CITY OF Newman CALIFORNIA

Newman Community Conservation Area Master Plan

Initial Study and Proposed Mitigated Negative Declaration

March 2021

APPENDIX A: NCCA Master Plan

Redtail Consulting
Environment & Community

Cover photograph: courtesy of Vollmar Natural Lands Consulting

CITY OF Newman CALIFORNIA

Newman Community Conservation Area
Master Plan

Third Administrative Draft
February 2021

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Cover image aerial photograph source: GoogleEarth (imagery date 07/18/2019, downloaded 03/16/2020)

Newman Community Conservation Area

Master Plan

Third Administrative Draft

February 2021

CITY OF Newman CALIFORNIA

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Contents

Chapters

Tables

Figures

Attachments *[To be appended as they are developed.]*

Chapter 1

Introduction

Purpose and Scope of this Master Plan

This Master Plan was developed to guide project implementation, operations, and maintenance at the Newman Community Conservation Area (NCCA), which will encompass three separate but related habitat restoration and creation projects, a multi-use trail system, and other amenities that will provide public access, nature viewing, and nature- and conservation-oriented education benefits to the community. This Master Plan lays out the City of Newman's (City's) vision for the NCCA and provides a framework to guide project planning, construction, operations, and maintenance. It also includes a strategy for immediate and longer-term operational funding for the NCCA. As such, the Master Plan expands and updates the vision described in the City's previous Planning Framework for the NCCA (City of Newman 2020a).

Overview of Plan Vision

The NCCA is planned to occupy two parcels: a 78-acre parcel located at the southeast corner of Canal School Road and Inyo Avenue and a nearby 24-acre parcel located northeast of Brazo Road. Together, the two parcels make up the Plan Area (Figure 1-1). The following projects are envisioned within the Plan Area (Figure 1-2):

- in the northwest portion of the 78-acre parcel, the Newman Environmental Wetland System (NEWS project), an approximately 21-acre constructed wetland complex that will treat stormwater and dry season runoff from the City and surrounding agricultural lands prior to discharge to the Newman Wasteway[1] and, ultimately, the San Joaquin River
- in the central and east portions of the 78-acre parcel, extending to the 24-acre parcel, an approximately 11-acre seasonal wetland, riparian, and grassland restoration project (wetland project) emphasizing natural sequestration of greenhouse gases (GHGs)
- in the southwest portion of the 78-acre parcel, the Miller Ditch Treatment Wetland (MDTW, MDTW project) an additional ~16-acre constructed wetland creation project that is being planned in

[1] The Newman Wasteway (Figure 1-1) was constructed as part of the federal Central Valley Project, to convey emergency releases from the Delta-Mendota Canal to the San Joaquin River (for more information, see U.S. Bureau of Reclamation and California Department of Water Resources 2010).

collaboration with the University of California, Merced (UC Merced) Environmental Systems Graduate Group to treat water from the Miller Ditch, with a focus on removing agricultural pollutants

- in the southeasternmost portion of the 78-acre parcel, community-oriented recreational and educational facilities potentially including a community gathering plaza, outdoor classroom areas, and native plant, rainwise garden, and low-impact development demonstration areas, with an unpaved trail network and interpretive signage extending throughout the 78-acre parcel to enable appropriate public recreational access and tie all of the projects together (Newman Nature Park, Nature Park)

The projects are described in more detail in Chapter 4 (*Vision, Goals, & Objectives*). With these projects in place, the NCCA will offer a unique resource, the first of its kind in the region, combining environmental benefit with previously unavailable opportunities for public recreation and nature- and conservation-oriented education.

Relationship to Other Plans & Policies

This Master Plan was not developed in a vacuum. Like all California jurisdictions, the City engages in planning on many fronts and responds to multiple regulatory requirements. As a result, this Master Plan must dovetail into a matrix of other plans and policies that define the City's vision for the future and maintain it in compliance with legal mandates. The City also participates in, and operates in the context of, regional planning efforts. Key plans and policies that shaped this Master Plan, or will intersect with it in some way, are discussed in the following sections. They include

- the City's current General Plan
- the Water Quality Control Plan (Basin Plan) for the Sacramento and San Joaquin River basins
- the Irrigated Lands Regulatory Program
- the Pyrethroid Management Plan
- the Storm Drainage Master Plan
- the Urban Water Management Plan
- the regional Groundwater Sustainability Plan
- Waste Discharge Order R5-2018-0024
- the City's Parks and Recreation Master Plan
- the City's Non-Motorized Transportation Plan

General Plan

General Plan Overview

The General Plan (City of Newman 2007) is the City's fundamental planning document, capturing the community's values and aspirations for the shared environment in coming decades. It begins with a *Vision Statement* that establishes a sense of purpose and mission and sets the tone for the specific direction the General Plan provides. Two components of the *Vision Statement* are particularly relevant to the NCCA and this Master Plan:

Map Source: *modified from* City of Newman 2007

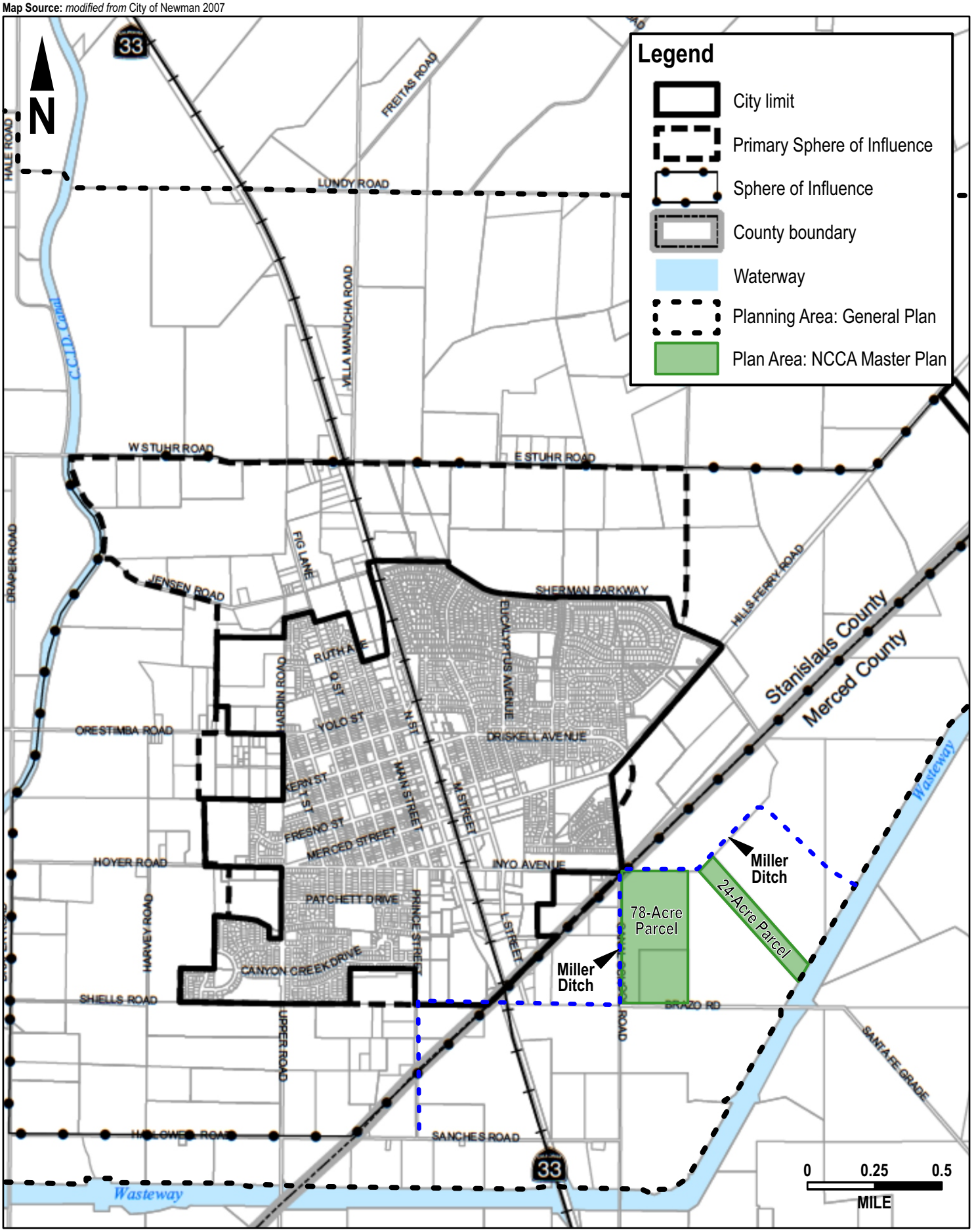

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Figure 1-1. Site Location and Plan Area Extent
Newman Community Conservation Area Master Plan
City of Newman

Aerial Photograph Source: GoogleEarth (imagery date 07/18/2019, downloaded 03/16/2020)

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Figure 1-2. Conceptual Site Layout Showing NCCA Project Footprints
Newman Community Conservation Area Master Plan
City of Newman

- *"There will be a range of activities available in Newman for all residents, including youth and seniors. Parks scattered throughout the city will provide…facilities that promote community gatherings. A network of pedestrian trails and bike paths will connect residents to parks…"* The NCCA will help to fulfill this vision by providing walking and bicycling opportunities as well as nature-oriented recreation such as nature viewing and birding. It will also offer nature- and conservation-oriented public education amenities, likely including outdoor "classroom" areas and native plant and rainwise garden demonstrations as well as a public gathering plaza that will be available for City and private events. Facilities will be ADA-compliant and accessible to all, and interpretive signage will be provided in both English and Spanish to serve the City's diverse population

- *"Newman will provide a variety of employment options for local residents, from entry-level to more advanced positions in the trade, office, and higher-paying retail industries."* Construction, operation, and maintenance of NCCA facilities will require labor and staffing. Some of this will be covered by existing City staff, but the NCCA is also expected to generate new employment and volunteer opportunities both during construction and over the long term, and the City will build on existing dialogue with local job training programs, schools, and non-profit organizations to help fill this need with maximum benefit to the local community, as Chapters 5 and 7 discuss in more detail

Following the *Vision Statement*, the core of the General Plan consists of seven topical chapters or "elements" that satisfy the State of California's legal requirements for local jurisdiction general plans (California Government Code §65302) and are consistent with recommendations of the Governor's Office of Planning and Research (2017):

- Land Use
- Transportation and Circulation
- Public Facilities and Services
- Recreational and Cultural Resources
- Natural Resources
- Health and Safety
- Community Design

Each General Plan element identifies goals, policies, and actions that

- express policy direction with regard to the City's physical, social, economic, cultural, and environmental character
- provide a comprehensive guide for decisions about land use, community character, circulation, open space, the environment, and factors related to public health and safety.
- serve as the City's "constitution" for land use and community development, providing the legal foundation for all zoning, subdivision, and public facilities ordinances, decisions, and projects

Goals are descriptions of general desired results the City seeks to achieve. *Policies* are specific statements intended to guide decision making toward the achievement of goals. The *actions* identified under some policies represent specific programs, measures, procedures, and techniques the City has identified to support the implementation of policies and achievement of goals (City of Newman 2007).

Relationship to this Plan

The table below identifies General Plan goals and policies relevant to this Master Plan and describes the Plan's role in implementing them. Like all of the City's "topic-specific" plan documents, this Master Plan is ultimately guided by the General Plan and can be viewed as a step-down plan from the General Plan.

Table 1-1. Relationship between NCCA Master Plan and General Plan Goals and Policies

Goal	Policy	Relationship to NCCA and Master Plan
Transportation and Circulation Element		
TC-7: Provide a bicycle and pedestrian network to encourage bicycling and walking for both transportation and recreation	TC-7.1: The City shall create and maintain a safe and convenient system of pedestrian and bicycle facilities that encourages walking or bicycling as an alternative to driving. These routes should directly link residential neighborhoods, parks, schools, downtown, neighborhood shopping centers, public facilities, and employment centers	Located at the southeast corner of Canal School Road and Inyo Avenue, the 78-acre parcel that will form the core of the NCCA is adjacent to the Class I separated bike path planned to extend from the City itself south along Canal School Road, continuing south of Brazo Road as a Class II bike lane. The Plan Area would thus be accessible from both north and south by non-motorized traffic and is planned as offering a destination for recreational riders of all ages. This Master Plan also provides for a network of multi-use trails within the 78-acre parcel, to encourage bicycling and walking within the Plan Area itself
	TC-7.2: The City shall promote development and street patterns that encourage walking, bicycling and other forms of non-motorist transportation	
	TC7.7: The City shall require inclusion of bicycle parking facilities at all new major public facilities	This Master Plan provides for bicycle parking to accommodate visitors accessing the NCCA via bike paths
Public Facilities and Services Element		
PFS-2: Promote efficiency, convenience and complementary relationships in the siting of public facilities	PFS-2.4: The City shall promote the selective clustering of public and quasi-public facilities such as…parks…and community activity centers	The NCCA will support multiple separate but interrelated projects that, when completed, will occupy the entirety of the 78-acre parcel and a substantial portion of the nearby 24-acre parcel, taking maximum advantage of the available acreage to provide complementary nature- and environmentally oriented improvements
PFS-3: Maintain an adequate level of service in the City's water system to meet the needs of existing and future development	PFS-3.10: The City shall require the use of drought-tolerant plant species and drip irrigation systems in the landscaping of new public and private open space areas, common areas, and parks…	This Master Plan requires all plantings to be native species suitable to their locations within the various NCCA projects. Hand watering will likely be provided during the vegetation establishment period for each project, but irrigation is not expected to be necessary over the long term, except in the event of prolonged drought. Drip irrigation or other water-efficient irrigation using City water may be provided for the demonstration garden areas and landscaping but would use small volumes of water well within City supply capacity
PFS-5: Maintain an adequate level of service in the City's storm drainage system to accommodate runoff from existing and future development and to prevent property damage due to flooding	PFS-5.2: Future drainage system discharges shall comply with applicable State and federal pollutant discharge requirements	Both the NEWS project and the MDTW project specifically focus on water treatment via natural wetland/marshland processes and will contribute directly to the quality of stormwater and agricultural tailwater discharged to the Newman Wasteway and ultimately into the San Joaquin River, supporting

Goal	Policy	Relationship to NCCA and Master Plan
		long-term achievement of regional water quality goals
Recreation and Cultural Resources Element		
RCR-1: Establish and maintain a system of public parks, open spaces and recreation facilities suited to the needs of Newman residents	RCR-1.3: The City shall acquire land or options on land for future parks and recreation development at the earliest practical time…such land may be land banked for future park development	The City's purchase of the two parcels that comprise the NCCA occurred in direct response to this requirement for proactive forward planning of open space
	RCR-1.6: All parks shall be designed to be accessible to all ages and disabled persons	Facilities at the NCCA will be ADA-compliant and fully accessible, consistent with City policies for new City construction
	RCR-1.11: The City shall design and maintain park and recreation facilities to … preserve wildlife habitat where appropriate, and incorporate native plants …	Although the two parcels comprising the NCCA currently offer some value to wildlife, they are substantially disturbed by prior cultivation and current unseasonable irrigation and grazing use (Kevin Merk Associates 2019, Vollmar Natural Lands Consulting 2021), such that their current habitat value is limited. The vision for habitat restoration and creation defined in this Master Plan is expected to substantially increase the value of the habitat offered by the two parcels while providing for its long-term preservation
	RCR-1.14: The City shall pursue development of a citywide network of pedestrian and bicycle ways … The pedestrian and bicycle ways system should be designed to directly link residential neighborhoods, parks, schools, downtown, neighborhood shopping centers and employment centers	This Master Plan builds on and expands this vision by locating a nature-oriented destination facility immediately adjacent to planned bicycle paths and lanes, and by providing for a network of multi-use trails internal to the NCCA
RCR-6: Preserve and promote Newman's historic and cultural resources by developing heritage tourism and establishing the City as a regional tourist destination		This Master Plan envisions the NCCA, as the first facility of its kind in the region, as a destination attraction serving not only Newman residents, but visitors from throughout the surrounding area. As discussed in more detail in Chapter 4, interpretive signage will include information on the Newman area's Native American heritage developed in collaboration with local tribal representatives
Natural Resources Element		
NR-2: Protect water quality in the San Joaquin River and the area's groundwater	NR-2.4: The City shall support efforts at the county, regional and State levels to reduce runoff of toxic agricultural chemicals into the area's watercourses and groundwater basin NR-2.6: The City shall comply with the requirements of the National Pollut[ant] Discharge Elimination System (NPDES)	As identified above, the NEWS and MDTW projects focus on water treatment via natural wetland/marshland processes. They reflect the City's commitment to reducing pollutant levels in discharges to the Newman Wasteway and San Joaquin River and in infiltration to shallow groundwater

Goal	Policy	Relationship to NCCA and Master Plan
NR-3: Protect sensitive native vegetation and wildlife communities and habitat	NR-3.3: The City shall support and participate in local and regional attempts to restore and maintain viable habitat for endangered plant and animal species, and wetlands. To this end, the City shall work with surrounding jurisdictions and State and federal agencies in developing a *Habitat Management Plan*. Such a plan shall provide data for the Newman area on special-status species, including the Swainson's Hawk, and shall provide guidelines and standards for mitigation of impacts on special-status species	This Master Plan represents an important step in implementing Policy NR3.3, through extensive restoration and creation of wetland and associated habitats, and as Chapter 7 discusses, may offer future opportunities to dovetail with the City's HMP
	NR-3.7: Parks, drainage detention areas and other open space uses shall incorporate, where feasible, areas of native vegetation and wildlife habitat	As discussed above, this Master Plan limits plantings at the NCCA to suitable native vegetation, and emphasizes the restoration and creation of habitat
NR-4: Promote and improve air quality in Newman and the region	This Master Plan is not directly germane to any of the specific policies called out in the General Plan under Goal NR-4, but by providing for restoration, creation, and long-term preservation of up to 40 acres of wetland and associated habitat, it will be supportive of General Plan Goal NR-4. Additionally, as discussed further in Chapter 6, the wetland project is being partially funded through a California Department of Fish and Wildlife (DFW) Wetlands Restoration for Greenhouse Gas Reduction Program grant awarded in 2019 and will be required to meet greenhouse gas reduction targets under the terms of the grant	

Water Quality Control Plan (Basin Plan)

Clean Water Act Section 303 Requirements

Section 303 of the federal Clean Water Act (CWA) requires the each of the 50 states to

- develop water quality standards to protect public health and welfare and enhance water quality
- identify water bodies that fail to meet the applicable standard for one or more pollutants, and
- develop programs to limit pollutant input and assist in recovering the quality of waters that do not meet applicable standards

Water quality standards must reflect the designated uses of each water body, which may include public water supply, fish and wildlife propagation, recreation, agriculture, industry, and other purposes, in addition to navigation. New and revised standards are subject to review and approval by the federal Environmental Protection Agency (EPA).

Water bodies that fail to meet water quality standards for one or more pollutants are referred to as *impaired*, and the list of impaired waters published by each state is often called the Section 303[d] list, from the governing section of the CWA. For each impaired water body and pollutant, the states are charged with developing a total maximum daily load (TMDL) program. A TMDL represents the maximum amount of a given pollutant that a water body can accept while still meeting water quality standards; the purpose of a TMDL program is to identify the sources of the pollutant and ways to reduce inputs of that substance. Because TMDL development can be

costly and time-consuming, CWA Section 303 requires the states to prioritize the waters on their 303[d] lists so the highest-priority recovery needs can be addressed first.

Basin Planning in California

In California, the EPA delegates CWA Section 303 implementation authority to the State Water Resources Control Board (SWRCB), which in turn delegates substantial responsibility for water quality control to the Regional Water Quality Control Boards (RWQCBs). This includes:

- developing and adopting water quality control plans ("basin plans") for each region's major surface water bodies and groundwater basins. This includes formally identifying ("designating") the beneficial uses[2] of the region's principal waters and the water quality objectives (WQOs) needed to protect them. WQOs represent the level of water quality needed to ensure that a water body continues to meet its designated beneficial uses, and may be numerical (quantitative) or narrative (descriptive)
- implementing programs to achieve the identified WQOs, including action recommendations, implementation schedules, and follow-up measures to determine whether compliance is achieved. This includes but is not limited to implementation and oversight of TMDL programs
- regulating discharges of waste that may affect waters of the state, setting standards to maintain the condition of waters that receive waste discharges, and encouraging and assisting in waste disposal programs

Plan Area and Downstream Water Quality

The City is within the Central Valley Region (Region 5), overseen by the Central Valley RWQCB. Other than the San Joaquin River itself and its important tributary Orestimba Creek, the largest surface water bodies in the vicinity of the Plan Area are constructed features: the federal Delta-Mendota Canal and the Newman Wasteway, which was originally intended to transmit emergency releases from the Canal to the San Joaquin River but now also delivers stormwater and agricultural tailwater from the City and surrounding lands. Receiving waters downstream of the Plan Area include the Newman Wasteway, San Joaquin River, and Sacramento – San Joaquin Delta, including the Old River, a principal Delta distributary.

No beneficial uses are designated for the Newman Wasteway in the Basin Plan (Central Valley Regional Water Quality Control Board 2018a), although it carries a designation for municipal and domestic supply under the SWRCB's Sources of Drinking Water Policy (Walters pers. comm.). Additionally, discharge from the Newman Wasteway has the potential to affect beneficial uses in downstream receiving waters, particularly those closest to the outfall, where dilution effects are the least. These are shown in Table 1-2 at the top of the next page; additional downstream waters, including Suisun and San Francisco Bays, also have designated beneficial uses that are not discussed in detail here.

[2] *Beneficial uses* refers to the "resources, services, and qualities" California's surface waters and groundwater provide to the people of the state (e.g., San Francisco Bay Regional Water Quality Control Board 2020). A specific range of beneficial uses is laid out in Section 13050[f] of the California Water Code. As a result, a water body's designated beneficial uses do not necessarily represent all of its potential or "reasonable" uses; for instance, wastewater discharge may be a reasonable use but is not recognized as a beneficial use subject to official designation. Protection and enhancement of beneficial uses is a cornerstone of California water quality planning (Central Valley Regional Water Quality Control Board 2018a).

Table 1-2. Designated Beneficial Uses for Downstream Surface Waters

Water Body	Reach		Beneficial Uses
San Joaquin River	Sack Dam to Merced River*	**Existing:**	agricultural supply (irrigation, stock watering), industrial process supply, water contact recreation, canoeing and rafting, other noncontact recreation, warm freshwater habitat, warm and cold freshwater migration, warm freshwater spawning, wildlife habitat
		Potential:	municipal and domestic supply, cold freshwater spawning
	Merced River to Vernalis	**Existing:**	agricultural supply (irrigation, stock watering), industrial process supply, water contact recreation, canoeing and rafting, other noncontact recreation, warm freshwater habitat, warm and cold freshwater migration, warmwater spawning, wildlife habitat
		Potential:	municipal and domestic supply
Sacramento – San Joaquin Delta	N/A	**Existing:**	municipal and domestic supply, agricultural supply (irrigation, stock watering), industrial service supply, industrial process supply, hydropower generation, water contact recreation, other noncontact recreation, warm and cold freshwater habitat, warm and cold freshwater migration, warmwater spawning, wildlife habitat, navigation
		Potential:	N/A

* Newman Wasteway discharges to the San Joaquin River about 0.7 mile upstream of the Merced River confluence.

Source: Central Valley Regional Water Quality Control Board 2018a

In addition to the beneficial uses shown for surface waters in Table 1-2, all of Region 5's groundwaters are considered suitable (or potentially suitable) for municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply, unless they have been specifically designated otherwise by the RWQCB (Central Valley Regional Water Quality Control Board 2018a).

Table 1-3 shows CWA Section 303[d]-listed water quality impairments threatening designated beneficial uses in receiving waters immediately downstream of the Plan Area and identifies the impairments for which TMDL programs are in place. Additional impairments have been listed farther downstream in the Sacramento – San Joaquin Delta, Suisun Bay, and San Francisco Bay (State Water Resources Control Board 2016) but are not discussed in detail here since they have a less direct relationship to this Master Plan.

Table 1-3. Identified Water Quality Impairments Downstream of Plan Area

Water Body	Reach	Pollutant	TMDL Status
Newman Wasteway	*N/A*	Chlorpyrifos	*No TMDL in place at this time*
		DDE	*No TMDL in place at this time*
		Dissolved oxygen	*No TMDL in place at this time*
		Fecal indicator bacteria	*No TMDL in place at this time*
		Salinity	*No TMDL in place at this time*
		Simazine	*No TMDL in place at this time*
San Joaquin River	Mud Slough to Merced River*	Boron	*No TMDL in place at this time*
		Chlorpyrifos	**Being addressed under EPA-approved TMDL**
		DDT	*No TMDL in place at this time*
		Diazinon	**Being addressed under EPA-approved TMDL**
		Electrical conductivity	*No TMDL in place at this time*

Water Body	Reach	Pollutant	TMDL Status
		Group A pesticides	*No TMDL in place at this time*
		Indicator bacteria	*No TMDL in place at this time*
		Mercury	*No TMDL in place at this time*
		Selenium	**Being addressed under EPA-approved TMDL**
		Toxicity	
	Merced River to Tuolumne River	Alpha-BHC	*No TMDL in place at this time*
		Chlorpyrifos	**Being addressed under EPA-approved TMDL**
		DDE	*No TMDL in place at this time*
		DDT	*No TMDL in place at this time*
		Electrical conductivity	*No TMDL in place at this time*
		Group A pesticides	*No TMDL in place at this time*
		Mercury	*No TMDL in place at this time*
		Specific conductivity	*No TMDL in place at this time*
		Total dissolved solids	*No TMDL in place at this time*
		Toxicity	*No TMDL in place at this time*
		Water temperature	*No TMDL in place at this time*
	Tuolumne River to Stanislaus River	Chlorpyrifos	**Being addressed under EPA-approved TMDL**
		DDT	*No TMDL in place at this time*
		Diazinon	**Being addressed under EPA-approved TMDL**
		Electrical conductivity	*No TMDL in place at this time*
		Group A pesticides	*No TMDL in place at this time*
		Mercury	*No TMDL in place at this time*
		Toxicity	*No TMDL in place at this time*
		Water temperature	*No TMDL in place at this time*
	Stanislaus River to Delta Boundary	Chlorpyrifos	**Being addressed under EPA-approved TMDL**
		DDE	*No TMDL in place at this time*
		DDT	*No TMDL in place at this time*
		Diuron	*No TMDL in place at this time*
		Group A pesticides	*No TMDL in place at this time*
		Mercury	*No TMDL in place at this time*
		Toxaphene	*No TMDL in place at this time*
		Toxicity	*No TMDL in place at this time*
		Water temperature	*No TMDL in place at this time*
Old River	San Joaquin River to Delta-Mendota Canal	Chlorpyrifos	**Being addressed under EPA-approved TMDL**
		Electrical conductivity	*No TMDL in place at this time*
		Low dissolved oxygen	*No TMDL in place at this time*
		Total dissolved solids	*No TMDL in place at this time*

***** Newman Wasteway discharges to the San Joaquin River between Mud Slough and the Merced River confluence.

Key to Abbreviations:

Alpha-BHC = alpha-benzenehexachloride
Alpha-HCH = alpha-hexachlorocyclohexane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane

Source: Central Valley Regional Water Quality Control Board 2016, 2019

Basin planning is an ongoing process. Among the planning efforts currently in progress (Central Valley Regional Water Quality Control Board 2020a) are

- development of a salinity and nitrate control plan (Central Valley Salinity Alternatives for Long-Term Sustainability)
- development of WQOs for ammonia
- development of policies to address issues related to onsite wastewater treatment systems

Relationship to this Plan

Two of the projects envisioned in this Master Plan—the NEWS project and the MDTW project—are specifically intended to improve water quality by treating currently untreated stormwater runoff and agricultural tailwater prior to discharge into jurisdictional waters (see Chapter 4 for more information on goals and objectives for each of the NCCA projects). The wetland project, by improving the extent, quality, and function of wetlands on the Plan Area parcels, would also indirectly benefit water quality. As such, all three of these projects are supportive of regional water quality in general and of Basin Plan goals to protect and enhance beneficial uses of waters downstream of the Plan Area. They will also support Basin Plan protection for beneficial uses of groundwater through designs that adequately separate water undergoing treatment from the shallow groundwater table, and by improving the quality of surface waters that may contribute recharge to local shallow groundwater reserves downstream of the Plan Area. The Newman Nature Park will provide new opportunities for community education on environmental topics, potentially including water quality protection and water conservation, and is therefore also viewed as supportive of Basin Plan goals.

