater return from the land application area and land application areas separated by levees or other permanent physical barriers from surface waters or drainage courses.

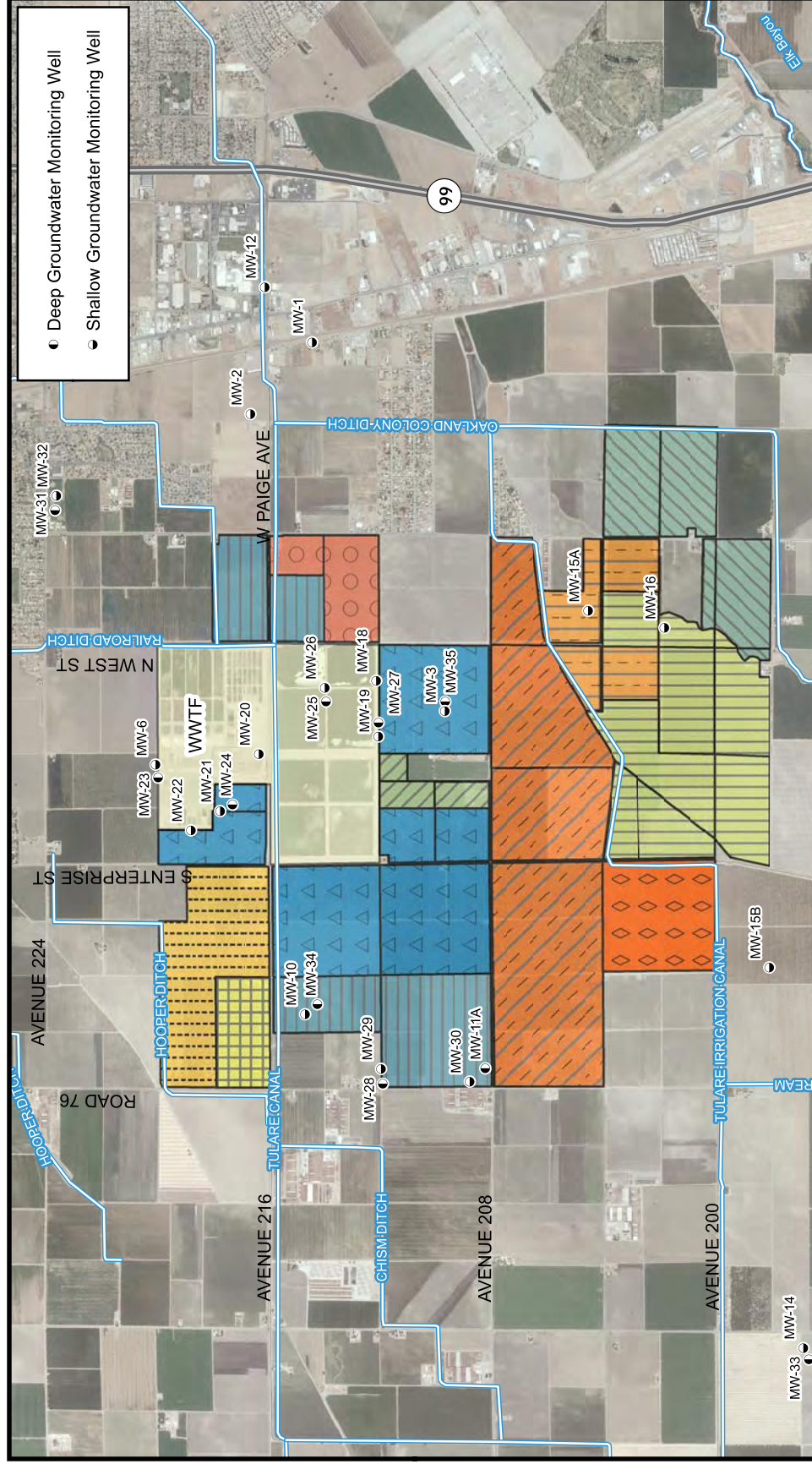
23. Tailwater runoff and spray of recycled water shall not be discharged outside of the use areas except in minor, incidental amounts that cannot reasonably be eliminated by implementation and good maintenance of best management practices.

24. There shall be at least a ten-foot horizontal and a one-foot vertical separation between all pipelines transporting recycled water and those transporting domestic supply, and the domestic supply pipeline shall be located above the recycled water pipeline.
25. A public water supply or auxiliary water supply shall not be used as backup or supplemental source of water for a recycled water system unless the connection between the two systems is protected by a backflow preventer (e.g., an air gap separation) which complies with the requirements of California Code of Regulations, title 17, sections 7601 through 7604.
26. Any backflow prevention device installed to protect a public water system shall be inspected and maintained in accordance with Title 17, section 7605. The recycled water system shall be tested for possible cross connections at least once every four years. The inspections and the testing shall be performed by a cross connection control specialist certified by the California-Nevada section of the American Water Works Association or an organization with equivalent certification requirements.
27. All recycling equipment, pumps, piping, valves, and outlets shall be marked to differentiate them from potable water facilities. All recycled water piping (above and below ground) and appurtenances in new installations and in retrofit installations shall be colored purple or distinctively wrapped with purple tape in accordance with California Health and Safety Code section 116815.
28. Recycled water controllers, valves, and similar appurtenances shall be affixed with recycled water warning signs, and shall be equipped with removable handles or locking mechanisms to prevent public access or tampering.
29. Quick couplers, if used, shall be different than those used in potable water systems.
30. Hose bibs and unlocked valves, if used, shall not be used in areas accessible to the public.
31. Public contact with recycled water shall be controlled using fences, signs, and/or other appropriate means. Signs of a size no less than four inches high by eight inches wide with proper wording (shown below) shall be placed at all areas of public access and around the perimeter of all areas used for effluent disposal or conveyance to alert the public of the use of recycled water. The size and content of these signs shall be as described in section 60310(g) of Title 22. All signs shall display an international symbol similar to that shown in Attachment G, which is attached hereto and a part of this Order, and present the following wording:

“RECYCLED WATER – DO NOT DRINK”
“AGUA DE DESPERDICIO RECLAMADA – NO TOME”

32. Public contact with recycled water shall be controlled using fences, signs, and/or other appropriate means. Signs of a size no less than four inches high by eight inches wide with proper wording (shown below) shall be placed at all areas of public access and around the perimeter of all areas used for effluent disposal or conveyance to alert the public of the use of recycled water. The size and content of these signs shall be as described in section 60310(g) of Title 22. All signs shall display an international symbol similar to that shown in Attachment G, which is attached hereto and a part of this Order, and present the following wording:

33. Workers shall be educated regarding proper hygienic procedures to ensure personal and public safety.
34. The annual nutrient loading of the Use Area, including the nutritive value of organic and chemical fertilizers and recycled water, shall not exceed crop demand.
35. Hydraulic and nutrient loading of recycled water and supplemental irrigation water shall be at reasonable agronomic rates designed to :
 - a. Maximize crop nutrient uptake;
 - b. Maximize breakdown of organic waste constituents in the root zone;
 - c. Minimize the percolation of waste constituents; and
 - d. Minimize erosion within the Use Areas.
36. The City of Tulare, the Central Valley Regional Water Quality Control Board (Central Valley Water Board), the California Department of Public Health, or an authorized representative of these parties, upon presentation of proper credentials, shall have the right to enter upon the recycled water use site during reasonable hours, to verify that the user of recycled water is complying with the City's rules and regulations.
37. Use Areas shall be inspected as frequently as necessary to ensure continuous compliance with the requirements of this Order.
38. A copy of the User Agreement and the Discharger's rules and regulations governing the distribution and use of recycled water shall be maintained at the User's facilities and be available at all times for inspection by Central Valley Water Board staff, the Discharger, and Department of Public Health staff.



RECYCLED WATER USE AREA MAP

ORDER R5-2013-0019

WASTE DISCHARGE REQUIREMENTS

AND

MASTER RECYCLING PERMIT

CITY OF TULARE

WASTEWATER TREATMENT FACILITY

TULARE COUNTY

ATTACHMENT F

Basemap Source:
2010 NAIP DOQQ

Existing Use Areas

	City of Tulare		Mello-Martin
	Eddy		Patricia Colson
	Clarklind Farms		Wilbur
	Colson		Lopes
	De Azevedo		



INTERNATIONAL SYMBOL FOR NONPOTABLE WATER

ORDER R5-2013-0019
WASTE DISCHARGE REQUIREMENTS
AND
MASTER RECYCLING PERMIT
CITY OF TULARE
WASTEWATER TREATMENT FACILITY
TULARE COUNTY

ATTACHMENT G

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. 86-108

WASTE DISCHARGE REQUIREMENTS
FOR
WOODVILLE PUBLIC UTILITIES DISTRICT
TULARE COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Board) finds that:

1. The Board, on 10 January 1969, adopted Resolution No. 69-161 which prescribed requirements for a discharge from Woodville Public Utilities District (hereafter Discharger) to land.
2. Present waste discharge requirements established by Resolution No. 69-161 are neither adequate nor consistent with plans and policies of the Board.
3. The Discharger discharges 0.33 million gallons per day from an aeration basin to evaporation/percolation ponds.
4. The treatment and disposal facility is in Section 19, T21S, R26E, MDB&M, on the Valley floor several miles from the nearest surface water.
5. The beneficial uses of the ground water are municipal, industrial, and agricultural supply.
6. The Board, on 25 July 1975, adopted a Water Quality Control Plan for the Tulare Lake Basin (5D) which contains water quality objectives. These requirements are consistent with that Plan.
7. The action to update waste discharge requirements for this facility is exempt from the provisions of the California Environmental Quality Act, in accordance with Section 15301, Title 14, California Administrative Code.
8. The Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge.
9. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that Resolution No. 69-161 be rescinded and Woodville Public Utilities District, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. Discharge Prohibitions:

1. The direct discharge of wastes to surface waters or surface water drainage courses is prohibited.

WASTE DISCHARGE REQUIREMENTS
WOODVILLE PUBLIC UTILITIES DISTRICT
TULARE COUNTY

-2-

2. The by-pass or overflow of untreated or partially treated waste is prohibited.

B. Discharge Specifications:

1. Neither the treatment nor the discharge shall cause a pollution or nuisance as defined by the California Water Code, Section 13050.
2. The discharge shall not cause degradation of any water supply.
3. The discharge shall remain within the designated disposal area at all times.
4. The 30-day average daily dry weather discharge flow shall not exceed 0.33 million gallons.
5. Collected screenings, sludges, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer.
6. Reclaimed wastewater shall meet the criteria contained in Title 22, Division 4, California Administrative Code (Section 60301, et seq.).
7. The dissolved oxygen content of holding ponds shall not be less than 1.0 mg/l for 16 hours in any 24-hour period.
8. The specific electrical conductivity (EC) of the discharge shall not exceed the average EC of the source water plus 500 micromhos/cm.

C. Provisions:

1. The Discharger may be required to submit technical reports as directed by the Executive Officer.
2. The Discharger shall comply with the attached Monitoring and Reporting Program No. 86-108.
3. The Discharger shall comply with the Standard Provisions and Reporting Requirements, dated 1 September 1985, which are a part of this Order.
4. The Discharger shall report promptly to the Board any material change or proposed change in the character, locations, or volume of the discharge.
5. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be forwarded to this office.

WASTE DISCHARGE REQUIREMENTS
WOODVILLE PUBLIC UTILITIES DISTRICT
TULARE COUNTY

-3-

6. The Board will review this Order periodically and may revise requirements when necessary.

I, WILLIAM H. CROOKS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 30 May 1986.


WILLIAM H. CROOKS, Executive Officer

CCC:bro:4/21/86

Attachments

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. 86-108

FOR
WOODVILLE PUBLIC UTILITIES DISTRICT
TULARE COUNTY

MONITORING

The following shall constitute the monitoring program:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Total Daily Flow	gpd	Estimate	Daily
Specific Electrical Conductance	micromhos/cm	Grab	Monthly
Dissolved Oxygen ^{2/}	mg/l	Grab	Monthly ^{1/}

1/ Effluent shall be sampled monthly and source water annually.

2/ Sample to be collected from opposite the inlet of each pond between the hours of 0800 and 0900.

REPORTING

In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly the compliance with waste discharge requirements.

Monthly monitoring reports shall be submitted to the Regional Board by the 15th day of the following month.

Ordered by

William H. Crooks
WILLIAM H. CROOKS, Executive Officer

CCC:bro

4/21/86

30 May 1986
(Date)

INFORMATION SHEET

WOODVILLE PUBLIC UTILITIES DISTRICT
TULARE COUNTY

The Woodville Public Utilities District provides water and sewage services to the community of Woodville which is about 10 miles west of Porterville in Section 19, T21S, R26E, MDB&M.

The District operates an extended aeration activated sludge treatment plant. Domestic sewage flows via gravity to a newly constructed headworks which consists of two lift pumps that pump the sewage to an aeration basin. The aeration basin is divided into two cells each fitted with a floating aerator suspended in the middle of the cell by cables. The aerators operate alternately on a 15 minute cycle. Activated sludge is recycled through the basin at about 100 gpm. The facility treats approximately 0.25 to 0.33 million gallons per day of domestic wastes. There are no industrial hookups to the system. Sludge from the basin is wasted about two times a year and disposed of on the 40-acre site owned by the District.

The effluent from the aeration basin flows to one of two percolation/evaporation ponds. The District uses one pond each year while the other pond is drying. Once the pond dries it is cleaned out and the bottom ripped to about 18 inches.

The facility is regulated by Resolution No. 69-161 which does not reflect the current policies of the Board.

Ground water quality in the area is considered good with an electrical conductivity of about 400 micromhos/cm. Depth to unconfined ground water is about 65 feet.

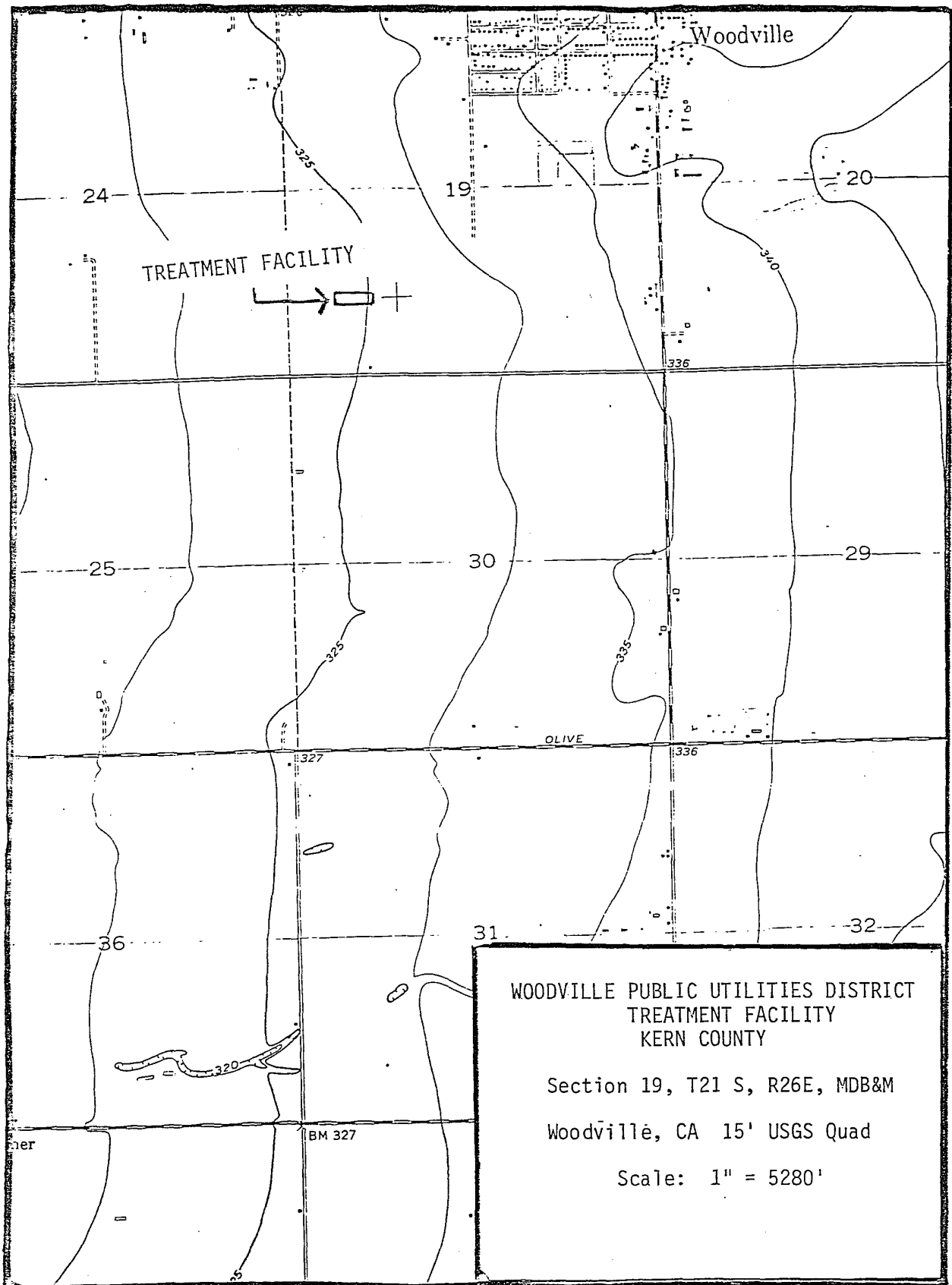
The facility is on the San Joaquin Valley floor several miles from the nearest surface water.

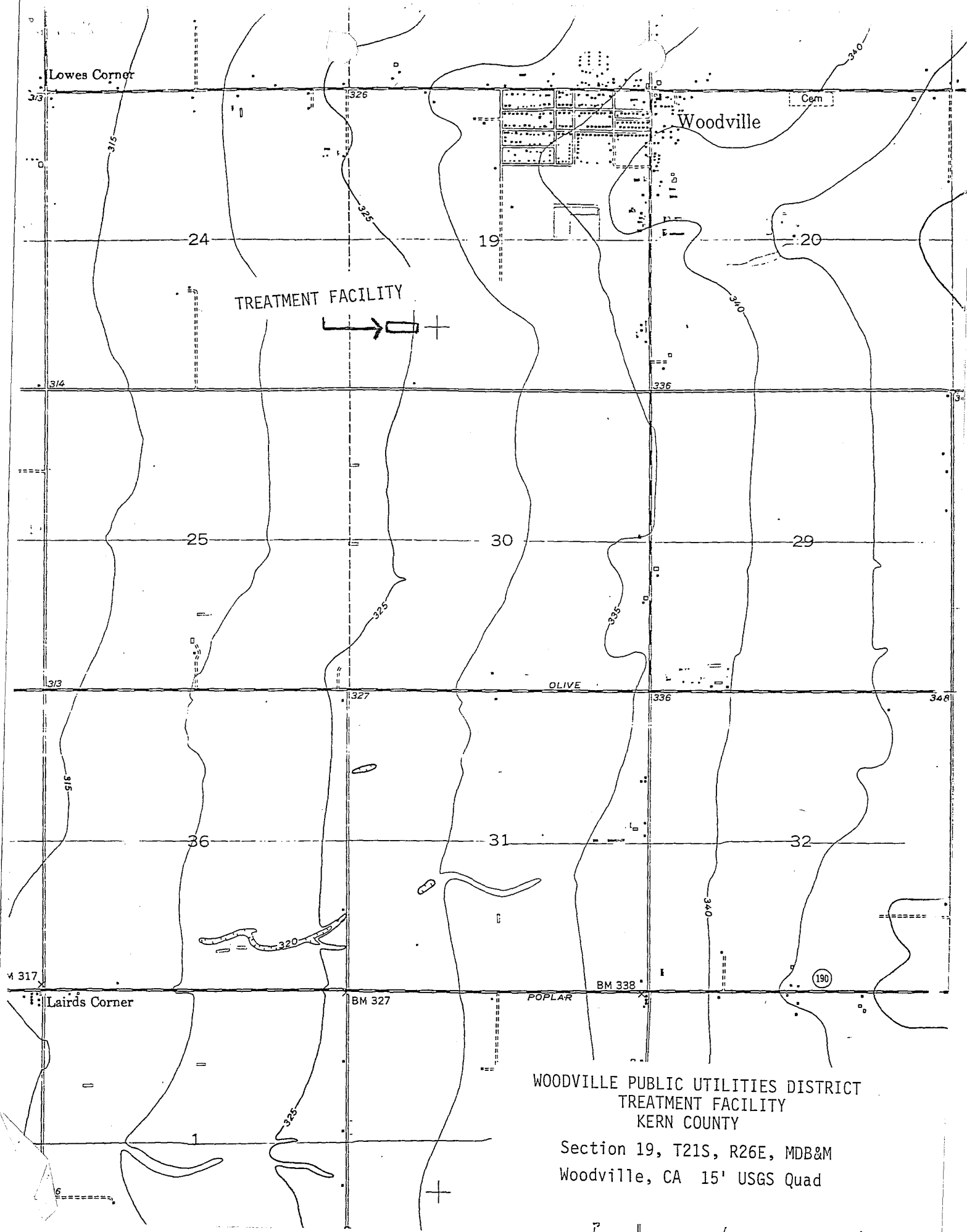
Soil in the area consists of Madera loam overlying hardpan which restricts surface penetration and subsoil drainage. Rainfall is about 10 inches annually, pan evaporation rates have been reported to be around 60 inches per year.

The action to adopt waste discharge requirements for this existing facility is exempt from the provisions of the California Environmental Quality Act, in accordance with Section 15301, Title 14, California Administrative Code.

CCC:bro

4/21/86





WOODVILLE PUBLIC UTILITIES DISTRICT
TREATMENT FACILITY
KERN COUNTY

Section 19, T21S, R26E, MDB&M
Woodville, CA 15' USGS Quad

Appendix H

Alternative No. 1 Engineer's Opinion of Probable Construction Cost

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
PRELIMINARY

MATHENY TRACT WASTEWATER STUDY
ALTERNATIVE NO. 1
ONSITE SEPTIC SYSTEMS WITH MAINTENANCE DISTRICT

8/18/2014

ITEM NO.	QTY	BID ITEM DESCRIPTION	UNIT PRICE	SUBTOTAL
1	1	Mobilization, Demobilization, Bonds and Insurance	\$50,000 / LS	\$50,000
2	1	Fugitive Dust Control	\$10,000 / LS	\$10,000
3	1	Worker Protection	\$20,000 / LS	\$20,000
4	1	Prepare & Implement SWPPP	\$25,000 / LS	\$25,000
5	298	Construct New Septic Systems	\$40,000 / EA	\$11,920,000
6	298	Abandon Existing Septic Systems	\$4,000 / EA	\$1,192,000
7	14,900	4" Service Line From House to New Tank	\$50 / LF	\$745,000
8	1	Miscellaneous Facilities & Operations	\$50,000 / LS	\$50,000
9	1	Permitting	\$15,000 / LS	\$15,000
		Subtotal		\$14,027,000
		Contingency - 20%		\$2,805,400
		Engineering and Construction Observation - 10%		\$1,402,700
		Total Project Cost		\$18,235,100
		Present Worth of O&M Costs (\$263,300 per year for 20 years at 3% interest)		\$3,917,239
TOTAL PROJECT COST + PRESENT WORTH COSTS				\$22,152,339

Notes:

O&M Costs are comprised of \$300 Septic Tank Pumping cost per house every three years (\$300/3*298=\$29,800 annual cost), \$750 Annual Inspection and testing cost per house every year (\$750*298=\$223,500 annual cost), and \$10,000 annual general maintenance cost.