All three projects will also support salinity and nitrate reduction in waters downstream of the NCCA and thus are consistent with the intent of the in-progress Central Valley Salinity Alternatives for Long-Term Sustainability salt and nitrate control plan.

Irrigated Lands Regulatory Program

Overview

In 2003, the RWQCB debuted its Irrigated Lands Regulatory Program (ILRP) to protect surface waters in the Central Valley region from the effects of agricultural runoff, and in 2012 the program was expanded to include protection for groundwater. Initially, the ILRP regulated only activities conducted by growers directly discharging irrigation tailwater or stormwater from irrigated fields. It now regulates all Central Valley growers, including those who do not directly discharge to waters of the state (Central Valley Regional Water Quality Control Board 2020a). The ILRP requires commercial irrigated lands, including nurseries and managed wetlands, to obtain regulatory coverage and comply with Waste Discharge Requirements (WDRs) issued by the RWQCB. Regulatory coverage is not required for properties that are not used for commercial purposes, properties that are dryland farmed, or commercial irrigated lands that are covered under another RWQCB regulatory program such as those for dairy and poultry operations (Central Valley Regional Water Quality Control Board 2020b).

Growers have the option of obtaining individual coverage, which entails issuance of WDRs specific to their operation, or may choose to join a water quality coalition ("third-party group") along with other growers and enroll in joint coverage that requires them to comply with WDRs issued on a sub-region basis. The coalition option offers the advantage of assistance with ILRP compliance, monitoring, and reporting requirements, and can reduce costs and streamline the compliance process for individual growers (Central Valley Regional Water Quality Control Board 2020b).

Currently, there are 8 sub-regional third-party groups with separate WDRs: Eastern San Joaquin Watershed, Grassland Drainage Area, Rice Growers within the Sacramento Valley, Sacramento River Watershed, San Joaquin County and Delta Area, Tulare Lake Basin Area, Western San Joaquin River, and Western Tulare Lake Basin Area (Central Valley Regional Water Quality Control Board 2020). Growers in the Newman area who have not obtained individual coverage fall under the Western San Joaquin River WDRs (RWQCB Order R5-2014-0002-08) (Central Valley Regional Water Quality Control Board 2014).

Western San Joaquin River Third-Party Group WDRs

Among other provisions, the Western San Joaquin River third-party group WDRs require the following of member growers (Central Valley Regional Water Quality Control Board 2014).

- Compliance with applicable California Water Code, Basin Plan requirements, and SWRCB plans and policies
- Compliance with specific monitoring and reporting requirements
- Implementation of water quality management practices to meet specified receiving water limitations
- Implementation of erosion control and sediment discharge prevention measures to minimize or eliminate the discharge of sediment above background levels; if discharges have the potential to degrade surface waters, a Sediment and Erosion Control Plan meeting specific requirements is required
- Preparation and implementation of a farm-specific irrigation and nitrogen management plan to minimize excess nutrient application
- Adherence to applicable state, county, or local agency standards governing water wells and groundwater quality; if no such standards apply, adherence to the California Department of Water Resources' (DWR's) water well standards is required as a minimum

In addition, settling ponds, basins, and tailwater recovery systems must be constructed, maintained, and operated in a manner that prevents erosion and slope failure, minimizes the discharge of sediment, and prevents groundwater degradation. Construction and operation must comply with applicable Natural Resources Conservation Service (NRCS) standards, NRCS or University of California Cooperative Extension recommendations, or another equivalent standard. Finally, member growers must participate in the coalition's outreach/education activities, and must provide the third-party with the information it requires to fulfill its responsibilities under the WDRs.

The third-party in turn is required to:

- develop and implement plans to track and evaluate the effectiveness of water quality management practices
- conduct water quality monitoring and assessments in conformance with quality assurance/quality control requirements
- conduct education and outreach activities to inform members of program requirements and water quality problems, including WQO exceedances or water quality degradation identified by the third-party or the RWQCB; outreach must include information on nitrogen application policies and the potential impact of nitrates on groundwater, and may need to be provided in multiple languages, depending on grower demographics

- work cooperatively with the RWQCB to ensure that all members are providing required information and taking necessary steps to address any identified exceedances or degradation
- inform members in a timely manner of any Notices of Violation received and provide them with information on the reason(s) for the violation
- ensure timely and complete submittal of plans and reporting required by the WDRs

Relationship to this Plan

The quality of Miller Ditch agricultural tailwaters—and by extension the waters treated by the NEWS and MDTW projects—directly reflects the efficacy of the Western San Joaquin Watershed third-party group and member growers in implementing ILRP WDRs, while the treatment provided at the NCCA will further increase the quality of agricultural tailwater and stormwater runoff conveyed to downstream waters. As such, the NEWS and MDTW projects can be viewed as complementary to ILRP requirements. In addition, the outdoor classrooms and community plaza expected to be provided at the Newman Nature Park will offer appropriate venues for third-party group outreach and educational activities and thus also indirectly support the ILRP.

Pyrethroid Management Plan

Background

Pyrethrins and pyrethroids are pesticides widely used in agriculture, for household applications, for pet flea control, and in mosquito control. Pyrethrins are derived from natural chrysanthemum flowers; pyrethroids are synthetic agents whose chemical structures are adapted from those of pyrethrins to increase their stability in sunlight. More than 3,500 pyrethrins and pyrethroids are registered with the EPA, and their use has increased in recent years due to the reduced application of the more acutely toxic organophosphate and carbamate pesticides (Environmental Protection Agency 2019).

In 2017, responding to identified impairment for pyrethroids in some 14 Central Valley water bodies, the RWQCB adopted Resolution R5-2017-0057, amending the Basin Plan to include measures for the control of pyrethroid pesticide discharges to waters of the state (Central Valley Regional Water Quality Control Board 2017). The RWQCB's Resolution R5-2017-0057

- established a TMDL program for nine of the impaired water bodies, where multiple sources discharge pyrethroids
- prohibited all pyrethroid discharges above specified concentrations unless the discharger has a pyrethroid management plan in place (referred to as the "conditional prohibition" since discharge is conditioned on limiting or managing discharges), and
- required agricultural dischargers of pyrethroids to the remaining five water bodies (those where agricultural discharge is the only significant source of pyrethroids) to develop management plans to reduce pyrethroid pesticide discharges to levels below the narrative WQO for toxicity within 20 years

It also put monitoring requirements in place to enable the RWQCB to evaluate progress in reducing pyrethroid discharges and preventing pesticide-related toxicity in area waters (Central Valley Regional Water Quality Control Board 2017), and committed the RWQCB to consider adoption of a numerical WQO for pyrethroids within 15 years.

All municipalities holding permits to discharge stormwater to waters under RWQCB jurisdiction are subject to the Resolution R5-2017-0057 conditional prohibition, and municipal stormwater permittees not subject to the

new TMDL must conduct baseline monitoring and provide their monitoring data to the RWQCB. However, small municipalities that hold a Phase II municipal separate storm sewer system (MS4) permit for stormwater discharge may choose to acknowledge that the existing data accurately represent their discharges, forgo baseline monitoring, and develop and implement a pyrethroid management plan. Municipal wastewater permittees are likewise subject to the conditional prohibition, and those not subject to the TMDL must also provide baseline monitoring to the RWQCB (City of Newman 2020b).

City Plan Development

As a small municipality operating under an MS4 permit (discussed further in *Storm Drainage Master Plan* below) as well as a municipal wastewater discharger (see *Waste Discharge Order R5-2018-0024* below), the City has elected to move directly to preparation of a Pyrethroid Management Plan as the most efficient and cost-effective approach to meet Resolution R5-2017-0057 requirements. The Plan is being developed in collaboration with 16 other small municipal dischargers, the unincorporated community of Mountain House, and the Counties of El Dorado, San Joaquin, and Stanislaus.

As of the preparation of this Master Plan, the City's Pyrethroid Management Plan (City of Newman 2020b) is still in draft, with completion and adoption anticipated by mid-2021. The draft Plan provides for (1) education and outreach activities to raise awareness of pesticide threats to water quality and ways to reduce environmental pesticide contamination; (2) active pollution prevention measures; and (3) reporting to track implementation and results, combined with adaptive management to increase Plan effectiveness going forward.

Education and outreach activities will include residential outreach, point-of-purchase outreach, outreach to pest control and landscape professionals, and outreach related to landscaping and irrigation practices. Education and outreach will encourage greater reliance on integrated pest management (IPM)[3] techniques, reduced overall pesticide use, and landscaping and irrigation best practices that reduce runoff, and will be provided bilingually in Spanish and English, consistent with the City's standard approach. Activities may be coordinated with the other participating dischargers for greater coverage and effectiveness (City of Newman 2020b).

The Plan also provides for measures to be implemented at City-owned and City-operated facilities. Similar to the approach encouraged for landscaping and structural professionals and the community at large, measures implemented by the City are expected to emphasize a shift to greater reliance on IPM and reduction in overall pesticide use, and will include adoption of an IPM policy that applies to all City and contractor staff engaged in pest management at City owned or operated facilities. The City will also increase the regulation of pesticide use within City limits and take greater part in the overall dialogue concerning pesticide regulation (City of Newman 2020b).

In addition to requiring dischargers to curtail or manage pyrethroid levels, Resolution R5-2017-0057 requires annual reporting to document the management practices that have been implemented, evaluate their success, and identify ways to adjust or add measures to increase effectiveness. This adaptive management approach will require monitoring of pyrethroid concentration trends. Approaches were undetermined as of the preparation of the draft Pyrethroid Management Plan, but the RWQCB is expected to issue additional guidance for small

[3] Integrated pest management (IPM) uses an understanding of pest biology to bring a combination of biological, cultural, physical, and chemical tools to bear on pest-related risks in a way that minimizes environmental as well as economic and health risks. IPM strives to correct the factors conducive to pest problems and emphasizes using approved pesticides only when necessary. Originally developed for agricultural pest management, IPM is now increasingly used in residential, recreational, institutional, and wildland contexts (IPM Institute of North America 2018, 2020).

municipal dischargers, which will be incorporated into the Plan as it is developed further (City of Newman 2020b).

Relationship to this Plan

There is a natural dovetail between the aims of the Pyrethroid Management Plan and the projects envisioned under this Master Plan. By treating currently untreated stormwater runoff and agricultural tailwater, the NEWS and MDTW projects will contribute to overall reduction of pesticide levels in waters discharged to the Newman Wasteway and San Joaquin River, amplifying the benefits of measures put in place under the Pyrethroid Management Plan. In addition, as mentioned above, the Newman Nature Park will provide an excellent forum for community outreach about IPM, ways of reducing pesticide use, and landscaping, irrigation, and runoff control best practices. These themes are all entirely consistent with the City's vision for the Nature Park (see Chapter 4 for more detail), and the demonstration gardens, outdoor classrooms, and community plaza will provide ideal sites for community outreach events under the Pyrethroid Management Plan.

Storm Drainage Master Plan

City Stormwater Management

Management and discharge of stormwater from the City is regulated under the SWRCB's statewide general permit authorizing MS4 discharges (General Permit) (State Water Resources Control Board 2013).

The Public Works Department is responsible for stormwater drainage facilities within the City, and is explicitly required by the General Plan to maintain a level of service adequate to accommodate runoff from existing and future development and avoid flood-related property damage (Goal PFS-5, City of Newman 2007). This necessitates periodic assessment of existing storm drainage capacity, coupled with forward planning that takes into account foreseeable development in this rapidly growing community. Since 1994, the City has maintained a Citywide Services Master Plan that includes stormwater drainage and flood protection as components. Only a few years after the original 1994 plan was prepared, it was updated by a step-down plan focusing on storm drainage (City of Newman 2001), due to a rapid pulse of development. The 2001 update remains in effect.

Drainage in the City and surrounding area flows generally eastward (City of Newman 2001), reflecting the City's location in an area historically tributary to the San Joaquin River. Within the City itself, a large proportion of storm runoff is collected in a system of underground storm drain pipelines, flows to the trunk lines within Inyo Avenue and Canal School Road, and is delivered to the City pump station near the northwest corner of these two roadways. The pump station discharges to the Miller Ditch, an agricultural ditch that conveys flow from the Central California Irrigation District (CCID) canal west of the City for agricultural use and collects return agricultural tailwater and stormwater.[4] The Miller Ditch in turn discharges to the Newman Wasteway and ultimately into the San Joaquin River (Figure 1-3). In addition to the direct outfall that discharges low flows from the Miller Ditch to the Newman Wasteway, an overflow pipeline carries excess flow from large storm events northeast from the Miller Ditch to a separate outfall into the Newman Wasteway (Figure 1-3). Some of the remaining storm runoff not captured by the storm drain system enters other CCID ditches within the City via overland flow (City of Newman 2001).

[4] The Miller Ditch is owned and operated by adjacent agricultural landowners; CCID provides coordination and assists with maintenance (Martin pers. comm.).

Source: *compiled from* City of Newman (1997); aerial photograph from GoogleEarth (imagery date 07/18/2019, downloaded 05/27/20)
For illustration only; locations not field-verified

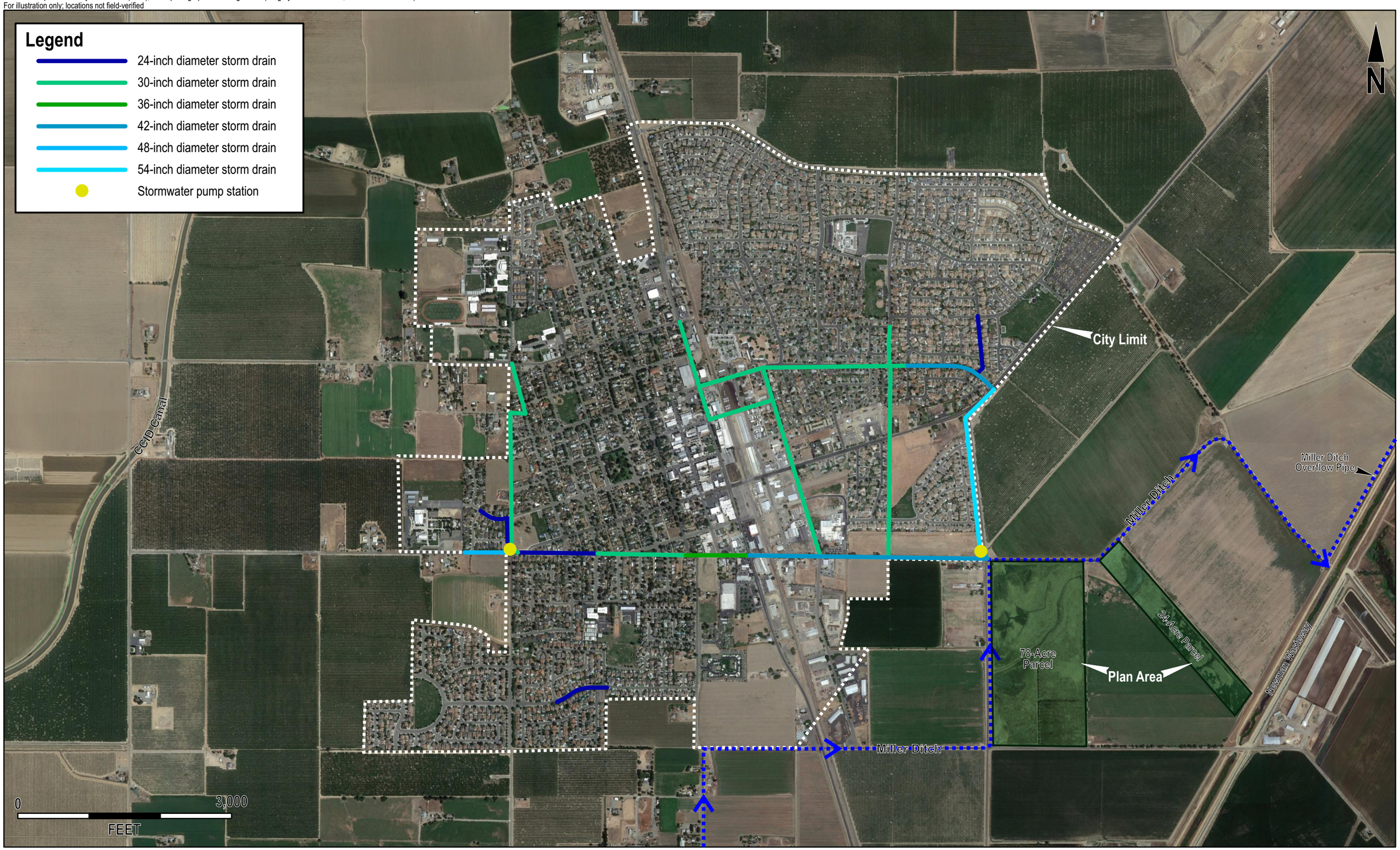

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Figure 1-3. Trunk Storm Drain Network
Newman Community Conservation Area Master Plan
City of Newman

Relationship to this Plan

At present, the City's stormwater runoff is not treated prior to discharge. One purpose of this Master Plan is to provide for treatment of a substantial portion of City storm runoff through development and operation of a constructed stormwater treatment wetland that would receive flow from the Miller Ditch immediately downstream of the pump station at Inyo Avenue and Canal School Road (the NEWS project). As such, this Master Plan expands on the City's current Storm Drain Master Plan (City of Newman 2001).

Additionally, this Master Plan requires the new treatment wetland constructed under the NEWS project to provide sufficient capacity to accommodate the design event that carries the greatest pollutant loading to the Newman Wasteway and San Joaquin River, the 85th percentile, 24-hour storm event (see *Goals & Objectives by Project* in Chapter 4). This is consistent with pollution control requirements of the General Permit, which prohibits discharges with the potential to cause a "condition of pollution or nuisance" that would threaten public health, aesthetics, or beneficial uses of waters of the state (State Water Resources Control Board 2013).

Urban Water Management Plan & Groundwater Sustainability Plan

Potable Water in the City

The Public Works Department owns and operates the City's potable water system and is the only public water agency serving the City and its Sphere of Influence (City of Newman 2007). Similar to stormwater drainage, the General Plan requires Public Works to maintain water service adequate to meet the demands of existing and future development (Goal PFS-3, City of Newman 2007). In addition to the General Plan, forward planning for potable water supply also responds to the Urban Water Management Planning Act of 1983 (California Water Code §§10610 – 10657) and the Water Conservation Act of 2009 (California Water Code §10608), which established a 20% reduction in per capita urban water use by 2020 as a statewide goal.

Every 5 years, California's Urban Water Management Planning Act requires municipal water suppliers that (1) serve more than 3,000 acre-feet/year, or (2) serve more than 3,000 urban connections, to prepare an Urban Water Management Plan (UWMP). The UWMP must assess the reliability of the supplier's water sources over a 20-year planning window, identify demand management measures and water shortage contingency plans (including existing and planned uses of recycled water), and report on progress toward meeting the statewide demand reduction target (California Department of Water Resources 2020a). The City's current Urban Water Management Plan was most recently updated in 2016 (City of Newman 2016).

The City obtains 100% of its potable water supply from local groundwater (City of Newman 2007, City of Newman 2016). Public Works operates four municipal wells with current pumping rates ranging from about 1,200 gallons per minute (gpm) to 1,600 gpm (Figure 1-4) (San Joaquin River Exchange Contractors GSP Group 2019a). A fifth City production well with an anticipated capacity of 1,800 gpm is being designed and will be online by early to mid-2021 (Figure 1-4). A number of additional wells in the area are operated by private entities and by the CCID.

The City overlies the Delta-Mendota Groundwater Subbasin of the San Joaquin River Groundwater Basin. The Delta-Mendota Subbasin has two principal aquifers—both in alluvial materials of the Pliocene – Pleistocene (Lettis 1982) Tulare Formation—that are separated by a regionally extensive aquitard, the Corcoran Clay member. The upper aquifer is largely unconfined and the lower aquifer is confined by the Corcoran Clay. Groundwater flow is generally eastward (City of Newman 2016, San Joaquin River Exchange Contractors GSP Group 2019b, Central Valley Regional Water Quality Control Board 2018b). Most groundwater in the Newman area is drawn from the upper aquifer, although the City's wells and some deeper irrigation wells tap the lower aquifer. Cased depths of City wells range from 450 to 635 feet. Wells No. 1R and No. 8 are screened only in the

lower aquifer; Wells No. 5 and No. 8 are screened in both aquifers (see Figure 1-4 for well locations) (San Joaquin River Exchange Contractors GSP Group 2019a).

California's Sustainable Groundwater Management Act of 2014 (SGMA) requires the formation of Groundwater Sustainability Agencies (GSAs) to manage withdrawals from medium- and high-priority groundwater basins[5] at sustainable levels (California Department of Water Resources 2020b). If multiple GSAs are active within a basin, they must coordinate their efforts. The City serves as the GSA within City limits, and also participates in regional groundwater management planning as a member of the San Joaquin River Exchange Contractors (SJREC) Groundwater Sustainability Planning (GSP) group, along with the Cities of Gustine, Los Banos, Dos Palos, Firebaugh, and Mendota and the Counties of Merced, Madera, and Fresno.

GSAs are required to develop Groundwater Sustainability Plans or provide an acceptable alternative that meets SGMA requirements. SJREC GSP's current Groundwater Sustainability Plan (San Joaquin River Exchange Contractors GSP Group 2019b) was adopted in 2019.

Relationship to this Plan

No new wells would be necessary for the projects envisioned in this Master Plan. Hand watering is expected to be necessary during the vegetation establishment periods for each of the projects, and would use potable supply from the City water system, likely delivered to the site via water trucks for maintenance staff use. Long-term supply to the hydration station, gardens, and landscaping at the Newman Nature Park would also use City water from existing sources, delivered by extending service from City water lines at the intersection of Inyo Avenue and Canal School Road. Hand-watering use would be limited and comparatively short-term, and ongoing use of potable supply would also be very limited. Both are expected to be well within the capacity of existing and projected City supply and therefore consistent with the City's commitments under the GSP and its overall responsibility for potable water supply to City residents and businesses.

Waste Discharge Order R5-2018-0024

City Wastewater Treatment

The City of Newman provides wastewater treatment for most uses within City limits, although some properties, both within City limits and in the larger Sphere of Influence, remain on septic systems. Wastewater from the City is conveyed to the City's Wastewater Treatment Plant (WWTP), operated by Public Works and—like the City's stormwater and potable water systems—mandated by the General Plan to maintain adequate capacity to serve the needs of existing and future development (Goal PFS-4, City of Newman 2007). Influent wastewater has a substantial residential and commercial component, but also includes input from four industrial sources within City limits, including a cheese manufacturing facility that alone contributes some 25% of total influent volume (Central Valley Regional Water Quality Control Board 2018b).

The WWTP is located about 1 mile north of the City adjacent to the Newman Wasteway, within the Sphere of Influence but outside City limits (Figure 1-5). Its current average dry weather flow (ADWF) capacity is 1.25 million gallons per day (MGD). Key facilities at the WWTP include

- a bar screen at the inlet

[5] Groundwater basins are prioritized for management based on the overlying population, the projected rate of population growth, the number of public and other wells that draw water from the basin, the importance of groundwater as a primary source of supply, and documented impacts on the basin such as overdraft, ground subsidence, and saline intrusion (California Water Code §10933).