Total Annual Cost	\$263,300
Monthly Cost per Customer (298)	\$74

Appendix I

Alternative No.2 Preliminary Layout



MATHENY SEWER SYSTEM PROJECT
SEWER SYSTEM NETWORK
COUNTY OF TULARE

DESIGN ENGINEER:
HEATHER E. BASHIAN

LICENSE NO:
73,075

DRAFTED BY:
ELV

CHECKED BY:
HEB

DATE: 06/11/2015

JOB NO: 13991401

ORIGINAL SCALE SHOWN IS IN
INCHES. ADJUST SCALE FOR
REDUCED OR ENLARGED PLANS.
SHEET

1 OF 1

6/11/2015 9:34 AM G:\Tulare_County of\1399\13991401-Matheny Sewer\DWG\EXHIBIT\13991401-SEWER-NETWORK-EXHIBIT-NEW.dwg -Liz Varner

Appendix J

Alternative No.2 Engineer's Opinion of Probable Construction Cost

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
PRELIMINARY

MATHENY TRACT WASTEWATER STUDY
ALTERNATIVE NO. 2
WASTEWATER COLLECTION SYSTEM AND
CONSOLIDATION WITH CITY OF TULARE

5/28/2015

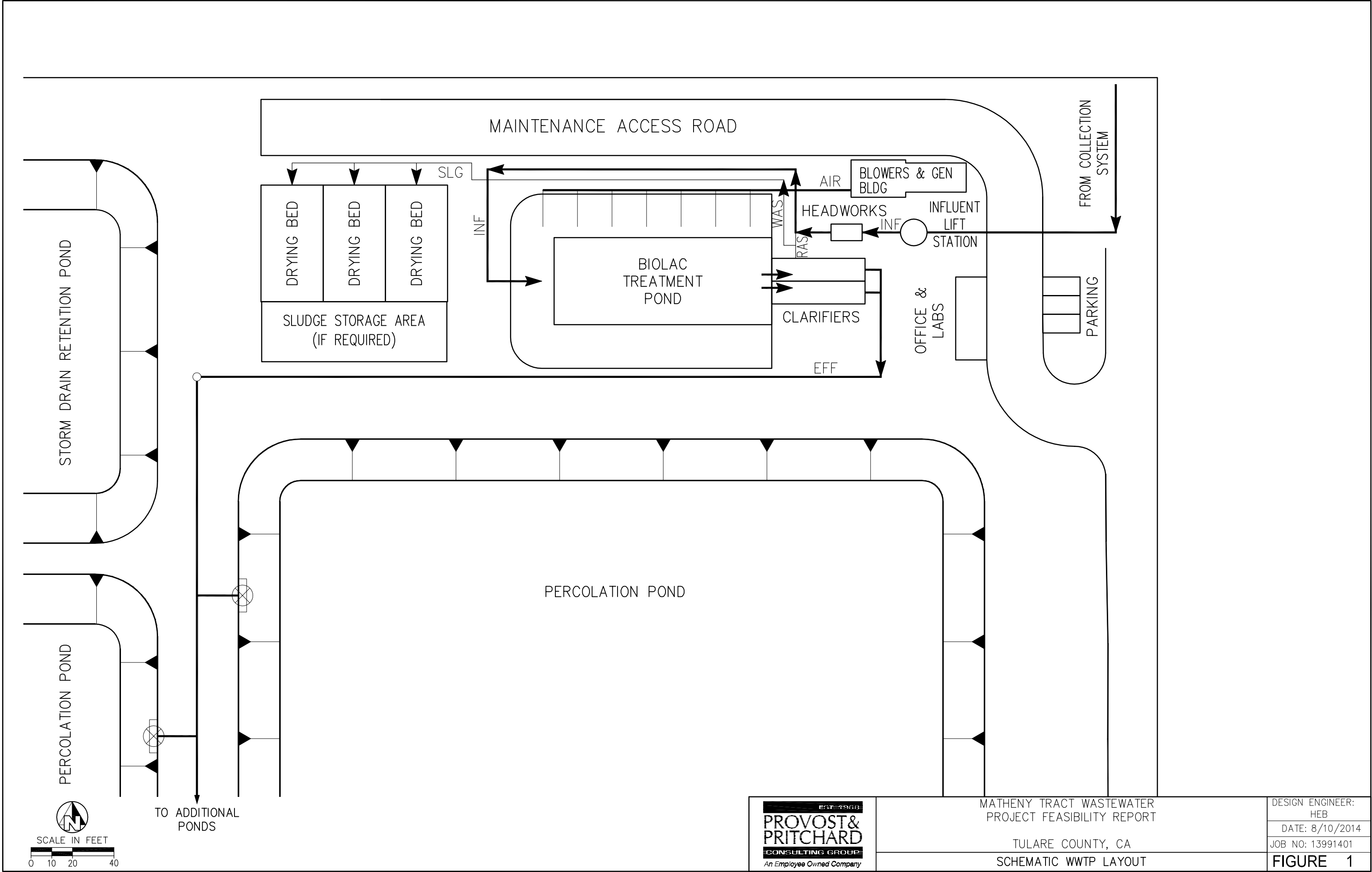
ITEM NO.	QTY	BID ITEM DESCRIPTION	UNIT PRICE	SUBTOTAL
Collection System				
1	1	Mobilization, Demobilization, Bonds and Insurance	\$150,000 / LS	\$150,000
2	1	Traffic Control	\$55,000 / LS	\$55,000
3	1	Fugitive Dust Control	\$10,000 / LS	\$10,000
4	1	Worker Protection	\$20,000 / LS	\$20,000
5	1	Prepare and Implement SWPPP	\$25,000 / LS	\$25,000
6	22,000	8-Inch PVC Sewer Main	\$50 / LF	\$1,100,000
7	1,010	10-Inch PVC Sewer Main	\$60 / LF	\$60,600
8	270	Bore & Jack 8" Carrier Pipe w/16" Casing	\$650 / LF	\$175,500
9	1	Lift Station	\$50,000 / EA	\$50,000
10	292	4" Sewer Service	\$4,000 / EA	\$1,168,000
11	6	6" Sewer Service	\$5,000 / EA	\$30,000
12	298	Abandon Existing Septic Systems	\$4,000 / LF	\$1,192,000
13	1	Permitting	\$15,000 / LS	\$15,000
14	23,010	Temporary Trench Resurfacing (Mains)	\$6 / LF	\$138,060
15	23,010	Permanent Trench Resurfacing (Mains)	\$30 / LF	\$690,300
16	298	Temporary Trench Resurfacing (Services)	\$30 / EA	\$8,940
17	298	Permanent Trench Resurfacing (Services)	\$30 / EA	\$8,940
		Subtotal Collection System		\$4,897,340
Connection to City of Tulare System				
18	2,810	12-Inch PVC Sewer Main	\$80 / LF	\$224,800
19	120	Bore & Jack 12" Carrier Pipe w/24" Casing	\$650 / LF	\$78,000
20	298	Capacity & Connection Fees	\$5,000 / LF	\$1,490,000
21	1	Permitting	\$2,500 / LS	\$2,500
22	2,810	Temporary Trench Resurfacing (Mains)	\$6 / LF	\$16,860
23	2,810	Permanent Trench Resurfacing (Mains)	\$30 / LF	\$84,300
		Subtotal Connection to City of Tulare		\$1,896,460
		Subtotal		\$6,793,800
		Contingency - 20%		\$1,358,760
		Engineering & Construction Observation - 10%		\$679,380
		Total Project Cost		\$8,831,940
		Present Worth of O&M Costs (\$150,200 per year for 20 years at 3% interest)		\$2,234,478
TOTAL PROJECT COST + PRESENT WORTH COSTS				\$11,066,418

Monthly Cost per Customer (298)

\$42

Appendix K

Alternative No. 3 Example Layout



Appendix L

Alternative No. 3 Engineer's Opinion of Probable Construction Cost

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

PRELIMINARY

MATHENY TRACT WASTEWATER STUDY ALTERNATIVE NO. 3 WASTEWATER COLLECTION SYSTEM AND LOCAL WASTEWATER TREATMENT PLANT

5/28/2015

ITEM NO.	QTY	BID ITEM DESCRIPTION	UNIT PRICE	SUBTOTAL
Collection System				
1	1	Mobilization, Demobilization, Bonds and Insurance	\$150,000 / LS	\$150,000
2	1	Traffic Control	\$55,000 / LS	\$55,000
3	1	Fugitive Dust Control	\$10,000 / LS	\$10,000
4	1	Worker Protection	\$20,000 / LS	\$20,000
5	1	Prepare and Implement SWPPP	\$25,000 / LS	\$25,000
6	22,000	8-Inch PVC Sewer Main	\$50 / LF	\$1,100,000
7	1,010	10-Inch PVC Sewer Main	\$60 / LF	\$60,600
8	270	Bore & Jack 8" Carrier Pipe and 16" Casing	\$650 / LF	\$175,500
9	1	Lift Station	\$50,000 / EA	\$50,000
10	292	4" Sewer Service	\$4,000 / EA	\$1,168,000
11	6	6" Sewer Service	\$5,000 / EA	\$30,000
12	298	Abandon Existing Septic Systems	\$4,000 / LF	\$1,192,000
13	1	Permitting	\$15,000 / LS	\$15,000
14	23,010	Temporary Trench Resurfacing (Mains)	\$6 / LF	\$138,060
15	23,010	Permanent Trench Resurfacing (Mains)	\$30 / LF	\$690,300
16	298	Temporary Trench Resurfacing (Services)	\$30 / EA	\$8,940
17	298	Permanent Trench Resurfacing (Services)	\$30 / EA	\$8,940
Subtotal Collection System				\$4,897,340
Treatment & Disposal				
1	1	Mobilization, Demobilization, Bonds and Insurance	\$75,000 / LS	\$75,000
2	1	Traffic Control	\$5,000 / LS	\$5,000
3	1	Fugitive Dust Control	\$10,000 / LS	\$10,000
4	1	Worker Protection	\$20,000 / LS	\$20,000
5	1	Prepare and Implement SWPPP	\$10,000 / LS	\$10,000
6	1	Influent Lift Station & Meter	\$40,000 / LS	\$40,000
7	1	Headworks Screen & Grit Removal	\$20,000 / LS	\$20,000
8	1	Headworks Structure	\$35,000 / LS	\$35,000
9	1	Equipment Package (Biolac)	\$450,000 / LS	\$450,000
10	200	Aeration Basin Concrete	\$1,000 / CY	\$200,000
11	1,400	Aeration Basin Excavation	\$15 / DY	\$21,000
12	250	Clarifier Concrete	\$1,000 / CY	\$250,000

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
PRELIMINARY

MATHENY TRACT WASTEWATER STUDY
ALTERNATIVE NO. 3
WASTEWATER COLLECTION SYSTEM AND
LOCAL WASTEWATER TREATMENT PLANT

5/28/2015

13	480	Clarifier Excavation	\$15 / CY	\$7,200
14	1	Yard Piping	\$60,000 / LS	\$60,000
15	400	Blower & Generator Building	\$100 / SF	\$40,000
16	600	Office/Lab	\$250 / SF	\$150,000
17	1	Sludge Drying Beds	\$40,000 / LS	\$40,000
18	12,000	Site Grading and Finish	\$20 / SF	\$240,000
19	3	Groundwater Monitoring Wells	\$15,000 / EA	\$45,000
20	1	Electrical and Instrumentation	\$155,000 / LS	\$155,000
21	1	Backup Generator	\$75,000 / LS	\$75,000
22	64,500	Evaporation - Percolation Ponds	\$15 / CY	\$967,500
		Subtotal Treatment & Disposal		\$2,915,700
		Subtotal		\$7,813,040
		Contingency - 20%		\$1,562,608
		Engineering and Construction Observation - 15%		\$1,171,956
		Total Project Cost		\$10,547,604
		Present Worth of O&M Costs (\$460,031 per year for 20 years at 3% interest)		\$6,844,092
TOTAL PROJECT COST + PRESENT WORTH COSTS				\$17,391,696
Operations & Maintenance Costs				
	2	Operator	\$65,000 / EA	\$130,000
	0.5	Administrative Assistant	\$40,000 / EA	\$20,000
	2	Vehicle	\$8,500 / EA	\$17,000
	1	Chemicals	\$2,500 / LS	\$2,500
	1	Parts & Supplies	\$93,000 / LS	\$93,000
	1	Electricity (75 HP Connected, \$0.12/KWH)	\$122,531 / LS	\$122,531
	1	Contract Services	\$75,000 / LS	\$75,000
		Total Annual Cost		\$460,031
		Monthly Cost per Customer (298)		\$129

Timothy J Loper

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by Timothy J
Loper
Date: 2017.06.30
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Digitally signed by Ryan Orgill
Contact Info: Carollo Engineers,
Inc.
Date: 2017.06.30 10:12:01-07'00'



CITY OF TULARE

**DWWTP AND COLLECTION SYSTEM CAPACITY
ANALYSIS**

COLLECTION SYSTEM CAPACITY ANALYSIS

FINAL
June 2017

CITY OF TULARE
DWWTP AND COLLECTION SYSTEM CAPACITY ANALYSIS
COLLECTION SYSTEM CAPACITY ANALYSIS

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COLLECTION SYSTEM CAPACITY ANALYSIS

1.0 EXECUTIVE SUMMARY

In March 2016, Provost & Pritchard Consulting Group (Provost & Pritchard) finalized a report entitled "Project Feasibility Report - Matheny Tract Wastewater System" (Feasibility Study). The Feasibility Study evaluated several options for providing sewer service to the existing residential community known as Matheny Tract. Matheny Tract consists of roughly 300 homes located adjacent to the City, which are currently served by on-site septic systems.

Based on an economic evaluation, the Feasibility Report ultimately recommended construction of a collection system, lift station, and force main to convey flow to the City's domestic wastewater treatment plant (DWWTP) for treatment. The force main would connect to the City's collection system at the existing 27-inch sewer main at West Paige Avenue and Pratt Street.

1.1 Existing Collection System and Wastewater Flows

The City's collection system facilities consist of 6-inch through 42-inch diameter gravity sewer pipelines, as well as 15 sewage lift stations and associated force mains. The majority of these pipelines convey wastewater generated within the City limits to the City's Domestic Wastewater Treatment Plant (DWWTP). There are also sewers dedicated to conveying wastewater flow from industrial dischargers to the City's Industrial Wastewater Treatment Plant (IWWTP).

Influent flow data from 2013 through 2016 was provided by the City for the DWWTP and IWWTP. The average daily wastewater flow (domestic) has decreased from 4.75 mgd in 2013 to 3.62 mgd in 2016. The decrease in wastewater flow is primarily associated with State of California mandatory water conservation due to extreme drought conditions. For 2016, the average and maximum daily flows at the IWWTP were 7.5 mgd and 8.9 mgd, respectively.

1.2 Projected Near-Term Flows

The existing collection system was evaluated under two near-term conditions:

- Existing plus Matheny Tract.
- Existing plus Matheny Tract and additional planned developments/approved units.

Matheny Tract and the planned developments were specifically targeted because of their potential impact on the existing 27-inch diameter gravity sewer on West Paige Avenue. Based on the 2016 Feasibility Study (Provost & Pritchard), Matheny Tract is estimated to

have an average daily flow (based on summer months) of 0.13 mgd and a peak flow of 0.27 mgd (using a peaking factor of 2.1).

Flow from the planned developments and approved units were based on acreage or number of dwelling units, land use type, wastewater flow factors (presented in the 2009 Master Plan), and average dwelling units per acre (from the General Plan Update). The average daily flow from the planned developments/approved units is estimated to be 0.42 mgd. Peak wet weather flow (PWWF) from the planned developments was based on infiltration/inflow (I/I) responses captured during the flow monitoring program.

1.3 Temporary Flow Monitoring Program

A temporary flow monitoring program was conducted to assist in the recalibration of the collection system hydraulic model. The flow monitoring was also used to determine the collection system's I/I response to wet weather events. V&A Consulting Engineers conducted the temporary flow monitoring program from January 5, 2017 through February 7, 2017. Fifteen sites were monitored during the flow monitoring program, including two sites located on the industrial collection system.

One main storm event (January 8-9, 2017) was captured during the flow monitoring program along with a number of less significant events. The flow monitoring results showed that the sites located on the domestic collection system had a discernable I/I response. The two sites located on the industrial collection system, however, did not have any discernable I/I response and therefore, was not included in the wet weather analysis.

1.4 Model Update and Calibration

Carollo developed the City's hydraulic model as part of the 2009 Master Plan project using the H₂OMap SWMM hydraulic modeling software program (developed by Innovyze, formerly MWH Soft). The 2009 hydraulic model was updated to include the following:

- Infrastructure installed, replaced, or taken offline (abandoned) since 2009.
- Vacant parcels that have developed since 2009.
- Matheny Tract development.
- Planned developments and approved dwelling units.
- Updated dry weather flow diurnal patterns (weekday, weekend, and daily).
- I/I response parameters (discussed further in Section 7.2.1).
- Wet weather scenarios (calibration and design storms).

Flow data collected during the flow monitoring program (from January 5, 2017 to February 7, 2017) was used to update the dry weather and wet weather calibration. The calibration process compared the meter data with the model output. Comparisons were made for minimum, maximum, and average flows as well as the temporal distribution of flow. The wet weather calibration consisted of calibrating the hydraulic model to the January 8-9, 2017 storm event.

Comparison of the simulated and field measured flows showed that all flow meters matched fairly well, and were within industry standards for dry weather calibration. The wet weather calibration also showed good correlation, with just one flow meter barely outside of the standard range (-10.1 percent compared to -10 percent). The model was considered calibrated and ready to use for capacity analysis.

1.5 Evaluation of 27-Inch Diameter Gravity Sewer

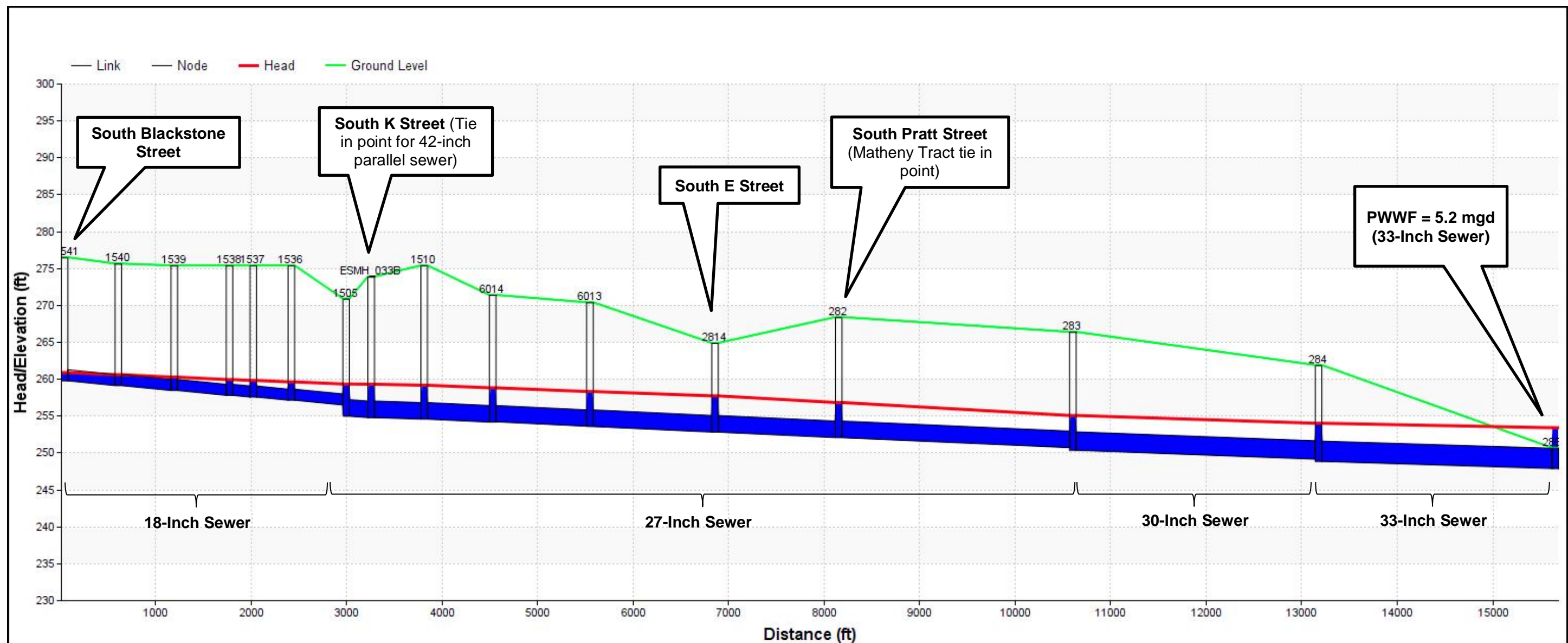
Only the existing sewer along West Paige Avenue, from K Street (where the parallel 42-inch diameter pipe ends) to the DWWTP was evaluated. This includes the location where Matheny Tract would connect. The same evaluation criteria used in the 2009 Master Plan were used in this capacity evaluation, specifically the maximum flow depth criteria for existing pipes (maximum d/D of 0.92).

Currently, the City raises the maximum wet well level at the DWWTP during major storm events, which causes a backup in the upstream gravity collection system. This was observed in the flow monitoring data during the January 8-9, 2017 storm event and is still continued by City staff. The evaluation of the 27-inch pipeline includes this operational practice.

The capacity evaluation of the 27-inch diameter gravity sewer on West Paige Avenue was based on the re-calibrated model. Three specific scenarios were evaluated under PWWF:

- Existing Conditions.
- Matheny Tract - Existing plus Matheny Tract.
- Near Term - Existing plus Matheny Tract and Planned Developments.

Evaluation of the three scenarios show that under design flow conditions (based on running a 10-year, 24-hour storm event), the existing gravity sewer along Paige Avenue (from approximately Blackstone Street to the DWWTP) is surcharged under each scenario. Figure 1 shows the maximum hydraulic grade line (HGL) for the existing sewer on Paige Avenue (from Blackstone Street to the DWWTP). With the additional flow from Matheny Tract and other planned development/approved units, the maximum depths are even higher and last longer. The maximum HGL profiles for the Matheny Tract and Near-Term scenarios are provided in Section 9.



**MAXIMUM HGL PROFILE - PAIGE AVE. PIPELINE
(EXISTING ONLY)**

FIGURE 1

CITY OF TULARE
DWWTP AND COLLECTION SYSTEM CAPACITY ANALYSIS

Table 1 summarizes the maximum flow depth in the 27-inch diameter gravity sewer on Paige Street (from K Street to Pratt Street). The manhole ID's listed in Table 1 correspond to some of the manhole labels on Figure 1. Note, a maximum depth of more than 2.25 feet indicates surcharge conditions (depth is greater than the 27-inch diameter pipe).

1.6 Recommended Improvements

The following improvements/operational changes are recommended to eliminate surcharging in the existing gravity sewer on Paige Avenue:

- Install the remaining 42-inch diameter gravity sewer along Paige Avenue, from K Street to the DWWTP (the Alternative Bid part of the Eastside Sewer Trunk Extension project). The 42-inch diameter gravity sewer should be constructed in accordance with the Eastside Sewer Trunk Extension design drawings. According to the design drawings and the City's 2009 Master Plan, the existing 27-inch diameter gravity main is intended to remain in service and will convey a portion of the City's existing flows. Therefore, the existing 27-inch diameter gravity sewer should not be abandoned.
- Limit the maximum level in the DWWTP influent wet well to an HGL of 250.43 (which represents a d/D of 0.92 in the upstream 33-inch influent pipe).

Both of these are necessary to completely eliminate surcharging during each scenario. If the new pipeline were installed, but the level in the wet well were still increased during storm events, there would still be some surcharging upstream of the DWWTP. Alternatively, if the operational practice of raising the wet well level during a storm event was discontinued (without installation of the new 42-inch pipeline), there would still be surcharging in the 27-inch portion of the existing sewer (more so with the addition of Matheny Tract and other planned developments).

It is also recommended to connect Matheny Tract to the new 42-inch diameter gravity sewer. Once the 42-inch diameter sewer is installed, it would have more available capacity than the existing 27-inch diameter sewer. Although, based on the hydraulic model, both pipes would have sufficient capacity to accept flow from Matheny Tract (once the new 42-inch pipe is installed).

The remaining section of the 42-inch line was included as Bid Alternate A for Project 11-13 that was opened on January 10, 2013. The bids for this portion of the project ranged from \$4.42 million to \$7.13 million. Using a 10-cities Engineering News Record (ENR) consumer cost index (CCI) adjustment from January 2013 (9437) to May 2017 (10532), this range in May 2017 is estimated at \$4.93 million to \$7.96 million. This estimate represents only the construction cost, and does not include design, engineering, or construction contingencies. The total cost for this project (assuming 20 percent for construction contingencies and

30 percent for engineering, construction management, and program implementation) is estimated to be between \$7.69 million to \$12.42 million.

The proposed 42-inch pipe would correct the existing deficiencies and also serve build-out flows. However, a 24-inch diameter pipe (parallel to the existing 27-inch pipe) would be large enough to correct the existing deficiencies and serve Matheny Tract. A 27-inch diameter pipe (parallel to the existing 27-inch pipe) would be required if the City wanted to serve Matheny Tract and the additional approved units/planned developments. The total estimated cost for the 24-inch and 27-inch pipeline is \$6.24 million and \$7.02 million, respectively. Preliminary evaluation of the proposed 24-inch and 27-inch diameter pipes, based on minimum slopes (Table 12), show that they would have similar invert elevations at the wastewater plant, although the overall profile would change. If the 42-inch diameter pipe is not selected, a detailed design analysis would have to be conducted to determine if the new alignment/profile would work.

Based on a flow apportionment between the City and Matheny Tract, Matheny Tract would be responsible for between 4.5 and 4.7 percent of the total estimated construction cost for the project, ranging from \$293,000 to \$559,000, depending on the pipe diameter and/or bid alternative chosen. A more detailed cost analysis is provided in Table 14 in Section 10.0.

The total estimated construction cost for the 24-inch and 27-inch pipes (which have to be re-designed) are on the higher range of the bids received for the construction of the 42-inch pipe. Because the 42-inch diameter pipe has already been designed and would serve all future build-out flows, it is the recommended alternative.