Map Source: *modified from* City of Newman 2015

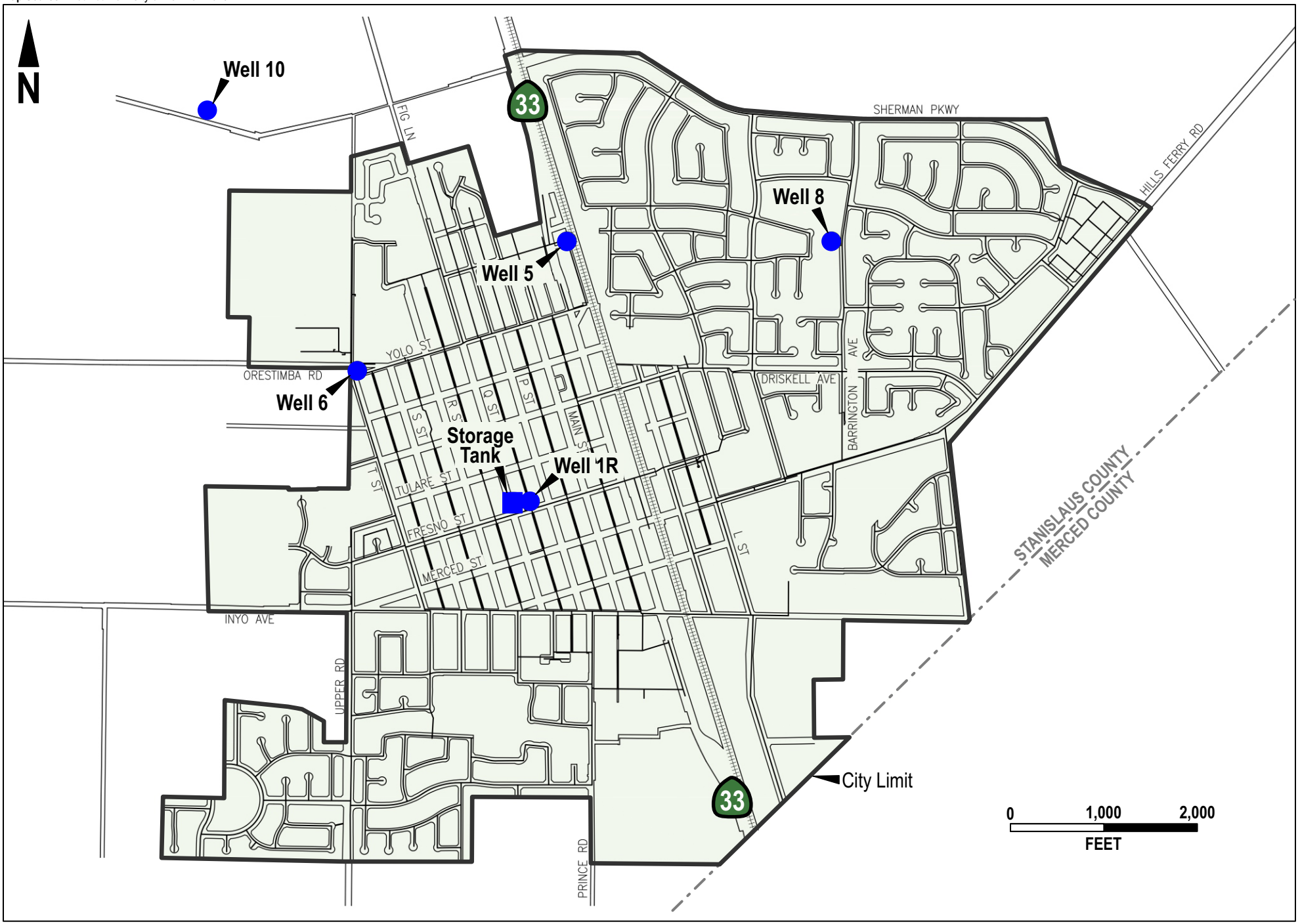

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Figure 1-4. Locations of City Potable Water Supply Wells
Newman Community Conservation Area Master Plan
City of Newman

Aerial Photograph Source: GoogleEarth (imagery date 07/08/2019, downloaded 05/13/2020)

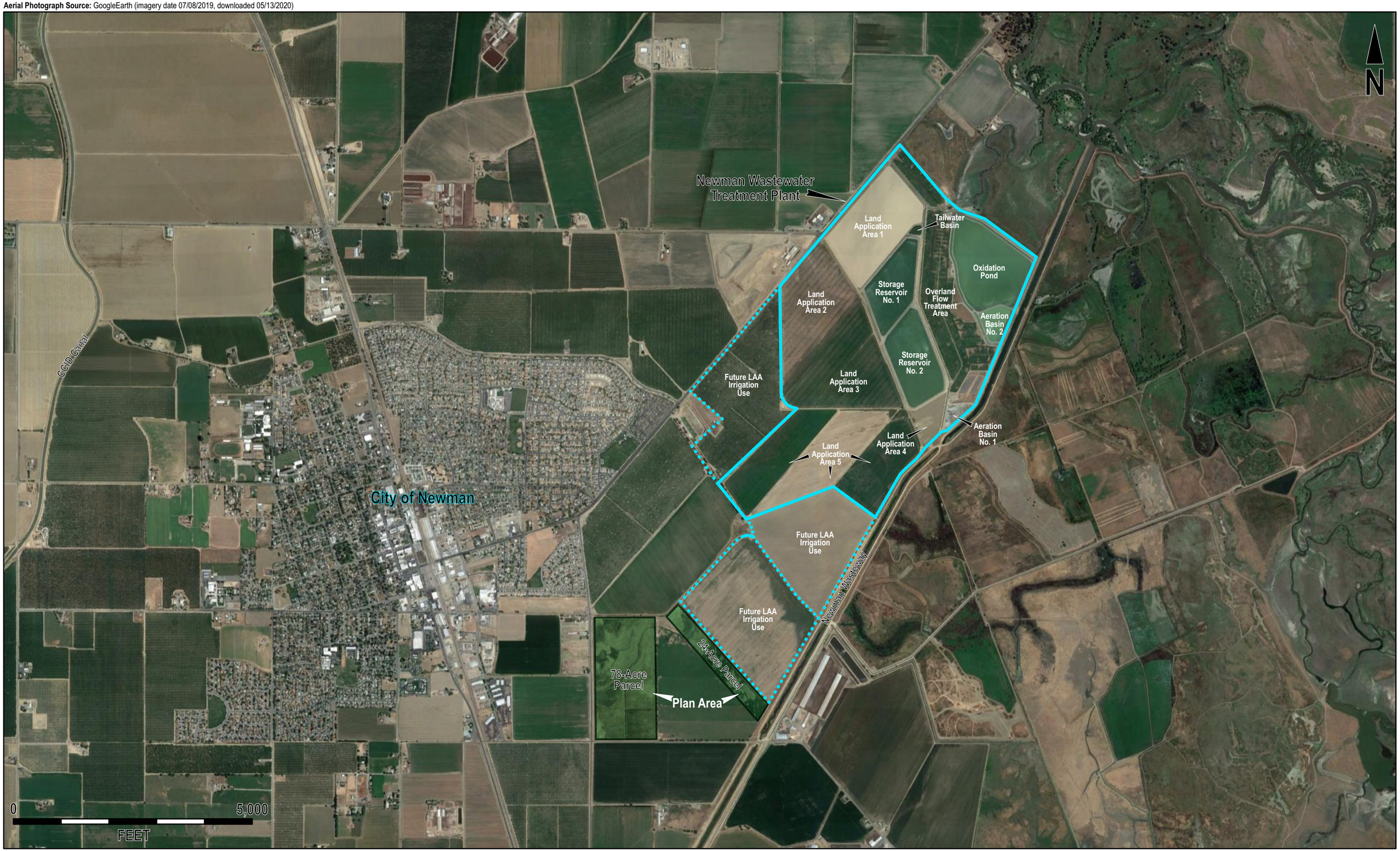

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Figure 1-5. Location and Layout of City Wastewater Treatment Plant
Newman Community Conservation Area Master Plan
City of Newman

- two unlined earth basins (Basin 1 and Basin 2)
- an unlined 50-acre oxidation pond
- two unlined effluent storage reservoirs with a combined capacity of 230 million gallons (MG)
- 60 acres of overland flow terraces
- 341 acres of land application areas (LAAs)
- an approximately 1-acre tailwater pond
- approximately 200 acres of additional City-owned lands adjacent to the existing LAAs, slated for future LAA use, and an additional approximately 100 acres to the northwest, currently in almonds but planned for future LAA use

With 2 feet of freeboard maintained, Basin 1 and Basin 2 have operational capacities of 7 MG and 9 MG respectively, and the capacity of the oxidation pond is 90 MG (Central Valley Regional Water Quality Control Board 2018b).

Influent wastewater is routed into Basin 1 for anaerobic treatment and then to Basin 2 for aerobic treatment (see Figure 1-5 for WWTP layout). From Basin 2, it enters the oxidation pond for bacterial oxygenation. Undisinfected secondary effluent is typically retained in the storage reservoirs for dry-season flood irrigation of crops such as alfalfa, corn silage, and oats grown under City management on the LAAs. Tailwater from all of the LAAs is collected in the tailwater pond and returned to the storage reservoirs (City of Newman 2007, Central Valley Regional Water Quality Control Board 2018).

Influent and effluent quality are monitored by the City. Recent data indicate that the waste stream contains high-strength organic material and there has been concern that the WWTP's capacity is inadequate to provide effective treatment (Central Valley Regional Water Quality Control Board 2018b). At present, however, 65% of influent biological oxygen demand is removed in Basin 1, and effluent discharged to the LAAs is meeting applicable standards (Perry pers. comm.). High effluent salinity has also been documented, and is attributed to increased influent salinity that is further elevated by evaporation during treatment and storage (Central Valley Regional Water Quality Control Board 2018b). The City has taken steps to reduce influent salinity through source control, and effluent discharged to the LAAs is also meeting salinity standards (Perry pers. comm.), but further measures to address both organic content and salinity may become necessary due to concerns about the effect of high-salinity, organic-rich effluent infiltrating into groundwater via the LAAs (Central Valley Regional Water Quality Control Board 2018b).

Planned WWTP Improvements

For some time, the City has considered WWTP capacity a principal factor limiting growth (City of Newman 2007), and in response to this concern and problems with effluent quality has been working with an engineering consultant and the Central Valley Regional Water Quality Control Board (RWQCB) to plan and implement a program of upgrades to the WWTP. The first phase of upgrades would entail the following improvements (Central Valley Regional Water Quality Control Board 2018b).

- Creating a new unlined 9-MG aeration basin (Basin 3) by installing baffles to separate off a 5-acre portion of the existing oxidation pond

- Modifying the headworks to provide for more flexible flow-splitting capabilities that allow influent to be directed to Basin 1, Basin 2, and/or Basin 3 with the ratio of the split adjusted to optimize treatment under seasonally variable weather conditions
- Adding baffling, short circuit prevention, and more effective mixing to Basin 1 to provide better treatment for high-strength organic content influent
- Irrigating with a combination of effluent and groundwater to reduce salinity loading to shallow groundwater to a range comparable with effluent from historic agricultural practices
- Nearly doubling the extent of the LAAs by bringing two new LAAs online

Phase I improvements are planned for completion by mid-2022. With Phase I completed, the WWTP's ADWF capacity would increase from 1.25 MGD to 1.5 MGD.

A second phase of improvements is planned for stepwise implementation as further capacity becomes necessary to accommodate growth in the City. Phase II is expected to include the following improvements.

- Increasing the capacity of Basin 3 from 9 MG to 20 MG by expanding the baffled portion of the oxidation pond
- Adding new aerators to Basin 3
- Installing a new 130-MG effluent storage basin (Storage Basin 3) in the existing LAA3
- Modifying and improving the influent distribution system to allow recirculation to any or all of the aeration basins
- Adding more groundwater and/or surface water to the irrigation mix to further reduce salinity and organic loading; surface water could potentially be obtained from the CCID, or might need to come from other sources if CCID supply does not become available
- Further increasing the extent of the LAAs

When all Phase II improvements are in place, the WWTP's ADWF capacity would be increased to 2.4 MGD.

Relationship to this Plan

As described above, the Phase I and Phase II improvements planned at the WWTP provide for progressive blending of saline effluent used to irrigate the LAAs with less saline water. This was originally envisioned as beginning with groundwater in Phase I, and transitioning either to increased use of groundwater or to use of groundwater plus CCID surface water in Phase II.

This Master Plan was intended in part to offer a third possibility: the use of treated discharges from the NEWS and/or MDTW projects. This could substantially decrease the need for groundwater use at the LAAs, decreasing pressures on the groundwater basin. However, retaining treated NCCA outflow in the Newman Wasteway rather than diverting it would reduce pollutant loading in the Wasteway, which has been identified as impaired for pesticides (State Water Resources Control Board 2016; see Table 1-3 above), and would also benefit water quality in the San Joaquin River and downstream receiving waters, also identified as impaired for multiple parameters (State Water Resources Control Board 2016; see Table 1-3). In this context, the City intends to evaluate various scenarios for the use of treated runoff from the NCCA, and to select the one that offers the

best balance of environmental benefit, benefit to the community, and cost-effectiveness. As a result, this Plan was developed to offer maximum flexibility and does not prescribe downstream use of NCCA discharges.

Parks & Recreation Master Plan

The City's Parks and Recreation Master Plan (City of Newman 1995) articulates goals, policies, and standards for the location, size, and characteristics of existing and proposed parks. It was originally prepared as a step-down from the 1992 General Plan, and has continued in use with adoption of the current General Plan (City of Newman 2007), since many of aspects of the City's vision for long-term development of public and private parkland spaces remain unchanged. The majority of the Parks and Recreation Master Plan focuses on "conventional" urban parks and community spaces and thus is not directly germane to the vision of this Master Plan. Rather, this Master Plan was developed in part to complement the types of facilities addressed by the Parks and Recreation Plan. However, this Master Plan is entirely aligned with the fundamental goal laid out in the Parks and Recreation Master Plan: "establish[ing] a system of public park and recreation facilities suited to the needs of Newman residents." Existing park spaces and the needs of the Newman community and surrounding area are discussed further under *Need for NCCA* in Chapter 2.

Non-Motorized Transportation Plan

City Vision for Non-Motorized Transportation

Consistent with General Plan Goal RCR-1.14 (see Table 1-1), in 2013 the City adopted a Non-Motorized Transportation Plan (NMTP) to guide development of bicycle and pedestrian facilities throughout the City (City of Newman 2013). The NMTP focuses on the portion of the General Plan Bicycle Network Plan (City of Newman 2007, Figure TC-2) within and immediately adjacent to City limits.

As a step-down from General Plan bicycle and pedestrian planning, the NMTP integrates and builds on policies in the General Plan (City of Newman 2007) as well as regional non-motorized transportation planning efforts. It assesses City needs, lays out specific goals, policies, and actions for bicycle and pedestrian transit in the City, recommends specific projects to achieve these ends, provides design standards, and identifies potential funding sources to defray project costs. It also identifies support programs to increase public awareness and encourage bicycling and walking for pleasure and transportation, including a Safe Routes to School program.

The City's vision for non-motorized transportation emphasizes the following overall goals (City of Newman 2013).

- Improving pedestrian and bicyclist safety
- Making trails accessible to all users, including pedestrians, bicyclists, and the physically disabled
- Creating a cohesive pedestrian and bicycle network that meets the needs of the community and encourages bicycling and walking
- Implementing General Plan policies in order to create an enjoyable environment that promotes walking and bicycling
- Encouraging community members to take advantage of non-motorized transportation opportunities in the City

Recommended projects identified in the NMTP include pedestrian-oriented and bicycle-oriented improvements, as well as City-wide improvements to enhance overall safety and qualify of experience for both pedestrians and bicyclists, such as sidewalk resurfacing and curb ramp improvements, road maintenance, improved wayfinding

signage, street and pathway lighting, and public art installations. Recommended bicycle projects include new and improved bicycle lanes and paths as well as *Bicycle Crossing* signs at key locations and bicycle detector loops to assist bicyclists in safely navigating signalized intersections (Figure 1-6).

Relationship to this Plan

One of the City's aims in selecting the location for the NCCA—immediately outside City limits and easily accessible—was to encourage the community to visit the NCCA on foot or by bicycle, and to provide a desirable destination for walkers and bicyclists. Access will be facilitated by construction of the NMTP-recommended bicycle route extending along Canal School Road, connecting bike lanes and paths in the City proper with points south (Figure 1-6).[6] Additionally, the NCCA is planned to provide an internal network of trails for pedestrian and bicycle use, including the O&M access roads serving the NEWS and MDTW projects, which would be open to the public for non-motorized recreational use, as well as dedicated trails constructed as part of the Newman Nature Park project. As such, the NCCA is part of the City's broader vision, articulated in the NMTP, of encouraging non-motorized transportation and recreational uses.

Once the Newman Nature Park is completed, the NCCA will also provide facilities such as bicycle racks, restrooms, and a drinking water station, consistent with NMTP Education and Encouragement Policy 1, which requires "end-of-trip" facilities to make bicycling a genuinely viable alternative to driving.

Contents and Organization of this Plan

In addition to this introductory chapter, this Master Plan contains the following sections:

- *Chapter 2: Background*, including information on the Newman community, the need for the NCCA, NCCA planning to date, and the regulatory context and requirements for the projects laid out in this Master Plan
- *Chapter 3: Existing Conditions at NCCA Site*, including designated, historic, and current land uses; Plan Area physiography, hydrology, and soils; biological and jurisdictional habitat resources; and other factors relevant to project planning and implementation at the NCCA
- *Chapter 4: Vision, Goals, & Objectives* for each of the NCCA projects, and a brief discussion of other related efforts and projects
- *Chapter 5: Implementation,* including project timing and priorities as well as implementation responsibility for the construction, post-construction, and long-term O&M periods
- *Chapter 6: Funding Strategy* for project planning and design, project construction, post-construction monitoring and maintenance of restored and created habitat, and long-term operations and maintenance (O&M) of the NCCA projects
- *Chapter 7: Future Opportunities*, discussing future environmental opportunities created by the NCCA as well as opportunities for community economic and educational benefits and volunteer involvement springboarding from the vision in this Master Plan

[6] The Canal School Road bike route project is discussed further under *Related Projects* in Chapter 4. Originally laid out as a Class I separated multi-use trail in the General Plan Bicycle Network Plan (City of Newman 2007, Figure TC-2), it was recommended as a Class II bicycle lane in the NMTP (City of Newman 2013) due to potential concerns about right-of-way width. Based on recent reevaluation, the City has concluded that the originally planned Class I trail will be feasible without acquisition of additional right-of-way, and intends to proceed on this basis.

Map Source: *modified from* City of Newman 2013

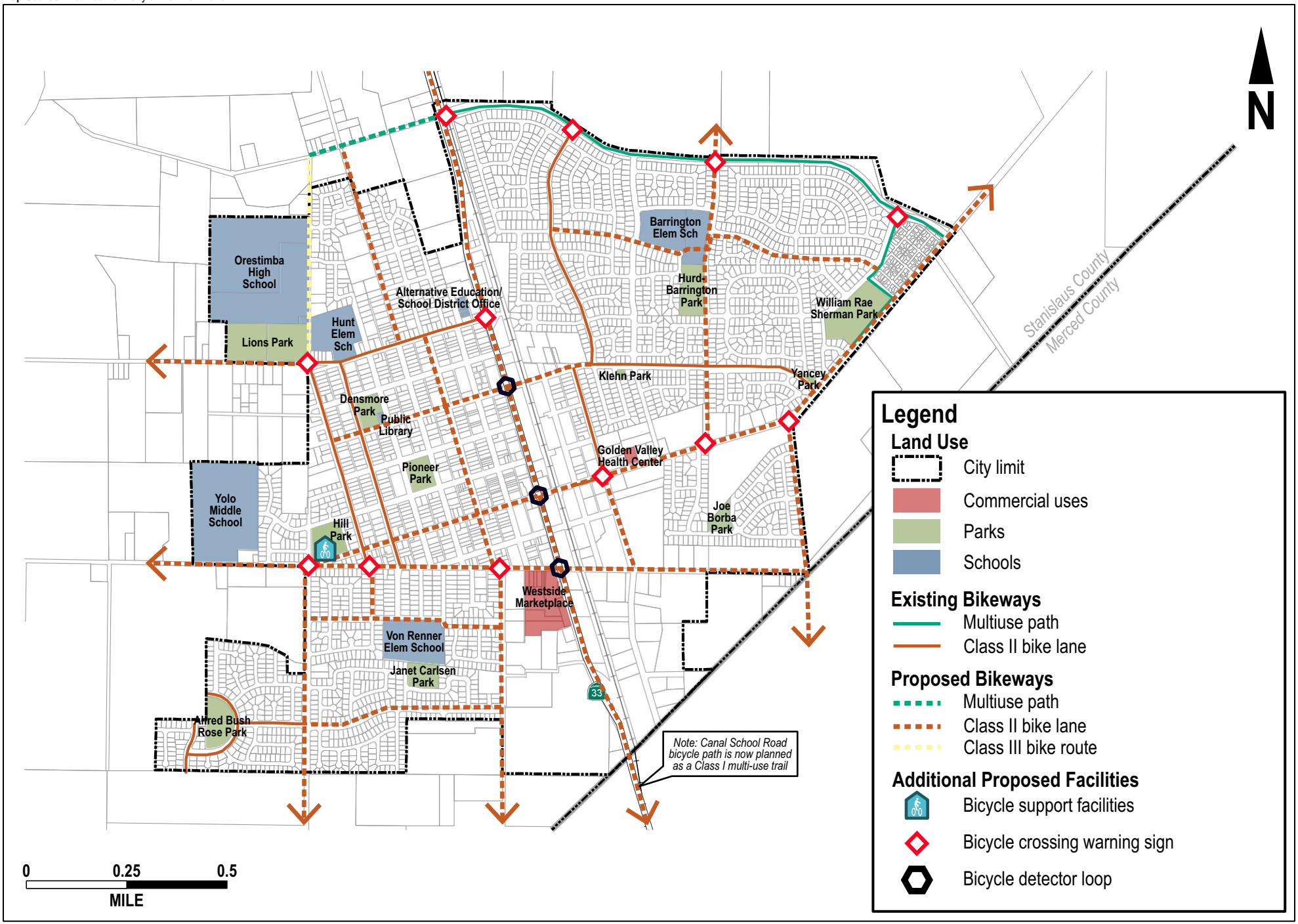

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Figure 1-6. Bicycle Projects Recommended in Non-Motorized Transportation Plan
Newman Community Conservation Area Master Plan
City of Newman

- *Chapter 8: Protecting Plan Area Resources*, including information on the City's planning for long-term preservation of the Plan area as an environmental and community resource, and the measures adopted to protect sensitive habitats and special-status plants and wildlife in the Plan Area

A list of acronyms and abbreviations follows Chapter 8 as an 11 x 17 foldout.

This Plan also includes an *Attachments* section that will be populated with additional step-down plans as these are developed, including post-construction Monitoring and Maintenance Plans for the restored and created habitat areas, and long-term O&M plans for each of the NCCA projects.

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Chapter 2

Background

Community Overview

Context

Located in the northwestern San Joaquin Valley about 5 miles east of Interstate (I) 5, the City is accessed from north and south via State Route (SR) 33, which runs through the center of the City as N Street. Access from I 5 is provided by West Stuhr Road, a 2-lane semi-rural arterial roadway. Neighboring communities include Crows Landing and Patterson, about 6 and 13 miles to the north along SR 33 respectively, and Gustine, 4 miles to the south. From Gustine, SR 140 provides access east into the heart of the Valley and to the foothills region and Sierra Nevada beyond (Figure 2-1).

The City itself occupies a footprint of just over 2 square miles. As of the preparation of the current General Plan, the City's Sphere of Influence, comprising lands the City may annex and urbanize in coming decades, covered about another 6 square miles (City of Newman 2007). The City and its Sphere of Influence are entirely within Stanislaus County. The City's larger Planning Area—the area encompassed in the General Plan vision—extends west toward I 5 and south and east to the Newman Wasteway and San Joaquin River, within Merced County. The NCCA Plan Area is adjacent to the County line within Merced County (Figure 1-1, Figure 2-1).

Founded in 1888 and incorporated in 1908 as Central Valley agriculture became increasingly important and rail transit opened widening markets, the City remained small and relatively stable for decades, but with shifting regional pressures it has grown rapidly in the last 30 years, from a population of approximately 4,000 in 1990 (City of Newman 2007) to an estimated 11,658 as of 2018 (United States Census Bureau 2020). At least in part, this growth reflects a new commuter population drawn to the area by more affordable housing, a relaxed pace, and high quality of living. Commuters tap into diverse employment markets as far away as the San Francisco Bay Area and Sacramento metropolitan regions, but agriculture and ranching still dominate the local economy. In this context, the City emphasizes the importance of valuing its heritage and maintaining its small-town character—including a vibrant historic downtown area—while looking to the opportunities of an evolving future.

Community Demographics

The table at the top of the next page summarizes City demographics.

Table 2-1. City of Newman Demographics

Race and Hispanic Origin	Percentage of Population
White	87.8%
White, not Hispanic or Latino	24.7%
Hispanic or Latino	69.7%
African-American	2.2%
Asian	1.3%
American Indian or Alaska Native	0.7%
Two or more races	3.2%

Source: United States Census Bureau 2020

Recent census data indicate that 56.5% of households in the City speak a language other than English at home (United States Census Bureau 2020). Although there is a proportion of Portuguese-speaking households, the majority of these are Spanish-speaking, and the City now routinely provides information and outreach bilingually in Spanish and English.

Median household income for the period 2014 – 2018 was $60,934 (2018 dollars), substantially below the statewide figure for the same period, $71,228. Education levels are also currently lower in the City than statewide. As of 2014 – 2018, 75.9% of community members over the age of 25 reported completion of high school and 10% reported a bachelor's or higher degree, by comparison with 82.9% and 33.3% statewide (United States Census Bureau 2020). Based on an income survey conducted in 2018 with assistance from a state Drinking Water State Revolving Fund grant, the City has been designated a Severely Disadvantaged Community (SDAC) by the Department of Water Resources (DWR).

Need for NCCA

The NCCA is intended to meet three needs:

- providing treatment for the City's previously untreated stormwater and agricultural tailwater runoff prior to discharge into the Newman Wasteway and San Joaquin River
- improving overall air, water, and habitat quality in the Newman area, as a benefit to the community, area wildlife, and the environment as a whole
- providing opportunities for nature-oriented open space recreation and nature education that are not currently available in the Newman area

Parklands and open spaces are a critical aspect of community livability and the ability to connect with nature is increasingly understood as vital to mental and physical health, nowhere more so than in disadvantaged communities. A number of community and neighborhood parks ranging from about 2 acres to 8 acres in extent are available throughout the City, providing various types of recreational and gathering facilities, including playgrounds, barbecue areas, dining areas, baseball and soccer fields, and basketball courts, as well as a community center, teen center, wading pool, and skateboard park. The City also has mini-parks, generally less than 1 acre in size, that serve their immediately surrounding neighborhoods with green space, picnic tables, and play structures.

However, city parks offer a different user experience and serve different functions than accessible areas of natural open space. Although the western San Joaquin Valley is largely a rural landscape, the closest parklands

Base Map Source: GoogleEarth (imagery date 07/18/2019, downloaded 5/14/2020)

Redtail Consulting
Environment & Community

Figure 2-1. Regional Setting

Newman Community Conservation Area Master Plan
City of Newman

offering any type of natural open space experience range from about 4 to 17 miles away as the crow flies (Table 2-2, Figure 2-1), and none of them is specifically dedicated to nature-oriented recreation or education. Additionally, although the City has adopted a Non-Motorized Transportation Plan (City of Newman 2013) and is working to expand and improve bicycle and pedestrian opportunities, the Newman area still lacks regional trail systems that offer extended walking and bicycling opportunities.

In this context, the need for the NCCA is clear: in addition to providing long-term environmental benefit, it will fill an important gap in the recreational resources available to residents of the City and surrounding vicinity, and provide opportunities for nature education that currently do not exist in the area. Both the NEWS project and the MDTW project are also planned to serve as "living labs" encouraging active involvement by area students and fostering interest in continuing STEM (science, technology, engineering, and mathematics) education.

Table 2-2. Open Space Parklands in Newman Area and Beyond

Facility	Offers…	Distance from City* (Miles)
National Wildlife Refuges		
San Luis National Wildlife Refuge	Hiking, hunting, fishing, wildlife viewing, visitor center, public events	11
Merced National Wildlife Refuge	Hiking, hunting, wildlife viewing, visitor facilities, field trip programs	24
National Parks		
Pinnacles National Park	Hiking, camping, nature watching	60
Yosemite National Park	Camping (including group campsites, horse campsites, RV camping, backcountry camping), hiking, backpacking; extensive facilities and programs available	90
State Wildlife Areas		
North Grasslands Wildlife Area	Fishing, hunting, wildlife viewing	China Island Unit: 4 Gadwall Unit: 23 Salt Slough Unit: 14
West Hilmar Wildlife Area	Hunting, wildlife viewing	6
Volta Wildlife Area	Hunting, wildlife viewing; pedestrian access only, except for permitted hunters during waterfowl season	14
Los Banos Wildlife Area	Wildlife viewing, fishing, hunting	17
State Parks		
George J. Hatfield State Recreation Area	Boating, fishing, hiking, geocaching, picnic areas, family and group campsites, primitive camping, RV sites	4.5
Great Valley Grasslands State Park	Boating, boat ramps, fishing, wildlife viewing	9
San Luis Reservoir State Park	Boating, boat ramps, family and group campsites, primitive camping, RV sites with hookups, RV dump station, fishing, swimming, surfing/windsurfing, hiking, horseback riding, geocaching, picnic areas, exhibits and programs, guided tours, off-highway vehicle use	17
McConnell State Recreation Area	Fishing, camping, picnic area, play areas	19
Pacheco State Park	Primitive camping, hiking, horseback riding, geocaching, picnic areas, interpretive exhibits and programs, guided tours	20
Turlock Lake State Recreation Area	Boating, swimming, fishing, camping, RV camping	32

Facility	Offers…	Distance from City* (Miles)
County of Stanislaus Parks**		
Frank Raines Off-Highway Vehicle Park	Off-highway vehicle recreation, biking, hiking, mudding, deer and wild pig hunting, picnic tables and shelters, barbecues, playground, sports field, volleyball court, horseshoe pit, recreation hall	19
Modesto Reservoir Regional Park	Boating, swimming, fishing, waterskiing, jet skiing, bird watching, waterfowl hunting, camping, picnic shelters, barbecues, archery range, radio-controlled model airplane field	31
La Grange Regional Park	Off-roading, mudding, motocross, camping, picnic tables, playground	38
Woodward Reservoir Regional Park	Boating, boat launches, swimming, fishing, water/jet skiing, waterfowl hunting, camping, picnic shelters, barbecues, volleyball court	38

* Distances measured "as the crow flies"; roadway mileages are higher
** County of Merced has no open space parks in City vicinity

Regulatory Context

California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires that projects proposed or funded by state and local government agencies undergo review to identify their effects on the environment prior to approval, unless they fit into one of the categories of projects that qualify for exemption, either because they have been identified as having no significant effects or because they have been specifically exempted by the Legislature (California Public Resources Code §21001.1; *CEQA Guidelines* §15260, §15300).[1] The goals of the CEQA process are to ensure that the significant impacts of a proposed project are disclosed to the public, that ways of avoiding or reducing environmental damage are identified and incorporated into the project, and that public participation in the planning process is enhanced (*CEQA Guidelines* §15002).

The NCCA projects are not expected to qualify for exemption from CEQA review, although they would result in substantial positive outcomes (as well as short-term adverse impacts) and are expected to result in a net benefit for both the natural environment and the community. As a result, concurrent with the development of this Master Plan, the City is embarking on the CEQA process, and anticipates circulation of the CEQA document in early 2021.

None of the projects planned for the NCCA is expected to result in environmental impacts that cannot be mitigated below the level of significance; the appropriate CEQA document is therefore expected to be an initial study and mitigated negative declaration (IS/MND) rather than an environmental impact report (EIR). To increase cost and schedule efficiency, the City tentatively plans to analyze all of the projects in a single document. This combined coverage will also have the benefit of bringing all four of these separate but related

[1] CEQA review requirements are the same for public and private projects; a key intent of the statute is to ensure that public projects are subject to the same "level of review and consideration" as private projects that require approvals from public agencies (California Public Resources Code §21001.1).

and complementary projects before the public and other agencies for review and comment at the same, providing a more comprehensive picture of the projects, their impacts, and their benefits.

The IS/MND prepared for the NCCA projects will in effect be a programmatic IS/MND document, since it will analyze multiple projects that together form a program of undertakings to realize the vision of this Master Plan. However, unlike many programmatic CEQA documents—and particularly documents analyzing the impacts of planning documents, which are by nature general and visionary in nature—it will analyze at least two of the NCCA projects "to the project level." This will enable prompt implementation following adoption of the MND, with no further CEQA review required unless conditions, or the projects themselves, change significantly.

The projects planned for project-level analysis are the NEWS project and the wetland project, which have been planned in the most detail to date. It may also be possible to analyze the Newman Nature Park to the project level. The MDTW project, which is in the preliminary planning stages, will be analyzed to the program level, with project-level detail provided where available. As planning proceeds and more detail on the MDTW project becomes available, the City will likely need to conduct a second round of CEQA review for the MDTW project before approving it to proceed. This may take the form of an internal addendum or a tiered document that incorporates and builds on the analysis already circulated, or it may be a stand-alone document, depending on how much background conditions and the nature of the project itself have evolved since the first round of analysis.

Other Regulations & Requirements

A number of other laws and regulations have the potential to apply to the NCCA projects because of existing environmental values in the Plan Area (described in Chapter 3). They are summarized in Table 2-3.

Table 2-3. Other Regulations Applicable to NCCA Projects

Regulation	Under the Jurisdiction of…	Scope and Requirements
Federal Clean Water Act, Section 404	U.S. Army Corps of Engineers (Corps)	Regulates the placement of "dredged and fill materials" into waters of the United States, including wetlands. In practice, because the terms *dredged and fill* are interpreted very broadly, requires Corps permit authorization for a wide range of activities entailing disturbance or permanent impact below the ordinary high water mark (OHWM) in fresh water and below the mean higher high tide (MHHT) line in tidally influenced waters
Federal Clean Water Act, Section 401	RWQCB	Requires projects that must obtain certain other federal permits, including CWA Section 404 authorization from the Corps, to obtain certification from the RWQCB that the proposed activities would not degrade the quality of the receiving waters, or RWQCB concurrence that certification can be waived
Federal Clean Water Act, Section 402[a] (National Pollutant Discharge Elimination System)	RWQCB	Regulates discharge of stormwater and other runoff from construction sites and other localized ("point") sources. In California, requires construction projects with a disturbance footprint of 1 acre or more to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit), which entails preparation by qualified personnel of a Storm Water Pollution Prevention Plan (SWPPP) reflective of site conditions and the sensitivity (risk level) of receiving waters
California Fish and Game Code Sections 1600 *ff.*	California Department of Fish and Wildlife (DFW)	Regulates activities affecting the geomorphology and function of California's rivers, streams, and lakes. Requires DFW approval for activities that would

Regulation	Under the Jurisdiction of…	Scope and Requirements
		• divert or obstruct the natural flow of a river, stream, or lake • modify the bed, channel, or bank of a river, stream, or lake • use material from the bed, channel, or bank of a river, stream, or lake • place debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake
Federal Endangered Species Act	U.S. Fish and Wildlife Service (USFWS)	Among other provisions, regulates activities affecting plant and wildlife species listed by USFWS or the National Marine Fisheries Service as Threatened or Endangered, and their habitat. Requires USFWS or National Marine Fisheries Service authorization for activities affected listed species or their habitat
California Endangered Species Act	DFW	Among other provisions, regulates activities affecting plant and wildlife species listed by the State of California as Threatened or Endangered, and their habitat. Requires DFW authorization for activities affecting listed species or their habitat

In addition to the resource agency authorizations listed in Table 2-3, the NCCA projects are expected to require building permits and grading authorization from the County of Merced (County). Extension of water service outside City limits to support limited uses at the NCCA will require authorization from the Merced County Local Agency Formation Commission (LAFCo).

At the City level, this Master Plan and the NCCA projects will need to be approved by City Council because the Plan Area is outside City limits and outside the City's defined planning area (Figure 1-1). Structures, such as those in the community area planned as part of the Newman Nature Park, will require City building permits. Approvals for grading and other project features will be issued based on review of project plans and specifications.

National Environmental Policy Act

Much like CEQA at the state and local level, the National Environmental Policy Act (NEPA) requires that projects proposed, funded, or authorized by federal agencies undergo environmental review prior to the federal agency taking action. Issuance of permits—such as those required under CWA Section 404—by federal agencies qualifies as a federal "action" subject to NEPA review. For permits that are issued at a programmatic or nationwide level, NEPA review also occurs at the program or national level, and separate, project-specific review is typically not required. Consequently, if the NCCA projects can obtain federal—specifically, Corps—permit coverage under any of several potentially applicable Nationwide Permits, NEPA review is unlikely to be needed. If, however, the Corps determines that Individual (project-specific) Permits are warranted, NEPA review will become necessary. In this case, the CEQA document will be expanded to become a "joint" document addressing both CEQA and NEPA requirements. The potential need for NEPA review is expected to be resolved through agency dialogue soon after the completion of this Master Plan.

Planning History

The use of natural processes for stormwater and wastewater treatment has become increasingly visible in recent decades, and City staff—inspired by successful projects such as the Arcata Marsh, where constructed marshlands have been providing tertiary treatment for wastewater since the late 1980s—have long held the vision that such applications would one day serve the Newman community. The parcels that ultimately became the Plan Area were considered particularly appealing because of their location adjacent to the stormwater pump

station that delivers runoff from the majority of the City to the Miller Ditch. With this in mind, staff informally approached the owner of the Plan Area parcels in the early 2010s to indicate interest in purchasing the property for a constructed stormwater treatment wetland should the owner ever wish to sell them, and when the parcels became available, the City was quick to take advantage of the opportunity. Staff also realized that the Plan Area parcels were large enough to host additional complementary projects and supported remnant habitat features that would be conducive to additional restoration, enabling development of a complex of projects that could ultimately meet multiple community needs.

Site Selection

As identified above, the NCCA site was selected with the vision that would become the NEWS project in mind—and because it offered opportunities for additional compatible projects that would provide further community benefits consistent with City planning priorities. Three primary factors drove the selection of the Plan Area parcels:

- proximity to the City's existing stormwater pump station at the northwest corner of Canal School Road and Inyo Avenue, which delivers stormwater from approximately two-thirds of the City, including its densest and most industrialized areas, to the Miller Ditch (Figure 1-3)
- location immediately adjacent to the route of a planned Class I bicycle path (Figure 1-6, Figure 4-4)
- opportunities to enhance and restore existing wetlands, which are currently in a disturbed and degraded state (see Chapter 3 for more information on existing site conditions)

Although the City owns extensive lands to the east, surrounding the WWTP (Figure 1-5), siting the NCCA in closer proximity to the WWTP was ruled out because

(1) it would require installation of extended, large-diameter conveyance to deliver stormwater to the site for treatment, with corollary environmental and cost impacts, and

(2) locating the NCCA farther from the City proper would make it more difficult to reach by foot or bicycle and would undermine its success in achieving the City's public accessibility objectives

Project Planning

Led by Public Works and the City Manager with assistance from the Community Development Department's planning staff, project planning moved ahead with the understanding that the two NCCA Plan Area parcels would support multiple complementary projects. In 2018 – 2019, the City retained consultants to assist with project planning, including Darla Elswick Consulting, RICK Engineering, and Kevin Merk Associates of San Luis Obispo for NEWS project planning, Vollmar Natural Lands Consulting of Berkeley and Sacramento for wetland project planning, RRM Design Group of San Luis Obispo for Newman Nature Park planning, and Redtail Consulting of Fremont for parcel-wide master planning, environmental review, and regulatory permitting support. The City also entered into a Memorandum of Understanding with UC Merced for co-development of the MDTW project. Although the four projects are planned to serve separate and distinct purposes, they are seen as complementary pieces of a larger planning vision, and will occupy the same context of opportunities and constraints. As a result, the City's consultants have largely operated as members of a single, cooperative team with extensive collaboration, information sharing, and mutual support facilitated by City staff.

A critical early step was to develop an understanding of the environmental opportunities and constraints presented by the Plan Area parcels, in order to

(1) understand exactly what would and would not be possible (and appropriate) within the Plan Area, and

(2) delineate the approximate footprint of each project so the projects would capitalize on the opportunities offered by the parcels, avoid challenges posed by existing constraints to the extent feasible, and minimize unnecessary environmental impacts

In spring 2019, Kevin Merk Associates conducted a preliminary biological constraints analysis for the Plan Area (Kevin Merk Associates 2019), funded by a SWRCB Proposition 1 Storm Water Grant Program Round 1 grant to the City for NEWS project planning, administered by the Council for Watershed Health. The engineering team also excavated test pits and conducted infiltration tests to evaluate soil properties, including permeability, on the Plan Area parcels (Technicon 2019). This was followed in late 2019 – early 2021 by several more detailed studies, including:

- topographic survey, needed to support engineering design
- a preliminary delineation of state- and federally jurisdictional habitat (wetlands and waters) (Vollmar Natural Lands Consulting 2021a)
- more detailed studies of the Plan Area's biological resources (Vollmar Natural Lands Consulting 2020a, 2021b)
- water quality and water budget studies for the Miller Ditch (Rodal Morales and Beutel 2020, Rodal Morales et al. 2020)

Additionally, in April 2020, the City contracted to have five piezometers installed to monitor shallow groundwater levels on the 78-acre parcel (ENGEO 2020). Results of the studies conducted to date are summarized in Chapter 3 (*Existing Conditions*). Further soil and infiltration testing was conducted during summer 2020 in conjunction with preliminary design of the wetland project (Vollmar Natural Lands Consulting 2020b). Based on the constraints and opportunities identified through these planning studies, Table 2-4 summarizes the rationale used to site each of the NCCA projects within the Plan Area.

Table 2-4. Project Siting and Footprint Considerations

Project	Key Constraints	Siting/Footprint*
NEWS project	• Maintain sufficient vertical separation between the bottom of the NEWS wetland basins and the shallow groundwater table • Avoid need for pumping to move stormwater between the NEWS project basins (requires proximity to inlet from Miller Ditch to provide efficient hydraulic gradient, due to nearly flat topography on Plan Area parcels) • Avoid central swale area on 78-acre parcel (discussed further in Chapter 3), which offers good habitat restoration opportunities	Northwest quadrant of 78-acre parcel; basin layout and depth optimized to enable treatment of runoff from design storm event (see discussion of NEWS project goals and objectives in Chapter 4) and maximize hydraulic function within limited footprint
Wetland project	• Minimize impacts on existing wetland features while capitalizing on opportunities for habitat enhancement, including central swale area and degraded ephemeral wetlands on 24-acre parcel	Central and east-central portion of 78-acre parcel, extending to 24-acre parcel
MDTW project	• Enable efficient delivery of water from Miller Ditch, without need for pumping • Avoid need for pumping to move water within project (requires proximity to Miller Ditch due to nearly flat topography on Plan Area parcels) • Avoid NEWS project footprint	Southwest quadrant of 78-acre parcel

Project	Key Constraints	Siting/Footprint*
	• Avoid central swale footprint on 78-acre parcel, which offers good habitat restoration opportunities	
Newman Nature Park	• Minimize impacts on existing wetland features • Avoid impacts on habitat created by other projects • Provide public access as appropriate throughout Plan Area, avoiding sensitive habitat areas	Community facilities area located in southeast corner of 78-acre parcel; trails in upland areas throughout 78-acre parcel

** Approximate project footprints are shown in Figure 1-2.*

Initial conceptual designs for the four NCCA projects were developed independently by the four consultant teams retained by the City. In late summer and early fall 2020, the City hosted a series of contactless virtual charrette sessions to enable interaction between the design teams. One of the key goals these sessions was to "dovetail" the footprints and features of the four projects in more detail, maximizing long-term benefits to habitat function and value across the NCCA site. The charrettes also took advantage of the new soil and hydrologic information collected in summer 2020. The charrette process resulted in modifications to the wetland and MDTW projects, which have been incorporated into this Master Plan. Charrettes will be ongoing as planning moves forward, to make sure the four projects continue to accommodate one another for best possible outcomes.

Stakeholder Involvement

Planning for the NCCA projects included early and comprehensive outreach to stakeholders. In addition to internal City finance and operations staff, key stakeholders were identified as including the following groups.

- Regulatory agencies that may have permit authority over the NCCA projects (see *Other Regulations & Requirements* above)
- The County of Merced, which has land use planning authority over the NCCA parcels since they are outside City limits
- CCID, which oversees provision of irrigation water via the Miller Ditch, and coordinates Miller Ditch operation and maintenance
- The Newman community at large

Table 2-5 summarizes stakeholder outreach conducted to date in the NCCA planning process, and the input received. In addition to the activities discussed in Table 2-5, in May 2020, the consultant team contacted California's Native American Heritage Commission for information on tribal contacts in the Newman area, who have been added to the list of stakeholders for future outreach. Additional community outreach focusing specifically on the Newman Nature Park is ongoing as of early 2021.

Table 2-5. Stakeholder Outreach

Group	Outreach Activities	Key Outcomes & Takeaways
CCID	• In spring 2019, the consultant team contacted CCID to confirm the potential to divert water from the Miller Ditch	• CCID confirmed that this was feasible within certain limitations that are not expected to affect project feasibility • CCID additionally clarified that the majority of the lands east of Canal School Road are outside their jurisdiction but cautioned that any downstream uses of Miller Ditch water are likely

Group	Outreach Activities	Key Outcomes & Takeaways
		well established and may need further investigation if the NCCA projects would reduce Miller Ditch flows downstream of the NCCA. If the City elects to divert treated water from the Plan Area for offsite beneficial uses (e.g., at the WWTP), this will be a topic for further dialogue to ensure that all users' needs can be balanced
Regulatory agencies	• In October 2019, during the pre-design phase, City and consultant team staff attended a pre-application meeting with Corps and RWQCB staff to discuss the NEWS project and briefly introduce the other NCCA projects • The consultant team conducted informal phone and email dialogue with Corps and RWQCB staff during spring 2020 to discuss the possibility of the NCCA projects (in particular, the NEWS and wetland projects) achieving "self-mitigating" status since they would restore and create significantly more aquatic habitat than they would impact • In early July 2020, City and consultant staff attended a virtual interagency task force meeting with Corps regulatory staff, Corps "Section 408" staff, and RWQCB staff in early to present the overall NCCA vision in more detail, update the agencies on additional technical studies and planning conducted since October 2019, and discuss permit requirements. USFWS and DFW staff typically attend these meetings but were not in attendance in July; the consultant team will follow up with them in coming weeks. NMFS staff indicated that they would not attend, likely because impacts on species under NMFS jurisdiction are expected to be beneficial and would only occur through the indirect San Joaquin River nexus	• At the October 2019 pre-application meeting, RWQCB staff expressed concern about the potential for infiltration from the NEWS project's wetland treatment basins to infiltrate into the subsurface and adversely affect the quality of shallow groundwater. This was addressed by design (ensuring basin depth is appropriate to maintain adequate separation between the basin invert and the groundwater table, and lining one of the basins where separation would be inadequate due to hydraulic constraints) • During informal phone conversations, Corps and RWQCB staff indicated that there was some potential for the NEWS and wetland projects to qualify as self-mitigating if specific conditions could be met. In particular, the habitat counted toward mitigation credit would need to be preserved in perpetuity under a conservation easement, which would typically be managed by an accredited third party. This may be feasible if the easement terms can be structured to permit normal operations; the City will continue to explore this • At the July 2020 meeting, RWQCB staff reminded the team that operation of the NEWS project (where periodic sediment removal is expected to be necessary) will need to be consistent with current state standards, and WDRs will be required for the NEWS project discharge to the Miller Ditch • Corps 408 staff confirmed the project team's understanding that 408 review will not be needed since no federal project works would be affected by the NCCA projects, and recommended that the team contact the Central Valley Flood Protection Board (CVFPB) to determine whether their authorization will be needed. The CVFPB and the Lower San Joaquin Levee District subsequently also confirmed that they do not have jurisdiction over the NCCA projects
County of Merced	• In early 2020, the City reached out to Merced County Planning staff for input into the development of the CEQA approach for the NCCA projects	• The County has expressed general support for the NCCA projects • Additional outreach will be conducted to clarify the County's approvals process

Group	Outreach Activities	Key Outcomes & Takeaways
Newman community at large	In 2019, following several staff presentations at City Council meetings, where residents had the opportunity to provide input on the NCCA concept and projects, the City conducted additional direct outreach to the community • City staff hosted tables at the April 2019 "Newman Together" community event and the September and October 2019 Newman Harvest Markets. All three events were widely attended, and materials were provided in Spanish and English to increase the opportunity for residents to comment. At each event, community members were surveyed concerning their preferences for the NCCA parcels, the City's intent to develop a conservation area and natural park, and specific parkland features • Also in 2019, the City and consultant staff held a collaborative community design charrette to solicit input on project preferences In early 2021, the City began a series of virtual meetings focusing specifically on community desires for the Newman Nature Park • The first meeting, held in early February via a public Zoom call, was facilitated to provide opportunities for community members to build on previous outreach, assist the City in visioning the Nature, and develop more detail around specific features desired at the Nature Park • The second meeting, in mid-February, was framed as a virtual focus group design charette. Following an introduction to bring new participants up to date, attendees were invited to join facilitated small-group discussions using the "break-out room" tool in Zoom. Using Jamboard, Google's interactive whiteboard system, small-group participants discussed options and chose locations within the Nature Park footprint for the features and amenities previously identified by the community. Each break-out group then had an opportunity to present their concept to the group as a whole for voting • As of this writing (February 2021), outreach is ongoing	• Overall, the community members surveyed at City Council meetings and the 2019 events communicated that they liked and supported the NCCA concept. The community expressed strong preferences for the following features: – birdwatching areas – jogging/walking/bicycle paths – opportunities to attend nature-themed learning events – improved opportunities for school-age children to interact with nature All of these features were incorporated into the NCCA vision • At the first virtual meeting in 2021, community members expressed a preference for an overall "natural" style at the Park, and overwhelmingly selected *Environment* as their preferred Park theme Among the features identified as desirable were trails and boardwalks (including bicycle trails), educational exhibits, outdoor classrooms, rest areas along trails, picnic areas, bird watching areas, a garden, and a fishing pond Some of the features identified by the community will likely not be appropriate at the Nature Park but will remain on the City's radar for future projects. These include vending machines, a BMX track, a dog park area, a fountain-type water feature, and bocce ball courts. The majority of attendees identified that they would bike to the Nature Park if a safe route were available • The second 2021 virtual meeting resulted in three separate community-generated layouts for the Nature Park, each including comments on specific features and preferences. These will provide a basis for further discussion and will continue to inform City planning for the Park

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Chapter 3

Existing Conditions in Plan Area

Land Use

Land Use Designation & Zoning

The Plan Area comprises Assessor's Parcel Numbers (APNs) 054-050-019 and -020 (78-acre parcel at the southeast corner of Inyo Avenue and Canal School Road) and APN 054-05-010 (24-acre parcel northeast of Brazo Road). The Plan Area parcels are located in Merced County immediately southeast of the Stanislaus County–Merced County boundary. They are immediately outside and adjacent to City limits and the City's Primary Sphere of Influence, but are within the Planning Area defined in the current General Plan (City of Newman 2007) (Figure 1-1). As a result, the Plan Area is subject to both City and County of Merced (hereafter, County) general plan land use designations, but is zoned only by the County, as shown in Table 3-1.

Table 3-1. City and County Land Use Designations for Plan Area Parcels

General Plan Land Use Designation		Zoning
City	County	County
Agriculture	Agriculture	A-1 General Agriculture

Sources: City of Newman 2007, 2017; County of Merced 2013, County of Merced 2020

The County's A-1 (General Agriculture) zone is generally intended to provide for areas of intensive farming that require higher quality soils, water availability, and relatively flat topography, and for agricultural commercial/ industrial uses that depend on proximity to urban areas or location in sparsely populated low-traffic areas (County of Merced Unified Development Ordinance 18:2:18.10). A wide range of uses are permissible (allowed by right based on zoning) or conditionally permissible (permissible with County approval) in A-1 zoned areas. Both public parks and recreation areas and wildlife management areas are permissible. The County zoning code does not specifically address public facilities or stormwater treatment on agricultural parcels.

Although the Plan Area parcels are designated and zoned for agricultural use, as City-owned land not under cultivation at the present time, neither of the parcels is currently under Williamson Act contract.

Historic & Current Land Uses

Like the surrounding area, where cultivation for a variety of row and orchard crops has been widespread and intensive throughout the last several decades, the 78-acre parcel has a history of agricultural use. Site topography and historic aerial photographs indicate that at one time it was graded for flood irrigation supported

by a system of ditches, and it was previously cultivated for row crops, but has been fallow since the 1990s. The 24-acre parcel appears not to have been cultivated. In recent years, both of the Plan Area parcels have primarily been used for low-intensity grazing (Pinnell pers. comms., GoogleEarth 2020, Vollmar Natural Lands Consulting 2021a).

Physiography & Hydrology

Surface Drainage

The Plan Area parcels lie at an elevation of approximately 75 – 80 feet above mean sea level and are gently rolling to nearly flat, with a maximum difference in elevation across each parcel of less than 10 feet.

Per the U.S. Geological Survey's hydrologic unit classification, the Plan Area is located in the Bennett Valley – San Joaquin River watershed (see U.S. Geological Survey 2020).

Based on review of archival aerial photographs and current conditions in the region, the two parcels were historically part of the large floodplain and tributary complex draining generally eastward to the San Joaquin River (Pinnell pers. comms., Vollmar Natural Lands Consulting 2021b). Regionally and in the site vicinity, this system has been substantially disrupted and replaced by agricultural uses, and the Plan Area parcels now occupy a complex surface water drainage context that includes a network of agricultural canals and ditches as well as the Newman Wasteway, which ultimately discharges to the San Joaquin River to the east.

As identified above, the majority of the 78-acre parcel was previously graded to enable irrigation and cultivation. The 24-acre parcel does not appear to have been substantially graded, and although they are in a disturbed condition (particularly the 78-acre parcel), neither parcel appears to have been subject to the deep ripping typical of agricultural lands in the Plan Area vicinity (Vollmar Natural Lands Consulting 2021a, 2021b). Both parcels support a conspicuous channel-like feature that appears to represent a substantially disturbed remnant tributary of the San Joaquin River, labeled as the *central swale* on Figure 1-2. This remnant channel no longer supports through-going flow; it is blocked by berms at both ends, has been extensively modified by shallow grading for agriculture, and is disconnected from the River by intervening cultivated lands. Berming along the banks has also reduced its original extent and further modified its hydrology although it is locally open to overland flow input on both the 78-acre and 24-acre parcels (Vollmar Natural Lands Consulting 2021a).

Three Drainage Management Areas (DMAs) have been defined in the vicinity of the Plan Area, based on topography and existing conveyance features, including agricultural ditches and the City's stormwater infrastructure (Figure 3-1):

- the urban City area
- agricultural fields to the north
- agricultural fields to the south

The majority of the urban City area, and the agricultural fields to the north, drain to the existing City stormwater pump station at the northwest corner of Canal School Road and Inyo Avenue. The agricultural fields to the south drain to the CCID's Miller Ditch, which borders the Plan Area parcels to the west and north (RICK Engineering 2019) and empties into the Newman Wasteway east of the 24-acre parcel, with excess flow from large storm events diverted via an overflow pipeline to a separate outfall to the north along the Wasteway. The Newman Wasteway in turn discharges to the San Joaquin River south of the City's WWTP and Hills Ferry Road (Figure 1-1).