Table 1 Maximum Flow Depth Summary (27-Inch Diameter Gravity Sewer)⁽¹⁾ DWWTP and Collection System Capacity Analysis City of Tulare								
Manhole ID	Cross-Street Location/Description	Maximum Pipe Depth (Feet)	Maximum Flow Depth (Feet)			Surcharge Duration (hours)		
			Existing	Matheny Tract	Near- Term	Existing	Matheny Tract	Near- Term
1505	South K Street (Just upstream of 42-inch tie in point)	2.25	4.37	4.56	4.87	7.7	10.7	14.2
ESMH_033B	South K Street (Tie in point for parallel 42-inch pipe)	2.25	4.55	4.75	5.05	5.0	5.7	7.8
1510	--	2.25	4.64	4.82	5.12	13.6	14.0	14.4
6014	--	2.25	4.69	4.89	5.18	14.2	14.4	14.6
6013	--	2.25	4.76	4.96	5.21	5.2	6.1	8.2
2814	South E Street	2.25	4.91	5.14	5.33	14.8	14.9	15.1
282	South Pratt Street (Matheny tie in point)	2.25	4.77	5.02	5.18	12.2	13.3	14.3
Note: (1) Assumes current operating protocol at the DWWTP influent wet well.								

2.0 BACKGROUND AND INTRODUCTION

In 2007, the City of Tulare (City) contracted with Carollo Engineers, Inc. (Carollo) to develop a Sewer System Master Plan (Master Plan). The Master Plan established sewer system planning criteria, evaluated the capacity of the existing sewer collection system, and recommended improvements needed to enhance existing capacity and to meet the needs of future growth within the City's Urban Development Boundary. As part of the Master Plan project, Carollo developed a sewer collection system hydraulic model that was used to conduct analysis of the collection system's ability to convey existing and future wastewater flows.

The hydraulic model is a valuable tool that the City can use to conduct "What If" analyses of the sewer collection system. A key part of any hydraulic modeling program is the continued update and calibration of the model so that it accurately simulates current design analysis conditions. When the hydraulic model was developed as part of the Master Plan project, an extensive model calibration process was conducted, but since that time, the hydraulic model has not been updated.

In March 2016, Provost & Pritchard Consulting Group (Provost & Pritchard) finalized a report entitled "Project Feasibility Report - Matheny Tract Wastewater System" (Feasibility Study). The Feasibility Study evaluated several options for providing sewer service to the existing residential community known as Matheny Tract. Matheny Tract consists of roughly 300 homes located adjacent to the City, which are currently served by on-site septic systems. The flow from the Matheny Tract was estimated to be approximately 110,000 gallons per day (gpd) on average, with approximately 130,000 gpd during peak summer months. The Feasibility Study evaluated several alternatives to provide wastewater collection system service to Matheny Tract, including:

- The establishment of a Septic Maintenance District for the on-site septic systems.
- Construction of a collection system for the community and connection to the City's collection system via a lift station.
- Construction of a collection system for the community with a small wastewater treatment facility near the Matheny Tract.
- A no project alternative.

Based on an economic evaluation, the Feasibility Report ultimately recommended construction of a collection system, lift station, and force main to convey flow to the City's DWWTP for treatment. The force main would connect to the City's collection system at the existing 27-inch sewer main at West Paige Avenue and Pratt Street.

In order to analyze the effect of the proposed Matheny Tract connection, the City authorized Carollo to conduct an evaluation of the capacity of the wastewater collection system, which includes the following tasks:

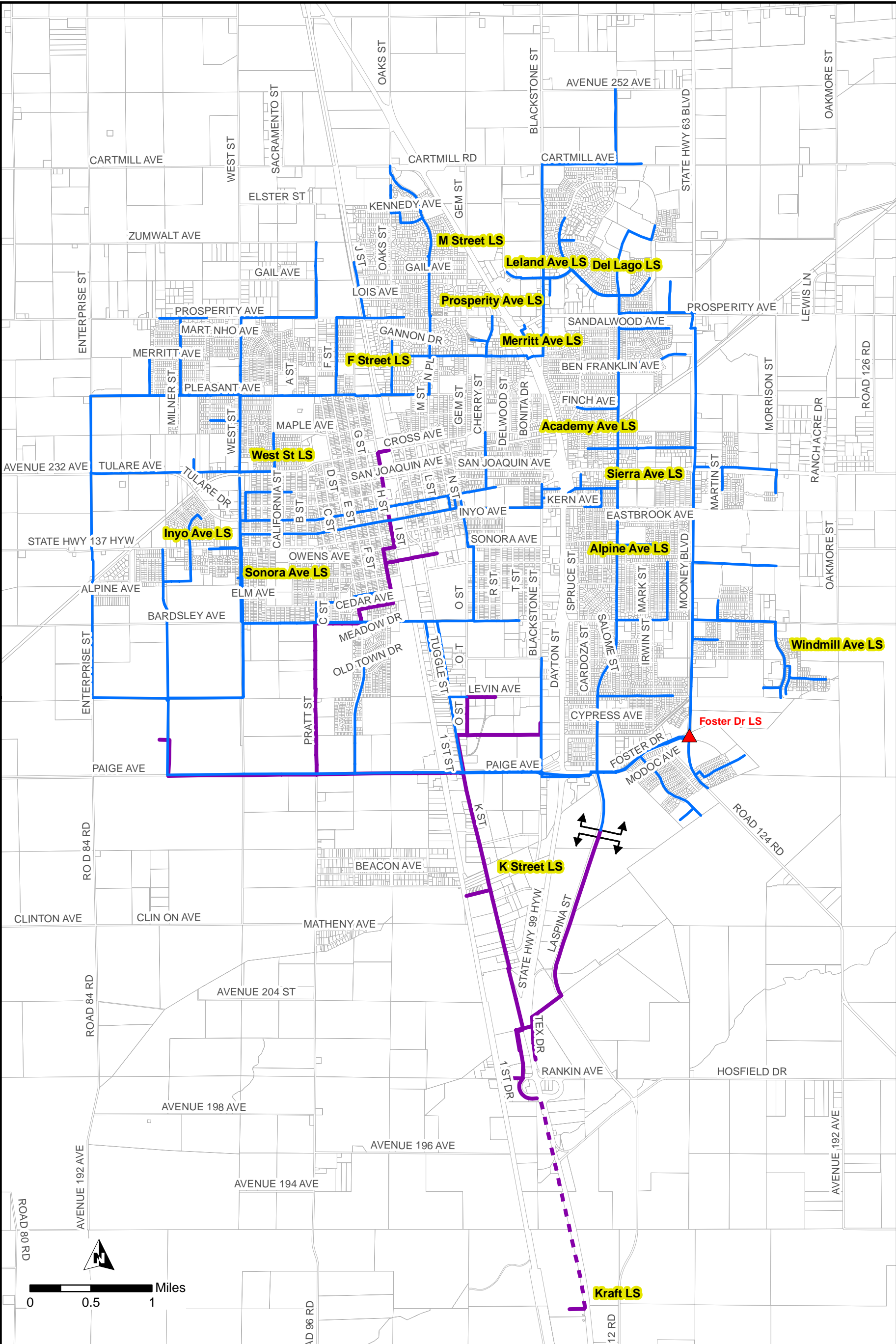
- Conduct flow monitoring at 15 locations.
- Update the City's 2009 sewer hydraulic model to include any parcels that have developed since 2009 and update flows from significant industrial users.
- Recalibrate the City's 2009 sewer system hydraulic model based on the updated flow monitoring results (dry and wet weather calibration).
- Evaluate the capacity of the existing 27-inch diameter gravity sewer on Paige Street (West of K Street) and its ability to accept flow from Matheny Tract (under average and peak flow conditions).
- Evaluate a near-term scenario, including Matheny Tract and several other planned developments, under average and peak conditions.
- Provide recommendations based on the capacity evaluation of the 27-inch pipeline.

Three specific scenarios were evaluated under peak wet weather flows:


- Existing conditions.
- Matheny Tract - Existing plus Matheny Tract.
- Near-Term - Existing plus Matheny Tract and Planned Developments.


3.0 EXISTING COLLECTION SYSTEM



The City's collection system facilities consist of 6-inch through 42-inch diameter gravity sewer pipelines, as well as 15 sewage lift stations and associated force mains. The majority of these pipelines convey wastewater generated within the City limits to the City's Domestic Wastewater Treatment Plant (DWWTP). There are also sewers dedicated to conveying wastewater flow from industrial dischargers to the City's Industrial Wastewater Treatment Plant (IWWTP). Figure 2 shows the City's existing domestic and industrial collection system.





Legend


-  Parcels

 Lift Station

 Industrial Gravity Main
-  Modeled Pipes

 Industrial Force Main

 New Modeled Pipes (>8 Inches)

 Abandoned Lift Station
- Infrastructure Changes Since 2009**

EXISTING COLLECTION SYSTEM

FIGURE 2



3.1 Domestic Collection System

Several new sewer infrastructure projects have been completed since the last collection system master plan was completed in 2009. Carollo obtained as-built drawings to identify pipelines that have been constructed (added to the system), abandoned, or replaced since the last model update. The as-built drawings were used to update the modeled sewer system network. Only new pipelines 10-inches in diameter and larger were added to the model. Hydraulic model elements that were added to the system as part of the model update process are shown on Figure 2. Figure 2 also shows infrastructure that has been taken offline or abandoned since the 2009 model.

One major project to note is the Eastside Sewer Trunk Extension project, which included the installation of approximately 1,530 linear feet of 36-inch diameter gravity pipe and 8,570 linear feet of 42-inch diameter gravity sewer along Foster Drive and West Paige Avenue. The Foster Drive Lift Station was also abandoned as part of this project. All flows upstream of the lift station have been rerouted to the new sewer trunk.

The Eastside Sewer Trunk Extension project was recommended in the 2009 Master Plan to correct an existing capacity deficiency in the 15-inch diameter gravity sewer downstream of the Foster Drive Lift Station (LS) and to serve future growth.

New pipelines smaller than 10-inches in diameter were not included in the updated model. As discussed in the 2009 Master Plan, only the "backbone" pipelines of the sewer system were included in the hydraulic model. These pipes are generally 10-inches in diameter and larger and function to convey the wastewater collected in the City's DWWTP and IWWTP.

3.2 Industrial Collection System

The existing industrial collection system is shown on Figure 2. There have been no major changes to the industrial collection system infrastructure since the 2009 Master Plan was completed. The City's industrial collection system is still divided into two main trunk sewers: High Strength Industrial Trunk and the Dairy Waste Trunk.

3.3 Lift Stations

The City currently operates 15 sewage lift stations within the existing collection system. Thirteen of these are part of the domestic collection system. As mentioned in Section 3.1, the Foster Drive LS was recently taken offline as part of the Eastside Sewer Trunk Extension project. The two industrial lift stations (K Street LS and Kraft LS) convey flows from the industrial area south of West Paige Avenue to the IWWTP. The existing lift stations are shown on Figure 2.

4.0 WASTEWATER FLOWS

This section summarizes the historical wastewater flows at the DWWTP and IWWTP and the projected wastewater flows from Matheny Tract and the planned developments. This section also summarizes the development of a design storm and the calculation of design flows used to evaluate the capacity of the 27-inch diameter gravity sewer on West Paige Avenue.

4.1 Historical Wastewater Flows

Influent flow data from 2013 through 2016 was provided by the City for the DWWTP and IWWTP. Table 2 summarizes the historical minimum, average, and maximum daily and monthly flows at the DWWTP. The maximum day and wet month peaking factors are also included in Table 2. As shown in Table 2, the average daily wastewater flow (domestic) has decreased from 4.75 mgd in 2013 to 3.62 mgd in 2016. The decrease in wastewater flow is primarily associated with mandatory water conservation due to extreme drought conditions.

For 2016, the average and maximum daily flows at the IWWTP were 7.5 mgd and 8.9 mgd, respectively. A summary of the 2016 flows for the major industrial users, including minimum, average, and maximum daily flows, is provided in Appendix A.

4.2 Existing Wastewater Flows

Vacant parcels from the previous master plan were compared to a more recent aerial background to determine which parcels have developed since 2009. Wastewater flows for these developed parcels were calculated based on the parcel's land use type, acreage, and the wastewater flow factors. The wastewater flow factors represent a unit wastewater flow generated per acre (gpd/acre) based on land use type. These were developed based on flow monitoring data collected as part of the 2009 Master Plan and are summarized in Table 3. The total acres and wastewater flow estimates for the developed vacant parcels are also included in Table 3. The estimated ADWF for the developed residential and commercial vacant parcels is 0.16 mgd and the estimated ADWF for the industrial parcels is 0.025 mgd. The existing wastewater flow in the model was updated to include flow from these developed parcels.

4.3 Projected Near-Term Wastewater Flows

This section summarizes the estimated wastewater flows under two near-term conditions:

- Existing plus Matheny Tract.
- Existing plus Matheny Tract and additional planned development/approved units.

Matheny Tract and the planned developments were specifically targeted because of their potential impact on the existing 27-inch diameter gravity sewer on West Paige Avenue.

Table 2 Historical Domestic Wastewater Flows DWWTP and Collection System Capacity Analysis City of Tulare							
Year	Daily Flow Summary				Monthly Flow Summary ⁽¹⁾		
	Minimum Day Flow (mgd)	Average Day Flow (mgd)	Maximum Day Flow (mgd)	Maximum Day Peaking Factor	Dry Month Average Flow (mgd)	Wet Month Average Flow (mgd)	Wet Month Peaking Factor
2013	3.65	4.75	4.83	1.02	4.54	4.74	1.04
2014	3.87	3.94	4.61	1.17	4.34	4.44	1.02
2015	2.93	3.31	3.76	1.14	3.58	3.68	1.03
2016	2.28	3.62	3.79	1.05	3.66	3.58	0.98
Notes: (1) Wet Month = November through April, Dry Month = May through October. (2) Data missing for one month in 2014 and one month in 2015.							

Table 3 Developed Infill Summary DWWTP and Collection System Capacity Analysis City of Tulare			
Land Use Type⁽¹⁾	Wastewater Flow Factor (gpd/acre)	Total Acres⁽²⁾	Estimated ADWF (gpd)⁽³⁾
Rural Residential (RR)	300	8.6	2,583
Rural Estate (RE)	600	15.5	9,300
Low Density Residential (LDR)	1,300	40.9	53,215
Medium Density Residential (MDR)	1,600	44.4	71,083
High Density Residential (HDR)	2,800	1.1	3,119
Neighborhood Commercial (NC)	500	1.9	944
Community Commercial (CC)	500	24.0	12,014
Service Commercial (SC)	500	6.6	3,287
Office Commercial (OC)	500	5.5	2,730
Subtotal (Developed Residential/Commercial Infill)			158,275
Light Industrial	500	1.0	481
Heavy Industrial	650	38.8	25,200
Subtotal (Developed Industrial Infill)			25,681
Notes: (1) Only land use types identified in the developed infill parcels were included. For a complete list of wastewater flow factors, refer to Table 3.6 of the 2009 Master Plan (Carollo). (2) Infill development area totals were developed based on a review of recent aerial photography of the City of Tulare. (3) Estimated ADWF = Wastewater Flow Factor (gpd/acre) * (Total Acres).			

4.3.1 Matheny Tract

Matheny Tract, shown on Figure 2, is a 300 home development located just outside the City's boundary. Currently the development is served by on-site septic systems. The 2016 Feasibility Study (Provost & Pritchard) estimated the average wastewater flows for Matheny Tract to be 110,000 gpd. The average wastewater flow during summer months was estimated to be 130,000 gpd. For this capacity evaluation, an average wastewater flow of 130,000 gpd was assumed. Based on a peaking factor of 2.1 (Feasibility Study), the peak wet weather flow (PWWF) is estimated to be 0.27 million gallons per day (mgd). The estimated wastewater flows for Matheny Tract are summarized in Table 4.

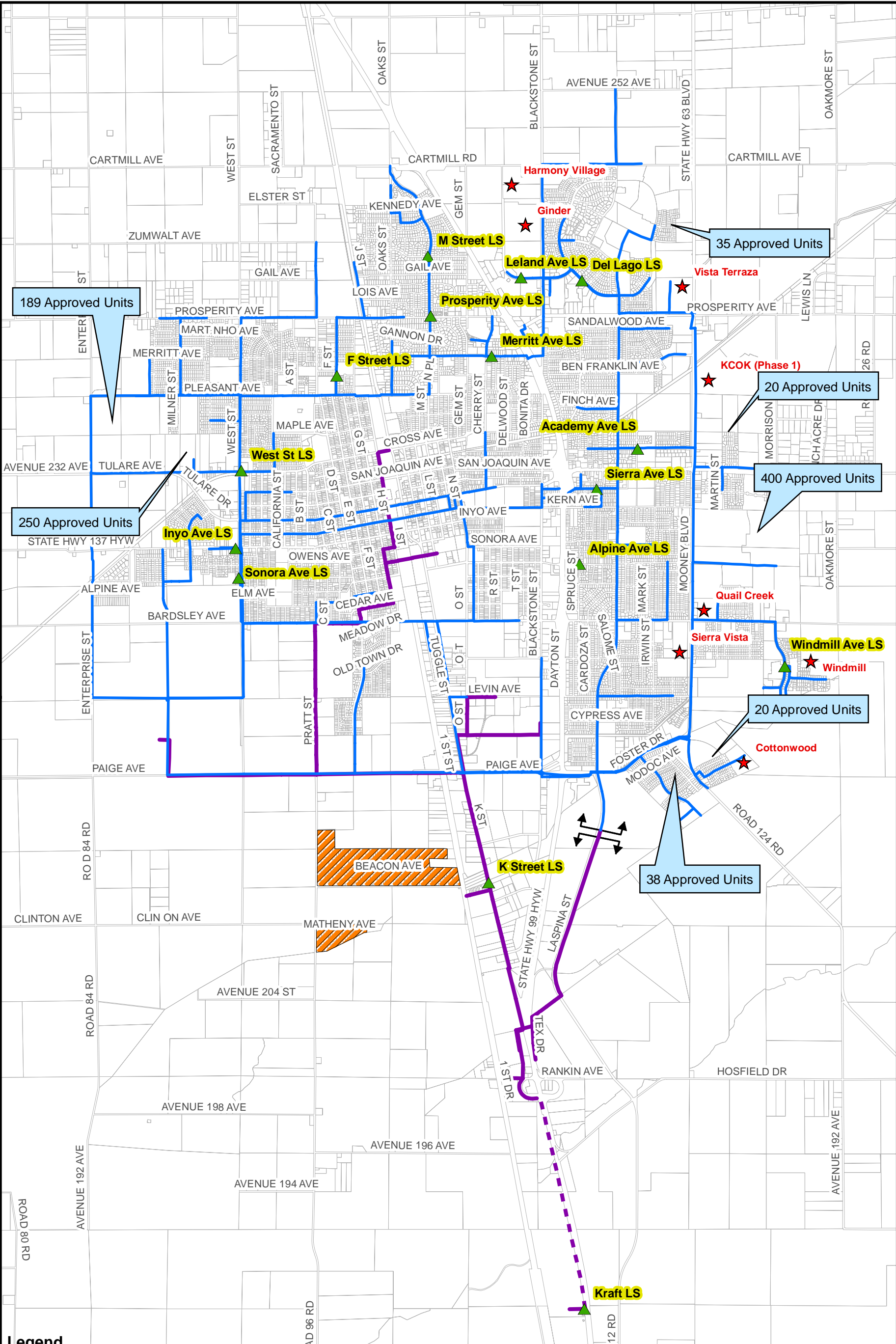
Table 4 Estimated Wastewater Flows - Matheny Tract DWWTP and Collection System Capacity Analysis City of Tulare	
Condition	Flow (gpd)
Average Dry Weather Flow (ADWF) ⁽¹⁾	130,000
Peak Wet Weather Flow (PWWF) ⁽²⁾	270,000
Notes: (1) Based on estimated wastewater flows during summer months (Feasibility Report, Provost & Pritchard Consulting Group). (2) Based on a peaking factor of 2.1 (2016 Feasibility Study).	

4.3.2 Planned Developments and Approved Units

In addition to the Matheny Tract development, there are several other areas approved for additional units or planned for development within the City's service area. The planned developments are shown on Figure 3 and include residential (low, medium, and high density) and community commercial land use types.

The estimated wastewater flows for the planned commercial areas were based on land use type, acreage, and wastewater flow factors (gpd/acre). There was only one type of commercial land use area among the planned developments (Community Commercial), which has a wastewater flow factor of 500 gpd/acre. The wastewater flow factors are summarized in Table 5.

Table 5 Wastewater Flow Factors DWWTP and Collection System Capacity Analysis City of Tulare			
Land Use Type⁽¹⁾	Average Dwelling Units per Acre (du/acre)⁽²⁾	Wastewater Flow Factor (gpd/acre)⁽³⁾	Average Flow per Dwelling Unit (gpd/du)⁽⁴⁾
Low Density Residential (LDR)	5.05	1,300	257
Medium Density Residential (MDR)	10.55	1,600	152
High Density Residential (HDR)	21.55	2,800	130
Community Commercial ⁽⁵⁾	--	500	--
Notes: (1) Only includes land use types of the planned developments. (2) Based on the City's General Plan Update. (3) From the 2009 Master Plan (Carollo). (4) Used to calculate wastewater flows for planned developments with residential land use types. (5) Wastewater flows for future commercial areas were calculated based on wastewater flow factor (gpd/acre) and commercial acreage.			



Legend

- ★ Planned Developments
- Modeled Pipes
- Existing System
- ▲ Lift Stations
- Industrial Gravity Main
- Industrial Force Main
- Matheny Tract
- Parcels

PLANNED DEVELOPMENTS AND APPROVED UNITS

FIGURE 3



Wastewater flows for the residential planned developments were estimated based on the following:

- Number of dwelling units (provided).
- Land Use Type.
- Average dwelling units per acre (du/acre), based on the General Plan Update.
- Wastewater Flow Factors (gpd/acre).

Because the number of residential dwelling units was known for the planned developments, land acreage was not used to calculate residential wastewater flows. Instead, an average wastewater flow per dwelling unit (gpd/du) was calculated for each land use type by dividing the wastewater flow factor (gpd/acre) by the average dwelling units per acre (du/acre). Table 5 summarizes the wastewater flow per dwelling unit based on land use type.

Table 6 provides a summary of the commercial and residential planned developments, including the development name, number of dwelling units, total acres, land use type, wastewater flow per dwelling unit or acre, and estimated average dry weather flow (ADWF). The total estimated flow from the planned developments and approved units is 0.42 mgd.

Peak wet weather flow (PWWF) for the planned developments were simulated based on the area (acreage) and I/I response. The I/I response was developed based on the analysis of wet weather events during the flow monitoring program, which is discussed further in Section 5.3.

4.4 Design Storm

This section describes the methodology used for simulating peak wet weather flows.

4.4.1 Design Storm Data

Design storms are rainfall events used to simulate the I/I response of a collection system during wet weather events. Developing a design storm can be accomplished two ways. If hourly rainfall data is not available for a historical design storm event, a synthetic design storm can be used. The NOAA Atlas 14 map of California is used to approximate the total depth for the 10-year, 24-hour design storm. NOAA Atlas 14, serves as the industry standard for determining total rainfall depth at specified frequencies and durations in Central and Northern California.

Based on the NOAA data, a 10-year, 24-hour design storm for Tulare is 2.1 inches of rainfall. This design storm has a ten percent chance (1/10) that 2.1 inches of rain will fall in any 24-hour period in a given year. A 10-year, 24-hour design storm is typically used when modeling peak wet weather flow (PWWF) in collection systems.

Table 6 Planned Development Summary DWWTP and Collection System Capacity Analysis City of Tulare				
Planned Development Name	Number of Dwelling Units (Total Acres)⁽¹⁾	Land Use Type⁽²⁾	Wastewater Flow per Dwelling Unit or Acre (gpd/du or gpd/acre)	Estimated ADWF (gpd)
Quail Creek	89 (18.9)	LDR	257 gpd/du	22,911
Vista Terraza	47 (8.4)	LDR	257 gpd/du	12,099
KCOK	106 (23.8)	LDR	257 gpd/du	27,287
Ginder	120 (10.2)	MDR	152 gpd/du	18,199
Windmills	100 (16.9)	LDR	257 gpd/du	25,743
Sierra Vista	52 (12.8)	LDR	257 gpd/du	13,386
Cottonwood	46 (10.2)	LDR	257 gpd/du	11,842
Bethel Harmony (Residential)	243 (11)	HDR	130 gpd/du	31,573
Bethel Harmony (Commercial)	-- (18)	CC	500 gpd/acre	9,000
Approved Units ⁽³⁾	952 (--) ⁽⁴⁾	LDR	257 gpd/du	245,070
Total Projected Wastewater Flow for Planned Developments (gpd)				417,109
Notes: (1) Total acres for residential developments were used during the PWWF analysis (see Section 7.2.1). (2) LDR = Low Density Residential, MDR = Medium Density Residential, HDR = High Density Residential, CC = Community Commercial. (3) Approved Units were assumed to be low density residential (LDR). (4) Acreage not provided. For purposes of modeling wet weather, acreage associated with approved units is assumed to be included with existing loading polygons (see Section 7.2.1).				