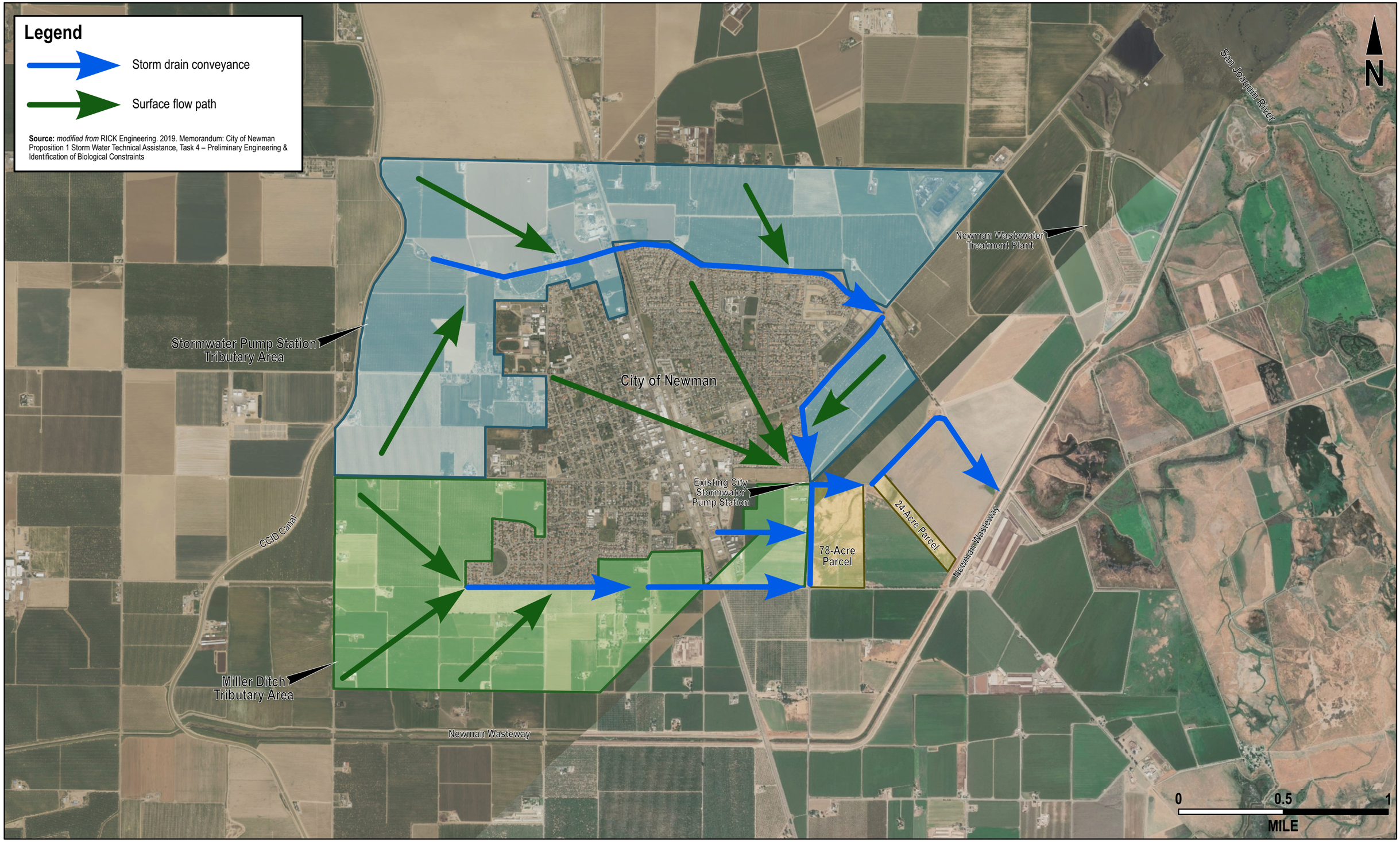

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Figure 3-1. Drainage in Plan Area Vicinity
Newman Community Conservation Area Master Plan
City of Newman

The Miller Ditch is a constructed feature that conveys flows from several sources. During the spring and summer, supply from the CCID canal west of the City is diverted into the Miller Ditch for irrigation use; several agricultural users both up- and downstream of the Plan Area have established agreements with the CCID for use of supply from the Miller Ditch (Beutel pers. comm., Landon pers. comm.). The Miller Ditch also receives agricultural tailwater and some overland runoff. As a result, flow in the Ditch is generally year-round, although data collected to date suggest that both flow volumes and water quality vary seasonally (Beutel pers. comm., Rodal Morales and Beutel 2020).

More specifically, flow and water quality monitoring conducted between September 2019 and May 2020 by the UC Merced Environmental Systems Graduate Group showed three regimes of flow and water quality in the Miller Ditch. In general, during the summer irrigation season, flows are comparatively high and are dominated by imported (CCID) water low in salinity and nitrate. In the fall, after irrigation flows are discontinued, overall flow volumes decrease and are dominated by shallow groundwater high in salinity and nitrate but low in phosphorus. During the winter, flows are low to moderate with somewhat elevated salinity, suggesting a mixture of freshwater rainfall input and more saline shallow groundwater. Additionally, comparison of data from monitoring stations up- and downstream of the existing stormwater pump station outfall at the northwest corner of the 78-acre parcel suggests that incoming stormwater flows from the pump station contribute elevated levels of suspended solids to Miller Ditch flows. Further monitoring will be needed to more fully assess these interpretations (Rodal Morales and Beutel 2020).

Shallow Groundwater

Like the City itself, the Plan Area overlies the Delta-Mendota Groundwater Subbasin of the San Joaquin River Groundwater Basin. The primary water bearing formation in the Delta-Mendota Subbasin—like the other subbasins along the west side of the San Joaquin Valley—is the Tulare Formation (California Department of Water Resources 2015) of probable Pliocene – Pleistocene age (Lettis 1982). Within the Tulare Formation, an upper unconfined aquifer and a lower confined aquifer are separated by a regionally extensive aquitard, the Corcoran Clay. Regional groundwater flow in the subbasin is generally toward the east (California Department of Water Resources 2015, City of Newman 2016, San Joaquin River Exchange Contractors GSP Group 2019).

In April 2020, the City contracted for the installation of five piezometers to monitor groundwater levels in shallow subsurface materials on the 78-acre parcel. Their locations are shown on Figure 3-2. Table 3-2 shows depths to groundwater as measured approximately one week after piezometer installation, allowing time for water levels to stabilize.

Table 3-2. Depth to Shallow Groundwater, 78-Acre Parcel

Location	Approximate Groundwater Elevation (Feet, NAVD88)	Approximate Depth to Groundwater from Surface (Feet)
Piezometer 1 (1-PZ1)	70.1	8.1
Piezometer 2 (1-PZ2)	70.1	10.1
Piezometer 3 (1-PZ3)	73.2	7.1
Piezometer 4 (1-PZ4)	71.6	8.5
Piezometer 5 (1-PZ5)	73.6	6.6

Source: ENGEO 2020

A test pit dug in May 2019 in the east-central portion of the 78-acre parcel—near the location of Piezometer 4 (1-PZ4 on Figure 3-2)—encountered groundwater at a depth of 6.5 feet below ground surface (Technicon 2019, 2020), following an unusually wet winter with late rains.

Testing conducted in May 2019 suggests that infiltration rates on the 78-acre parcel range from 3.8 gallons/square foot/day at the parcel's northeast corner to as much as 34.1 gallons/square foot/day in the central portion of the NEWS project footprint and 41.1 gallons/square foot/day near the NEWS project's southeast boundary. Similar testing in the central portion of the 24-acre parcel showed an infiltration rate of 1.1 gallons/square foot/day (Technicon 2019). Additional infiltration testing was conducted in late summer 2020 in support of wetland project design and yielded similar results, with measured infiltration rates ranging from as low as 1.1 gallons/square foot/day to a maximum of 41.1 gallons/square foot/day, with lower rates along the central swale on the 78-acre parcel and in the less-disturbed wetlands on the 24-acre parcel, and higher rates in leveled areas outside the central swale on the 78-acre parcel (Vollmar Natural Lands Consulting 2020).

An existing well is located near the northwest corner of the 78-acre parcel. Very little information is available on the well, but Department of Water Resources (DWR) records indicate that it was drilled in late 1992 or early 1993. It has a 6-inch casing diameter, was completed to a depth of 185 feet, and is screened from 150 to 170 feet below ground surface (California Department of Water Resources n.d.), and thus is probably producing from the upper unconfined aquifer. In recent years, it has been used for cattle watering (Souza pers. comm.).

Because the Plan Area parcels—unlike surrounding acreage—have not been deep-ripped, the Plan Area was originally thought to preserve intact Northern Claypan, an indurated clay layer that significantly reduces downward percolation of surface water and creates perched groundwater conditions in the shallow subsurface (Vollmar Natural Lands Consulting 2021a). Further soil testing performed in summer 2020 has shown, however, that although subsurface clays are locally present, there is no regional claypan on the plan area parcels (Vollmar Natural Lands Consulting 2020). Design of the wetland project—described further in Chapter 4—has been adjusted to take maximum advantage of existing soil conditions and shallow hydrology in the Plan Area.

Soils

The Plan Area and surrounding vicinity are situated on soils assigned to the Pedcat, Britto, and Dosamigos series (Figure 3-3). These are saline, clay-rich, loamy soils of alluvial fans, fan aprons, and basin floors, formed in alluvium derived from sedimentary rock. Drainage is poor, such that soils may remain seasonally saturated, and pedogenic calcium carbonate and/or gypsum are present in varying percentages. Soil profiles are locally affected by leveling for agriculture (Natural Resources Conservation Service 2019).

Table 3-3 provides an overview of key characteristics by soil series. As shown on Figure 3-3, the Plan Area is largely underlain by Pedcat clay loam (leveled), with the exception of the central swale, which is underlain by Britto clay loam (leveled).

Table 3-3. Soils of Plan Area and Vicinity

Soil	Landform	Typical Profile*	Drainage	Salinity
Merced County				
Britto clay loam, leveled	Rims on basin floors	0 – 5: clay loam 5 – 22: clay loam 22 – 62: sandy clay loam *Up to 5% $CaCO_3$**, 10% $CaSO_4 \cdot 2H_2O$****	Very poor	Moderate – strong

Source: *after* ENGEO 2020; aerial photograph from GoogleEarth (imagery date 07/18/2019, downloaded 03/16/2020)

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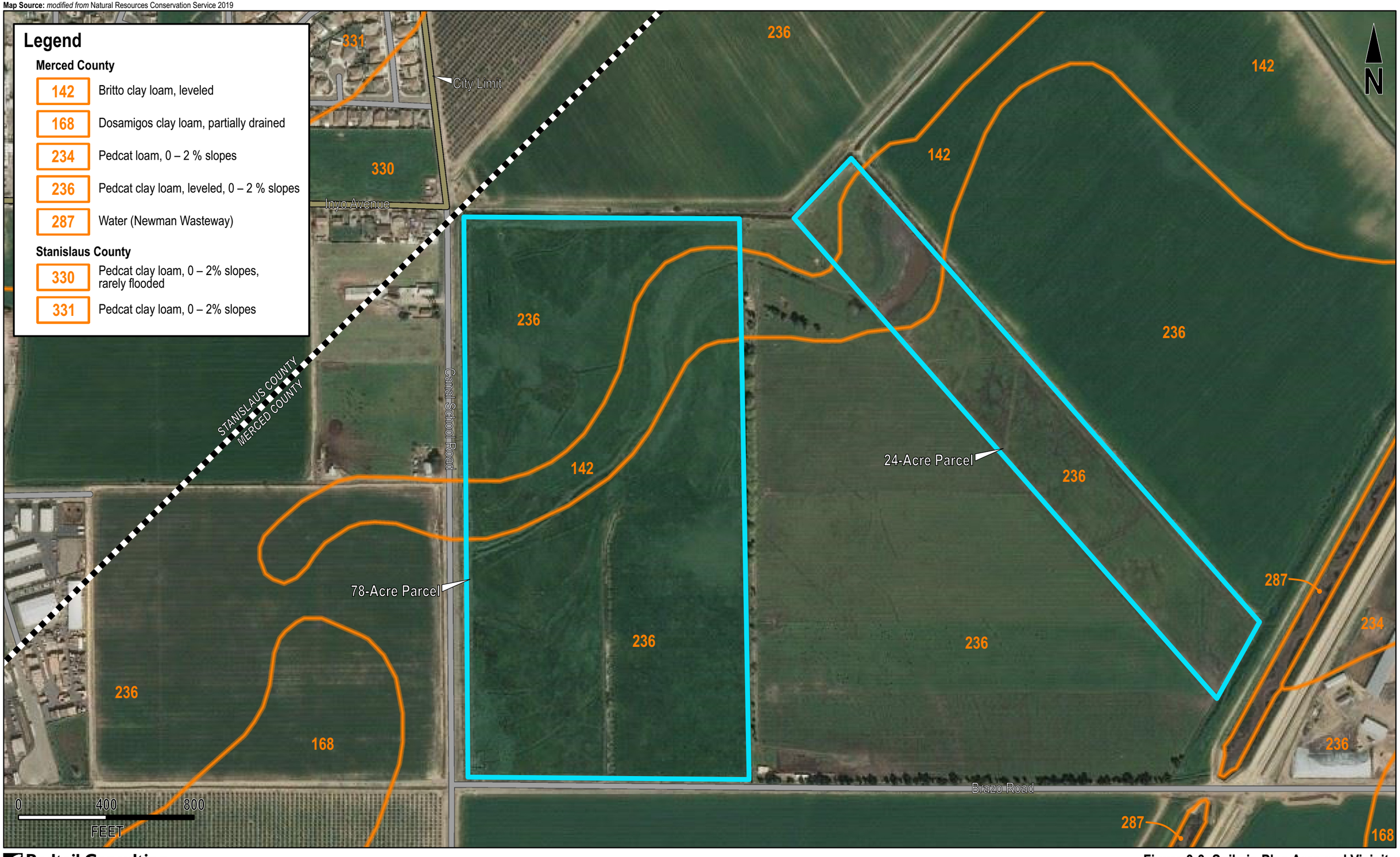
Figure 3-2. Piezometer Locations
Newman Community Conservation Area Master Plan
City of Newman

Map Source: *modified from* Natural Resources Conservation Service 2019



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Environment & Community

Figure 3-3. Soils in Plan Area and Vicinity
Newman Community Conservation Area Master Plan
City of Newman

Soil	Landform	Typical Profile*	Drainage	Salinity
Dosamigos clay loam, partially drained	Alluvial fans	0 – 5: clay loam 5 – 29: clay loam 29 – 62: clay loam *Up to 35% $CaCO_3$, 10% $CaSO_4 \cdot 2H_2O$*	Somewhat poor	Very slight – strong
Pedcat loam, 0 – 2% slopes	Fan aprons	0 – 5: loam 5 – 23: clay 23 – 29: clay 29 – 60: stratified sandy clay loam to clay *Up to 3% $CaCO_3$*	Poor	Moderate – strong
Pedcat clay loam, leveled, 0 – 2 % slopes	Fan aprons	0 – 5: clay loam 5 – 23: clay 23 – 29: clay 29 – 60: stratified sandy clay loam to clay	Poor	Moderate – strong
Stanislaus County				
Pedcat clay loam, 0 – 2% slopes	Alluvial fans	0 – 7: clay loam 7 – 25: clay 25 – 51: clay loam 51 – 60: stratified sandy clay loam to clay *Up to 15% $CaCO_3$*	Poor	Moderate – strong
Pedcat clay loam, 0 – 2% slopes, rarely flooded	Alluvial fans	0 – 7: clay loam 7 – 25: clay 25 – 51: clay loam 51 – 60: stratified sandy clay loam to clay *Up to 15% $CaCO_3$*	Poor	Moderate – strong

* Depths in inches below ground surface
** Calcium carbonate
*** Gypsum

Source: Natural Resources Conservation Service 2019

Biological Resources & Jurisdictional Habitat

Habitat Conditions

The Plan Area currently supports a mosaic of disturbed upland and wetland habitats, as well as remnant and currently functional agricultural ditches that also offer wetland value. Although vernal pools occur in the region and likely were present historically in the Plan Area, none of the Plan Area wetlands supports a majority of vernal pool indicator species at present, based on biological surveys conducted during winter 2019 – 2020. In recent decades, wetland extent has been influenced, and the condition of some wetlands—particularly on the 24-acre parcel—degraded by flood irrigation to improve summer grazing conditions (Vollmar Natural Lands Consulting 2020, 2021a, 2021b).

The table below summarizes wetland acreages; their distribution is shown on Figures 3-4 and 3-5.

Table 3-4. Potential Jurisdictional Habitat in Plan Area

Habitat Type	Total Extent	Presumed Jurisdiction		
		Corps	DFW	RWQCB
Emergent wetland	0.142	—	—	0.142
Seasonal wetland, central swale	1.396	0.064	0.064	1.396

Habitat Type	Total Extent	Presumed Jurisdiction		
		Corps	DFW	RWQCB
Other seasonal wetland	7.979	2.155	0.886	7.979
Ditch	3.704	3.704	3.704	3.704
Total extent of wetland habitat:	*13.221*	*5.923*	*4.654*	*13.221*

Source: Poisson pers. comm.

Seasonal wetlands on the Plan area parcels support a mixture of native and non-native species, including native Mexican rush (*Juncus mexicanus*) and non-native Mediterranean barley (*Hordeum marinum*), Italian rye grass (*Festuca perennis*), rabbit's foot grass (*Polypogon monspeliensis*), curly dock (*Rumex crispus*), and annual blue grass (*Poa annua*). Emergent wetland supports native common tule (*Schoenoplectus acutus occidentalis*), broad-leaved cattail (*Typha latifolia*), water-pepper (*Persicaria hydropiper*), and knotgrass (*Paspalum distichum*), interspersed with the same native and non-native species found in the seasonal wetlands (Vollmar Natural Lands Consulting 2021a). Based on their distribution and geometry, and the Plan Area's history of agricultural use, wetlands in the Plan Area are thought to represent a combination of heavily disturbed remnant natural features and anthropogenic features created by agricultural grading (Vollmar Natural Lands Consulting 2021b).

Upland habitat on the Plan Area parcels consists primarily of grasslands dominated by non-native species typical of ruderal uplands in the region, although a few small, localized stands of native grassland are present. Non-native grasses found on the parcels include ripgut brome (*Bromus diandrus*), soft chess (*B. hordeaceus*) slender wild oat (*Avena barbata*), foxtail barley (*H. murinum*), and Bermuda grass (*Cynodon dactylon*). Associated non-native forbs include white clover (*Trifolium repens*), bur-clover (*Medicago polymorpha*), bindweed (*Convolvulus arvensis*), summer mustard (*Hirschfeldia incana*), English plantain (*Plantago lanceolata*), white horehound (*Marrubium vulgare*), milk thistle (*Silybum marianum*), black mustard (*Brassica nigra*), and wild geranium (*Geranium dissectum*). Native grassland areas support beardless wild rye (*Elymus triticoides*) and meadow barley (*H. brachyantherum* ssp. *brachyantherum*). Mexican rush also occurs sporadically in upland habitats across both parcels (Vollmar Natural Lands Consulting 2021a).

A number of large mature willows (*Salix* spp.), Mexican fan palms (*Washingtonia robusta*), a mid-sized walnut tree (*Juglans* sp.), and smaller cultivated fruit trees are present immediately outside the east boundary of the 78-acre parcel, visible in Figure 1-2 and other figures with an aerial photograph base.

Additionally, both parcels exhibit numerous large and small mammal burrows, likely the work of California ground squirrel (*Otospermophilus beecheyi*) and pocket gopher (*Thomomys bottae*). Upland habitat on the 78-acre parcel supports several large California ground squirrel burrow complexes, and numerous additional ground squirrel burrows are present within berms and levees. Smaller gopher burrows are concentrated in wetland and grassland habitats. Several California ground squirrel individuals were observed during site visits conducted in March 2020 (Vollmar Natural Lands Consulting 2021a).

Special-Status Species

A number of special-status species have the potential to be present on the Plan Area parcels, including plants as well as wildlife. The Plan Area is not located within designated critical habitat for any listed species (Vollmar Natural Lands Consulting 2021a).

Table 3-5 lists the special-status plants with potential to occur in the Plan Area. None of the species considered potentially present is state- or federally listed; they qualify for special status due to their inclusion in the

N

0 200 400
FEET

Legend

Symbols

- Miller Ditch (approximate; not surveyed)
- Miller Ditch culvert (approximate; not surveyed)

Potential Jurisdictional Features (Federal and State)

- Ditch
- Seasonal wetland swale
- Seasonal wetland

Potential Jurisdictional Features (State)

- Ditch
- Seasonal wetland swale
- Seasonal wetland
- Emergent wetland

Vollmar NATURAL LANDS CONSULTING

Source: *modified from* Vollmar Natural Lands Consulting 2020b

Redtail Consulting
Environment & Community

Figure 3-4. Potential Jurisdictional Waters, 78-Acre Parcel
Newman Community Conservation Area Master Plan
City of Newman

Redtail Consulting
Environment & Community

Figure 3-5. Potential Jurisdictional Waters, 24-Acre Parcel
Newman Community Conservation Area Master Plan
City of Newman

California Native Plant Society's rare plant inventory. Additional special-status plants are known from the region, but are believed to be absent from the Plan Area due to unsuitability of habitat and/or distance from the species' primary range. Protocol-level surveys of the Plan Area parcels for special-status plants were conducted in spring – summer 2020. Parry's rough tarplant (*Centromadia parryi* ssp. *rudis*) (CRPR 4.2) was observed on both the 78-acre parcel and the 24-acre parcel. None of the other species listed in Table 3-5 was found to be present. However, presence and local population extent can vary from year to year, and caution with regard to the other five species is likely still warranted.

Table 3-5. Special-Status Plants Potentially Present in Plan Area

Species	Rank*	Habitat	Potential to Occur in Plan Area
Heartscale *Atriplex cordulata* var. *cordulata* (Annual herb)	1B.2	Saline or alkaline chenopod scrub, meadows and seeps, valley and foothill grasslands, on sandy substrates, at elevations up to 70 meters above sea level	Wetlands in Plan Area offer suitable habitat. Closest documented occurrence is 5 miles away
Crownscale *Atriplex coronata* var. *coronata* (Annual herb)	4.2	Alkaline chenopod scrub, valley and foothill grasslands, vernal pools, commonly on clay substrates, at elevations up to 200 meters above sea level	Wetlands in Plan Area offer suitable habitat
Lesser saltscale *Atriplex minuscula* (Annual herb)	1B.1	Alkaline chenopod scrub, playas, valley and foothill grasslands with sandy substrates, at elevations of 15 – 45 meters above sea level	Wetland and mesic uplands in Plan Area offer suitable habitat
Vernal pool smallscale *Atriplex persistens* (Annual herb)	1B.2	Alkaline vernal pools, at elevations less 115 meters above sea level	Wetlands in Plan Area offer suitable habitat. Closest documented occurrence is 3.3 miles away
Parry's rough tarplant *Centromadia parryi* ssp. *rudis* (Annual herb)	4.2	Alkaline, vernally mesic seeps, roadsides, valley and foothill grasslands, vernal pools, at elevations up to 100 meters above sea level	Wetland and mesic uplands in Plan Area offer suitable habitat
San Joaquin spearscale *Extriplex joaquiniana* (Annual herb)	1B.2	Alkaline chenopod scrub, meadows and seeps, playas, valley and foothill grasslands, at elevations up to 350 meters above sea level	Plan Area offers suitable habitat. Closest documented occurrence is 4 miles away

* Refers to California Native Plant Society's California Rare Plant Ranks and California threat level codes

Key to California Rare Plant Ranks

CRPR 1A = Plants presumed extirpated in California and either rare or extinct elsewhere
CRPR 1B = Plants rare, threatened, or endangered in California and elsewhere
CRPR 2B = Plants rare, threatened, or endangered in California but more common elsewhere
CRPR 3 = More information is needed about plant
CRPR 4 = Plants of limited distribution ("watch list")

Key to California Threat Level Codes

1 = seriously threatened in California
2 = fairly threatened in California
3 = not very threatened in California

Source: Vollmar Natural Lands Consulting 2021a

Special-status wildlife species that may occur in the Plan Area are identified in Table 3-6 on the next page. Numerous additional special-status species—including Valley elberberry longhorn beetle (*Desmocerus californicus dimorphus*), several amphibians, and a number of special-status bird, bat, and other small mammal

species—are known from the region but are not expected to use the Plan Area, due to unsuitability of habitat and/or distance from the locations of documented occurrences (Vollmar Natural Lands Consulting 2021a). Protocol-level surveys for large branchiopods—Conservancy fairy shrimp (*Branchinecta conservatio*), longhorn fairy shrimp (*B. longiantenna*), vernal pool fairy shrimp (*B. lynchi*), and vernal pool tadpole shrimp (*Lepidurus packardi*)—were conducted during winter 2019 – 2020 and these species were found to be absent from the Plan Area (Vollmar Natural Lands Consulting 2021a). California tiger salamander (*Ambystoma californiense*) (CTS) (state and federally listed as Threatened) is also expected to be absent. Although the Plan Area's uplands offer potential refugial habitat for the species, the Plan Area does not offer suitable breeding habitat, is more than 3.6 miles (the maximum distance CTS have been documented as traveling overland) away from the closest known CTS occurrence, and is surrounded by an extensive buffer of unsuitable agricultural lands (Vollmar Natural Lands Consulting 2021a).