The Natural Resources Conservation Service (NRCS), formally known as the Soil Conservation Service (SCS), developed normalized rainfall hyetograph distribution curves based on the storm's geographical location. The distribution curves are applied to total storm event volumes in order to develop hourly storm event hyetographs. There are four types of rainfall distributions used to represent various regions throughout the United States (Type I, IA, II, and III). Types I and IA represent the Pacific maritime climate with wet winters and dry summers. Type III represents Gulf of Mexico and Atlantic coastal areas where tropical storms bring large 24-hour rainfall amounts. Type II represents the rest of the country. The City lies between a Type 1 and Type 1A boundary. Based on the location of the City, the Type IA distribution was used. The design storm developed using the NRCS method is shown in Figure 4. The NRCS method was used to develop synthetic rainfall hyetographs in order to simulate the PWWF in the collection system during a design storm event.

4.4.2 Design Storm Flows

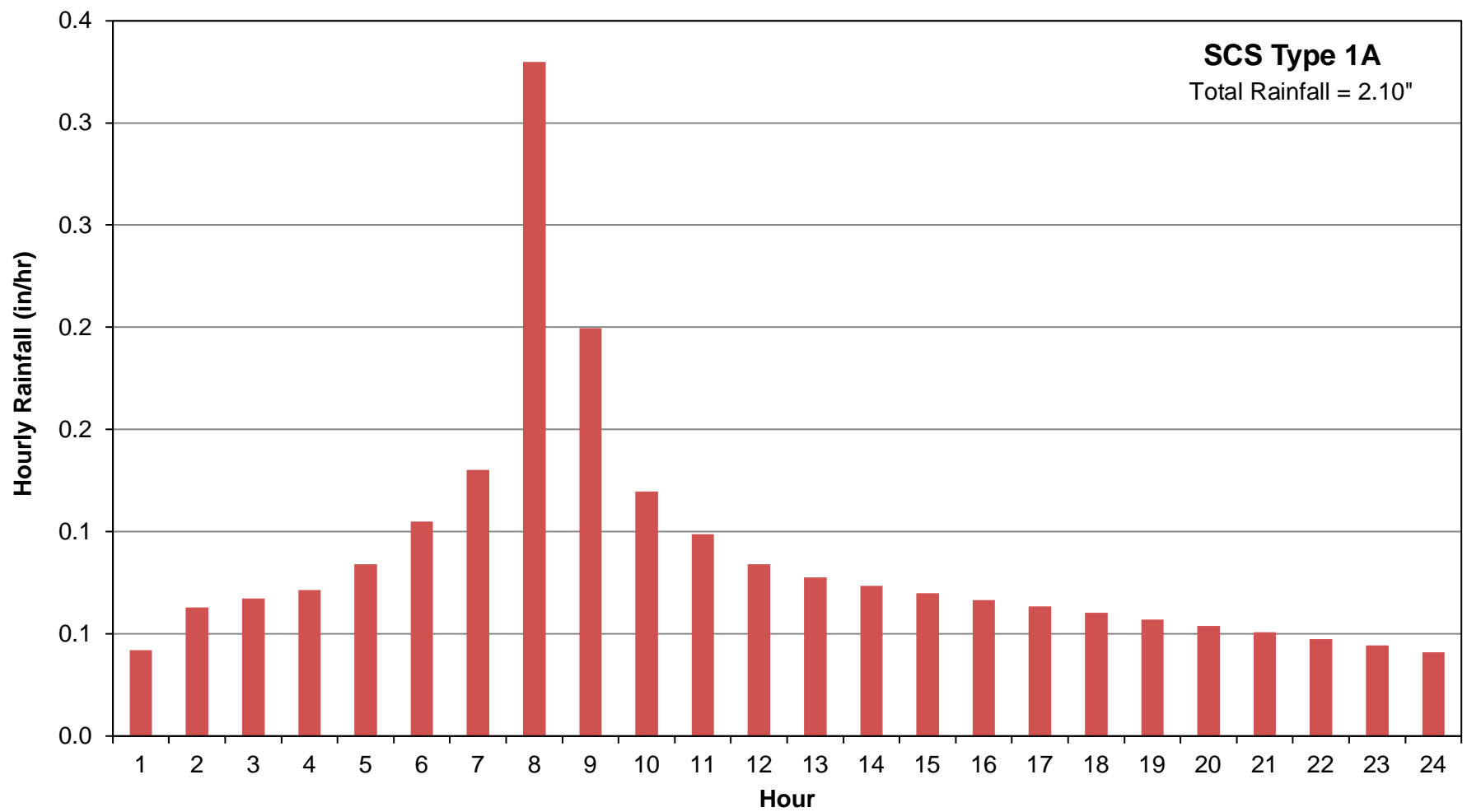
The design flow is the maximum hourly flow rate under selected design storm and growth conditions. The design flow includes the ADWF and the peak I/I rate. Typically, a design storm is routed through a hydraulic model to estimate the PWWF in a sewer system and to quantify the system's capacity. This study utilized the 10-year, 24-hour design storm rainfall pattern for generating the design flow in the sewer system ("design flow" is synonymous to peak wet weather flow).

The existing PWWF was generated by routing the 10-year, 24-hour synthetic design storm through the hydraulic model, which was calibrated under both dry weather and wet weather conditions. Detailed information regarding the calibration of the City's hydraulic model is provided in Section 6.0.

Similar to the existing PWWF, the PWWF for the near-term conditions (Matheny Tract and Planned Developments) was derived by routing the same synthetic 10-Year, 24-hour design storm through the hydraulic model. The I/I response parameters (discussed in Section 7.2.1) for Matheny Tract were adjusted until the PWWF yielded a peaking factor of 2.1 compared to the ADWF. The PWWF for the other planned developments and approved units were based on the peak I/I rates for their tributary flow monitoring area.

5.0 TEMPORARY FLOW MONITORING PROGRAM

A temporary flow monitoring program was conducted to assist in the recalibration of the collection system hydraulic model. The flow monitoring was also used to determine the collection system's inflow and infiltration (I/I) response to wet weather events.



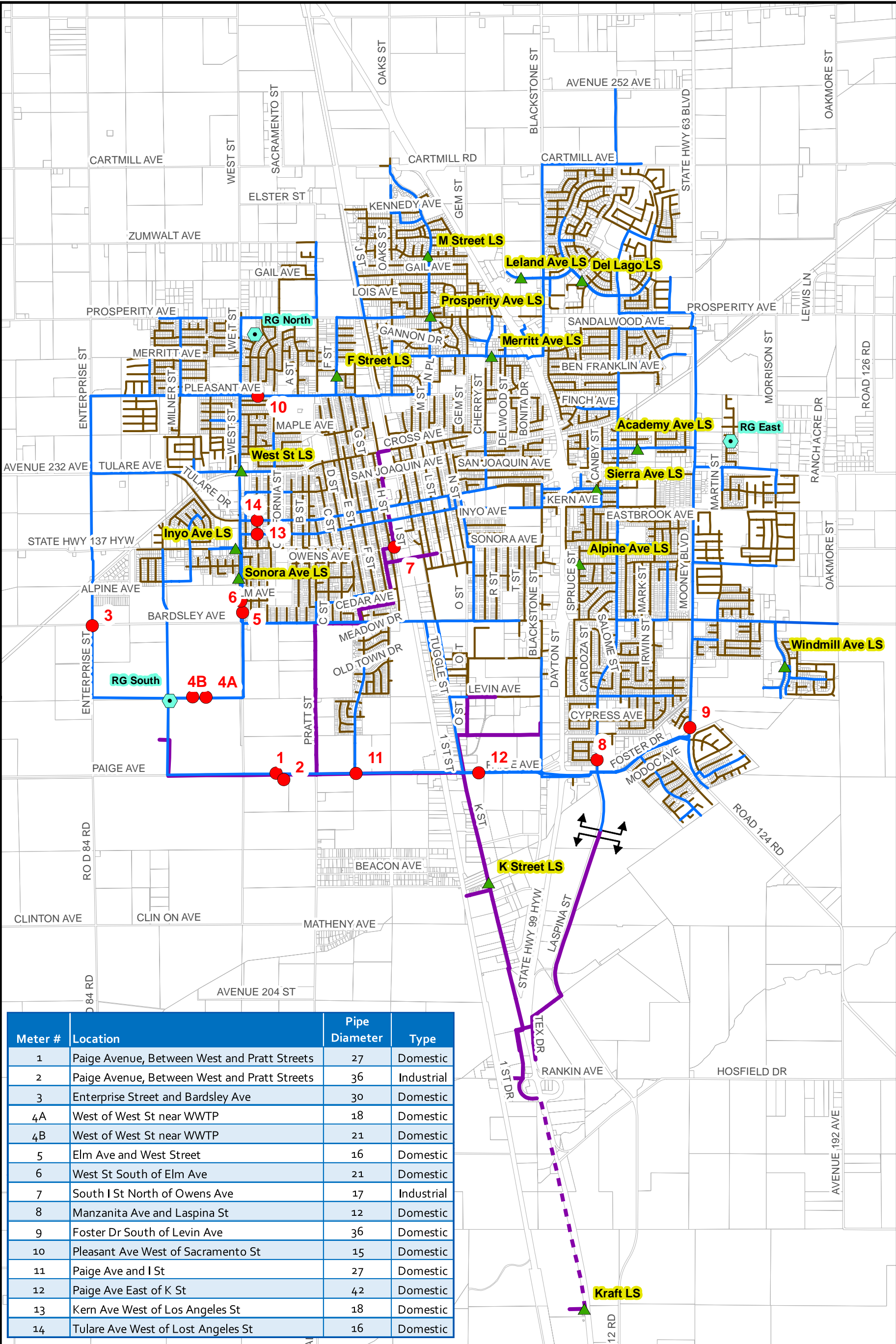
10-YEAR 24-HOUR DESIGN STORM

FIGURE 4

CITY OF TULARE
DWWTP AND COLLECTION SYSTEM CAPACITY ANALYSIS

V&A Consulting Engineers conducted the temporary flow monitoring program from January 5, 2017 through February 7, 2017. Fifteen sites were monitored during the flow monitoring program, including two sites located on the industrial collection system. Table 7 lists the flow monitoring locations and the diameters for the sewers where the meters were installed. Figure 5 shows the locations of the flow monitoring sites. Figure 6 provides a schematic illustration of the flow monitoring locations.

Table 7 Temporary Flow Monitoring Locations DWWTP and Collection System Capacity Analysis City of Tulare			
Site	Diameter (in.)	Location	Type
1	27	Paige Avenue, Between West and Pratt Streets	Domestic
2	36	Paige Avenue, Between West and Pratt Streets	Industrial
3	30	Enterprise Street and Bardsley Avenue	Domestic
4A	18	West of West Street near WWTP	Domestic
4B	21	West of West Street near WWTP	Domestic
5	16	Elm Avenue and West Street	Domestic
6	21	West Street South of Elm Avenue	Domestic
7	17	South I Street North of Owens Avenue	Industrial
8	12	Manzanita Avenue and Laspina Street	Domestic
9	36	Foster Drive South of Levin Avenue	Domestic
10	15	Pleasant Avenue West of Sacramento Street	Domestic
11	27	Paige Avenue and I Street	Domestic
12	42	Paige Avenue East of K Street	Domestic
13	18	Kern Avenue West of Los Angeles Street	Domestic
14	16	Tulare Avenue West of Lost Angeles Street	Domestic



Meter #	Location	Pipe Diameter	Type
1	Paige Avenue, Between West and Pratt Streets	27	Domestic
2	Paige Avenue, Between West and Pratt Streets	36	Industrial
3	Enterprise Street and Bardsley Ave	30	Domestic
4A	West of West St near WWTP	18	Domestic
4B	West of West St near WWTP	21	Domestic
5	Elm Ave and West Street	16	Domestic
6	West St South of Elm Ave	21	Domestic
7	South I St North of Owens Ave	17	Industrial
8	Manzanita Ave and Laspina St	12	Domestic
9	Foster Dr South of Levin Ave	36	Domestic
10	Pleasant Ave West of Sacramento St	15	Domestic
11	Paige Ave and I St	27	Domestic
12	Paige Ave East of K St	42	Domestic
13	Kern Ave West of Los Angeles St	18	Domestic
14	Tulare Ave West of Lost Angeles St	16	Domestic

Legend

- Temporary Flow Meter

⬢ Rain Gauge

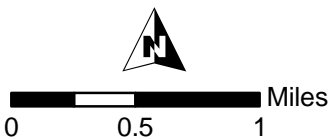
Existing System

▲ Lift Stations
- Industrial Gravity Main

Modeled Pipes

Industrial Force Main

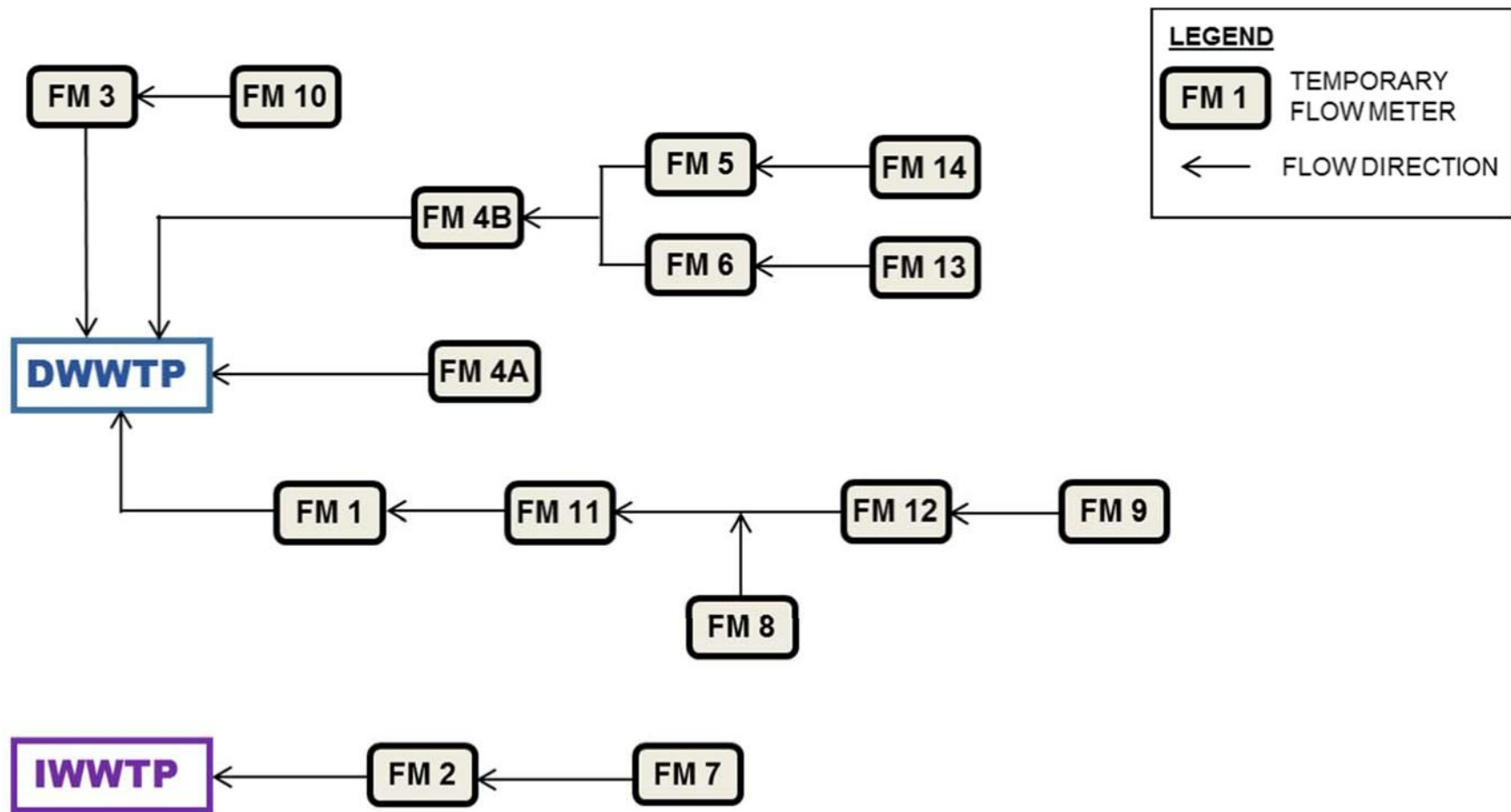
Parcels



FLOW MONITORING LOCATIONS

FIGURE 5





FLOW MONITORING SCHEMATIC

FIGURE 6

CITY OF TULARE
DWWTP AND COLLECTION SYSTEM CAPACITY ANALYSIS

5.1 Dry Weather Flow Monitoring Results

During the flow monitoring period, flow data was collected at each meter at 15 minute intervals. The 15 minute data was then aggregated to hourly data for the dry weather flow calibration effort. Characteristic dry weather 24-hour diurnal flow patterns for each site were developed based on the hourly data. This hourly flow data was then used to calibrate the hydraulic model for the observed dry weather flows during the flow monitoring period.

Table 8 provides the dry weather flow for weekends and weekdays for each of the meter sites.

Table 8 Dry Weather Flow Summary DWWTP and Collection System Capacity Analysis City of Tulare			
Site	Dry Weather Flow ⁽¹⁾ (mgd)		Weekend/ Weekday Ratio
	Weekday	Weekend	
1	1.73	1.75	1.01
3	5.70	5.62	0.99
2	1.79	1.87	1.05
4A	0.42	0.44	1.05
4B	0.80	0.86	1.08
5	0.46	0.47	1.02
6	0.33	0.33	1.01
7	0.29	0.27	0.93
8	0.53	0.57	1.08
9	0.94	1.03	1.09
10	0.54	0.56	1.03
11	1.63	1.65	1.01
12	1.01	1.05	1.05
13	0.23	0.23	1.03
14	0.14	0.15	1.08
Note: (1) Dry Weather Flow represents the average of the 15-minute flow data during the dry weather days observed during the flow monitoring period.			

5.2 Rainfall Data

Three rain gauges were installed by V&A as part of the flow monitoring program to capture rainfall that occurred throughout the system. The location of each rain gauge is shown on Figure 5. V&A performed a quality assurance, quality control review of the data from these three rain gauges and it appeared to be valid and appropriate to use for the purposes of this study.

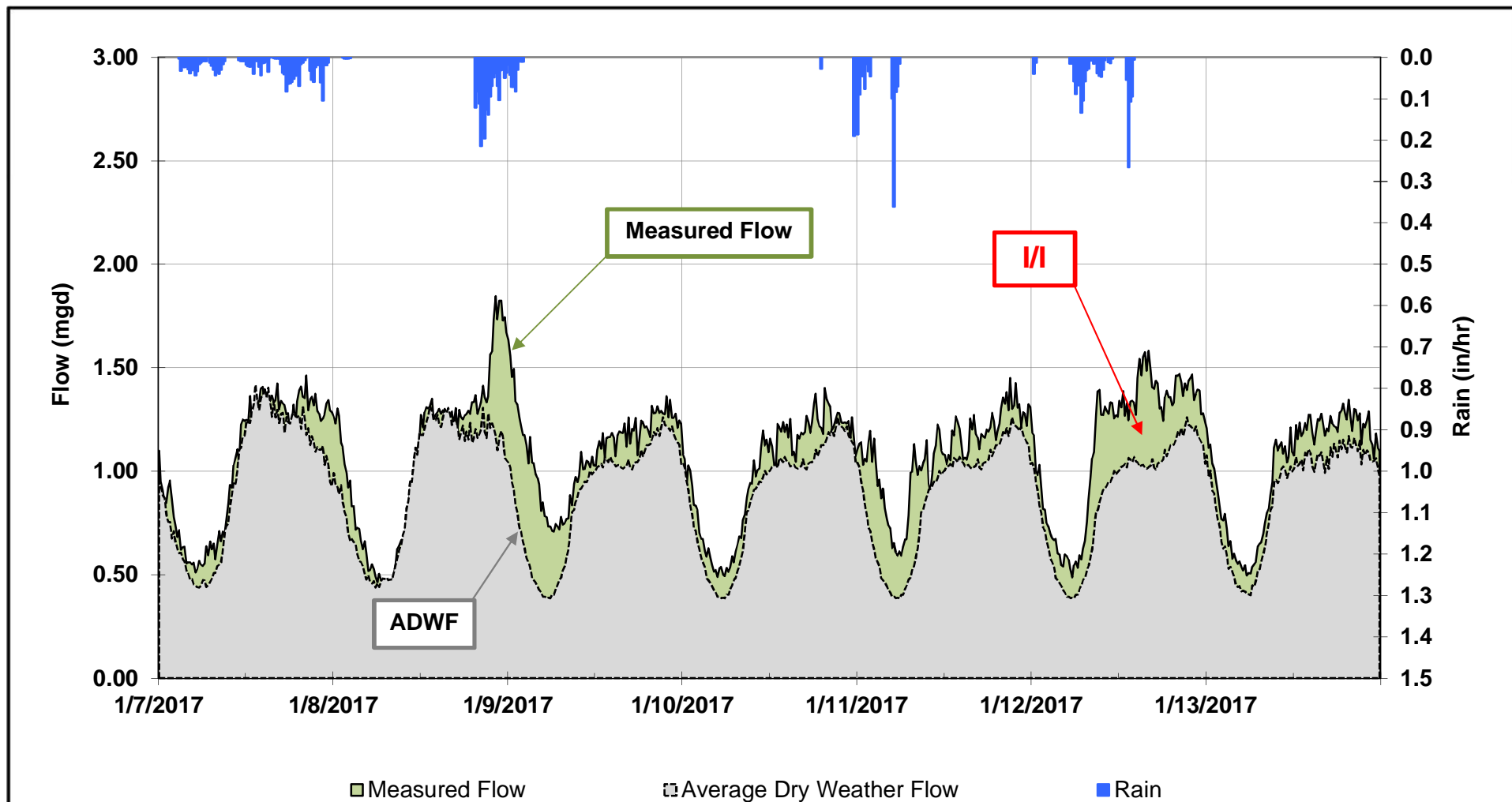
There was only one main rainfall event (January 8-9, 2017) that occurred during the course of the flow monitoring period, as well as a few other relatively minor events. Table 9 summarizes the total rainfall recorded at each rain gauge during the main rainfall event, as well as over the entire flow monitoring period.

Table 9 Rainfall Summary DWWTP and Collection System Capacity Analysis City of Tulare		
Rain Gauge	Measured Rainfall (in.)	
	Main Rainfall Event (January 8-9, 2017)	Total Flow Monitoring Period
RG North	0.51	3.60
RG East	0.55	4.15
RG South	0.52	3.74

5.3 Wet Weather Flow Monitoring Results

The flow monitoring data was also evaluated to determine how the collection system responds to wet weather events (I/I response). As mentioned above, the flow monitoring program captured one main rainfall event (January 8-9, 2017). This rainfall event was associated with the largest I/I response during the flow monitoring period, and was most appropriate to be used for I/I analysis. The other rainfall events did not yield significant I/I responses and, therefore, only the January 8-9, 2017 rainfall event was used for wet weather calibration. The wet weather calibration process is described in Section 7.2.

Figure 7 shows an example of the wet weather response at Meter 3. Figure 7 illustrates the volume of I/I that entered the system from the collection system upstream of Site 3. The grey area is the base sanitary flow while the light green area is the measured flow from the flow monitoring period. As can be seen in the figure, discernible amounts of I/I do enter the system during wet weather events. An I/I response was noted for most of the flow monitoring locations on the domestic collection system. However, there was no discernable I/I pattern for the two flow monitoring locations on the industrial collection system.



EXAMPLE WET WEATHER RESPONSE (METER 3)

FIGURE 7

CITY OF TULARE
DWWTP AND COLLECTION SYSTEM CAPACITY ANALYSIS

6.0 MODEL UPDATE

Hydraulic network analysis is a powerful tool used in all aspects of sewer collection system planning, design, operation, management, and emergency response. The City's hydraulic model is a critical element used in evaluating the City's existing sewer system and in planning the City's future facilities.

Carollo developed the City's hydraulic model as part of the 2009 Master Plan project using the H₂OMap SWMM hydraulic modeling software program (developed by Innovyze, formerly MWH Soft). The 2009 hydraulic model was updated to include the following:

- Infrastructure installed, replaced, or taken offline (abandoned) since 2009.
- Vacant parcels that have developed since 2009.
- Matheny Tract development.
- Planned developments and approved dwelling units.
- Updated dry weather flow diurnal patterns (weekday, weekend, and daily).
- I/I response parameters (discussed further in Section 7.2.1).
- Wet weather scenarios (calibration and design storms).

7.0 MODEL CALIBRATION

Flow data collected during the flow monitoring program (from January 5, 2017 to February 7, 2017) was used to update the dry weather and wet weather calibration. The calibration process compared the meter data with the model output. Comparisons were made for minimum, maximum, and average flows as well as the temporal distribution of flow.

7.1 Dry Weather Calibration

The diurnal patterns were updated based on the new flow data and the dry weather flow was scaled until simulated flows closely matched the measured flows. Table 10 summarizes the average and peak dry weather flow (DWF) calibration results for the 15 flow monitoring locations. The entire collection system, including flow monitoring sites not tributary to the 27-inch diameter gravity pipeline on West Paige Avenue, were re-calibrated. The industrial flow monitoring sites were also re-calibrated.