Table 3-6. Special-Status Wildlife Potentially Present in Plan Area

Species	Status	Habitat Requirements	Potential to Occur in Plan Area
Amphibians and Reptiles			
Northwestern pond turtle *Actinemys marmorata*	SSC	Permanent and intermittent waters of rivers, creeks, small lakes and ponds, marshes, unlined irrigation canals, and reservoirs	**Low potential.** Irrigation ditches in Plan Area provide marginal habitat, and closest documented occurrence is 2 miles away, but species is highly mobile and could use Plan Area parcels for dispersal when moving between areas of better habitat
Western spadefoot *Spea hammondii*	SSC	Grasslands with shallow temporary pools offer optimal breeding habitat. Adults remain in underground burrows during most of the year	**Low potential.** Seasonal wetlands in Plan Area provide marginal breeding habitat due to very shallow water and fairly short ponding duration. Adjacent annual grassland uplands could provide suitable refugia during dry season, but closest documented occurrence is 6.7 miles away. Species is unlikely to be present but cannot be conclusively ruled out
Giant garter snake *Thamnophis gigas*	FT/ST/SSC	Primarily observed in marshes, sloughs, drainage canals, and irrigation ditches, especially around rice fields; occasionally found in slow-moving creeks. Prefers locations with vegetation close to the water for basking	**Low potential.** Species has been thoroughly studied and there is only one known breeding population in the San Joaquin Valley. Plan Area ditches that offer aquatic habitat connecting to Newman Wasteway and ultimately the San Joaquin River provide potentially suitable habitat. Closest documented occurrence is 2 miles away, is from 1976, and is imprecisely located, but species' presence cannot be conclusively ruled out
Birds			
Tricolored Blackbird *Agelaius tricolor*	SC/SSC (nesting)	Forages in pastures, agricultural fields, rice fields, and feedlots; nests in freshwater marshes with tules or cattails, or in dense thickets of willow, thistle, wild rose, or blackberry in close proximity to open water	**Low potential.** Species occurs year-round in area; closest documented occurrence is 0.6 mile away. Suitable foraging habitat is present in and around the Plan Area but the Plan Area does not provide nesting habitat; the perennial marsh in the central swale is too small and degraded and lacks the density the species requires
Burrowing Owl *Athene cunicularia*	SSC	Found in open, treeless areas with low, sparse vegetation, such as grasslands, deserts, pastures, agricultural fields, and levee embankments. Nests in small mammal burrows	**Potential.** Plan Area provides grassland habitat with small mammal burrows and offers suitable breeding, foraging, and refuge habitat. Closest documented occurrence is 11.7 miles away but species is mobile and may use the Plan Area

Species	Status	Habitat Requirements	Potential to Occur in Plan Area
Swainson's Hawk *Buteo swainsoni*	ST (nesting)	Forages in open grasslands, prairies, and agricultural fields; nests adjacent to riparian habitat	**Potential.** Large trees suitable for nesting are present adjacent to boundaries of Plan Area and suitable foraging habitat is available in and around the Plan Area. Species is known to nest in the region during spring and summer and has been observed foraging onsite
Northern Harrier *Circus hudsonius*	SSC (nesting)	Frequents meadows, grasslands, open rangelands, desert sinks, and fresh- and saltwater emergent wetlands; seldom found in wooded areas. Typically found in flat or hummocky open areas with tall, dense grasses, shrubs, and sedges for nesting, cover, and feeding	**Low potential.** Plan Area provides suitable nesting and foraging habitat in freshwater emergent wetlands and dense grasslands. Closest documented occurrence is 13.5 miles away, but species is mobile and may be present
Loggerhead Shrike *Lanius ludovicianus*	SSC (nesting)	Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. Nests in thorny vegetation, trees, shrubs, brush piles, or tumbleweeds	**Potential.** Plan Area's open habitat and fencing provide suitable foraging and resting habitat and species has been observed onsite
Yellow-billed Magpie *Pica nuttalli*	BCC (nesting)	Prefers open oak and riparian woodland or farm and ranchland with tall trees in the vicinity of grassland, pasture, and cropland	**Potential.** Grassland in the Plan Area and adjacent trees provide suitable habitat
Mammals			
American badger *Taxidea taxus*	SSC	Prefers open areas and may also frequent brushlands with little groundcover. When inactive, dens underground	**Very low potential; likely absent.** Plan Area habitat is marginal and no dens or other signs of the species were observed during the 2019 – 2020 biological surveys. Closest documented occurrence is 6.8 miles away. Species is not expected to be present
San Joaquin kit fox *Vulpes macrotis mutica*	FE/ST	Annual grassland, scrub, subshrub land. Dens in friable soils or enlarges smaller holes created by other animals	**Low potential.** Suitable grassland habitat is present throughout the Plan Area and the species' prey base of small mammals is present, but habitat in the Plan Area is largely disconnected from other suitable habitat in the area, no dens were observed in the Plan Area during the 2019 – 2020 biological surveys, and closest documented occurrence is 3.6 miles away. Species is unlikely to use the Plan Area for breeding but may pass through or hunt on the Plan Area parcels.

Key to Status Abbreviations:
FT = federally listed as Threatened
FE = federally listed as Endangered
BCC = USFWS Bird of Conservation Concern
ST = state-listed as Threatened
SC = candidate for state listing
SSC = state Species of Special Concern

Source: Vollmar Natural Lands Consulting 2021a

Measures to protect sensitive habitats and special-status species in the Plan Area during construction and long-term O&M are laid out in Chapter 8.

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Chapter 4

Vision, Goals, & Objectives

Vision

Habitat Restoration & Creation

As identified in Chapter 1, the NCCA is envisioned as supporting three habitat-related projects, including restoration of wetland and associated habitats and creation of two constructed stormwater and tailwater treatment wetlands, which would be operated and maintained for water quality benefit but would also offer a level of habitat function and value (Figure 1-2).

The habitat-related projects include the following.

- The **NEWS project,** an approximately 21-acre constructed wetland complex located in the northwest quadrant of the 78-acre parcel, which will use natural physical, biological, and biochemical processes to treat stormwater and dry season runoff from the City and surrounding agricultural lands prior to discharge to the Newman Wasteway and San Joaquin River. Because of the need to operate and maintain the constructed wetland treatment complex, the NEWS project will also include unpaved access roadways occupying high-ground embankments that separate the wetland treatment cells; these will be opened to public access for walking, jogging, and bicycling and other non-vehicular nature-oriented recreation once the NEWS project is operational (Figure 4-1)
- The **wetland project,** an approximately 11-acre seasonal wetland, riparian, and grassland restoration project located in the central and east portions of the 78-acre parcel and extending to the central and south portions of the 24-acre parcel, emphasizing natural sequestration of greenhouse gases (GHGs) (Figure 4-2)
- The **MDTW project,** an additional ~16-acre constructed wetland project located in the southwest quadrant of the 78-acre parcel and planned in collaboration with the Environmental Systems Graduate Group in the UC Merced Department of Civil and Environmental Engineering that will treat water from the Miller Ditch, with a focus on removing agricultural pollutants. Like the NEWS project, the MDTW project is also expected to include access roadways that serve a dual purpose as trails enabling non-vehicular access and nature-oriented recreation by the general public (Figure 4-3)

Both the NEWS project and the MDTW project will serve as a "living laboratories" providing hands-on learning opportunities for local students, including the MDTW students involved in project design and operations and K–12 students from area schools.

Together, to the extent that current site constraints permit, the three projects are intended to restore a habitat mosaic consistent with the historical pre-disturbance condition of the Plan Area and its surroundings. The project concepts will also be developed to minimize the loss of existing habitat that currently offers value and to capitalize as much as possible on opportunities offered by remnant wetland and other features. Although archival aerial photographs suggest that the parcel did not historically support perennial ponding, perennial ponding was likely present in other nearby portions of the tributary system (Pinnell pers. comm.), and the year-round presence of water would provide valuable opportunities for waterfowl and other migratory birds, further enhanced by a planting palette that includes numerous native trees and shrubs. In addition, to the extent feasible, the projects will be developed to be self-mitigating.

The projects will also offer several opportunities to better integrate surface water hydrology throughout the parcel. For instance, treated water from the MDTW project is envisioned as discharging to the central swale on the 78-acre parcel, where it will support emergent marsh and riparian habitat restored under the wetland project. At some point in the future, it may be possible for the City to purchase all or part of the intervening parcel and reconnect the central swale between the 78- and 24-acre parcels, further restoring this disturbed remnant tributary channel.

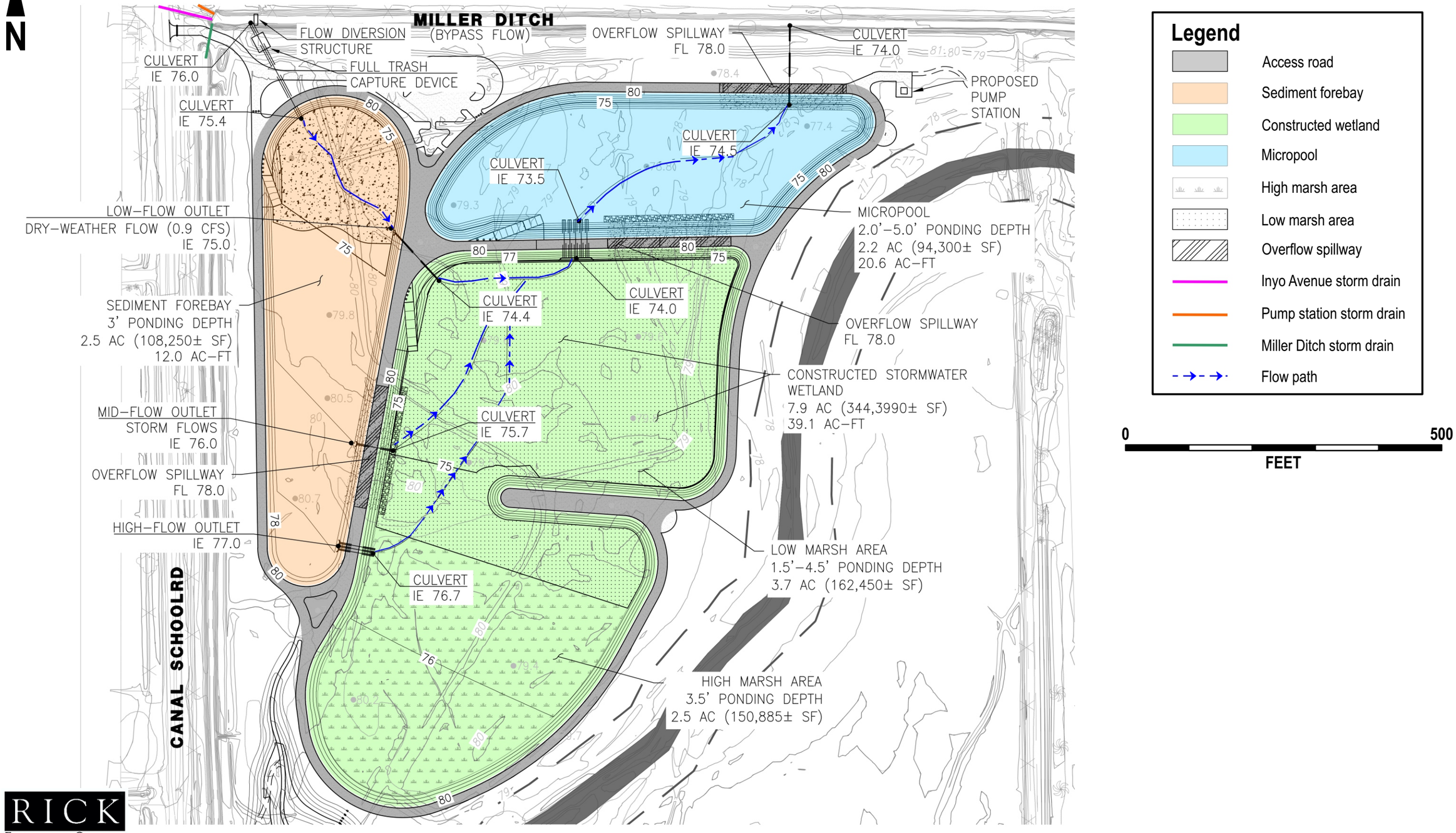
With this in mind, the location, extent, and elements of each project are being developed based on opportunities offered by existing site conditions and features, as follows.

- The location of the NEWS project on the northern portion of the parcel was selected based on proximity to the City's existing stormwater pump station at the northwest corner of Inyo Avenue and Canal School Road, and the Miller Ditch along the west and north margins of the parcel. This location will maximize hydraulic efficiency and minimize the difficulty—and the corollary impacts—of delivering untreated runoff to the project. The NEWS project footprint currently supports low-quality seasonal wetlands and disturbed uplands that will be largely replaced by constructed emergent wetlands bordered by appropriate native tree and shrub plantings
- The wetland project will occupy the central and east-central portions of the 78-acre parcel and extend to the 24-acre parcel, where it will capitalize on opportunities to enhance and expand emergent marsh in the central swale, replace previously cultivated and disturbed uplands with native perennial grassland and seasonal wetlands, and restore degraded seasonal wetlands to their historic ephemeral (vernal pool) condition. It will also plant native trees along the margin of the central swale, which is envisioned as a quasi-riparian corridor; that is, the swale will provide standing water, and will be bordered by native riparian tree plantings, but will not support through-going flow since there is at present no means for flow to exit the parcel, which is bounded on the downstream (east) side by actively cultivated agricultural lands
- The MDTW project is planned for the southwest quadrant of the 78-acre parcel, where it can draw untreated agricultural runoff from the Miller Ditch with minimal additional disturbance to the site and surrounds. This area has most recently been used for livestock corrals and related ranch infrastructure but does preserve small low-quality seasonal wetlands as well as features thought to be former irrigation ditches, now disconnected from through-going flow. These will be expanded and replaced by a series of constructed perennial wetlands designed to provide polishing treatment

Public Access, Education, & Recreation

To increase community benefits from the habitat creation and restoration projects, the NCCA will also provide a suite of recreational and education-oriented improvements—the Newman Nature Park—in addition to the

Source: *modified from* RICK Engineering. 2020. Wetland System Routing Schematic, Newman Environmental Wetland System, City of Newman, CA (03/16/2020), scale: 1:1,800



RICK ENGINEERING COMPANY
San Luis Obispo

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Figure 4-1. NEWS Project Concept
Newman Community Conservation Area Master Plan
City of Newman

Vollmar
NATURAL LANDS CONSULTING

Existing Connection to Miller Ditch

Miller Ditch

New Inlet/Outlet to Miller Ditch

Reestablish marsh
(hydrologic addition)
1.49 acres

Conceptual Future Connection

Reestablish marsh
(hydrologic addition
and regrading)
4.55 acres

Enhance marsh
0.626 acre

News Project Area

Excavated
swales with
groundwater
connection,
direct surface
flow into
central swale
0.14 acre

Enhance marsh
0.78 acre

Enhance ephemeral wetlands
3.8 acres

New Inlet from
UC Merced
Project

At least 50 riparian trees planted along south edge of marsh; perennial grasslands reestablished in disturbed uplands

24-Acre Parcel

UC Merced Project Area

78-Acre Parcel

Access and Education
Community Area

N

Legend

Existing Features

- Approximate parcel boundary
- Potential jurisdictional features

30% Design Habitat Zones

- Marsh enhancement (1.41 acres)
- Marsh reestablishment (6.04 acres)
- Seasonal wetland reestablishment (0.14 acre)
- Ephemeral wetland enhancement (3.8 acres)

Source: *modified from* Vollmar Natural Lands Consulting 2020

0 250 500
FEET

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Figure 4-2. Wetland Project 30% Design
Newman Community Conservation Area Master Plan
City of Newman

Source: *modified from* Rodal Morales pers. comm. **Aerial Photograph Source:** GoogleEarth (imagery date 07/18/2019, downloaded 03/16/2020)

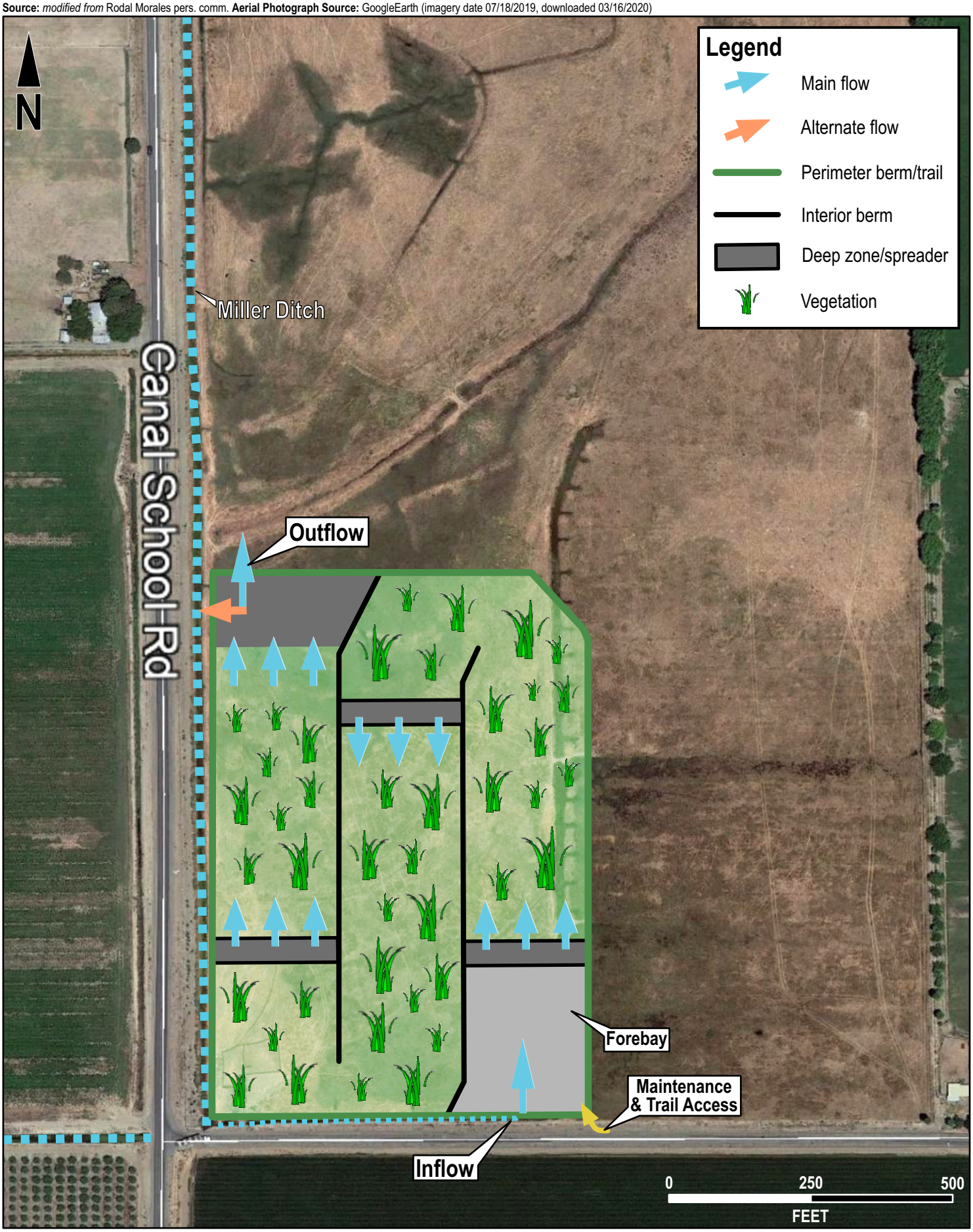

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Figure 4-3. MDTW Project Concept
Newman Community Conservation Area Master Plan
City of Newman

access/trails that will be constructed under the NEWS and MDTW projects (Figure 4-4). The Newman Nature Park is planned to include

- an unpaved multi-use trail network, potentially including a perimeter trail and/or main trail loop and connecting trails sited appropriately through the parcel interior, with interpretive signage and shaded stations for rest and nature viewing
- restrooms and a hydration station
- parking for vehicles and bicycles accessing the NCCA
- amenities to enable nature-oriented community education such as outdoor classroom areas and possibly also a plaza for community gatherings
- a low-impact development stormwater capture cistern and vegetated swales
- a native plant and rainwise garden demonstration area

It may also include demonstration areas for native plant gardening, composting, rainwise and other sustainability techniques, and facilities such as nature-themed play structures, picnic facilities, and a shade structure.

Most of the Nature Park community facilities will be clustered in the southeasternmost portion of the 78-acre parcel, where the existing level of disturbance is the high and habitat creation and restoration opportunities have been evaluated as less optimal. Trails will occupy suitable high ground and boardwalks throughout the 78-acre parcel and will ultimately serve to tie the three habitat areas together, giving the NCCA a sense of unity. Interpretive signage will be located as appropriate along the trails, and will include relevant information on local natural resources and hydrology and on the Newman area's Native American heritage. It is the City's intent to work collaboratively with local tribal representatives—including representatives of the North Valley Yokuts Tribe and Amah Mutsun Tribal Band—in developing signage that represents their history, culture, and resource use. All signage will be bilingual in Spanish and English.

The opportunities provided by the Newman Nature Park—especially in conjunction with the other three NCCA projects—would be the first of their kind in the Newman area, which currently lacks nature-oriented open-space recreational opportunities, as discussed in Chapter 2.

Goals & Objectives

NCCA Program Goal & Objectives

The City's overarching goal for the NCCA is to create a community amenity that supports improved water and air quality, GHG sequestration, and habitat resources while offering site-appropriate recreational and educational opportunities as well as economic benefits for residents of the City and surrounding area.

The following sections identify goals and objectives for each of the projects under the program. Programmatic parcel-wide objectives comprise the objectives of the individual projects, all of which individually support the City's programmatic goal for the NCCA.

Goals & Objectives by Project

NEWS Project

The goal of the NEWS project is to construct, operate, and maintain a wetland system consistent with historic habitats in the surrounding area, in order to

- reduce the discharge of urban and agricultural storm and dry weather runoff pollutants to the Newman Wasteway and San Joaquin River via physical, biological, and biochemical marshland processes
- support the City's vision to manage stormwater as an ecological and water resource asset
- benefit the community of Newman and the surrounding area by providing appropriate public access to encourage natural environment experiences
- provide a "living lab" for K–12 and college/university students in the Newman area and beyond
- offer operational flexibility to support downstream objectives for stormwater and agricultural runoff management

Specific objectives are to

- develop an approximately 21-acre constructed wetland system comprising a trash rack, sediment settlement forebay, and vegetated clarification ponds, with unpaved access suitable for operations and maintenance as well as non-vehicular public use such as walking, jogging, bicycling, birding, and watershed education
- treat urban and agricultural stormwater and dry weather runoff from 2,421 acres in and around the City, diverted from the City storm drain system downstream of the pump station at Canal School Road and Inyo Avenue
- provide sufficient capacity to capture and treat the urban water quality design event that carries the greatest pollutant loading to the Newman Wasteway and San Joaquin River (the 85th percentile, 24-hour storm event)
- plant at least 100 trees and shrubs of suitable native species on high ground bordering the ponds

Wetland Project

The goal of the wetland project is to restore a mosaic of wetland, riparian woodland, and native perennial grassland habitat, in order to

- sequester GHGs and other pollutants
- restore and preserve rare habitat types for the benefit of plants and wildlife
- contribute to public nature viewing and educational amenities for the City and surrounding area

Specific objectives are to

- reestablish, rehabilitate, or enhance at least 10 acres of wetland habitat
- plant and establish at least 50 trees of native species suitable to the site
- restore at least 1 acre of native perennial bunchgrass habitat

Aerial Photograph Source: GoogleEarth (imagery date 07/18/2019, downloaded 02/09/2021)

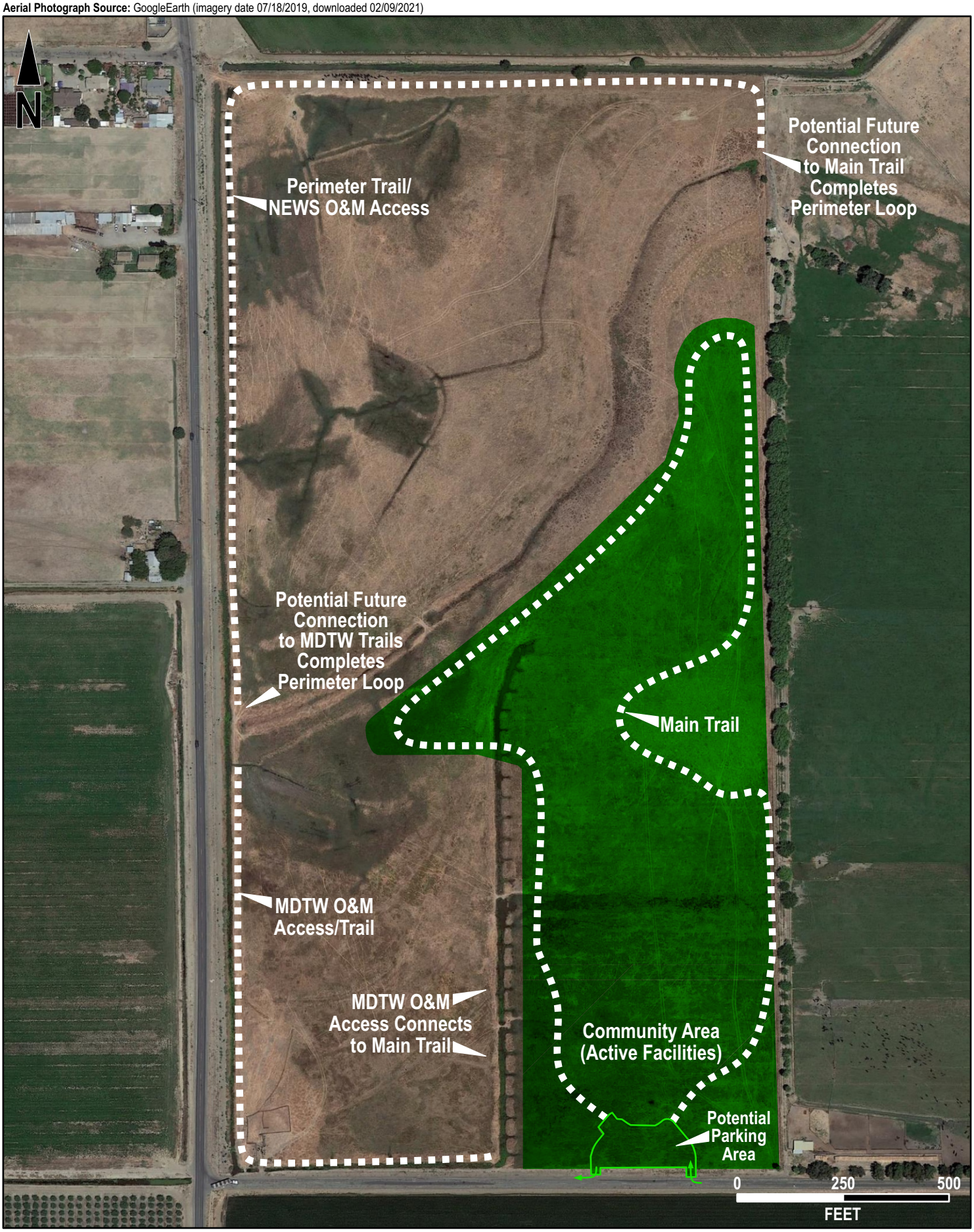

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Figure 4-4. Newman Nature Park Concept
Newman Community Conservation Area Master Plan
City of Newman

MDTW Project

The goal of the MDTW project is to create and enhance wetland habitat using CCID agricultural supply and agricultural tailwater, in order to

- treat flow from the Miller Ditch (including agricultural tailwater) in support of downstream reuse
- create hands-on learning opportunities in the planning, development, execution, and operation of constructed wetland water treatment projects for students in the Environmental Engineering program at UC Merced
- improve the ecological function and value of the 78-acre parcel
- contribute to public nature viewing and educational amenities for the City and surrounding area

Specific objectives include

- enhancing and creating up to 16 acres of perennial or near-perennial freshwater surface-flow wetland in multiple cells designed to provide polishing treatment
- providing unpaved access suitable for operations and maintenance as well as non-vehicular public use such as walking, jogging, bicycling, birding, and watershed education

Newman Nature Park

The Newman Nature Park is planned to provide a local opportunity for open-space recreation offering multiple social, economic, and environmental benefits to residents of the City and surrounding area. It is envisioned as expanding and diversifying the non-vehicular recreational access offered by the NEWS and MDTW projects.

Goals of the Newman Nature Park include

- providing the community with opportunities to connect with nature through walking, bicycling, and other passive recreation accessible to a diverse range of visitors, including families, seniors, youth groups, and those with disabilities
- promoting mental and physical health through access to, and interaction with, the natural environment
- providing the City's disadvantaged youth with opportunities for outdoor experiences and a connection to nature
- fostering learning opportunities for K–12 and college/university students
- showcasing sustainable water and land resource management practices

Specific objectives—which were developed in consideration of preliminary community outreach and will be refined and finalized based on continuing dialogue with the community—include

- constructing a network of new accessible (ADA-compliant) trails suitable for non-vehicular passive recreation such as jogging, walking, bicycling, birding, and wildlife observation, potentially including a perimeter trail and/or main trail loop and connecting trails sited appropriately throughout the parcel
- providing seating and shade along the trails for rest, nature viewing, and contemplation areas; incorporating bilingual (English/Spanish) interpretive signs to enhance the trail and park experience for a variety of users, including children, those with disabilities, and seniors

- developing opportunities for nature-oriented public education, such as outdoor learning areas, and potentially including a community plaza gathering area
- showcasing the use of permeable surface media, runoff capture, bioswales, and other low-impact development (LID) measures as well as solar-powered lighting where appropriate
- providing restrooms, a handwashing station, and a hydration station, as well as storage for maintenance and educational materials
- providing ample off-street visitor parking, including ADA stalls and bicycle parking and potentially including a bus drop-off to facilitate group visits

The Newman Nature Park may also offer demonstration areas for native plant gardening, composting, rainwise and other sustainability techniques that can be incorporated at area homes and businesses.

Related Projects

As Chapter 1 details, development of the NCCA will dovetail with projects moving forward under other related but separate City planning efforts. This section discusses the two reasonably foreseeable projects with the closest relationship, or potential relationship, with the NCCA projects:

- multi-use trail proposed to extend south from the City center along Canal School Road
- planned improvements at the WWTP, described in detail in Chapter 1

Class I Multi-Use Trail Project

Consistent with the General Plan (City of Newman 2007) and the more recently adopted NMTP (City of Newman 2013), the City is actively working to improve opportunities for pedestrian and bicycle transit throughout the City and its Sphere of Influence. Figure 4-5 shows the City's planned network of bicycle and pedestrian paths as envisioned in the General Plan. This includes a combination of fully separated Class I multi-use trails accommodating both bicyclists and pedestrians and Class II lanes suitable for use by bicyclists but not pedestrians.

One of the highest priority projects for bicycle and pedestrian transit is the route proposed to extend along Canal School Road from Driskell Avenue (Figure 4-5). As discussed in Chapter 1, this was originally planned as a Class I separated multi-use path (City of Newman 2007) and was revisioned as a Class II bicycle lane in the NMTP (City of Newman 2013) due to potential concerns about right-of-way width. The City recently reevaluated and has concluded that construction of a Class I path will be feasible without acquisition of additional right-of-way, and intends to proceed with the project as a Class I path.

To the north, the new Canal School Road multi-use path would connect with existing Class II bicycle lanes along Driskell Avenue, giving access to the downtown area and connecting to points further north via additional Class II lanes on cross streets and the through-going bicycle route planned along N Street. To the south, the Class I trail would extend as far as Brazo Road, where it would continue west along Brazo Road as part of the City limits Class I perimeter trail, and south along Canal School Road to Sanches Road as a Class II bicycle lane.

The new Class I trail would provide direct bicycle access to the Plan Area from points throughout the City, linking the developed portions of the City with Plan Area amenities. Provision of a Class I multi-use trail rather than a Class II bicycle lane will maximize non-motorized access from the City to the Plan Area, and multi-use

Map Source: modified from City of Newman 2007

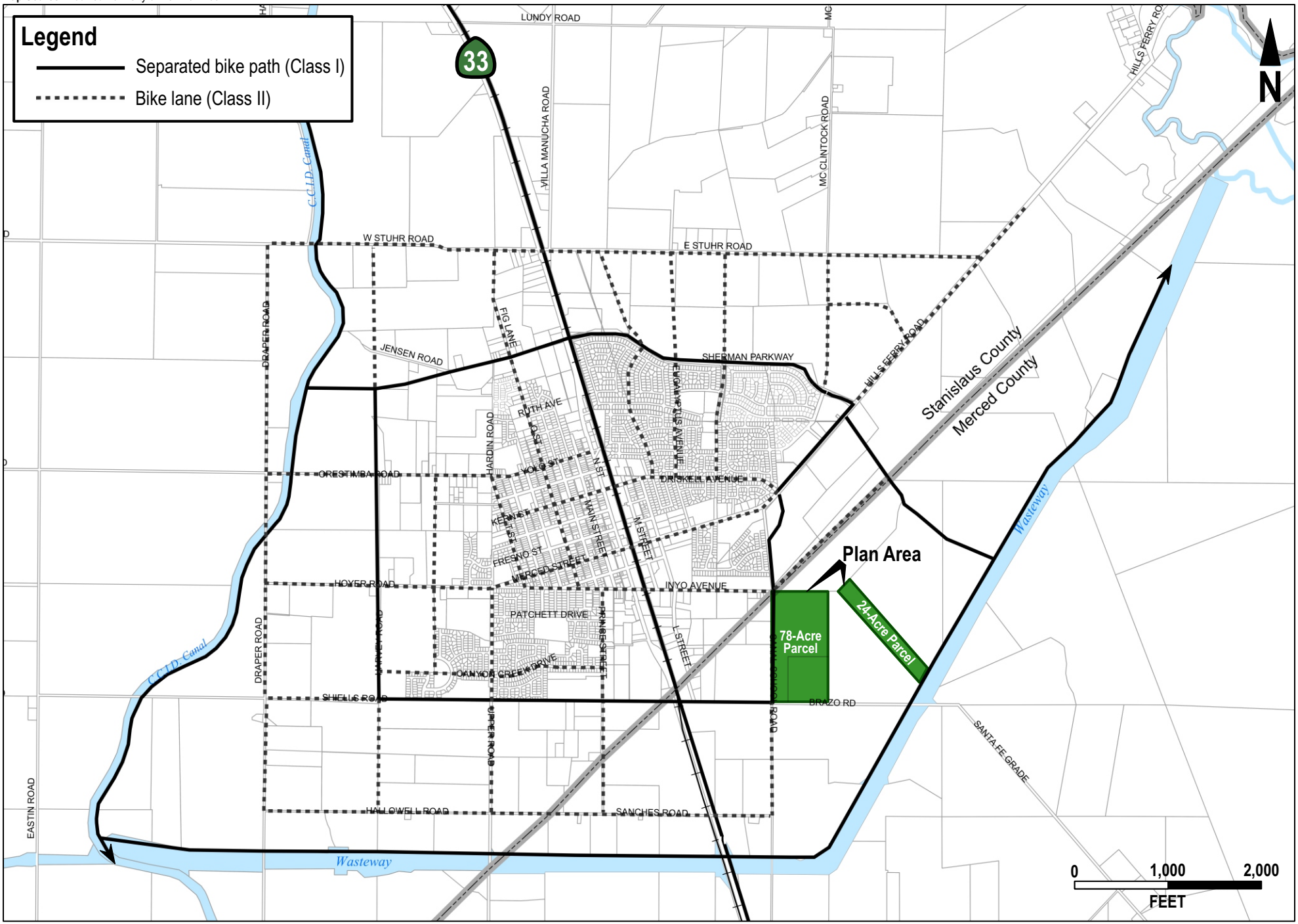

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Figure 4-5. Bicycle Network Plan, Showing Plan Area Connectivity
Newman Community Conservation Area Master Plan
City of Newman

trails within the Plan Area itself are envisioned as extending bicycling and walking opportunities beyond what will become available within the urbanized City into a more natural setting.

WWTP Improvements

As described in Chapter 1, the City is embarking on a program to expand and upgrade its WWTP. The first phase of improvements is expected to be complete by mid-2022 and will increase the WWTP's ADWF capacity from 1.25 to 1.5 MGD. A second phase of improvements will be implemented incrementally as the City grows, bringing the WWTP's capacity to 2.4 MGD when completed.

One of the key issues addressed by the WWTP upgrades is excessive salinity and high-strength organic content in treated effluent, which is discharged by irrigation use on cultivated LAAs. The planned WWTP improvements provide for progressive blending of treated effluent with higher-quality water prior to land application. Blending was originally proposed to rely on groundwater in Phase I, with increased use of groundwater, possibly augmented by CCID surface water, in Phase II. As mentioned in Chapter 1, an alternative possibility is to use treated water discharges from the NEWS and/or MDTW projects for blending with WWTP effluent. This would have the advantage of decreasing the need for groundwater use and reducing pressures on the groundwater basin—but would reduce the NCCA projects' ability to ameliorate water quality in the Newman Wasteway, San Joaquin River, and downstream receiving waters, all of which have been identified as impaired for multiple parameters (State Water Resources Control Board 2016) (see Table 1-3).

In determining downstream uses of NCCA discharges, the City intends to work with the RWQCB and other resource agencies to maximize overall environmental benefits, and will select the approach that is identified as offering the optimum balance of environmental benefit, benefit to the community, and cost-effectiveness. Thus, while this Master Plan offers the potential for an alternative approach to improve WWTP effluent quality, it is not the intent of this Plan to dictate downstream use of NCCA discharges.

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Chapter 5

Implementation

Implementation Timing & Priorities

It is the City's intent to implement the NCCA projects and realize their benefits as quickly as possible. Since these are major capital projects that will require substantial funding (discussed further in Chapter 6), implementation timing will be constrained to some extent by the availability of both internal and external funds to support bid-ready design, environmental review and clearances, construction, the post-construction monitoring and maintenance that will likely be required for at least some of the projects under the conditions of regulatory permits, and long-term O&M.

That said, the City has already been successful in obtaining grant funding for the wetland project from DFW's Wetlands Restoration for Greenhouse Gas Reduction Program. This will enable the wetland project to move ahead to construction as soon as design and environmental review are completed. As discussed in Chapter 2, the IS/MND for the NCCA projects is expected to be on the street for public review in early 2021, enabling completion of the CEQA process by spring 2021 and issuance of resource agency permits for at least the wetland project by early summer 2021. Construction of the wetland project is expected to begin no later than late summer 2021 and be completed by fall 2022.

The NEWS project is expected to be next in line. Design for the NEWS project is at the 60% milestone as of the preparation of this Master Plan and bid-ready construction documents are expected to be complete by late 2021. In June 2020, the City submitted an application to the SWRCB's Proposition 1 Storm Water Grant Program for implementation funding; funding was awarded in February 2021. This will almost certainly position the NEWS project as the next project to be constructed.

Substantial progress has also been made on conceptual design of the Newman Nature Park. Although community outreach is ongoing as of February 2021 and the project will likely continue to evolve, it is expected to follow the NEWS project to implementation, as funding becomes available. It is the City's intent to apply for funding for this project in the next cycle (Round Four) of the state Department of Parks and Recreation's (DPR's) Proposition 68 Statewide Park Development and Community Revitalization Program, which has a deadline in spring 2021.

Development of the MDTW project will proceed more slowly, since it depends on the availability of student participants and their faculty advisor(s) and will thus be tied in some degree to the academic calendar as well as funding availability. The MDTW project is anticipated to be the last project completed at the NCCA.

Responsibility, Oversight, & Staffing

Public Works is taking the lead in planning, developing, and implementing the NCCA projects, with substantial input from the Community Development Department and the City Manager. Community Development will have significant input into the environmental reviews and clearances for each of the projects. Public Works will then oversee project construction, post-construction monitoring and maintenance, and long-term O&M.

Staffing for design, environmental review, and post-construction monitoring will likely continue to rely on contracted expert consultants overseen by Public Works and Community Development. Construction will be executed through the City's standard contract process for capital projects.

Once the habitat-related projects are in the ground they are expected to require maintenance and monitoring as a condition of resource agency permits. Maintenance during the post-construction and long-term O&M phases may be provided by Public Works with assistance and input from contracted consultants familiar with local and site ecology, or may be covered through outside contracting. Monitoring will be conducted by contracted biological/ecological consultants. If long-term O&M responsibility shifts to Public Works staff, the City may need to make additional part- or full-time hires; O&M plans—to be incorporated as Attachments—will be developed as step-down plans from this Master Plan, and this will determine O&M staffing requirements by project. In addition, the City has been exploring the possibility of collaboration with local job training programs and schools to expand staffing for the NCCA, as Chapter 7 discusses in more detail.

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None.

Chapter 6

Funding Strategy

As major capital undertakings, the projects envisioned in this Master Plan will be costly to implement, and will also require an ongoing investment in O&M, potentially including expanded staffing as discussed in Chapter 5. As a result, a combination of internal City funds and external funding will likely be needed to bring the NCCA projects to fruition. Internal City funding sources include the City's Capital Project Fund, the Public Works Department's operating budget (a portion of which comes out of the City's General Fund), and revenue from various City fees. Potential external funding sources include various grant programs, infrastructure financing plans, and public-private partnerships, among others.

Funding Needs Overview

Total project costs over the long term will reflect four project phases: development, construction, post-construction monitoring and maintenance, and O&M. *Development costs* include engineering design and environmental review and clearance costs. *Construction costs* include construction labor and materials as well as the cost of implementing environmental measures such as surveys and monitoring for special-status species and monitoring of SWPPP erosion and runoff controls. *Post-construction monitoring and maintenance* refers to the monitoring and corrective action expected to be required as regulatory permit conditions to ensure vegetation establishment in restored and created habitat. *O&M costs* will include the staffing—existing and new—and equipment, materials, and supplies needed to operate, maintain, and repair NCCA projects and facilities over the long term.

Anticipated sources of City funding by project phase are as follows.

- **Development.** The City is seeking grant funding to support project development, and will provide matching funds from its Capital Project Funds budget; potential grant sources and the present status of grant applications are discussed further below
- **Construction.** Project construction will likely also be funded by a combination of external (grant or other) monies and City capital projects funding
- **Post-construction monitoring and maintenance.** The types of grant vehicles most appropriate for the habitat-related NCCA projects (discussed further below) typically provide some funding for the establishment period, but may not cover the entirety of a standard 5-year monitoring and maintenance period required to see the projects through to achievement of their success standards under regulatory permit conditions. Matching funds, and funds to complete a 5-year monitoring cycle, are expected to

come from the City's capital projects budget, potentially augmented by external (non-grant funds); possibilities are discussed below

- **Long-term O&M.** Over the longer term, once the post-construction monitoring and maintenance period is past, O&M responsibility for the NEWS and MDTW projects will either transition to Public Works staff or will continue to be handled through outside contracts, as discussed in Chapter 5. Similarly, once operational, O&M for the Newman Nature Park amenities will be carried out by Public Works. O&M needs are expected to be minimal for the wetland project once it is established, but minor activities such as trash removal and invasive species control will probably be needed, and will also fall under the Public Works rubric. As a result, long-term O&M funding is expected to come primarily if not exclusively from the Public Works Department's operating budget. Sources of additional funding are discussed in the following sections.

Funding Sources

Grant Funding

Grant Funding in Progress

The early stages of NCCA planning identified several grant vehicles as good fits for the NCCA projects, and the City has applied for funding under these programs:

- Proposition 1 Storm Water Grant Program, administered by the SWRCB
- Wetlands Restoration for Greenhouse Gas Reduction Grant Program, administered by DFW
- Climate Adaptation and Resiliency Program funding, administered by the California Wildlife Conservation Board
- Recreational Trails and Greenways Grant Program (Proposition 68 grants), administered by the California Natural Resources Agency (NRA)

The City submitted an application for Recreational Trails and Greenways Grant Program funding for the Newman Nature Park in late 2019, and was informed in early 2020 that the application was not successful; the program had just under $28 million in funding available and had received grant applications totaling about $288 million. As of mid-2020, proposals are no longer being accepted for this program (California Department of Natural Resources 2020), so it is not discussed further.[1] The other three programs are described in more detail in the following sections.

Proposition 1 Storm Water Grant Program

Proposition 1 (AB 1471), passed in 2014, authorized more than $7 billion in general obligation bonds to fund a wide range of water-related projects. The SWRCB alone administers 5 separate programs funded by Proposition 1 bonds, including the Storm Water Grant Program (State Water Resources Control Board 2020).

The Storm Water Grant Program is intended to fund multi-benefit stormwater management projects, including stormwater treatment facilities, green infrastructure, and rain- and stormwater capture projects. Funds are available to public agencies, 501[c][3] nonprofit organizations, federally recognized Tribes and Tribes listed on

[1] Additional Proposition 68 funding is available through other programs, including DPR's Statewide Park Development and Community Revitalization Program, which is discussed in Table 6-1.

the California Native American Heritage Commission's Tribal Consultation List, mutual water companies, and GSAs formed in accordance with the Sustainable Groundwater Management Act. Grant awardees are required to provide a 50% cost match, although disadvantaged communities may apply for a reduction of the match requirement (State Water Resources Control Board 2020).

The Proposition 1 Stormwater Grant Program originally provided for both planning and implementation grants, each to be awarded in two rounds. To date, some $10 million in planning grants has been awarded, and planning grants are no longer available. Round 1 implementation grants totaled about $80 million, and this grant cycle is also closed (State Water Resources Control Board 2020). The solicitation period for Round 2 implementation grants opened in April 2020, and in June 2020 the City submitted an application to fund NEWS project implementation. As identified in Chapter 5, funding in the amount of $6.4M was awarded in February 2021.

Wetlands Restoration for Greenhouse Gas Reduction Grant Program

The Wetlands Restoration for GHG Reduction Program is part of the California Climate Investments Program, a statewide initiative that reinvests the state's portion of cap-and-trade funds generated under the Global Warming Solutions Act of 2006 (AB32) in a range of climate-related endeavors (California Department of Fish and Wildlife 2020, California Climate Investments 2020). The goal of the Wetlands Restoration for GHG Reduction Program is to restore or enhance wetlands and watershed ecosystems to increase carbon sequestration, benefitting the state's human, wildlife, and fish populations (California Department of Fish and Wildlife 2020). To date, some $15 million in grants has been awarded under this program, including an award of $610,000 to the City in late 2019 for the wetland project.

Climate Adaptation and Resiliency Program

The Climate Adaptation and Resiliency Program (CARP) was established by 2017's AB109, which amended the 2017 state budget to provide a total $20 million to the Wildlife Conservation Board (WCB) for local assistance. Funds are payable from the state's Greenhouse Gas Reduction Fund; as such, CARP is also part of the Climate Investments Program, briefly discussed above (California Wildlife Conservation Board 2020a). Funds are available to local governments, park and open space districts, resource conservation districts, private landowners, and nonprofit organizations. Cost sharing is viewed favorably and may be provided by the applicant or by other sources such as private donors and nonprofit organizations (California Wildlife Conservation Board 2020b).

CARP currently provides funding for acquisition of conservation easements, project planning (including design and environmental review), and technical assistance such as the development of tools to guide ecosystem management under changing climate conditions. Preference is given to projects that can demonstrate readiness for implementation within 3 years. There is no limit on the amount of funding that can be requested, but WCB cautions that "the most competitive" funding requests are in the range of $300,000 – $1 million for acquisition of conservation easements and $100,000 – $300,000 for planning and technical assistance projects (California Wildlife Conservation Board 2020b).

In late spring 2020, the City submitted an application for CARP funding to support detailed GHG monitoring required under the terms of the recently awarded Wetlands Restoration for GHG Reduction Program grant that will support the wetland project.

Additional Grant Programs

In addition to the programs discussed above, a number of other programs may offer funding opportunities for the NCCA projects. They are listed and briefly described in Table 6-1, and will be explored in more depth as planning moves ahead.

Table 6-1. Additional Grant Programs

Program	Agency	Types of Projects Funded	Potentially Eligible NCCA Projects
California Conservation Corps programs	CCC*	The CCC administers grant programs under Proposition 1, Proposition 68, the state's Active Transportation Program, and the state Greenhouse Gas Reduction Fund Forest Health Program. The first three in particular may be appropriate to provide funding for collaborative efforts with the CCC in support of NCCA O&M and potential future NCCA improvements	All projects
Clean Water State Revolving Fund Program	SWRCB	Program offers grants and long-term below market rate loans for a wide variety of water quality projects. Eligible projects include nonpoint source projects, stormwater projects, and water reuse projects	NEWS project, MDTW project
Habitat Enhancement and Restoration Program	WCB	Program supports a wide variety of projects, including habitat restoration, wildlife corridor improvements, and fisheries enhancements. Pre-applications are accepted on a continuous basis; projects must receive a recommendation from DFW in order to move ahead	NEWS project, MDTW Project
Inland Wetlands Conservation Program	WCB	Program supports the Central Valley Joint Venture in its mission to protect, restore, and enhance wetlands and associated habitats to increase populations of waterfowl, shorebirds, riparian-dependent songbirds, and waterbirds. Eligible activities include restoration of public or private lands and enhancement of existing degraded habitat	NEWS project, MDTW Project
Nonpoint Source Pollution Control Grant Program	SWRCB	Program supports projects that install treatments or management practices to reduce and mitigate effects of nonpoint source pollutants—such as sediment, pesticides, and nutrients—to waters of the state. Projects must be completed within 3 years of award. Preference is given to projects that address identified waterbody impairments	MDTW project
Proposition 68 Rural Recreation, Tourism and Economic Enrichment Investment Program	DPR	Projects must include at least one recreation feature. Program funds a wide variety of projects, including visitor and interpretive structures, wildlife viewing structures, open space for public recreation use, and trails for non-motorized recreational use. Projects must be located in a county with a population of less than 500,000 *and* in a city, town, or unincorporated area with a population of less than 50,000	Newman Nature Park
Proposition 68 Statewide Park Development and Community Revitalization Program	DPR	Program supports new recreation opportunities in underserved communities, and is now entering its fourth round of awards, with approximately $395M in funding available. Grants range from $200,000 to $8.5M. Matching funds are not required. Eligible	Newman Nature Park

Program	Agency	Types of Projects Funded	Potentially Eligible NCCA Projects
		projects include creation of new parks and renovation or expansion or existing facilities; relevant facility types specifically called out in program application guidelines include community and demonstration gardens, jogging and walking loops, non-motorized trails, and open space and natural areas for public recreation use, along with supporting amenities such as plazas, public art, parking areas, and restrooms As identified in Chapter 5, the City intends to apply for funding under this program in spring 2021	
Proposition 84 San Joaquin River Water Quality Grant Program	DWR	Program provides funds for implementation of projects that will improve water quality in the San Joaquin River and the Sacramento – San Joaquin Delta, targeting subsurface agricultural drainage from the west side of the San Joaquin Valley	MDTW project

* California Conservation Corps
** California Department of Parks and Recreation

Infrastructure Financing Plans

Considering the NCCA as not "just" an environmental and community benefit but as a key part of the City's infrastructure expands the possibilities for approaches to fund the NCCA projects.

Infrastructure has traditionally been regarded as comprising constructed physical assets that support private business development, such as transportation and transit networks, energy production facilities and energy distribution networks, telecommunications systems, water, sewer, and wastewater systems, and solid waste management facilities. An alternative approach broadens the definition to include infrastructure that is essential for social function and quality of life, such as schools, universities, libraries, hospitals, administrative facilities, and parks and other recreational facilities (International City/County Management Association and Government Finance Officers Association 2017). In both contexts, the NCCA will become an important part of the City's infrastructure, and NCCA funding can be considered in the context of overall approaches to local jurisdiction infrastructure funding.

Infrastructure in the United States is funded by a combination of public and private monies, and federal, state, and local governments all play a role in infrastructure investment. The federal government takes sole responsibility for passenger railroads and funds a substantial proportion of aviation and water transportation as well as water resources–related infrastructure such as dams and levees. State and local governments are the primary provider of highways, roads, transit systems, and potable and wastewater systems (International City/County Management Association and Government Finance Officers Association 2017). Parklands, parks, and recreational facilities other than commercially operated amusement parks are funded at the federal, state, and local levels. Conservation lands—which arguably fall under the second, broader definition of infrastructure—can be funded in a variety of ways, which may include federal, state, and local capital funds, federal and state grant funding (discussed above), and private donations and public-private partnerships (discussed briefly below).

Infrastructure can be funded on a capital (cash or assets) basis or on a debt (financing) basis. Debt funding options include traditional bond financing and private bank loans (International City/County Management

Association and Government Finance Officers Association 2017), both of which will bear exploration for NCCA funding.

Additionally, because of the NCCA's unique focus on environmental benefit combined with community recreational and education benefits, non-traditional debt avenues such as green bonds and social impact bonds may offer additional sources of debt financing. Green bonds are a recently developed type of fixed-income instrument specifically earmarked for environmental and climate-related projects (Investopedia 2020). Among their advantages are the potential to attract new capital market investors interested in environmental projects (International City/County Management Association and Government Finance Officers Association 2017). Social impact bonds, as the name implies, are aimed at societal needs. Both repayment of principal and rate of return are typically contingent on success in achieving the agreed-upon goals of the bond program. Like green bonds, social impact bonds offer the potential to attract new investment to the infrastructure sector, including nonprofits, philanthropic organizations, and corporations (International City/County Management Association and Government Finance Officers Association 2017).

Public-Private Partnerships

Public-private partnerships may offer an additional source of funding, particularly as the NCCA becomes more established and visible in the community. Private partners could include local or regional for-profit corporations as well as nonprofits, particularly those with an environmental, social benefits, or—because of the City's status as a majority-minority, severely disadvantaged community—equity-related mission. Funds could potentially address all project phases, from development through long-term O&M. Properly developed partnerships could also offer substantial positive visibility for the funding entities. The City intends to explore possibilities as NCCA planning proceeds.

Additional Funding Sources

Additional sources of long-term funding for NCCA project O&M could include the following, which are commonly used to support parklands and other similar amenities.

- Approval of a new storm drainage fee
- Addition to monthly City sewer rates
- Addition to development fees
- Formation of a special assessment district enabling the City to assess an additional local tax on assessed property values for NCCA funding

Special assessment districts are typically created through ballot measures, and therefore would require approval by a majority of City voters, preventing the City from leveeing direct costs from the community without the community's consent. If this approach is under consideration, it should be delayed until the NCCA is well enough established that the community has had an opportunity to experience what if offers and make an informed judgment about costs vs. benefits.

User fees could also be charged for park amenities, either in the form of admission charges for certain uses, or rental fees for private use of NCCA facilities. If user fees are considered, it will be important to the City to develop options that provide a meaningful contribution to NCCA funding while ensuring that the NCCA remains welcoming and accessible to all members of the community, consistent with the goals and objectives laid out in Chapter 4 of this Master Plan.

Finally, since the NCCA is intended to benefit the community at large it may be possible to include an increment for NCCA funding in the development impact fees levied as part of the approvals process for larger planned developments.