**Table 10 Dry Weather Flow Calibration Summary
 DWWTP and Collection System Capacity Analysis
 City of Tulare**

Meter Site	Weekday Dry Weather Flow			Weekend Dry Weather Flow			Average Dry Weather Flow ⁽³⁾		
	Measured ⁽¹⁾ (gpm)	Modeled (gpm)	Percent Difference ⁽²⁾	Measured ⁽¹⁾ (gpm)	Modeled (gpm)	Percent Difference ⁽²⁾	Measured ⁽¹⁾ (gpm)	Modeled (gpm)	Percent Difference ⁽²⁾
1	1.73	1.827	5.7%	1.75	1.92	9.4%	1.73	1.85	6.8%
2	5.70	5.724	0.3%	5.62	5.59	-0.5%	5.68	5.69	0.1%
3	1.79	1.748	-2.4%	1.87	1.82	-2.7%	1.81	1.77	-2.5%
4A	0.42	0.407	-3.3%	0.44	0.46	2.5%	0.43	0.42	-1.6%
4B	0.80	0.766	-3.7%	0.86	0.82	-3.9%	0.81	0.78	-3.8%
5	0.46	0.462	-0.1%	0.47	0.50	6.5%	0.47	0.47	1.8%
6	0.33	0.305	-6.4%	0.33	0.32	-2.8%	0.33	0.31	-5.3%
7	0.29	0.295	2.3%	0.27	0.26	-4.2%	0.28	0.28	0.6%
8	0.53	0.509	-3.4%	0.57	0.57	-0.6%	0.54	0.53	-2.5%
9	0.94	0.903	-4.3%	1.03	0.97	-4.9%	0.97	0.92	-4.5%
10	0.54	0.542	-0.3%	0.56	0.57	2.2%	0.55	0.55	0.5%
11	1.63	1.689	3.3%	1.65	1.77	7.5%	1.64	1.71	4.5%
12	1.01	0.969	-3.9%	1.05	1.04	-1.2%	1.02	0.99	-3.1%
13	0.23	0.237	5.0%	0.23	0.25	8.1%	0.23	0.24	5.9%
14	0.14	0.140	-0.9%	0.15	0.16	5.9%	0.14	0.15	1.2%

Notes:

(1) Source: V&A Temporary Flow Monitoring Program.

(2) Percent difference between meter collected and model derived results.

(3) Average flow calculated from weekday/weekend dry weather flow monitoring data. Maximum and minimum values are hourly averages, and correspond to either weekday or weekend flows, depending on the meter site.

An example of the DWF calibration for Meter 8 is presented in Figure 8. This figure shows the measured flow at the meter versus the model predicted flow for both weekday and weekend periods. Figure 8 also shows the weekday and weekend diurnal patterns developed based on the flow monitoring results. The remaining DWF calibration plots are provided in Appendix B. It is industry standard practice to consider a hydraulic model to be satisfactorily calibrated when the model simulated values are within ± 10 percent of the field measured data. As shown in Table 10 and Appendix B, the model showed good correlation between the measured flow and simulated flow for all sites.

7.2 Wet Weather Calibration

The wet weather flow (WWF) calibration consists of calibrating the hydraulic model to a specific storm event or events to accurately simulate the peak rate and volume of I/I into the sewer system. The amount of I/I is essentially the difference between the WWF and DWF components. The following sections describe the wet weather calibration methodology and results.

7.2.1 Wet Weather Calibration Process

The WWF calibration enables the hydraulic model to accurately simulate I/I entering the collection system during a large storm. As outlined below, the WWF calibration process consists of several elements:

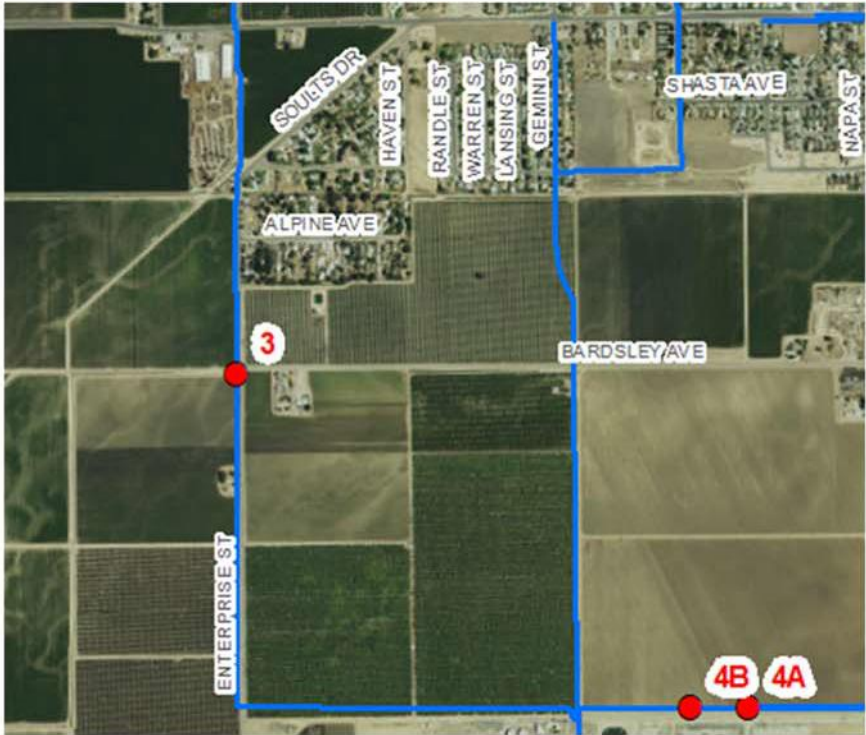
- **Identify calibration rainfall events.** The WWF calibration process consists of running model simulations of historical rainfall events based on data collected as part of the temporary flow monitoring program. The goal of any wet weather flow monitoring program is to capture and characterize a system's response to a significant rainfall event, preferably during wet antecedent moisture conditions.

The selection of a particular calibration storm or group of storms is based on a review of the flow and rainfall data. For WWF calibration, the model was run from January 8-9, 2017, and calibrated to one main rainfall event that occurred during this timeframe.

In order to run a model simulation for the January 8-9, 2017 rainfall event, the hourly rainfall data were input into the model. Each flow monitoring tributary area, or basin, was assigned a specific rainfall hyetograph, which was calculated for each basin based on the rainfall data collected at the rain gauges installed as part of the temporary flow monitoring program.

Location: Enterprise Street and Bardsley Ave
Pipeline diameter: 30"
Silt Level at Site: 0.5"

Flow Monitor Location

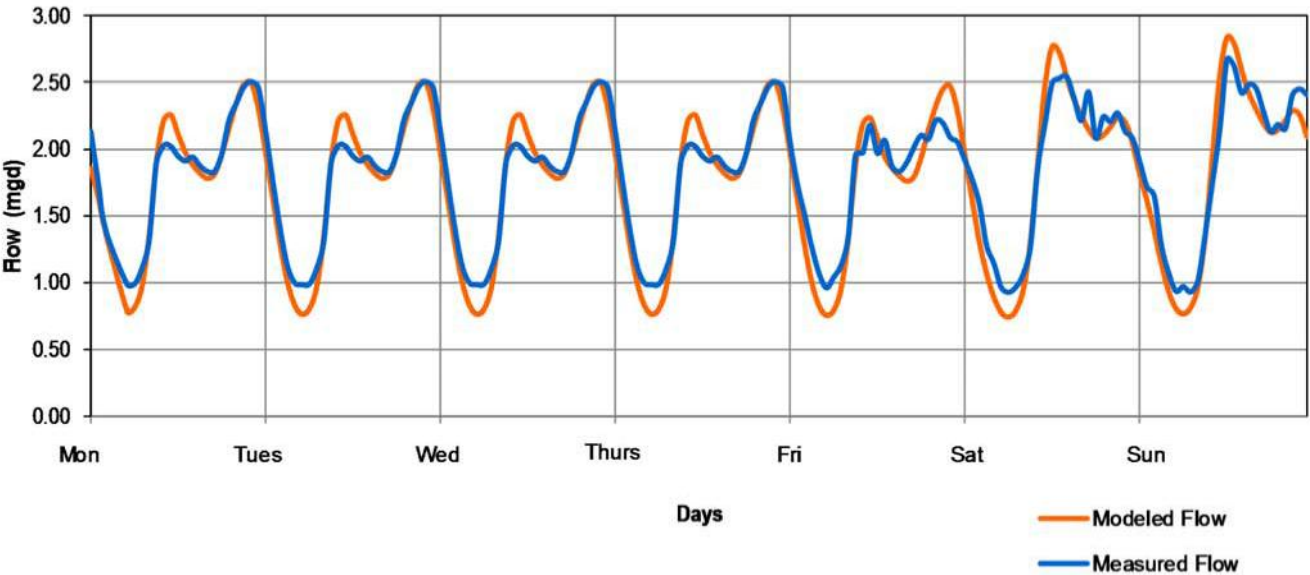


Model Calibration Summary

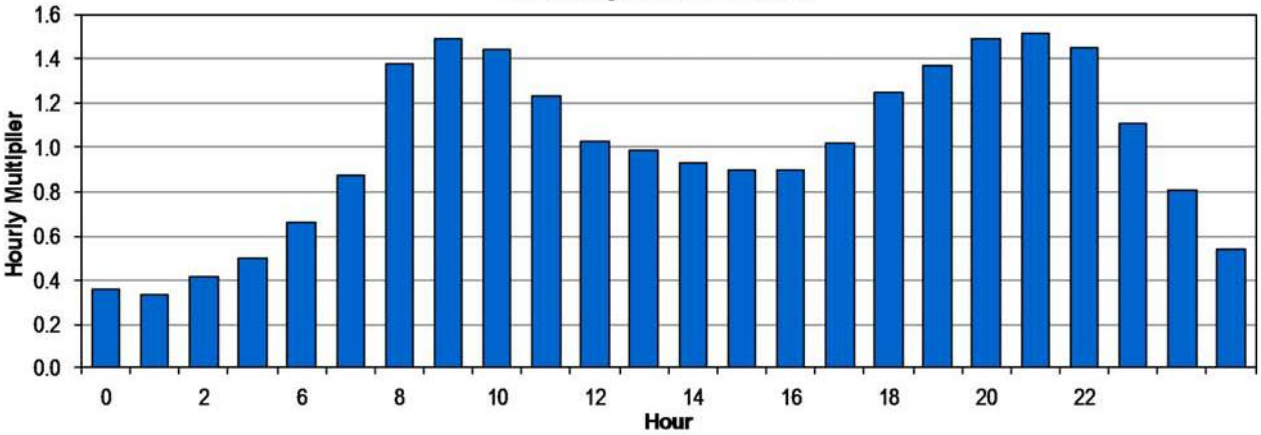
Day	Measured Data ⁽¹⁾		Modeled Data		Percent Error ⁽³⁾	
	Avg. Flow (mgd)	Peak Flow ⁽²⁾ (mgd)	Avg. Flow (mgd)	Peak Flow ⁽²⁾ (mgd)	Avg. Flow (%)	Peak Flow (%)
Mon.	1.80	2.51	1.75	2.50	-2.4%	-0.5%
Tues.	1.80	2.51	1.75	2.50	-2.4%	-0.5%
Wed.	1.80	2.51	1.75	2.50	-2.4%	-0.5%
Thur.	1.80	2.51	1.75	2.50	-2.4%	-0.5%
Fri.	1.77	2.21	1.73	2.47	-2.4%	11.7%
Sat.	1.86	2.55	1.80	2.77	-2.9%	8.6%
Sun.	1.89	2.67	1.84	2.84	-2.6%	6.1%
Summary						
Weekday	1.79	--	1.75	--	-2.4%	--
Weekend	1.87	--	1.82	--	-2.7%	--
ADWF ⁽⁴⁾	1.81	--	1.77	--	-2.5%	--

Notes:

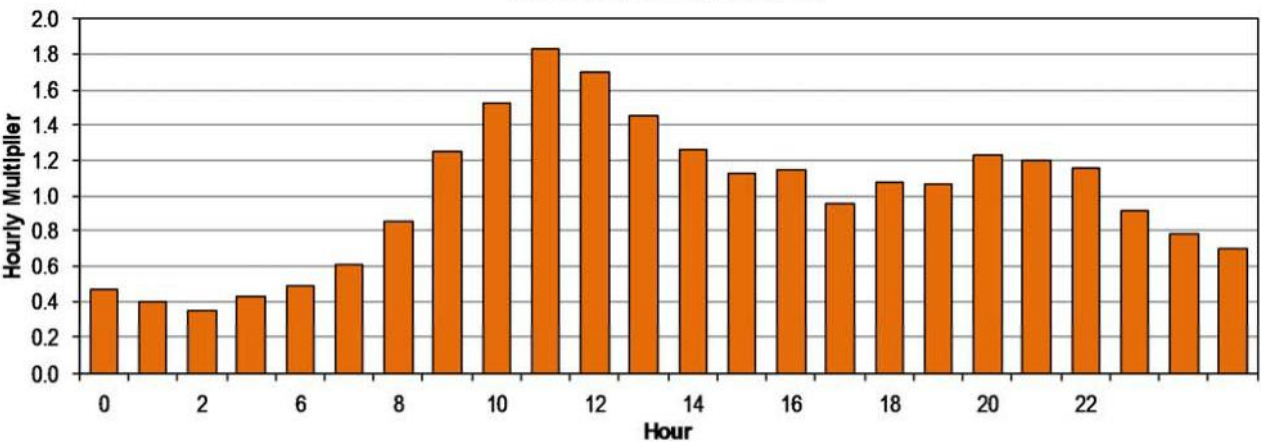
- 1. Source: V&A Temporary Flow Monitoring Program
- 2. Peak flow is the hourly average hourly peak flow, which was derived based on the 15-minute flow data from V&A.
- 3. Percent Error = (Modeled - Measured) / Measured x 100
- 4. ADWF = (5xWeekday Average + 2xWeekend Average)/7



Weekday Diurnal Pattern



Weekend Diurnal Pattern



EXAMPLE DWF CALIBRATION (METER 8)

FIGURE 8

CITY OF TULARE
DWWTP AND COLLECTION SYSTEM CAPACITY ANALYSIS

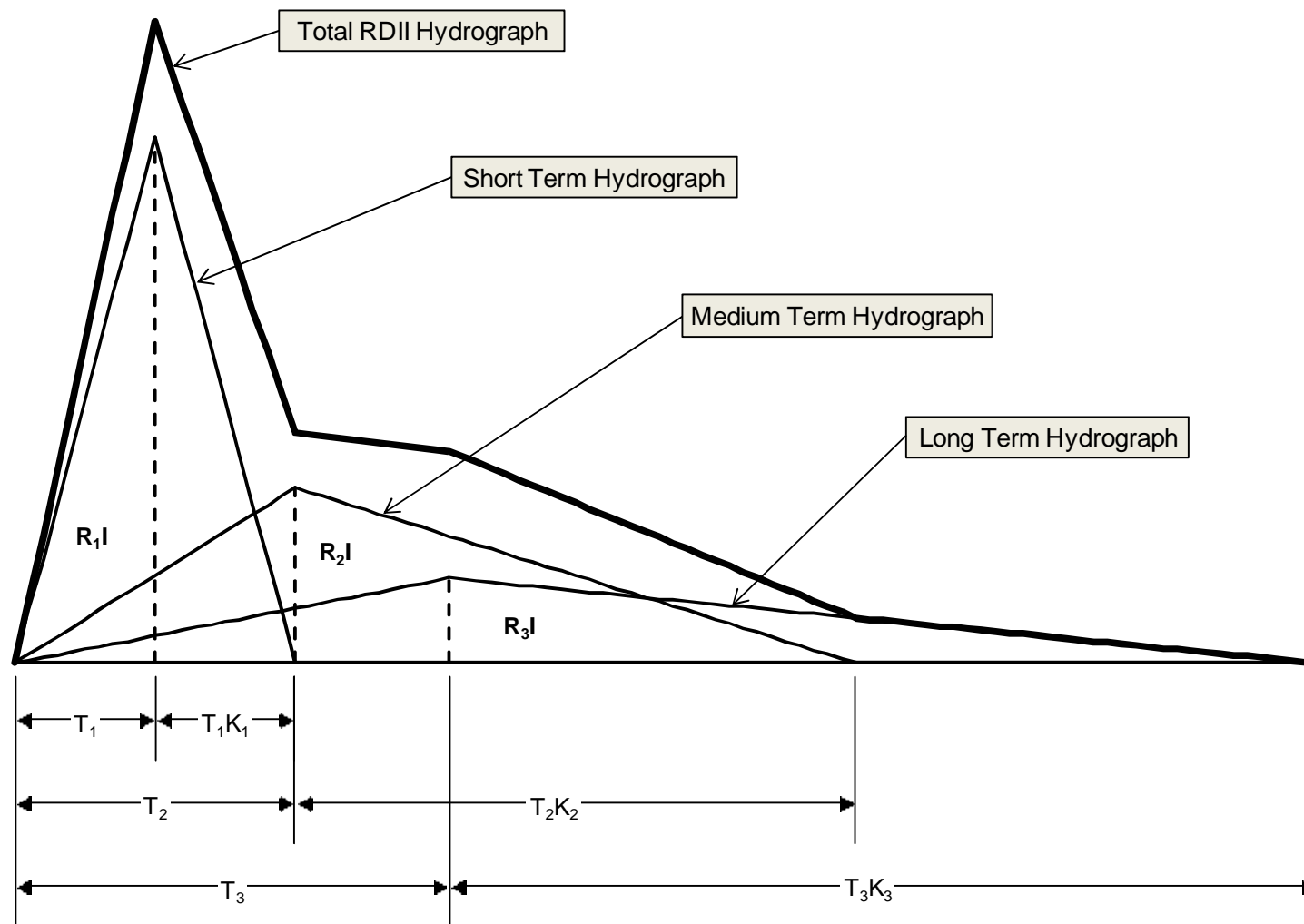
- **Define Rainfall Derived I/I (RDII) tributary areas.** For the WWF calibration, RDII flows are superimposed on top of the DWF. The model calculates RDII by assigning “RDII Inflows” to each node in the model. RDII inflows consist of both a unit hydrograph and the total area that is tributary to the model node. The RDII tributary areas were calculated in GIS using the loading polygons. Loading polygons were created as part of the 2009 hydraulic model and were used to assign DWF loads for the existing system. The area associated with these loading polygons was used in the model update for the RDII process.

The tributary area provides a means to transform hourly rainfall depth from the rainfall hyetographs into a rainfall volume. The rainfall volume is transformed into actual RDII flows using the unit hydrograph, as described in the next step.

- **Create I/I parameter database and modify to match field measured flows.** The main step in the WWF calibration process involves creating custom unit hydrographs for each flow monitoring tributary area using the “RTK Method,” which is widely used in collection system master planning. Using the RTK Method, the RDII unit hydrograph is the summation of three separate triangular hydrographs (short term, medium term, and long term), which are each defined by three parameters: R, T, and K. R represents the fraction of rainfall over the sewer shed that enters the collection system; T represents the time to peak of the hydrograph; and K represents the ratio of time to recession to the time to peak. Therefore, there are a total of nine separate variables associated with each unit hydrograph. Figure 9 shows the shape of an example unit hydrograph.

The hydrographs utilize the R-Values (percent of rainfall that enters the collection system) calculated for each basin to simulate I/I. The nine variables in each unit hydrograph were initially set based on engineering judgment and then adjusted until the model simulated flows (both peak flows and average flows) matched closely with the field measured flows.

As with the dry weather calibration, the wet weather calibration process compared the meter data with the model output. Comparisons were made for average and peak flows as well as the temporal distribution of flow until flows returned to their baseline levels. According to the Wastewater Planning Users Group (WaPUG), a hydraulic model is generally considered to be satisfactorily calibrated to WWF conditions if the modeled peak flows are within +25 percent to -15 percent of the field measured data, and if the average modeled flows are within +20 percent to -10 percent of the field measured data.



EXAMPLE RDII HYDROGRAPH

FIGURE 9

CITY OF TULARE
DWWTP AND COLLECTION SYSTEM CAPACITY ANALYSIS

7.2.2 Wet Weather Calibration Results

An example of the wet weather calibration for Sites 3 and 8 are shown on Figure 10. Figure 10 shows the model simulated flow compared to the field measured flow for the calibration storm event. Calibration plots for each of the domestic flow monitoring sites are included in Appendix C. The industrial flow monitoring sites are not included in Appendix C because there was no discernable I/I response seen during the flow monitoring program, and were not evaluated under wet weather.

Table 11 provides a summary of the wet weather flow calibration using the average and peak flow results. As shown in Table 10, the model simulated average and peak flows were within the acceptable tolerances for all but one flow monitoring site. The percent difference for Site 4B (-10.1 percent) was just below the accepted range (-10 to 15 percent). Therefore the model was considered calibrated and ready to use for capacity analysis purposes.

8.0 EVALUATION CRITERIA

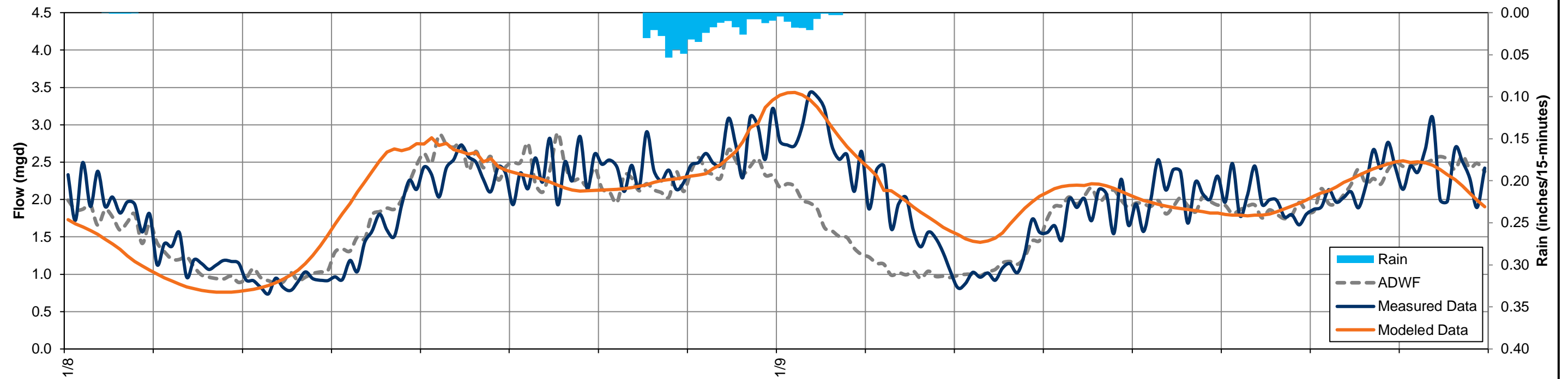
The evaluation criteria used to evaluate the 27-inch diameter gravity sewer on West Paige Avenue are summarized in Table 12. The maximum allowable flow depth to pipe diameter (d/D) ratio was used to evaluate the capacity of the existing 27-inch diameter pipe. In addition, the existing 27-inch diameter gravity pipe (as well as the proposed 42-inch gravity sewer) was designed with a sufficient slope to maintain scour velocities, as shown in Table 12. Many of the manholes along this section of pipeline are relatively deep (about 15 feet deep) and provide a buffer during wet weather events (providing additional storage capacity in the riser). However, the City intentionally limits the influent to the DWWTP during some wet weather events. This operational practice was observed in the flow monitoring data during the January 8-9, 2017 storm event. The evaluation of the 27-inch pipeline includes the operational practice of raising the wet well level during storm events.

9.0 EVALUATION OF 27-INCH DIAMETER GRAVITY SEWER

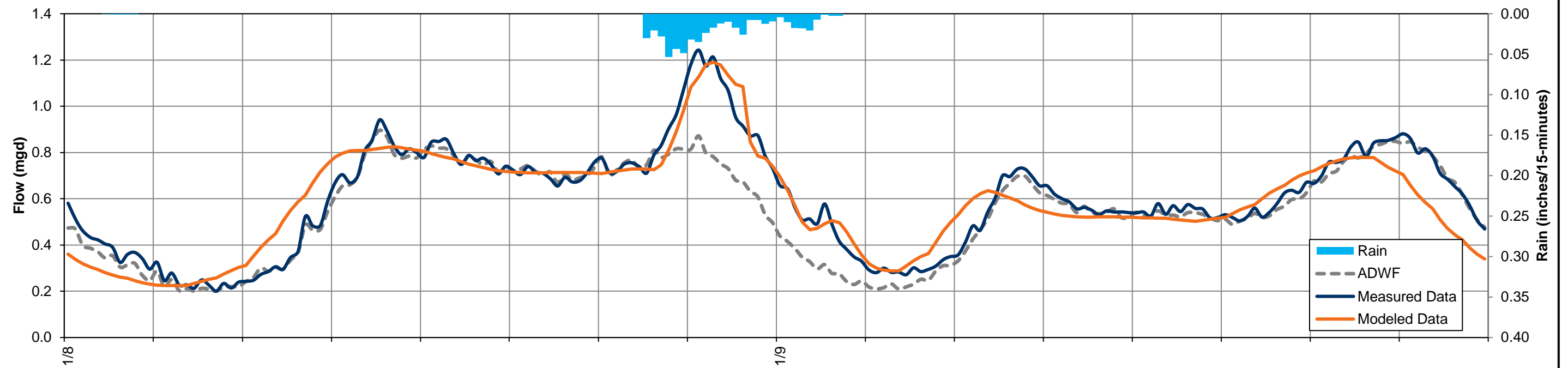
The capacity evaluation of the 27-inch diameter gravity sewer on West Paige Avenue was based on the re-calibrated model. Three specific scenarios were evaluated under PWWF:

- Existing Conditions.
- Matheny Tract - Existing plus Matheny Tract.
- Near Term - Existing plus Matheny Tract and Planned Developments.

This section discusses the impact of the Matheny Tract and other planned developments on the existing 27-inch diameter gravity sewer. In accordance with the established flow depth criteria for existing sewers, pipelines where the maximum d/D exceeded 0.92 were identified. The following sections describe the three scenarios in further detail.



Meter 3



Meter 8

EXAMPLE WWF CALIBRATION

FIGURE 10

CITY OF TULARE
DWWTP AND COLLECTION SYSTEM CAPACITY ANALYSIS

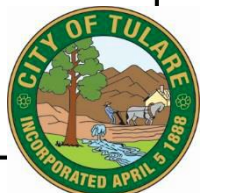


Table 11 Wet Weather Flow Calibration Summary DWWTP and Collection System Capacity Analysis City of Tulare						
Meter Number	Measured Data ⁽¹⁾		Modeled Data ⁽²⁾		Percent Difference ⁽³⁾	
	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Flow (mgd)	Peak Flow (mgd)
1	1.944	3.701	2.041	3.573	5.0%	-3.5%
3	1.939	3.218	1.934	3.395	-0.2%	5.5%
4A	0.517	0.815	0.484	0.922	-6.4%	13.1%
4B	0.978	1.698	0.879	1.472	-10.1%	-13.3%
5	0.522	0.940	0.561	0.934	7.4%	-0.7%
6	0.357	0.598	0.341	0.647	-4.3%	8.2%
8	0.639	1.244	0.641	1.190	0.3%	-4.3%
9	1.120	1.850	1.039	1.828	-7.2%	-1.2%
10	0.684	1.613	0.682	1.730	-0.3%	7.3%
11	1.880	3.493	1.881	3.081	0.1%	-11.8%
12	1.103	1.783	1.067	1.735	-3.2%	-2.7%
13	0.257	0.489	0.278	0.602	8.2%	23.1%
14	0.217	0.469	0.195	0.506	-10.0%	7.9%
Notes: (1) Source: V&A Temporary Flow Monitoring Program. (2) Average flows are calculated from flow monitoring data. Maximum flow values are hourly peaks. Averages were adjusted to account for data not recorded. (3) Percent Difference = (Modeled - Measured)/Measured*100.						

9.1 Existing System

For the existing system (without Matheny Tract or other planned developments), the design flow was routed through the hydraulic model. Figure 11 shows the maximum hydraulic grade line (HGL) profile of the gravity pipeline on West Paige Avenue (from South Blackstone Street to the DWWTP) under existing design flow conditions. As shown in Figure 10, under existing conditions, a design storm would cause surcharging (maximum d/D greater than 1) in the existing pipeline along Paige Avenue, from just west of Blackstone Street to the DWWTP. The maximum depth in the manholes on the 27-inch diameter pipe ranges from 4.37 to 4.91 feet above the pipe inverts, which means the interceptor would surcharge approximately 2.12 to 2.66 feet above the pipe crown.

Table 12 Planning and Evaluation Criteria Summary
Sewer System Master Plan
City of Tulare

Minimum Slopes for New Circular Pipes

Slopes are based on City Improvement Standards and the 1991 Sewer System Master Plan.

Pipe Size (in.)	Minimum Slope ⁽¹⁾ (ft/ft)
8	0.0033
10	0.0025
12	0.0019
15	0.0014
18	0.0011
21	0.0009
24	0.0008
27	0.0007
30	0.0006
36	0.0004
42	0.0004

Note: 1. Minimum slopes reflect City's minimum slopes when pipe is flowing half-full; based on criteria from 1991 Master Plan.

Flow Depth, d/D

The following flow depth criteria will be used in the analysis:

d/D for evaluating existing sewers: 0.92

d/D for Designing New Sewers:

Pipe Size (in.)	Maximum d/D Ratio (during Peak Flows)
10 and smaller	0.50
12 to 16	0.67
Larger than 16	0.75

Headloss in Existing Pipes

Headloss in existing sewer pipes shall be calculated based on the following:

Gravity Pipes	Manning's n =	0.013
Pressure Pipes	Hazen William's C =	120

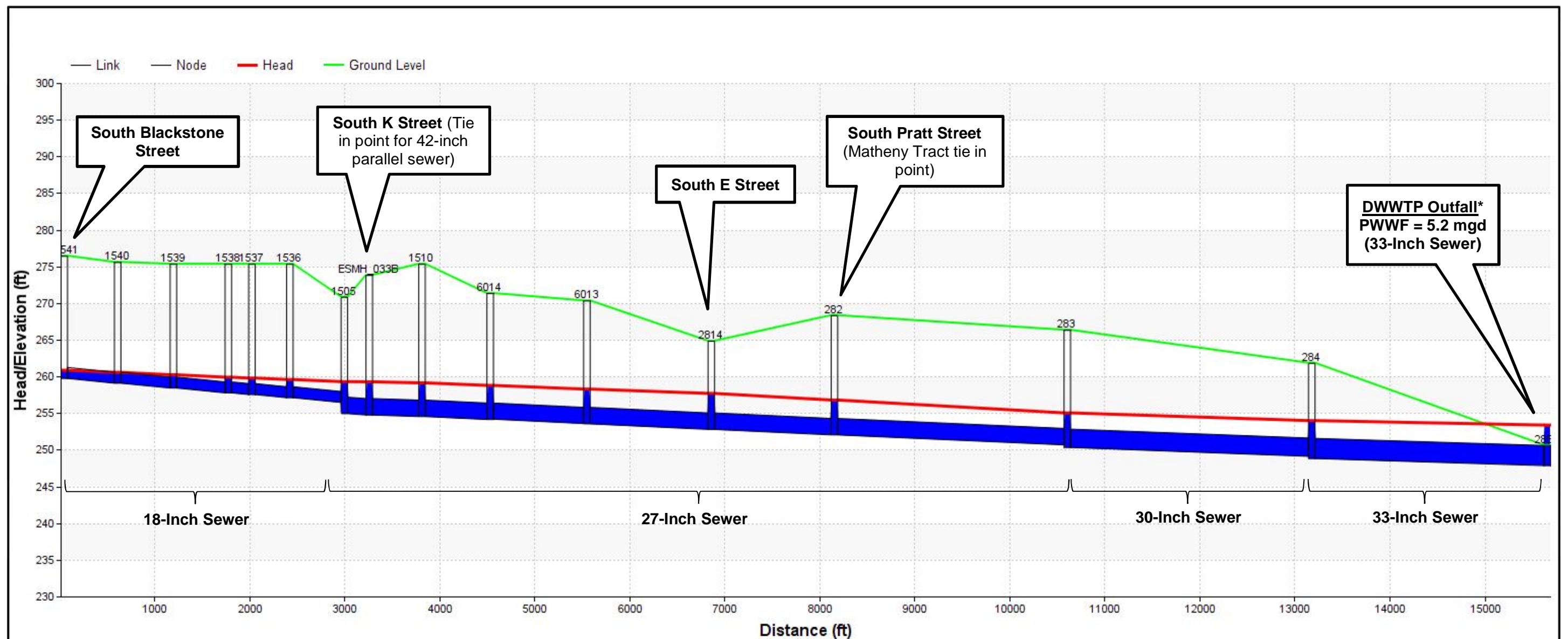
Changes in Pipe Size

When a smaller sewer joins a larger one, sewer crowns will be matched.

Average Sewer Flow Coefficients

These flow coefficients are applied to gross land use acreages to yield average day sewer flows.

Land Use Category	Code	Coefficients (gpda)
Rural Residential	R-RR	300
Rural Estate	R-RE	600
Low Density Residential	R-LDR	1,300
Medium Density Residential	R-MDR	1,600
High Density Residential	R-HDR	2,800
Neighborhood Commercial	C-NC	500
Community Commercial	C-CC	500
Regional Commercial	C-RC	500
Service Commercial	C-SC	500
Central Business District	CBD	500
Entertainment Commercial	C-EC	500
Office Commercial	C-OC	500
Light Industrial	I-LI	500
Heavy Industrial	I-HI	650
Public/Quasi-Public	PUB	400
Parks and Recreation	PRK	0
Open Space	OS/AG	0
Roadways and Railroads	--	0
Village	NC	617
Residential Reserve	UR-R	1,361
Commercial Reserve	UR-C	650
Industrial Reserve	UR-I	600



*Note: Ground elevation shown at DWWTP outfall does not represent actual ground elevation. Outfalls do not have a field for ground elevation in the modeling software.

MAXIMUM HGL PROFILE - PAIGE AVE. PIPELINE (EXISTING ONLY)

FIGURE 11

CITY OF TULARE
DWWTP AND COLLECTION SYSTEM CAPACITY ANALYSIS

9.2 Matheny Tract

The Matheny Tract scenario included existing flow and Matheny Tract development. Figure 12 shows the maximum HGL profile of the gravity pipeline on Paige Street under design flow conditions (including Matheny Tract). The maximum depths in the manholes along the 27-inch portion of the pipeline increased with the additional flow, and range from 4.56 to 5.14 feet above the pipe inverts. Therefore, in this scenario the HGL would rise about 2.31 to 2.89 feet above the pipe crown.

9.3 Near-Term

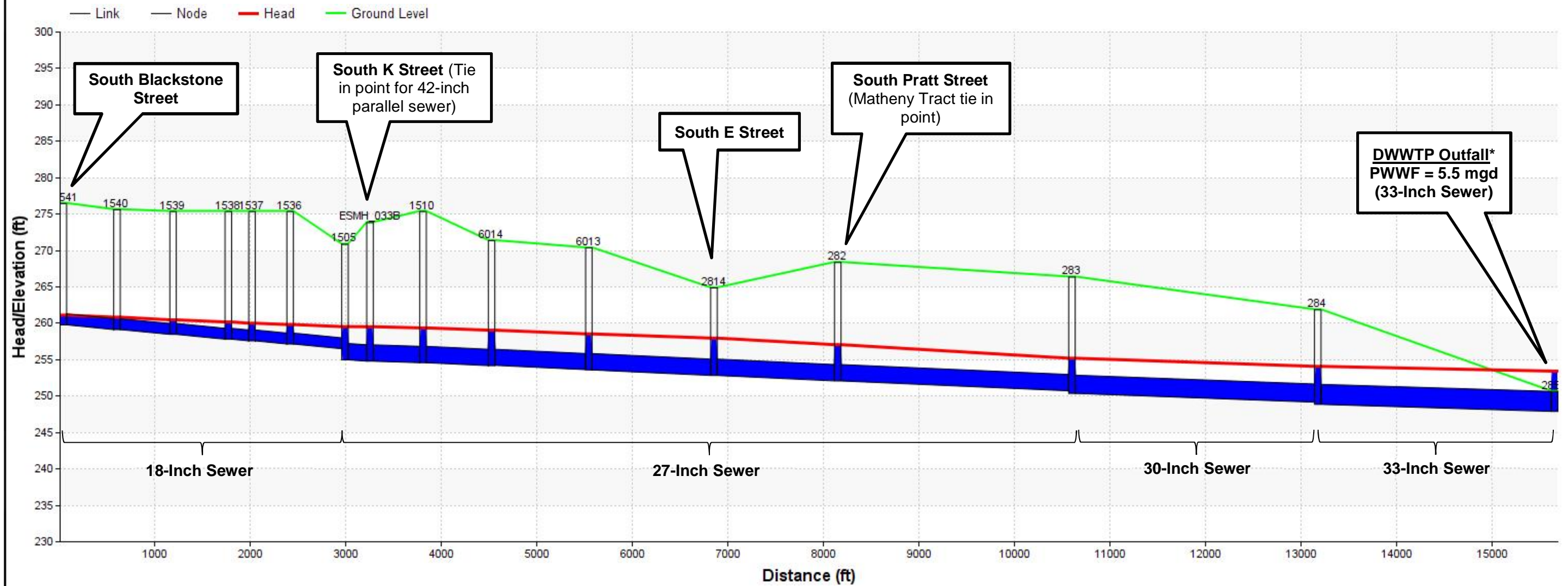
The near-term scenario includes the existing flow, plus Matheny Tract and the planned developments (listed in Table 6). Figure 13 shows the maximum HGL profile of the gravity pipeline on Paige Street under near-term design flow conditions. The maximum depths in the 27-inch diameter pipe increased even more, ranging from 4.87 to 5.33 feet above the pipe inverts (or 2.62 to 3.08 feet above the pipe crown).

Table 13 summarizes the maximum flow depth in the 27-inch diameter gravity sewer on Paige Street (from K Street to Pratt Street). The manhole ID's listed in Table 13 correspond to the manhole labels shown on the maximum HGL profiles (Figures 11, 12, and 13). Note a maximum depth over 2.25 feet indicates surcharge condition (depth is greater than the 27-inch pipe diameter). The total surcharge time (out of the 24-hour simulation period) is also included in Table 10. As shown in Table 13 the maximum depth and duration of surcharging increases with the addition of Matheny Tract, and even more with the planned developments.

10.0 CONCLUSIONS

As shown in the previous section, the 27-inch diameter gravity sewer on Paige Avenue is surcharged under existing design flow conditions. The additional flow from Matheny Tract and the other planned developments further increase the maximum depths and surcharge duration in this pipeline. The following improvements/operational changes are recommended to eliminate surcharging in the existing gravity sewer on Paige Avenue:

- Install the remaining 42-inch diameter gravity sewer along Paige Avenue, from K Street to the DWWTP (the Alternative Bid part of the Eastside Sewer Trunk Extension project). The 42-inch diameter gravity sewer should be constructed in accordance with the Eastside Sewer Trunk Extension design drawings. According to the design drawings and the City's 2009 Master Plan, the existing 27-inch diameter gravity main is intended to remain in service and will convey a portion of the City's existing flows. Therefore, the existing 27-inch diameter gravity sewer should not be abandoned. The 42-inch proposed pipeline was designed with a sufficient slope to maintain minimum scouring velocities (in accordance with Table 3.2 of the 2009 Master Plan).
- Limit the maximum level in the DWWTP influent wet well to an HGL of 250.43 (which represents a d/D of 0.92 in the upstream 33-inch influent pipe).

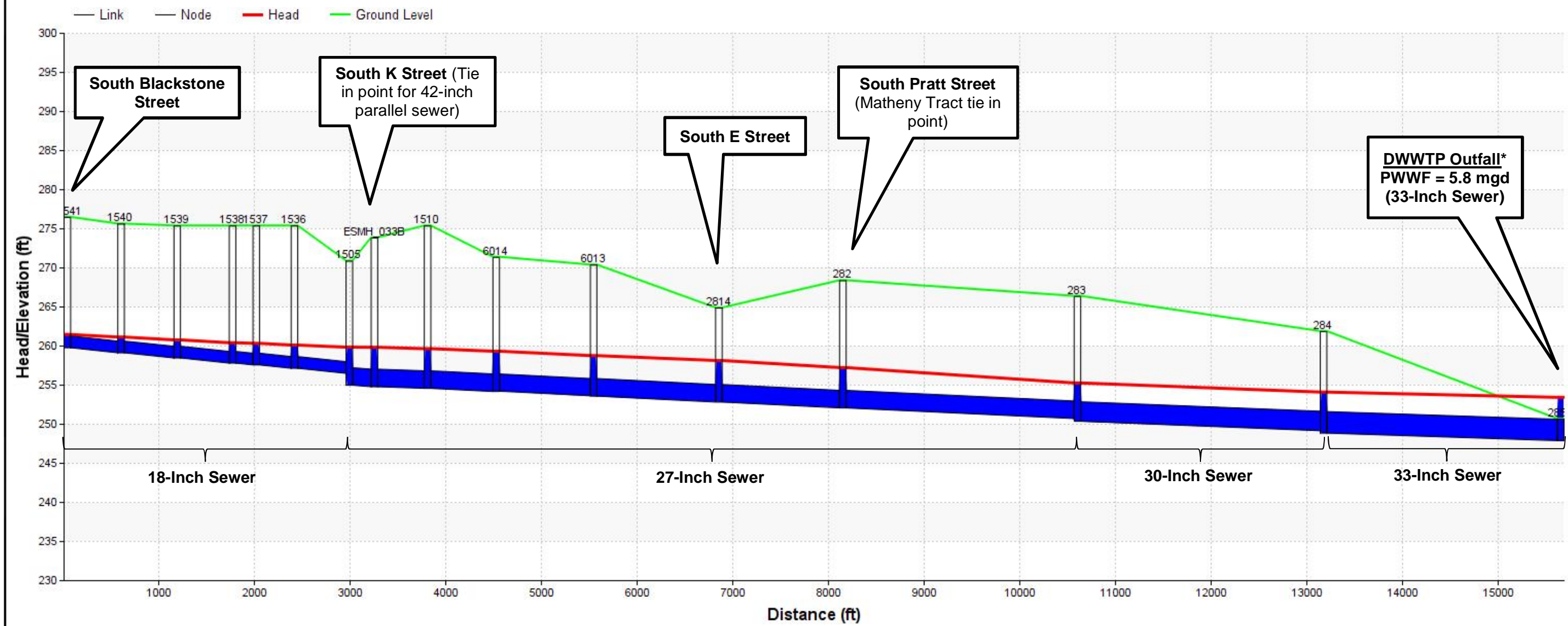


*Note: Ground elevation shown at DWWTP outfall does not represent actual ground elevation. Outfalls do not have a field for ground elevation in the modeling software.

MAXIMUM HGL PROFILE - PAIGE AVE. PIPELINE (EXISTING PLUS MATHENY TRACT)

FIGURE 12

CITY OF TULARE
DWWTP AND COLLECTION SYSTEM CAPACITY ANALYSIS



*Note: Ground elevation shown at DWWTP outfall does not represent actual ground elevation. Outfalls do not have a field for ground elevation in the modeling software.

MAXIMUM HGL PROFILE - PAIGE AVE. PIPELINE (NEAR-TERM)

FIGURE 13

CITY OF TULARE
DWWTP AND COLLECTION SYSTEM CAPACITY ANALYSIS

Table 13 Maximum Flow Depth Summary (27-Inch Diameter Gravity Sewer)⁽¹⁾ DWWTP and Collection System Capacity Analysis City of Tulare								
Manhole ID	Cross-Street Location/Description	Maximum Pipe Depth (Feet)	Maximum Flow Depth (Feet)			Surcharge Duration (hours)		
			Existing	Matheny Tract	Near-Term	Existing	Matheny Tract	Near-Term
1505	South K Street (Just upstream of 42-inch tie in point)	2.25	4.37	4.56	4.87	7.7	10.7	14.2
ESMH_033B	South K Street (Tie in point for parallel 42-inch pipe)	2.25	4.55	4.75	5.05	5.0	5.7	7.8
1510	--	2.25	4.64	4.82	5.12	13.6	14.0	14.4
6014	--	2.25	4.69	4.89	5.18	14.2	14.4	14.6
6013	--	2.25	4.76	4.96	5.21	5.2	6.1	8.2
2814	South E Street	2.25	4.91	5.14	5.33	14.8	14.9	15.1
282	South Pratt Street (Matheny tie in point)	2.25	4.77	5.02	5.18	12.2	13.3	14.3
Note: (1) Assumes current operating protocol at the DWWTP influent wet well.								

Both of these are necessary to completely eliminate surcharging during each scenario. Figure 14 shows the maximum HGL profile of the 27-inch diameter gravity sewer on West Paige Avenue after both improvements. With both improvements, the maximum flow depth in the 27-inch pipe is 0.73 (less than the maximum criteria of 0.92). The maximum depth in the entire 42-inch Eastside trunk (including existing and proposed portions) is 0.45.

If the new pipeline were installed, but the level in the wet well were still increased during storm events, there would still be some surcharging upstream of the DWWTP. Alternatively, if the operational practice of raising the wet well level during a storm event was discontinued (without installation of the new 42-inch pipeline), there would still be surcharging in the 27-inch portion of the existing sewer (more so with the addition of Matheny Tract and other planned developments).

It is also recommended to connect Matheny Tract to the new 42-inch diameter gravity sewer. Once the 42-inch diameter sewer is installed, it would have more available capacity than the existing 27-inch diameter sewer. Although, based on the hydraulic model, both pipes would have sufficient capacity to accept flow from Matheny Tract (once the new 42-inch pipe is installed).

The remaining section of the 42-inch line was included as bid alternate A for Project 11-13 that was opened on January 10, 2013. The bids for this portion of the project ranged from \$4.42 million to \$7.13 million. Using a 10-cities Engineering News Record (ENR) consumer cost index (CCI) adjustment from January 2013 (9437) to May 2017 (10532), this range in May 2017 is estimated at \$4.93 million to \$7.96 million. This estimate represents only the construction cost, and does not include design, engineering, or other construction contingencies. The total cost for this project (assuming 20 percent for construction contingencies and 30 percent for engineering, construction management, and program implementation) is estimated to be between \$7.69 million to \$12.42 million.

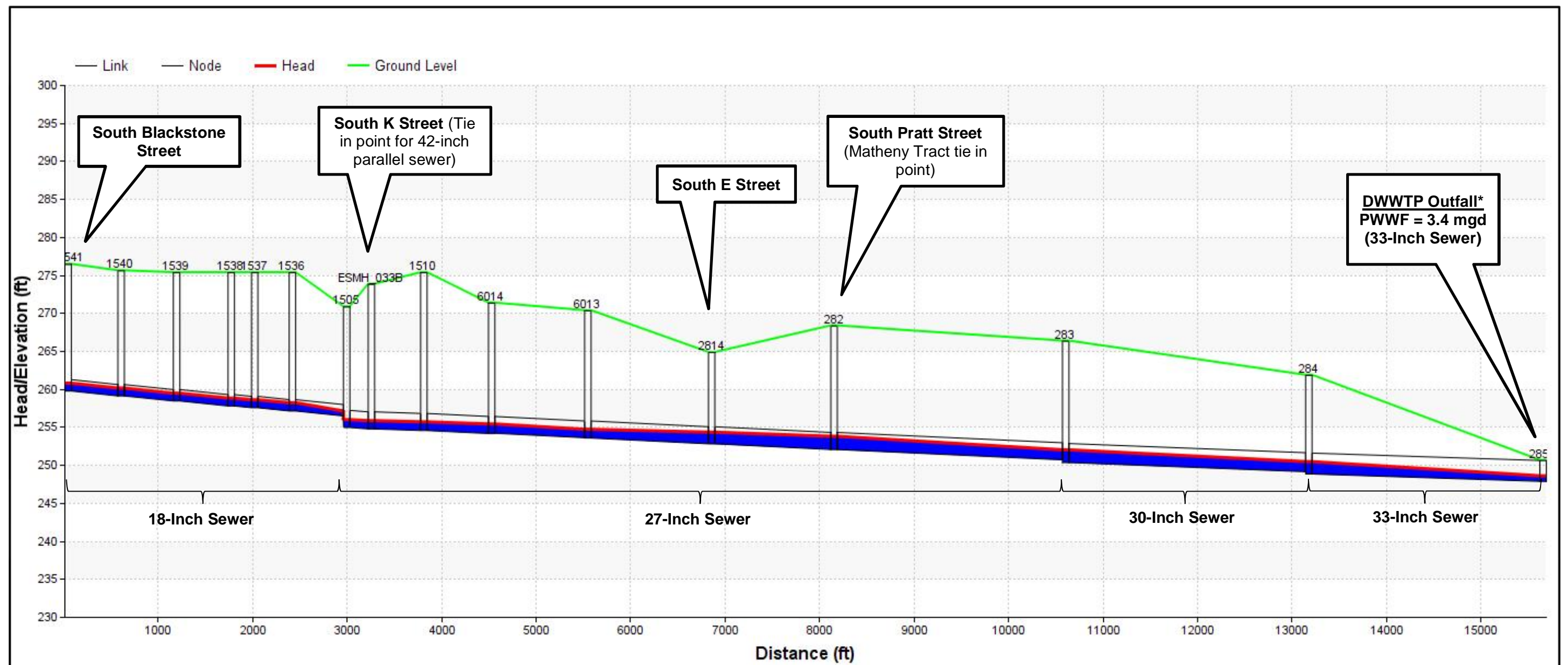
The proposed 42-inch pipe would correct the existing deficiencies and also serve build-out flows. However, a 24-inch diameter pipe (parallel to the existing 27-inch pipe) would be large enough to correct the existing deficiencies and serve Matheny Tract. A 27-inch diameter pipe (parallel to the existing 27-inch pipe) would be required if the City wanted to serve Matheny Tract and the additional approved units/planned developments. The total estimated cost for the 24-inch and 27-inch pipeline is \$6.24 million and \$7.02 million, respectively. A detailed cost summary is provided in Table 14.