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Chapter 7

Future Opportunities

Development of this Master Plan was driven by an expansive and optimistic view of opportunities for the future. These include opportunities for environmental benefit beyond the immediate Plan Area, as well as economic, recreational, and educational opportunities for residents of the City and surrounding area. There are also opportunities for regional collaboration and benefit.

Environmental Opportunities

As discussed in Chapters 1 and 4, a key outcome of the NEWS project will be to treat a large proportion of the City's stormwater runoff, which is currently discharged untreated into the San Joaquin River via the Newman Wasteway. Potential uses for treated water supplied by the NEWS project include

- discharge to the Newman Wasteway and San Joaquin River, benefiting water quality in these two impaired water bodies and downstream receiving waters
- reuse at the WWTP to dilute effluent discharged to LAAs, benefiting the quality of water infiltrating into the shallow subsurface

Additional opportunities for downstream use of treated water may be identified in the future as the City continues to explore expansion of water reuse in the Newman area.

Additionally, as discussed in Chapter 1, the City's current General Plan (City of Newman 2007) commits the City to support local and regional efforts to restore and maintain wildlife habitat, including collaboration with other agencies to develop a Habitat Management Plan (HMP) (General Plan Goal NR-3; see Table 1-1). There may be opportunities for mutual support here, in particular as uses for the 24-acre parcel are further clarified. For instance, the wetland project and the portions of the 24-acre parcel not included in the wetland project could provide a cornerstone for the habitat set-asides used to compensate for projects authorized under a future HMP. The City intends to continue to explore this possibility as planning proceeds.

Community Opportunities

Community opportunities include economic, educational, and volunteer opportunities—and, as the following sections describe, some of these opportunities will overlap with one another due to the holistic nature of the NCCA projects.

Economic Opportunities

As discussed in Chapter 5, the NCCA projects will generate short-term employment opportunities during construction, which are expected to be filled by a predominantly local labor force. The NCCA projects may also create longer term employment opportunities associated with the need for ongoing O&M. Hiring for new permanent staff positions supporting the NCCA will prioritize local residents, consistent with the City's ongoing commitment to "hire local" to the extent possible.

The City is also in the process of developing a contract with the HOST House and Naomi's House projects in Patterson, which provide services and resources to area homeless and working poor citizens. The contract will lay out a "jobs for training" exchange program that provides skills and experience in exchange for labor, under certain conditions. Staffing needs for the NCCA may open opportunities for job training under this contract.

Additionally, the City has been exploring the possibility of developing a collaboration with the California Conservation Corps (CCC) to employ CCC Corpsmembers while providing them training, experience, and exposure to natural resources management, habitat creation/restoration, City public works operations, and local agency culture. The CCC's mandated focus on conservation makes it a natural fit for undertakings such as the NCCA projects; the CCC has determined that it would be feasible for them to assist and has expressed interest in developing the relationship. Corpsmembers could be employed during both construction and operational phases of the projects. City staff would be needed to train and supervise Corpsmember employees, potentially generating additional permanent employment within Public Works or other City departments.

Educational & Volunteer Opportunities

Both the NEWS and MDTW projects are intended to serve as "living labs" offering K – 12, community college, and university students in the Newman area and beyond direct exposure to natural resources and processes. The Newman Nature Park will offer similar opportunities related to topics such as conservation, sustainable water management, native plant gardening, and other topics. The City will be reaching out to local K – 12 teachers to develop collaborative educational and student involvement programs. One possibility would be for local classes to "adopt" a portion of a project—for instance, assisting with planting and maintenance of demonstration gardens or developing rainwise gardening or rainwater capture exhibits. This would be a good fit for local high school or junior college agriculture classes but could likely also involve K – 12 students with the right teacher involvement.

The NCCA projects may also provide opportunities for internships or summer employment for students at a number of area junior colleges and universities, including Merced Community College (with campuses in Merced and Los Banos), Modesto Junior College, and the California State University campuses in Stanislaus, Sacramento, and Fresno as well as UC Merced. The City intends to begin informal outreach to area colleges and universities in the near future, to provide information on the potential for partnerships, gage interest levels, and solicit input on potential opportunities for students.

As Chapter 4 describes, the NCCA will provide "passive" education to the community at large through interpretive signage and demonstration areas. The community plaza and classroom areas will also provide a space for active community education on a range of nature- and conservation-oriented topics. Programs and classes could be offered directly by the City through the City's Recreation Department, which already offers sports programs for youth and adults. Adding new programs or classes to the Recreation Department roster would also offer opportunities for new short-term contract hiring, as instructors—presumably from within the City itself or from nearby commutable locations in the surrounding area—are brought on board to develop and deliver educational content. Educational programs could also be developed in conjunction with local civic

organizations such as the Newman 4-H, the Boy Scouts and Girl Scouts, the Newman Historical Society, the Newman Garden Club, and others. The classrooms and plaza may also provide a venue for outdoor exhibits of nature- and local history–oriented art, either through the Recreation Department or in partnership with the West Side Art Association, and for cultural events in partnership with local Native American tribal entities. There may also be opportunities to coordinate programs with the City's existing stormwater partnership community outreach and water conservation outreach.

Finally, there is significant potential to develop volunteer programs enlisting interested area residents in program development, planting and demonstration area programs, and plant cultivation, and possibly other aspects of NCCA operations. This would have educational benefits both for participants and for the community at large, and would also benefit community building and civic pride, as area residents become increasingly involved in this unique resource.

Regional Opportunities

As the first facility of its kind in the western San Joaquin Valley, the NCCA is expected to become a recreational and ecotourism magnet drawing visitors from well beyond the immediate Newman area. This will extend the NCCA's recreational and educational benefits beyond the City itself, and has the potential to benefit the City economy by bringing new visitors to area restaurants and shopping.

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Chapter 8

Protecting Plan Area Resources

Development of this Master Plan reflects the City's long-term commitment to enhancing and protecting the Plan Area's natural resources for the benefit of the environment and the community. This chapter describes

- the City's plans for long-term protection of the Plan Area as a habitat and recreational resource
- the avoidance and minimization measures (AMMs) the City has adopted to prevent and reduce adverse effects on sensitive habitats and special-status species during construction, operation, maintenance, and enjoyment of the NCCA projects

Preservation of Restored & Created Habitat

The City is committed to long-term preservation of habitat restored and created at the NCCA. The terms of such preservation are still being defined, however, and will likely differ from project to project. The conditions of the DFW grant that will fund the wetland project require that enhanced and created habitat be protected for a minimum of 50 years. Similar multi-decade terms are envisioned as a minimum for the other projects, and—as discussed in Table 2-5—if self-mitigating status is sought for the NEWS and/or wetland projects, in-perpetuity preservation of at least some of the created and restored habitat will be required. For the NEWS and MDTW projects, habitat preservation will also need to be balanced against the demand for routine O&M to ensure that the treatment wetlands continue to function as designed, providing the target level of water quality benefit. This will be a key topic for discussion with resource agency staff as planning moves ahead.

Avoidance & Minimization Measures

The following sections describe a suite of AMMs that will be implemented to reduce the potential for adverse effects on sensitive habitats, water bodies, and the special-status plants and wildlife that may be present in the Plan Area. AMMs will apply to initial construction of the NCCA projects, and will continue to be in effect for future maintenance or repair activities that have the potential to disturb habitat or otherwise affect special-status species. As step-down O&M plans are developed for the individual NCCA projects, they will incorporate these AMMs, with additional detail as appropriate to facilitate straightforward and effective implementation on a project-specific basis. New AMMs may also need to be developed as the details of project O&M come into clearer focus.

The AMMs presented below are based on current (2020) habitat conditions on the Plan Area parcels. The NEWS, wetland, and MDTW projects will modify Plan Area habitat substantially, and conditions may continue to evolve as the projects become increasingly established over time. In addition, O&M for the three habitat

projects, and the introduction of recreational and educational access, will increase human presence and activity in the Plan Area over the long term. As a result, there may be changes in the types of AMMs that are needed—some AMMs may become less relevant, some may need to be amplified, and new measures may become appropriate. With this in mind, AMM-1 provides for routine re-evaluation to verify Plan Area conditions and support review and—if needed—updates to the AMMs to enable adaptive management throughout the lifespan of the NCCA projects.

Additionally, it should be noted that the AMMs are intended to dovetail with the requirements of resource agency permits authorizing the NCCA projects. In particular, in the years immediately following completion of each project, permit terms and conditions may require more frequent and intensive monitoring of restored and created habitat. In that case, the permit terms and conditions for each project will temporarily supersede or augment the Plan Area–wide AMMs within that project's footprint; elsewhere in the Plan Area, the AMMs will continue to apply in their most current form.

Many of the AMMs laid out here require the assistance of a qualified biologist. At the outset, it is the City's intent to develop an on-call relationship with a biologist or biologists who can provide this support on an as-needed basis. Over time, it may be possible to train City staff to take over some of the qualified biologist's responsibilities, in order to streamline implementation and reduce costs. Responsibilities initially transferred to City staff could include inspection of fencing and water quality protection measures. Over time, it may be warranted for the City to hire staff with biology qualifications who could also bring re-evaluation and survey responsibilities inhouse. Long-term options for AMM implementation staffing will be explored in more detail in the first few years following development of the first NCCA project.

AMM-1. Routine Reassessment & AMM Updates

At the completion of each NCCA project, GIS-based habitat mapping for the Plan Area parcels will be updated to document changes in habitat distribution as a result of the project.

Over the long term, the Plan Area parcels will be reevaluated for habitat conditions and potential special-status species use every other year. Reevaluation will also include updating maps delineating populations of rare plant species (i.e., plants assigned a California Rare Plant Rank by the California Native Plant Society and plants state- or federally listed as Threatened or Endangered). The evaluation will be conducted by a qualified biologist/ecologist who has experience with wetland and upland habitats in the west-central San Joaquin Valley, will cover both Plan Area parcels in their entirety, and will include, at a minimum, the following activities.

- Assessment of habitat distribution to determine whether the most recent habitat and rare plant mapping is still accurately representative of conditions on the Plan Area parcels
- California Rapid Assessment Method (CRAM) assessment of wetland health and performance

Results will be documented in an NCCA Habitat Assessment Report for City records. The Habitat Assessment Report will also identify the date of the next routine re-survey, enabling survey frequency to be adjusted (increased or decreased) if appropriate based on the rate and nature of change in conditions on the Plan Area parcels. In addition, depending on the extent and nature of changes in Plan Area conditions and the City's planned activities during the next few years, the Survey Report may recommend more detailed reassessment, potentially including re-mapping of habitat, updated delineation of state and federally jurisdictional habitat (wetlands and waters of the United States and State of California), and/or focused surveys for special-status plant and/or wildlife species.

In addition to documenting current Plan Area Conditions, the Habitat Assessment Report will include an evaluation of the AMMs in place at the time of the reassessment, and will identify any needed changes to the AMMs, potentially including modification or discontinuation of existing AMMs and/or establishment of new AMMs. Changes to AMMs will only be instituted in the interests of better preserving and protecting habitat values on the Plan Area parcels, in balance with appropriate O&M and recreational/educational access. If adverse changes in habitat conditions or the status of rare plant populations are identified, the Habitat Assessment Report will also include recommendations for corrective action(s).

The City will maintain Habitat Assessment Reports and other relevant documentation such as habitat and jurisdictional delineation mapping and special-status species sighting reports (see AMM-6) on file for ongoing reference in managing the NCCA. If corrective actions are identified as necessary, the City will be responsible for ensuring that they are promptly implemented by qualified personnel.

AMM-2. Appropriate Long-Term Public Access

All public access, including access roadways opened for public trail use, will incorporate appropriate measures to prevent accidental incursions—and discourage intentional access—into sensitive habitat. Measures will be designed for aesthetic consistency with their natural surroundings, such that they foster a positive and welcoming user experience while protecting sensitive resources to the extent possible. Measures may include carefully selected trail routing as well as split-rail or other suitable fencing, strategically located plantings, and the use of elevated boardwalks. Signage will also be used to inform the public of sensitive resources and foster appreciation for the need to protect them. All signage will be bilingual in English and Spanish to reflect the City's diverse population. Wildlife-proof trash and recycling receptacles will be provided at regular intervals along all trails to discourage littering.

AMM-3. Worker Awareness Training

All construction personnel will be required to attend environmental awareness training before beginning work. All O&M staff and any future interns, student employees, and volunteers will also receive environmental awareness training as part of their routine City training. Training will be provided bilingually in English and Spanish if appropriate.

Training will be delivered by a qualified biologist/ecologist and will provide information on the sensitive habitats within the Plan Area (based on the most recent surveys of the Plan Area per AMM-1), the special-status species that are known or potentially present, and measures required to protect water quality and sensitive habitats under AMM-4.

For each special-status species, training will include information on listing status, habitat preferences, distinguishing physical characteristics, causes of decline, and measures required to protect the species within the Plan Area. Training will include a hard copy handout that summarizes information presented in the training and includes photographs of habitat resources and species to facilitate identification in the field by construction and O&M personnel.

AMM-4. Wetland & Water Quality Protection

Best management practices will be implemented for all ground-disturbing activities to prevent siltation and contaminated runoff to wetlands and water bodies within and adjacent to the Plan Area. During construction, this may take the form of a SWPPP prepared and implemented by appropriately qualified/certified personnel. For O&M activities that involve ground disturbance, similar measures will be implemented by City staff. BMPs

will also be implemented for all O&M activities that require handling of fuels, lubricants, paints, solvents, and other substances with the potential to degrade water quality.

BMPs will include, but will not necessarily be limited to, the following.

- Before work begins, a qualified biologist/ecologist will delineate sensitive areas to be avoided, using pin flags, temporary construction fencing, or another appropriate low-impact medium. No entry (personnel, equipment, or materials) will be permitted into delineated avoidance areas
- If excavation or ground disturbance is necessary, runoff control measures such as straw wattles, filter rolls, filter fences, or silt fences will be installed to contain disturbed soil materials. Runoff control will be in place prior to groundbreaking. If straw wattles are used, they will consist of certified sterile, weed-free rice straw or similar, suitable for use in sensitive habitat. If filter fences or mesh are used, they will consist of materials, and employ a design, approved by DFW and USFWS as safe for amphibians and reptiles
- If ground disturbance occurs in a vegetated area, the disturbed area will be reseeded immediately following the completion of repairs, using a certified weed-free native species seed mix appropriate to the location and approved by a qualified biologist/ecologist
- Excavated materials will be stockpiled away from sensitive habitat, in areas that are relatively level, and relatively free of vegetation. Stockpiles will be located as far as reasonably feasible from the limits of sensitive habitat, and runoff control measures as described above will be used to prevent delivery of sediment to wetlands and ditches. If wattles are used, they will consist of certified sterile, weed-free materials, as identified above. Any excavated materials not reused on site will be promptly removed to appropriate permanent disposal locations following the completion of work
- All diesel- and gasoline-powered construction equipment and tools, including generator units, will be inspected for leaks and damage prior to mobilization
- Fueling, lubrication, and maintenance of vehicles and equipment will be conducted as far as reasonably feasible from wetlands and waterbodies, and will take place offsite if possible. Equipment staging will also be located as far as reasonably feasible from wetlands and water bodies. If onsite fueling, maintenance, or repairs are required, containment measures such as drip pans will be required
- To the maximum extent possible, materials staging will also be restricted to paved, surfaced, or upland areas away from wetlands and watercourses
- During all work, appropriate types and quantities of materials will be maintained onsite to contain any spills or releases of materials and prevent them from entering sensitive habitat and jurisdictional waters
- In the event of a spill, appropriate spill response procedures will be initiated as soon as the incident is discovered. If contractor staff are involved, the contractor will be required to notify City staff as soon as feasible, and in no case more than 24 hours after the occurrence; a designated City contact will be specified in the project construction documents for this purpose. If there is any potential for the spill to enter jurisdictional waters, the City will notify the RWQCB
- Food waste will be appropriately contained and disposed, and trash generated during construction and O&M activities will be promptly and properly removed from the site

AMM-5. Special-Status Plant Protection

Before any work begins at the NCCA site, existing occurrences of rare plant taxa (as defined in AMM-1) will be delineated on GIS-based maps for future reference, based on the results of protocol-level peak blooming period surveys.[1] Mapping will be regularly updated as part of the routine re-surveys required under AMM-1.

Work will be planned to avoid delineated rare plant occurrences to the extent feasible. Prior to the start of construction and O&M work in the vicinity of delineated occurrences of rare plants, a qualified biologist/ecologist will define the current extent of the occurrence in the field using pin flags, temporary construction fencing, or another appropriate low-impact medium. The delineated avoidance area will include a setback buffer appropriate to the species involved and the nature of the work planned. No entry, staging, or other activity within delineated avoidance areas will be permitted.

If an occurrence of rare plants cannot be entirely avoided, the following additional measures will apply.

(1) Plants that can be avoided will be demarcated by an exclusion area as described above

(2) If possible, work will be scheduled for timeframes when the special-status taxa occurring in the work area are senescent and/or after seed has set

(3) If an individual or group of individuals must be removed, one of two options may be employed, followed by monitoring, and, if needed, further corrective action to ensure that over the long term no net loss of the species occurs

   i. Seeds from the affected species may be collected from existing onsite populations or from another population within the Bennett Valley – San Joaquin River watershed and distributed in the work area following completion of work, or, if the work area cannot be reseeded, in another appropriate location within the Plan Area. Appropriate locations will be identified based on currently prevailing soil characteristics, site hydrology, and overall habitat conditions at the time of the restoration

   ii. A nursery with experience growing special-status plants of the western San Joaquin Valley region may be contracted to grow seedlings of the species from locally native seeds (collected from the work area or from another population in the Bennett Valley – San Joaquin River watershed). Seedlings may be planted in the work area following completion of work, or, if this is not possible, may be planted in another appropriate location within the Plan Area. As identified in (i) above, appropriate locations will be identified based on currently prevailing soil characteristics, site hydrology, and overall habitat conditions at the time of the restoration

Note that seeds derived from plants in the Bennett Valley – San Joaquin River watershed may be available from local nurseries, and local nurseries may also be able to propagate seeds from adults grown from locally native collected seeds. In this case, seeds do not need to be collected from the work area.

Prior to impacts and reseeding or replanting, a qualified biologist/ecologist will develop a monitoring and corrective action plan for the revegetated area. The plan will include at least the following components.

- Interim and final success criteria for the revegetated area. The goal will be to match or exceed pre-disturbance population levels in the Plan Area over the long term. Due to normal variations in

[1] Initial mapping was completed in 2020.

population from year to year, average population data for annual taxa can be calculated from several years of data collected

- Procedures for annual monitoring for a minimum of 3 years or until final success criteria are met
- Low-disturbance methods for as-needed invasive species control within the replanted area, suitable to site conditions and the rare plant species involved
- Corrective actions (additional seeding or planting) in the event interim success criteria are not met

The City will be responsible for ensuring that the monitoring plan is implemented by qualified personnel, and that any corrective action identified as necessary is properly carried out.

AMM-6. Special-Status Wildlife Protection (General)

In the event of a known or potential sighting of special-status wildlife in or near any construction or O&M work area, the following requirements will apply.

- Personnel will avoid the animal and will immediately notify designated City staff and the City's on-call biologist, who will advise them on how to proceed; if warranted (depending on the species involved), the biologist will consult with resource agency (DFW and/or USFWS) staff for guidance
- The biologist will respond onsite to relocate the animal or assist in implementing other protective measures, guided by agency input
- If the sighting is confirmed by the biologist, the species and location will be reported to DFW for inclusion in the California Natural Diversity Database (CNDDB). The biologist will be responsible for making the report
- The biologist will also provide a brief memorandum documenting the sighting and any follow-up actions, including CNDDB documentation, for City records

AMM-7. Western Spadefoot Protection

To the extent feasible, construction and O&M activities will be conducted during the dry season (May – October), or will avoid entry into and disturbance of ponded features.

If work within or in proximity to ponded features occurs during the rainy season, a qualified biologist will delineate areas to be avoided to prevent impacts on breeding special-status amphibians, using pin flags, temporary construction fencing, or another appropriate low-impact medium. No entry (personnel, equipment, or materials) will be permitted into delineated avoidance areas.

If work would impact areas with burrows, a qualified biologist will evaluate the burrows to determine whether they are suitable for use by western spadefoot, and will scope any suitable burrows. If any western spadefoot individuals are found within burrows to be impacted, they will be safely excavated from the burrow by hand or small excavator, either by the biologist or under biologist oversight, and will be relocated to a suitable burrow location outside the disturbance area and far enough away that they would not be expected to return.

AMM-8. Giant Garter Snake Protection

To the extent feasible, all construction and O&M activities will avoid impacting or working within 200 feet of the drainage ditches in the Study Area. Once the NEWS and MDTW projects become operational, the same

precautions will apply to created water bodies. Appropriate silt fencing, flagging, and/or other measures will be employed to protect the drainage ditches and other aquatic habitat from direct and indirect impacts, as described in AMM-4.

If work within 200 feet of suitable habitat for giant garter snake is necessary (e.g., for NEWS and MDTW project O&M), the following additional measures will be required.

(1) If possible, work within 200 feet of suitable habitat will be conducted between May 1 and October 1, when the species is more active and mortality is less likely

(2) At all times of year, prior to work within 200 feet of suitable habitat, before work begins, a qualified biologist will conduct a pre-construction survey of the work area (including access and staging) for giant garter snake. If the species is present, the biologist will notify the City and work will be delayed until the biologist can consult USFWS regarding next steps. Work will not proceed until USFWS has recommended appropriate next steps and these have been implemented. Once work has begun, if activity is suspended for 2 weeks or more, the survey—and, if needed, follow-up—will be repeated

AMM-9. Northwestern Pond Turtle Protection

Prior to the start of construction or O&M activities, a qualified biologist will conduct a pedestrian preconstruction survey for northwestern pond turtle. The survey will be conducted no more than 24 hours prior to start of work, and will include walking the work area limits and interior and investigating all areas that could be used by the species. If northwestern pond turtle individuals are found, the biologist will relocate them to suitable habitat outside the disturbance area and far enough away that they would not be expected to return.

AMM-10. Nesting Bird Protection

To the extent feasible, construction will be scheduled outside the February 1 – September 15 nesting season. O&M activities reasonably expected to generate substantial sustained disturbance above Plan Area baseline levels and O&M activities that would involve ground disturbance or vegetation removal or trimming will also be scheduled outside the nesting period if possible.

If the types of activities identified above would commence during the nesting season, a qualified biologist will conduct a preconstruction survey for nesting birds. The survey will be conducted within 2 weeks of the start of work, and will cover the entire work footprint, including access and staging, plus a 500-foot-wide buffer. If active nests are found within the survey area, a no-disturbance zone will be established around the nest for the duration of the nesting season, or until the biologist determines that the young have fledged and left the nest, or that the nest has been abandoned. No entry into the no-disturbance zone will be permitted. The no-disturbance zone will be delineated in the field by or under the supervision of the biologist, using temporary construction fencing or another suitable low-impact medium. The width of the no-disturbance zone will be determined by the biologist, based on

- the location of the nest and the amount of vegetative and other screening between the nest and areas where work will take place
- noise and human disturbance levels at the site at the time of the survey and the noise and disturbance expected during the work
- the sensitivity of the species involved and behaviors of the nesting birds, and, if appropriate,
- other site- or species-specific factors

If special-status species are involved, the biologist will consult with the appropriate resource agency(ies) (DFW and/or USFWS) in determining the width of the no-disturbance zone.

If work during the nesting season is suspended for more than 1 week and then recommences, an additional survey will be conducted before work is reinitiated, and the same no-disturbance zone requirements will apply in the event active nests are found.

AMM-11. Western Burrowing Owl Protection

If construction will take place during the western burrowing owl breeding season (February 1 – August 31), protocol-level preconstruction surveys will be conducted for this species. O&M activities reasonably expected to generate substantial sustained disturbance above Plan Area baseline levels and O&M activities that would involve ground disturbance will also be subject to this requirement.

Surveys will be conducted by a qualified biologist and will follow the methodology described in DFW's current Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012, or future reports that supersede the 2012 version). Four surveys will be conducted within 2 hours of sunrise or sunset, with the final survey occurring 24 hours prior to the start of construction activities. If active nest burrows are found, the no-disturbance zone requirements described in AMM-10 will apply. If work during the burrowing owl nesting season is suspended for more than 1 week and then recommences, an additional survey will be conducted before work is reinitiated, and the same no-disturbance zone requirements will apply in the event active nests are found.

Reference Cited in this Chapter

California Department of Fish and Game. 2012. Staff Report on Burrowing Owl Mitigation. Available: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843&inline=true. Accessed: May 2020.

Acronyms & Abbreviations

ADWF	average dry-weather flow
AMM	avoidance and minimization measure
APN	assessor's parcel number
BMP	best management practice
CARP	Climate Adaptation and Resiliency Program (part of California Climate Investments program)
CCC	California Conservation Corps
CCID	Central California Irrigation District
CEQA	California Environmental Quality Act
City	City of Newman
Corps	U.S. Army Corps of Engineers
County	County of Merced
CRAM	California Rapid Assessment Method
CTS	California tiger salamander
CVFPB	Central Valley Flood Protection Board
CWA	Clean Water Act
DMA	Drainage Management Area
DPR	California Department of Parks and Recreation
DWR	State Department of Water Resources
DFW	California Department of Fish and Wildlife
EIR	Environmental Impact Report
EPA	federal Environmental Protection Agency
General Permit	statewide general permit authorizing discharges from small municipal separate storm sewer systems
GHGs	greenhouse gases
gpm	gallons per minute
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
HMP	Habitat Management Plan
I	Interstate
IPM	Integrated Pest Management
ILRP	Irrigated Lands Regulatory Program
IS/MND	Initial Study and Mitigated Negative Declaration
LAA	land application area
LAFCo	Local Agency Formation Commission
MDTW	Miller Ditch Treatment Wetland
MG	million gallons
MGD	million gallons per day
MHHT	mean higher high tide
MS4	municipal separate storm sewer system
NEPA	National Environmental Policy Act
NCCA	Newman Community Conservation Area (Plan Area)
NEWS	Newman Environment Wetland System
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NRA	California Natural Resources Agency
NRCS	Natural Resources Conservation Service
O&M	operations and maintenance
OHWM	ordinary high water mark
RWQCB	Regional Water Quality Control Board
SDAC	Severely Disadvantaged Community
SGMA	Sustainable Groundwater Management Act
SJREC	San Joaquin River Exchange Contractors
SR	State Route
STEM	science, technology, engineering, and mathematics
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TMDL	total maximum daily load
UC Merced	University of California, Merced
UWMP	Urban Water Management Plan
USFWS	U.S. Fish and Wildlife Service
WCB	California Wildlife Conservation Board
WDRs	Waste Discharge Requirements
WQOs	Water Quality Objectives
WWTP	City of Newman Wastewater Treatment Plant

Attachments


Newman Environmental Wetland System
Wetland Project
Central Swale
Newman Nature Park
Miller Ditch Treatment Wetland
Canal School Rd
Wetland Project
Wetland Project
Wetland Project
Brazo Rd