Based on a flow apportionment between the City and Matheny Tract, Matheny Tract would be responsible for between 4.5 and 4.7 percent of the total estimated construction cost for the project, ranging from \$293,000 to \$559,000, depending on the pipe diameter and/or bid alternative chosen.

Preliminary evaluation of the proposed 24-inch and 27-inch diameter pipes, based on minimum slopes (Table 12), show that they would have similar invert elevations at the

wastewater plant, although the overall profile would change. If the 42-inch diameter pipe is not selected, a detailed design analysis would have to be conducted to determine if the new alignment/profile would work.

The total estimated construction costs of the 24-inch and 27-inch pipes (which have to be re-designed) are on the higher range of the bids received for the construction of the 42-inch pipe. Because the 42-inch diameter pipe has already been designed and would serve all future build-out flows, it is the recommended alternative.



*Note: Ground elevation shown at DWWTP outfall does not represent actual ground elevation. Outfalls do not have a field for ground elevation in the modeling software.

MAXIMUM HGL PROFILE - PAIGE AVE. PIPELINE (WITH IMPROVEMENTS)

FIGURE 14

CITY OF TULARE
DWWTP AND COLLECTION SYSTEM CAPACITY ANALYSIS

Table 14 Cost Estimate Summary DWWTP and Collection System Capacity Analysis City of Tulare					
Proposed Diameter (Inches)	Groups Served	Baseline Construction Cost⁽¹⁾	Total Estimated Cost⁽²⁾	Matheny Tract Flow Apportionment	Matheny Tract Cost Portion
24	Corrects existing deficiencies and serves Matheny Tract (MT)	\$3,999,000	\$6,238,000	4.70%	\$293,000
27	Corrects existing deficiencies and serves MT + Approved Units/Planned Developments	\$4,499,000	\$7,018,000	4.50%	\$316,000
42	All of the above + all future build-out flows ⁽³⁾	\$4.93M - \$7.96M	\$7.69M - \$12.42M	4.50%	\$346,000 - \$559,000
Notes: (1) Based on unit pipe costs of \$312/LF (24-inch) and \$352/LF (27-inch). Baseline construction cost for the 42-inch diameter pipe based on 2013 bid tabs escalated to May 2017. (2) Based on 20% construction contingency and 30% for Engineering, construction management, and program implementation. (3) The 42-inch pipe was proposed in the 2007 Master Plan to correct the existing deficiency and convey build-out flows. Build-out is considered to be long-term and assumes full build-out of the City's General Plan.					

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County of Tulare

Matheny Tract Wastewater System

Technical Memorandum

Addendum to Project Feasibility Report

Tulare County, CA
September 2017

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Abbreviations

DWWTP	Domestic Wastewater Treatment Plant
EOPCC.....	Engineer’s Opinion of Probable Construction Cost
PFR.....	Project Feasibility Report
PVC.....	polyvinyl chloride
RCP	reinforced concrete pipe
RWQCB	Regional Water Quality Control Board
SWRCB.....	State Water Resources Control Board
WWTF.....	Wastewater Treatment Facility

1 Introduction

In March 2016, a Project Feasibility Report was prepared to evaluate the alternatives available to improve or replace on-site septic systems for the Matheny Tract community in Tulare County, adjacent to the City of Tulare. The community, home to approximately 1,200 residents, is currently un-sewered and relies on individual septic systems at each residence for wastewater treatment and disposal.

The alternatives analyzed included:

- *On-Site Systems with a Septic Maintenance District*: provides replacement of the existing on-site septic systems with systems that denitrify wastewater before discharging it, and would provide for continuation of proper maintenance of the systems by creating a Septic Maintenance District.
- *Gravity Collection System, Consolidation with the City of Tulare*: provides construction of a wastewater collection system throughout the community with a main connection to the City of Tulare wastewater collection system and ultimate delivery to the City of Tulare Domestic Wastewater Treatment Plant (DWWTP). This alternative assumes that the City of Tulare will ultimately own and operate the Matheny Tract collection system and main connection to the City of Tulare.
- *Gravity Collection System with Community Wastewater Treatment Facility*: provides for construction of a wastewater collection system similar to the one shown in Alternative 2; however, it would also provide for construction of a small independent Wastewater Treatment Facility (WWTF) within or near the Matheny Tract.
- *No Project*: maintains the community in its current condition with no improvement to the existing septic systems.

Based on the analysis presented in the Project Feasibility Report (PFR), the selected alternative was *Gravity Collection System, Consolidation with the City of Tulare*. The selected alternative consists of construction of a wastewater collection system within the Matheny Tract, at least one lift station located along Pratt Street, a force main in Pratt Street with a connection to the existing 27-inch sewer trunk main at the intersection of Paige Avenue and Pratt Street. Implementation of this alternative is contingent upon reaching an agreement between the County and the City to accept the wastewater flows from the Matheny Tract. The City advised they would not allow connection of a domestic wastewater collection system, such as would be constructed within the Matheny Tract, to the industrial wastewater trunk main that exist in Pratt Street.

Following completion and adoption of the PFR, the City provided input that they were uncertain if the capacity of the sewer trunk main in Paige Avenue was sufficient and the City would need to perform an analysis of their collection system to determine if the capacity was available.

This memorandum summarizes the findings of the City of Tulare DWWTP and Collection System Capacity Analysis in relation to the PFR and selected alternative implementation. The City of Tulare DWWTP and Collection System Capacity Analysis is attached by reference to this memorandum and this memorandum shall be considered an addendum to the original, adopted PFR.

2 Collection System Evaluation Report

In June 2017, Carollo prepared a report entitled *City of Tulare Collection System Capacity Analysis* (Capacity Analysis) to evaluate the capacity of the City of Tulare's (City) wastewater collection system, in part to specifically identify if the system has capacity to convey the wastewater flows from the Matheny Tract to the DWWTP, if the DWWTP has capacity to treat the wastewater flows and, if not, what improvements would be necessary to provide the necessary capacity.

2.1 Report Findings

The capacity of the 27-inch sewer trunk main in Paige Avenue at Pratt Street was evaluated and found to be operating in a surcharge state in its current configuration without the addition of wastewater flows from Matheny Tract. Adding new flows to this main would worsen the operating condition.

The recommended improvements to resolve this condition include evaluation of two alternatives, (1) install a second¹ domestic sewer trunk main in Paige Avenue from K Street to the DWWTP or (2) limit the level in the DWWTP influent wet well. Ultimately, both alternatives are needed to fully correct the surcharge condition; however, with construction of the additional trunk main improvements, the flows from Matheny Tract could be accepted by the City without worsening their current operating condition. Three alternatives were evaluated in relation to constructing a new trunk main.

The alternatives evaluated include constructing a 24-inch trunk main, a 27-inch trunk main or a 42-inch trunk main¹. The purpose of each alternative is as follows:

- *Immediate Solution: The 24-inch trunk main would correct the existing deficiencies and provide capacity to serve Matheny Tract.*
- *Near-Term Solution: The 27-inch trunk main would also correct existing deficiencies, provide capacity to serve Matheny Tract and provide capacity to serve previously approved development projects.*
- *Long-Term Solution: The 42-inch trunk main would provide the same service in addition to providing capacity for future build-out flows.*

The necessary improvements to provide service to the Matheny Tract (near-term solution) is constructing the 27-inch trunk main which would correct the existing City wastewater collection system deficiencies, provide the necessary capacity to serve Matheny Tract and previously approved development projects.

Considering that the 27-inch main does not provide sufficient capacity for ultimate City build-out, it would be impractical for the City to construct it only to need another trunk main in the same corridor to accommodate future development. For this reason, the City intends to construct the master-planned 42-inch trunk main to provide a long-term solution for the wastewater conveyance.

¹ The secondary sewer trunk main would be in addition to the existing sewer trunk main in Paige Avenue, not a replacement of the existing main. Both mains would be in operation to convey wastewater to the DDWTP.

Despite the City's intention to construct the 42-inch main, the Matheny Tract is responsible for their proportionate share of the hypothetical second¹ 27-inch main, based on flow apportionment. This share equates to 4.5 percent of the 27-inch or 42-inch trunk main, \$315,810 and \$558,900, respectively (as shown in Table 14 of the Capacity Analysis). The remaining percentage of the improvement cost will be borne by the City. No modifications of the DWWTP are attributable to the Matheny Tract wastewater flows.

3 Selected Alternative Modifications

As previously discussed, the selected alternative included construction of a wastewater collection system within Matheny Tract with one sewer lift station and a force main connection to the City's wastewater trunk main in Paige Avenue.

The result of the Capacity Analysis will lead to modification of the selected alternative to include construction of a 42-inch sewer trunk main in Paige Avenue from K Street where it currently ends to the DWWTP. Additionally, since the original PFR was prepared, the preliminary design has been completed for the collection system. The preliminary design includes modifications to the originally described recommended alternative, also. The following sections detail the revised recommended alternative including these modifications.

3.1 Selected Alternative Analysis

The analysis presented in the PFR provided several criteria for evaluating and ultimately selecting the preferred alternative (Alternative No. 2 is the selected alternative). Those criteria are summarized below and revised (where applicable) to including updated information from both the Capacity Analysis and preparation of the preliminary design for the collection system. The advantages and disadvantages of each alternative, as presented in the PFR, remain mostly unchanged; however, the disadvantage stated for Alternative No. 2 in Table 5-6 of the PFR, "Reluctance of the City to provide wastewater service in this area" has partially been mitigated based on ongoing discussions between the City, County and the Regional Water Quality Control Board (RWQCB).

County of Tulare, Resource Management Agency
Matheny Tract Wastewater System
 Technical Memorandum, Addendum to Project Feasibility Report

Table 3-1: Comparison of Alternatives

Comparison Basis	Alt No. 1 Onsite Septic Systems with District	Alt No. 2 – Consolidation with the City of Tulare [1]		Alt No. 3 – Community Collection & Treatment System
		Alt No. 2a	Alt No. 2b	
Capital Cost [2]	\$19,465,400	\$20,766,300	\$26,168,300	\$16,481,400
Annual O&M Cost [2]	\$251,400	\$162,000	\$162,000	\$487,431
Present Worth Cost of O&M (20 year at 3% Interest)	\$3,740,197	\$2,410,151	\$2,410,151	\$7,251,735
Project + Present Worth Cost [2]	\$23,205,597	\$23,176,451	\$28,578,451	\$23,733,135
Monthly User Charge [3]	\$74	\$48		\$143
Construction Challenges				
Difficulty identifying existing onsite improvements, including location of existing septic systems for purposes of constructing new septic system improvements	X			
Possible interconnection of onsite wastewater infrastructure similar to the conditions found during the Pratt MWC Water System Improvement project	X	X		X
Identifying and purchasing property for constructing a WWTP				X
Critical Concerns				
Creation of a Special District	X			X
Consolidation Agreement with the City of Tulare		X		
Does not address state priorities regarding protection of groundwater and centralized wastewater treatment	X			X
Ongoing operation of a collection system and a WWTP				X
Does not address RWQCB priorities for consolidation of wastewater systems	X			X

Notes:

[1] Alternative No. 2a refers to construction of a 27-inch main in Paige Avenue and Alternative No. 2b refers to construction of a 42-inch main in Paige Avenue, as previously discussed.

[2] The capital costs were updated for Alternatives No. 1 and 3 were updated based on current construction costs and an accurate number of connections determined during preliminary design. For purposes of comparing alternatives, the full capital cost of Alternative No. 2 has been utilized rather than the proportionate share attributable to Matheny Tract.

[3] The usage rates for Alternatives No. 1 and 3 increased due to a lesser number of connections determined during preliminary design. The usage rate for Alternative No. 2 is a reflection of the FY 17-18 City of Tulare Sewer Rate. This charge does not include loan repayment costs, if necessary.

Based on the information presented in Table 3-1, the updated ranking of the alternatives is provided below. As the ranking indicates, Alternative No. 2 (with either size main), the previously selected alternative, continues to be the preferred alternative.

The preferred alternative is Alternative No. 2b, despite it not being the least expensive alternative. The reasons for this include the evaluation of other ranking criteria that continue to rank Alternative No. 2 as the preferred alternative and consistency with the City's Master Plan that shows a 42-inch main in Paige Avenue. Construction of a smaller main would necessitate the City removing and replacing the main or constructing a third main later, all of which are inefficient use of funds and would, overall, increase total cost of constructing a 27-inch main if replacement costs were considered (for purposes of this memorandum, evaluation of replacement costs has not been completed or included). For these reasons, Alternative 2a is not considered feasible, therefore Alternative 2b is the best ranked alternative and remains preferred.

Table 3-2: Ranking of Alternatives				
Comparison Category	Alternative Rating			
	Alt 1	Alt 2a	Alt 2b	Alt 3
Present Worth Cost	\$23,205,597	\$23,176,451	\$28,578,451	\$23,733,135
Present Cost Ranking	2	1	4	3
Monthly User Fees	2	1	1	3
Construction Challenges	2	1	1	2
Critical Concerns	3	1	1	4
Total Scoring	9	4	7	12

3.2 Project Description

The selected alternative includes construction of a wastewater collection system within the Matheny Tract, one lift station located near Pratt Street and Wade Avenue, a combination of 8-, 10- and 12-inch polyethylene vinyl chloride (PVC) gravity-flow sewer mains with manholes spaced at 350 feet, a lift station, a 4-inch high density polyethylene (HDPE) force main and a 27-inch or 42-inch sewer trunk main, pending City decision. It is anticipated the sewer trunk main will be reinforced concrete pipe (RCP).

3.3 Receptiveness of Agencies

The purpose of the Capacity Analysis was to verify what improvements are necessary to address the City's concerns regarding providing service to their existing customers without compromise with the addition of the Matheny Tract wastewater flows. This analysis and associated recommendations supports discussions between the City of Tulare, County of Tulare and State Water Resources Control Board (SWRCB) to reach an agreement on how the Matheny Tract Wastewater System project can proceed.

3.3.1 City of Tulare

The City of Tulare has indicated the City would be receptive to the project if the recommended improvements to their collection system are constructed in a manner that would not compromise the City's ability to serve its existing customers. With those recommendations finalized, the component of the project that would be the City's responsibility is the proportionate share of the 27-inch or 42-inch sewer trunk main (pending City decision) in Paige Avenue from K Street to the DWWTP. Discussions between the City, County of Tulare, and SWRCB can continue to identify possible funding mechanisms to fund both the Matheny Tract components of the project (discussed in more detail below) and the remaining City share of the sewer trunk main.

The City has indicated willingness to continue those discussions to come to a mutually advantageous agreement; however, the City has also indicated it is not willing to take on debt or financial obligation to provide service to the Matheny Tract. The City does not have funding reserved for the sewer trunk main in Paige Avenue now and will therefore be seeking financial assistance from the SWRCB or other funding sources to help fund its cost share to provide timely wastewater service to the Matheny Tract residents; however, other funding programs have not been identified.

3.3.2 County of Tulare

The County of Tulare is willing to work with the City and SWRCB to reach an equitable agreement with the intention of funding the Matheny Tract's project costs (both construction and non-construction) through a grant from the SWRCB. Neither the County nor the residents of Matheny Tract have the financial means to fund a project of this magnitude.

3.4 Project Cost Estimate

As mentioned above, the Matheny Tract Project would not be financially responsible for the entire cost of the sewer trunk main in Paige Avenue; they would be responsible for 4.5% of the cost to construct a 27-inch or 42-inch trunk main. The following Engineer's Opinion of Probable Construction Cost, including O&M present worth, is shown below and includes the total estimated cost of the 27-inch and 42-inch mains in Paige Avenue for reference. A detailed Engineer's Opinion of Probable Construction Cost (EOPCC) is included in the Appendix.

Table 3-3 shows a summary of the overall project cost, including all improvements to connect to the DWWTP for both the 27-inch and 42-inch options.

An agreement between the City, County and State would need to be reached on how the total cost of the trunk main would be paid before the Project could proceed.

Table 3-3: Total Project Cost Estimate		
Item Description	27-inch Alternative	42-inch Alternative
Matheny Tract Wastewater Collection System [1]	\$9,026,900	\$9,026,900
Capacity and Connection Fees [2]	\$1,562,000	\$1,562,000
Contingency (20%)	\$1,805,400	\$1,805,400
Engineering & Construction Observation (15%)	\$1,354,000	\$1,354,000
Paige Avenue Trunk Main Total Cost [3]	\$7,018,000	\$12,420,000
Total Project Cost	\$20,766,300	\$26,168,300
Notes: [1] The collection system cost includes collection mains, a lift station and force main in Pratt Street to Paige Avenue. [2] The Capacity and Connection Fees are based on 284 services at \$5,500 per service. This fee would be payable to the City of Tulare upon completion of the project, as discussed in more detail in the PFR. [3] The Paige Avenue cost include contingency, engineering and construction observation components, as discussed in more detail in Appendix A and the Capacity Analysis.		

Table 3-4 shows a summary of the project cost separated by proportionate share attributable to the Matheny Tract and the remainder attributable to the City, including all improvements to connect to the DWWTP for both the 27-inch and 42-inch options.

Table 3-4: Project Cost Estimate with Proportional Share		
Item Description	27-inch Alternative	42-inch Alternative
Matheny Tract Wastewater Collection System [1]	\$9,026,900	\$9,026,900
Capacity and Connection Fees [2]	\$1,562,000	\$1,562,000
Contingency (20%)	\$1,805,400	\$1,805,400
Engineering & Construction Observation (15%)	\$1,354,000	\$1,354,000
Paige Avenue Trunk Main (Matheny Proportional Share) [3]	\$315,810	\$558,900
Matheny Tract Proportional Share Subtotal	\$14,064,110	\$14,307,200
Paige Avenue Trunk Main (Remainder) [3]	\$6,702,190	\$11,861,100
Total Project Cost	\$20,766,300	\$26,168,300
Notes: [1] The collection system cost includes collection mains, a lift station and force main in Pratt Street to Paige Avenue. [2] The Capacity and Connection Fees are based on 284 services at \$5,500 per service. This fee would be payable to the City of Tulare upon completion of the project, as discussed in more detail in the PFR. [3] The Paige Avenue cost include contingency, engineering and construction observation components, as discussed in more detail in Appendix A and the Capacity Analysis.		

3.5 Project Schedule

The project schedule is provided below with an assumed start date of October 2017.

Table 3-5: Project Schedule Description	
Project Task	Notes
Conduct Community Outreach	Community outreach has been occurring and will continue.
Finalize Environmental Documents	The environmental documents will be adopted with adoption of this Technical Memorandum, anticipated by September 30, 2017.
Conduct Proposition 218 Election	The Prop 218 Election will begin once necessary agreements are in place.
Apply for Construction Funding	Construction Funding application submittal is anticipated by December 31, 2017. Receipt of funds could be more than a year depending on the funding agency and availability of funds.
Prepare Final Construction Documents	Draft Construction Documents are prepared to 90 percent level. Preparation of Final Construction Documents (including Paige Avenue improvements) will proceed once construction funding is received. This includes County legal counsel review time.
Construction Bidding	Timing provides for actual bidding activities, including bid advertisement, receipt and evaluation of bids, recommendation to the Board of Supervisors and approval to award construction contract.
Construction	Timing is based on construction of similar size and type of projects

Table 3-6: Project Timetable																					
Project Task	2017			2018												2019					
	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
Conduct Community Outreach																					
Finalize Environmental Documents																					
Conduct Proposition 218 Election [1]																					
Apply for Construction Funding																					
Prepare Final Construction Documents [1]																					
Construction Bidding																					
Construction [2]																					
Notes:																					
[1] Proposition 218 Election and Final Construction Documents can commence as soon as construction funding is received.																					
[2] Construction would extend beyond the limits of this schedule and is therefore not shown in its totality.																					

3.6 Permits Required for Implementation

The project will require permitting during the planning stage as well as construction permits. Table 3-7 lists the permits that will be required and what phase of the project they will be required during; this list may not be exhaustive depending on the timing of construction and permit requirements at that time.

Table 3-7: Selected Alternative Required Permitting		
Permit Name	Approving Agency	Project Phase
Extraterritorial Service Agreement	City of Tulare	Design
Railroad Crossing Agreement	Union Pacific Railroad	Design
CEQA/NEPA	County of Tulare	Design
Indirect Source Review	San Joaquin Valley Air Pollution Control District	Design
Railroad Crossing Agreement	Union Pacific Railroad	Design
Common Use Agreement	Tulare Irrigation District	Design
Report of Waste Discharge	Regional Water Quality Control Board	Design
Encroachment Permit	County of Tulare	Construction
Storm Water Pollution Prevention Plan	SWRCB	Construction
Dust Control Plan	SJVAPCD	Construction

3.7 Key Issues

The key issues for the project are discussed below.

- *The Matheny Tract Community Acceptance*
 - The County has been conducted community outreach; however, additional community outreach will be conducted to ensure the community residents support the selected solution.
 - The property owners will be required to execute an agreement with the City and complete wastewater account setup prior to being connected to the proposed wastewater collection system.
- *City of Tulare Acceptance*
 - A letter of commitment backed by a City Council Resolution will be required prior to receiving funding and an agreement with each property owner will be required prior to approving construction of the improvements.
 - An agreement between the City and County will be required, detailing all the terms and conditions of sewer service provision, including the Paige Avenue Sewer Trunk Main improvements.
 - The Matheny Tract will not be annexed into the City through this project.
- *Obtain Construction Funding*
 - The selected alternative has a Matheny Tract Proportional capital improvement cost ranging between \$14.1M and 14.3M including Contingency, Engineering and Construction Services

- (Inspection, Staking, Construction Engineer, etc.). The total capital improvement cost of the entire project ranges from \$20.8M to \$26.2M. This cost is further detailed in the Appendix.
- The SWRCB's Clean Water State Revolving Funding (CWSRF) financial assistance program for construction projects can provide a 100% grant, up to \$4M, for projects benefitting an SDAC with a wastewater rate between 1.5% and 2% of the community's MHI. The SWRCB may increase grant maximum with Board approval.
 - A loan could be required on the remaining project costs. Terms would include repayment over 30 years at an interest rate of half the general obligation rate. If loan repayment is required it would necessitate creation of a Special Assessment District or a rate structure set by the governing entity providing a special assessment for the Matheny Tract residences and businesses. The special assessment cost has not been calculated due to uncertainty in amount of loan and interest rates. It is anticipated the County will seek full grant funding to avoid this assessment, necessitating special approval by the SWRCB.

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Appendix B: Engineer's Opinion of Probable Construction Cost for All Alternatives

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ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST**PRELIMINARY****MATHENY TRACT WASTEWATER STUDY****ALTERNATIVE NO. 1****ONSITE SEPTIC SYSTEMS WITH MAINTENANCE DISTRICT**

11/8/2022

ITEM NO.	QTY	BID ITEM DESCRIPTION	UNIT PRICE	SUBTOTAL
Construction Costs				
1	1	Mobilization, Demobilization, Bonds and Insurance	\$992,200 / LS	\$992,200
2	1	Fugitive Dust Control	\$49,600 / LS	\$49,600
3	1	Worker Protection	\$99,200 / LS	\$99,200
4	1	Prepare and Implement SWPPP	\$49,600 / LS	\$49,600
5	1	Permitting	\$20,000 / LS	\$20,000
6	1	Traffic Control	\$25,000 / LS	\$25,000
7	287	Construct New Septic Systems	\$49,000 / EA	\$14,063,000
8	280	Abandon Existing Septic Systems	\$15,000 / EA	\$4,200,000
9	14,350	4" Service Line From House to New Tank	\$100 / LF	\$1,435,000
10	1	Miscellaneous Facilities & Operations	\$100,000 / LS	\$100,000
Subtotal				\$21,033,600
Non-Construction Costs				
Contingency - 20%				\$4,206,700
Engineering & Construction Observation - 18%				\$3,786,000
Matheny Tract Project Capital Cost Total [1]				\$29,026,300

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST**PRELIMINARY****MATHENY TRACT WASTEWATER STUDY****ALTERNATIVE NO. 2A & 2B****WASTEWATER COLLECTION SYSTEM AND CONSOLIDATION WITH CITY OF TULARE**

11/8/2022

ITEM NO.	QTY	BID ITEM DESCRIPTION	UNIT PRICE	SUBTOTAL
Construction Costs				
1	1	Mobilization, Demobilization, Bonds and Insurance	\$630,800 / LS	\$630,800
2	1	Traffic Control	\$189,200 / LS	\$189,200
3	1	Fugitive Dust Control	\$31,500 / LS	\$31,500
4	1	Worker Protection	\$63,100 / LS	\$63,100
5	1	Prepare and Implement SWPPP	\$31,500 / LS	\$31,500
6	1	Permitting	\$15,000 / LS	\$15,000
7	21,600	8-Inch SDR-26 PVC Sewer Main	\$140 / LF	\$3,024,000
8	920	10-Inch SDR-26 PVC Sewer Main	\$160 / LF	\$147,200
9	3,100	4-Inch HDPE Sewer Force Main	\$148 / LF	\$458,800
10	75	48" Sewer Manhole	\$6,500 / EA	\$487,500
11	5	48" Sewer Drop Manhole	\$22,500 / EA	\$112,500
12	2	Air Release Valve	\$4,600 / EA	\$9,200
13	100	Bore & Jack 4" Carrier Pipe w/8" Casing - Pratt Street	\$1,000 / LF	\$100,000
14	180	Bore & Jack 8" Carrier Pipe w/16" Casing - (3 Locations - Wade, Addie, and Beacon Avenues)	\$1,200 / LF	\$216,000
15	1	Lift Station	\$263,600 / EA	\$263,600
16	1	Electrical Controls and Lighting	\$250,000 / EA	\$250,000
17	285	4" Sewer Service with Onsite Service Line	\$5,100 / EA	\$1,453,500
18	2	6" Sewer Service with Onsite Service Line	\$6,500 / EA	\$13,000
19	280	Abandon Existing Septic Systems	\$15,000 / EA	\$4,200,000
20	287	Temporary Trench Resurfacing (Services)	\$100 / EA	\$28,700
21	287	Permanent Trench Resurfacing (Services)	\$600 / EA	\$172,200
22	25,620	Temporary Trench Resurfacing (Mains)	\$15 / LF	\$384,300
23	25,620	Permanent Trench Resurfacing (Mains)	\$50 / LF	\$1,281,000
24	1	Miscellaneous Facilities & Operations	\$100,000 / LS	\$100,000
Subtotal				\$13,562,600
Non-Construction Costs				
Capacity & Connection Fees (287 services @ \$5980 each)				\$1,716,260
Contingency (20%)				\$2,712,500
Engineering & Construction Observation (18%)				\$2,441,300
Matheny Tract Project Capital Cost Total [1]				\$20,432,660
Paige Avenue Infrastructure Alternatives			Alternative Total Cost	Matheny Share
27-inch RCP Sewer Trunk Main [2]			\$9,471,900	4.5%
42-inch RCP Sewer Trunk Main [2]			\$16,762,700	4.5%

Notes:

[1] The Matheny Tract Project Capital Cost Total includes all improvements up to but not including the Paige Avenue improvements.

Based on the Paige Avenue Alternative selected, the total project cost varies.

[2] Paige Avenue infrastructure alternatives costs taken from Capacity Analysis, Table 14.

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST**PRELIMINARY****MATHENY TRACT WASTEWATER STUDY****ALTERNATIVE NO. 2C****WASTEWATER COLLECTION SYSTEM AND CONSOLIDATION WITH CITY OF TULARE**

11/8/2022

ITEM NO.	QTY	BID ITEM DESCRIPTION	UNIT PRICE	SUBTOTAL
Construction Costs				
1	1	Mobilization, Demobilization, Bonds and Insurance	\$711,000 / LS	\$711,000
2	1	Traffic Control	\$213,300 / LS	\$213,300
3	1	Fugitive Dust Control	\$35,600 / LS	\$35,600
4	1	Worker Protection	\$71,100 / LS	\$71,100
5	1	Prepare and Implement SWPPP	\$35,600 / LS	\$35,600
6	1	Permitting	\$14,200 / LS	\$14,200
7	21,600	8-Inch SDR-26 PVC Sewer Main	\$140 / LF	\$3,024,000
8	920	10-Inch SDR-26 PVC Sewer Main	\$160 / LF	\$147,200
9	10,700	4-Inch HDPE Sewer Force Main	\$148 / LF	\$1,583,600
10	75	48" Sewer Manhole	\$6,500 / EA	\$487,500
11	5	48" Sewer Drop Manhole	\$22,500 / EA	\$112,500
12	2	Air Release Valve	\$4,600 / EA	\$9,200
13	100	Bore & Jack 4" Carrier Pipe w/8" Casing - Pratt Street	\$1,000 / LF	\$100,000
14	180	Bore & Jack 8" Carrier Pipe w/16" Casing - (3 Locations - Wade, Addie, and Beacon Avenues)	\$1,200 / LF	\$216,000
15	1	Lift Station	\$263,600 / EA	\$263,600
16	1	Electrical Controls and Lighting	\$250,000 / EA	\$250,000
17	285	4" Sewer Service with Onsite Service Line	\$5,100 / EA	\$1,453,500
18	2	6" Sewer Service with Onsite Service Line	\$6,500 / EA	\$13,000
19	280	Abandon Existing Septic Systems	\$15,000 / LF	\$4,200,000
20	287	Temporary Trench Resurfacing (Services)	\$100 / EA	\$28,700
21	287	Permanent Trench Resurfacing (Services)	\$600 / EA	\$172,200
22	33,220	Temporary Trench Resurfacing (Mains)	\$15 / LF	\$498,300
23	33,220	Permanent Trench Resurfacing (Mains)	\$50 / LF	\$1,661,000
24	1	Miscellaneous Facilities & Operations	\$100,000 / LS	\$100,000
Subtotal				\$15,301,100
Non-Construction Costs				
Capacity & Connection Fees (287 services @ \$5980 each)				\$1,716,260
Temporary and Permanent Easement Cost				\$11,160
Contingency (20%)				\$3,060,200
Engineering & Construction Observation (18%)				\$2,754,200
Matheny Tract Project Capital Cost Total				\$22,842,920

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST**PRELIMINARY****MATHENY TRACT WASTEWATER STUDY****ALTERNATIVE NO. 3****WASTEWATER COLLECTION SYSTEM AND LOCAL WWTP**

11/8/2022

ITEM NO.	QTY	BID ITEM DESCRIPTION	UNIT PRICE	SUBTOTAL
Collection System				
1	1	Mobilization, Demobilization, Bonds and Insurance	\$765,800 / LS	\$765,800
2	1	Traffic Control	\$229,700 / LS	\$229,700
3	1	Fugitive Dust Control	\$38,300 / LS	\$38,300
4	1	Worker Protection	\$76,600 / LS	\$76,600
5	1	Prepare and Implement SWPPP	\$38,300 / LS	\$38,300
6	1	Permitting	\$100,000 / LS	\$100,000
7	1	Miscellaneous Facilities & Operations	\$100,000 / LS	\$100,000
8	21,600	8-Inch SDR-26 PVC Sewer Main	\$140 / LF	\$3,024,000
9	920	10-Inch SDR-26 PVC Sewer Main	\$160 / LF	\$147,200
10	75	48" Sewer Manhole	\$6,500 / EA	\$487,500
11	5	48" Sewer Drop Manhole	\$22,500 / EA	\$112,500
12	2	Air Release Valve	\$4,600 / EA	\$9,200
13	180	Bore & Jack 8" Carrier Pipe w/16" Casing - (3 Locations - Wade, Addie, and Beacon Avenues)	\$1,200 / LF	\$216,000
14	1	Electrical Controls and Lighting	\$250,000 / EA	\$250,000
15	285	4" Sewer Service with Onsite Service Line	\$5,100 / EA	\$1,453,500
16	2	6" Sewer Service with Onsite Service Line	\$6,500 / EA	\$13,000
17	280	Abandon Existing Septic Systems	\$15,000 / EA	\$4,200,000
18	287	Temporary Trench Resurfacing (Services)	\$100 / EA	\$28,700
19	287	Permanent Trench Resurfacing (Services)	\$600 / EA	\$172,200
20	22,520	Temporary Trench Resurfacing (Mains)	\$15 / EA	\$337,800
21	22,520	Permanent Trench Resurfacing (Mains)	\$50 / EA	\$1,126,000
Subtotal Collection System				\$12,926,300
Treatment & Disposal				
22	1	Influent Lift Station & Meter	\$49,300 / LS	\$49,300
23	1	Headworks Screen & Grit Removal	\$24,900 / LS	\$24,900
24	1	Headworks Structure	\$42,900 / LS	\$42,900
25	1	Equipment Package (Biolac)	\$550,700 / LS	\$550,700
26	200	Aeration Basin Concrete	\$1,300 / CY	\$260,000
27	1,400	Aeration Basin Excavation	\$20 / DY	\$28,000
28	250	Clarifier Concrete	\$1,300 / CY	\$325,000
29	480	Clarifier Excavation	\$20 / CY	\$9,600
30	1	Yard Piping	\$73,600 / LS	\$73,600
31	400	Blower & Generator Building	\$130 / SF	\$52,000
32	600	Office/Lab	\$310 / SF	\$186,000
33	1	Sludge Drying Beds	\$49,300 / LS	\$49,300
34	12,000	Site Grading and Finish	\$24 / SF	\$288,000

ITEM NO.	QTY	BID ITEM DESCRIPTION	UNIT PRICE	SUBTOTAL
35	3	Groundwater Monitoring Wells	\$18,500 / EA	\$55,500
36	1	Electrical and Instrumentation	\$202,900 / LS	\$202,900
37	1	Backup Generator	\$250,000 / LS	\$250,000
38	64,500	Evaporation - Percolation Ponds	\$20 / CY	\$1,290,000
Subtotal Treatment & Disposal				\$3,737,700
Construction Total				\$16,664,000
Non-Construction Costs				
Land Acquisition Costs				\$750,000
Contingency - 20%				\$3,482,800
Engineering & Construction Observation - 18%				\$2,999,500
Matheny Tract Project Capital Cost Total [1]				\$23,896,300

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Appendix C: Potential Easement Appraisal (Excerpt)

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SUMMARY OF VALUE CONCLUSIONS

The estimate of fair market value plus net severance damages for the subject is summarized below:

1 – Value of Larger Parcel Before Taking			\$2,030,875
2 – Value of Part Taken as Part of Whole:			
Value of Permanent Pipeline Easement		\$8,113	
Value of Temporary Easement	+	\$1,150	
			– \$9,263
3 – Value of Remainder as Part of Whole			= \$2,021,612
4 – Value of Remainder Without Benefits:			
Underlying Fee in Pipeline Easement		\$8,112	
Underlying Fee in Temporary Easement		\$30,475	
Unencumbered Land Value	–	\$1,983,025	
			– \$2,021,612
5 – Severance Damages:			
Step Three Value		\$2,021,612	
Step Four Value	–	\$2,021,612	
Total Severance Damages			= \$0
6 – Value of Remainder With Benefits:			
Property Value		\$2,021,612	
Benefits	+	\$0	
			\$2,021,612
7 – Benefits to the Remainder:			
Step Six Value		\$2,021,612	
Step Four Value	–	\$2,021,612	
			\$0
8 – Net Damages to the Remainder:			
Step Five Value		\$0	
Step Seven Value	–	\$0	
			\$0
9 – Estimate of Just Compensation:			
Step Two Value		\$9,263	
Step Eight Value	+	\$0	
Final Total Value Opinion			\$9,263
	Rounded to		<u>\$9,300</u>

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ATTACHMENT “E”

Mitigation Monitoring and Reporting Program

MITIGATION MONITORING AND REPORTING PROGRAM

This Draft Mitigation Monitoring and Reporting Program (MMRP) has been prepared in compliance with State law and based upon the findings of the Draft Mitigated Negative Declaration for the Matheny Tract Wastewater Collection System and Pipeline Inter-tie Project.

The CEQA Public Resources Code Section 21081.6 requires the Lead Agency decision making body is going to approve a project and certify the EIR that it also adopt a reporting or monitoring program for those measures recommended to mitigate or avoid significant/adverse effects of the environment identified in the EIR. The law states that the reporting or monitoring program shall be designed to ensure compliance during project implementation. The MMRP is to contain the following elements:

- **Action and Procedure.** The mitigation measures are recorded with the action and procedure necessary to ensure compliance. In some instances, one action may be used to verify implementation of several mitigation measures.
- **Compliance and Verification.** A procedure for compliance and verification has been outlined for each action necessary. This procedure designates who will take action, what action will be taken and when and by whom and compliance will be monitored and reported and to whom it will be report. As necessary the reporting should indicate any follow-up actions that might be necessary if the reporting notes the impact has not been mitigated.
- **Flexibility.** The program has been designed to be flexible. As monitoring progresses, changes to compliance procedures may be necessary based upon the recommendations by those responsible for the MMRP. As changes are made, new monitoring compliance procedures and records will be developed and incorporated into the program

The following presents the Mitigation Measures identified for the proposed Project in this MND. Each Mitigation Measure is identified by the impact number. For example, 4-1 would be the first Mitigation Measure identified in the Biological analysis of the MND.

The first column of Table identifies the Mitigation Measure. The second column, entitled “When Monitoring is to Occur,” identifies the time the Mitigation Measure should be initiated. The third column, “Frequency of Monitoring,” identifies the frequency of the monitoring that should take place to assure the mitigation is being or has been implemented to achieve the desired outcome or performance standard... The fourth column, “Agency Responsible for Monitoring,” names the party ultimately responsible for ensuring that the Mitigation Measure is implemented. The last

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columns will be used by the County of Tulare (or Wastewater System Governing Entity once formed) to ensure that individual Mitigation Measures have been complied with and monitored.

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Mitigation Monitoring and Reporting Program							
Mitigation Measure	Monitoring Timing / Frequency	Action Indicating Compliance	Monitoring Agency	Person Responsible for Monitoring / Reporting	Verification of Compliance		
					Initials	Date	Remarks
BIOLOGICAL RESOURCES: <i>Based on the disturbed condition of the majority of the proposed Project area, reasonable inferences were made that it was unlikely that any of the sensitive species listed would actually occur onsite. However, this Project does not preclude the opportunity for special status species from accessing or traveling through the site prior or post construction phases. Historically, there have been records of special status species in the vicinity of the proposed Alternatives. Within the context of CEQA, potential impacts could result in significant impacts; however, implementation of Mitigation Measures 4-1 through 4-7 would reduce potential impacts to Less Than Significant.</i>							
Plant Species							
Impact: Four (4) special status species are known to occur in the vicinity of the proposed Project action area. As shown in the CNDDDB results (Appendix “B”), the presence of Swainson’s hawk was indicated within 10 miles of the site in the last 10 years. No evidence is available to suggest that other raptor species are within the vicinity of the Project site (for example, through CNDDDB information and existing uses; such as residential uses, commercial uses, roadways, etc., and the absence of suitable trees for nesting).		.					
Bio 4-1 Avoidance: Special Status plant species: No impacts to Special Status plant species are anticipated, however, as a measure to ensure that no species occur in these areas prior to construction, if either Alternatives 2 or 3 are selected, pre-construction surveys shall be required before construction. Surveys should be timed to coincide with flowering periods for species that could occur (March-May).	Prior to start of construction.	Once within 30 days of construction, unless pre-construction survey results in new recommendation for further study and mitigation. Then mitigation should occur as recommended following coordination	Governing Entity established for operating the Wastewater System Services.	Field survey by a qualified Biologist.			

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Mitigation Monitoring and Reporting Program							
Mitigation Measure	Monitoring Timing / Frequency	Action Indicating Compliance	Monitoring Agency	Person Responsible for Monitoring / Reporting	Verification of Compliance		
					Initials	Date	Remarks
		with Governing Entity.					
Bio 4-2., Minimization (Special Status Plant Species): Because no impacts to Special Status plant species are anticipated, no minimization is required, but see Mitigation Measure 3.4-1 as well. If pre-construction surveys detect special status plant species, transplantation, project modification and/or compensation shall be employed.	Prior to construction-related activities.	As needed if special status species are detected.	Governing Entity established for operating the Wastewater System Services.	Qualified biologist.			
Bio 4-3. Compensation (Special Status plant species): No compensation is anticipated as part of the Alternatives. If Special Status plant species are detected during pre-construction surveys in the action areas or impact footprints, compensation for impacts shall be required to compensate for impacts.	Prior to construction-related activities.	As needed if special status species are detected.	Governing Entity established for operating the Wastewater System Services.	Qualified biologist working with USFS and/or CFW			
Bio 4-4. Monitoring (Special Status plant species): No monitoring is required. If pre-construction surveys detect plant species along the alignments/action areas, or impact footprints, but can be avoided, construction monitoring shall be required to ensure avoidance of those sensitive areas.	During construction-related activities.	On-going during construction-related activities	Governing Entity established for operating the Wastewater System Services.	Construction manager with oversight by qualified biologist.			
Animal Species							
Bio 4-5. Avoidance (Special Status Animal Species): Impacts to all kit fox dens, potential raptor nests and other animals located along the alignments shall be avoided.	Prior to start of construction.	Once within 30 days of construction, unless pre-construction survey results in new recommendation for further study and	Governing Entity established for operating the Wastewater System Services.	Field survey by a qualified Biologist.			

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Mitigation Monitoring and Reporting Program							
Mitigation Measure	Monitoring Timing / Frequency	Action Indicating Compliance	Monitoring Agency	Person Responsible for Monitoring / Reporting	Verification of Compliance		
					Initials	Date	Remarks
		mitigation. Then mitigation should occur as recommended following coordination with Governing Entity.					
Bio 4-6. Minimization (Special Status Animal Species): Minimization measures assume that some level of impact will occur (that some level of disturbance occurs). Under this approach, the Agency shall consult with DFW/USFWS. As the Agency initiates this process they can offer to perform the following measures as part of their permitting process with the agencies in order to help minimize impacts to the kit foxes, raptors and other species: <ul style="list-style-type: none"> Revegetate disturbed areas with trees and grass from on the site or adjacent areas; Conduct employee education programs to inform workers about sensitive biological resources they may encounter and what they should do to minimize potential impacts. 	Implemented only if sensitive species are encountered.						
4-7 Monitoring (Special Status Animal Species): If pre-construction surveys detect listed or protected species along any of the project alternatives, while construction occurs, a biologist will need to be on-site to educate workers, monitor compliance, [ensure implementation of] best management practices	During construction.	As needed during construction.	Governing Entity.	Determination by qualified biologist.			

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Mitigation Monitoring and Reporting Program							
Mitigation Measure	Monitoring Timing / Frequency	Action Indicating Compliance	Monitoring Agency	Person Responsible for Monitoring / Reporting	Verification of Compliance		
					Initials	Date	Remarks
<p>and to identify and protect natural resources, including Special Status Species. The monitor will be responsible for ensuring that appropriate measures are taken to prevent disturbance of core avoidance areas. Any unauthorized take of Special Status species will be immediately reported to DFW by the monitor. The monitor will also notify the Project Coordinator who will stop work until corrective measures are implemented.</p> <p>The designated Project Coordinator and the designated monitor for this Project will need to be established if Agency decides to pursue mitigation and monitoring.</p>							
CULTURAL RESOURCES AND GEOLOGY/SOILS:							
Cul 5-1 - In the event that historical, archaeological or paleontological resources are discovered during site excavation, the County shall require that grading and construction work on the Preferred/ Proposed Project site be immediately suspended until the significance of the features can be determined by a qualified archaeologist or paleontologist. In this event, the specialists shall provide recommendations for measures necessary to protect any site determined to contain or constitute an historical resource, a unique archaeological resource, or a unique paleontological resource or to undertake data recover, excavation analysis, and curation	During Construction	Daily or as needed throughout the construction period if suspicious resources are discovered	Governing Entity established for operating the Wastewater System Services via field evaluation of the resource finds by a qualified archaeologist	A qualified archaeologist shall document the results of field evaluation and shall recommend further actions that shall be taken to mitigate for unique resource or human remains found,			

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Mitigation Monitoring and Reporting Program							
Mitigation Measure	Monitoring Timing / Frequency	Action Indicating Compliance	Monitoring Agency	Person Responsible for Monitoring / Reporting	Verification of Compliance		
					Initials	Date	Remarks
of archaeological or paleontological materials. County staff shall consider such recommendations and implement them where they are feasible in light of Project design as previously approved by the County.				consistent with all applicable laws including CEQA.			
Cul 5-2 - The property owner shall avoid and minimize impacts to paleontological resources. If a potentially significant paleontological resource is encountered during ground disturbing activities, all construction within a 100-foot radius of the find shall immediately cease until a qualified paleontologist determines whether the resources requires further study. The project proponent shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. The paleontologist shall notify the Tulare County Resource Management Agency and the project proponent of the procedures that must be followed before construction is allowed to resume at the location of the find. If the find is determined to be significant and the Tulare County Resource Management Agency determines avoidance is not feasible, the paleontologist shall design and implement a data recovery plan consistent with applicable standards. The plan shall be submitted to the Tulare County Resource Management Agency for review and approval. Upon approval, the plan shall be incorporated	During Construction	Daily or as needed throughout the construction period if suspicious resources are discovered	Governing Entity established for operating the Wastewater System Services via field evaluation of the resource finds by a qualified archaeologist	A qualified archaeologist shall document the results of field evaluation and shall recommend further actions that shall be taken to mitigate for unique resource or human remains found, consistent with all applicable laws including CEQA.			

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Mitigation Monitoring and Reporting Program							
Mitigation Measure	Monitoring Timing / Frequency	Action Indicating Compliance	Monitoring Agency	Person Responsible for Monitoring / Reporting	Verification of Compliance		
					Initials	Date	Remarks
into the project.							
TRANSPORTATION/TRAFFIC							
Trans 3.17-1 - Fences, barriers, lights, flagging, guards, and signs will be installed as determined appropriate by the public agency having jurisdiction to give adequate warning to the public of the construction and of any potentially dangerous condition to be encountered as a result thereof.	During Construction activities	On-going during construction-related activities	County of Tulare / Governing Entity established for constructing and operating the Wastewater System Services via specific contractual requirements and via on-going review of records kept by contractor to document compliance	Maintenance by contractor of documentary evidence of compliance. Such records to be provided to County of Tulare / Governing Entity upon request			
TRIBAL CULTURAL RESOURCES							
TCR 18-1 – During construction-related activities, a Tribal Representative shall evaluate the proposed activity area(s) to determine the presence or absence of Tribal resources. Although surface Tribal resources would not likely occur, there is a potential that subsurface discovery of Tribal resources could occur. The Tribal representative shall determine the specific course of action in the event of discovery of Tribal resources including but not limited to	Prior to and during construction-related activities.	On-going as deemed necessary by Tribal representative.	County of Tulare, Governing Entity established for constructing and operating the Wastewater System Services.	County of Tulare / Governing Entity			

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Mitigation Monitoring and Reporting Program							
Mitigation Measure	Monitoring Timing / Frequency	Action Indicating Compliance	Monitoring Agency	Person Responsible for Monitoring / Reporting	Verification of Compliance		
					Initials	Date	Remarks
cessation of work, collection of resource(s), curation/removal/relocation/etc. of resource(s), designation of areas that are not to be disturbed, and re-initiation of work.							
TCR 18-2 - In the event that historical, archaeological or paleontological resources are discovered during site excavation, the County shall require that grading and construction work on the Project site be immediately suspended until the significance of the features can be determined by a qualified archaeologist or paleontologist. In this event, the property owner shall retain a qualified archaeologist / paleontologist to provide recommendations for measures necessary to protect any site determined to contain or constitute an historical resource, a unique archaeological resource, or a unique paleontological resource or to undertake data recover, excavation analysis, and curation of archaeological or paleontological materials. County staff shall consider such recommendations and implement them where they are feasible in light of Project design as previously approved by the County.	During Construction activities	On-going during construction-related activities	County of Tulare / Contractor	County of Tulare / NAHC / Local Tribe			
TCR – 18-3 Consistent with Section 7050.5 of the California Health and Safety Code and (CEQA Guidelines) Section 15064.5, if human remains of Native American origin are discovered during Project construction, it is necessary to comply with State laws relating to	During Construction activities	On-going during construction-related activities	County of Tulare / Contractor	County of Tulare / NAHC / Local Tribe			

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Mitigation Monitoring and Reporting Program							
Mitigation Measure	Monitoring Timing / Frequency	Action Indicating Compliance	Monitoring Agency	Person Responsible for Monitoring / Reporting	Verification of Compliance		
					Initials	Date	Remarks
<p>the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (Public Resources Code Sec. 5097). In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken:</p> <ol style="list-style-type: none"> 1. There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until: <ol style="list-style-type: none"> a. The Tulare County Coroner/Sheriff must be contacted to determine that no investigation of the cause of death is required; and b. If the coroner determines the remains to be Native American: <ol style="list-style-type: none"> i. The coroner shall contact the Native American Heritage Commission within 24 hours. ii. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American. iii. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing 							

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Mitigation Monitoring and Reporting Program							
Mitigation Measure	Monitoring Timing / Frequency	Action Indicating Compliance	Monitoring Agency	Person Responsible for Monitoring / Reporting	Verification of Compliance		
					Initials	Date	Remarks
<p>of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code section 5097.98, or</p> <p>2. Where the following conditions occur, the landowner or his authorized representative shall reburial the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.</p> <p>a. The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.</p> <p>b. The descendant fails to make a recommendation; or</p> <p>c. The landowner or his authorized representative rejects the recommendation of the descendent.</p>							