

N-2 Wastewater Technical Memorandum & WWSI Letter

SOUTHLAND CIVIL ENGINEERING & SURVEY, LLPENGINEERING DONE RIGHT ... FROM THE START

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November 2, 2017

Mr. Greg Beck
Champion Realty, Ltd
11601 Wilshire Blvd., Suite 1650
Los Angeles, CA 90025

Re: 6220 W. Yucca Street Mixed Used Development – Wastewater (REVISION)

Dear Mr. Beck:

Southland Civil Engineering & Survey, LLP (SCE&S) is pleased to submit our findings on the matter of available wastewater sewer capacity for the proposed mixed used development project located at 6220 West Yucca Street.

A request for Waste Water Service Information (WWSI) for your project was submitted to the City of Los Angeles Bureau of Sanitation (BOS) on 07/05/2017.

A WWSI Response Letter by BOS dated 07/05/2017 (enclosed hereto) was received noting apparent sufficient capacity for the development project based on provided gallons per day (GPD) for the proposed project uses.

In order to obtain the necessary permits to connect a project to the City of Los Angeles Sewer System, the City of Los Angeles will ultimately require a Sewer Capacity Availability Request (SCAR) be submitted to the Bureau of Engineering (BOE) to verify hydraulic capacity of the system. The SCAR shall be reviewed and approved by BOS to determine available hydraulic capacity for the proposed development project. Approval of a SCAR shall likely contain the following conditions:

- Sewer connection must be made within 180 days from the date of SCAR approval, prior to expiration (expiration shall require a new SCAR)
- A Sewerage Facilities Charge (SFC) is required to be paid to BOE prior to the expiration of the SCAR in order to avoid re-starting the approval process.
- An Industrial Waste Management Division (IWMDP) Permit is required and shall be obtained from the Department of Public Works while acquiring building permits.

The Project Site currently consists of apartment buildings on two adjacent lots, the westerly zoned commercial and the easterly zoned residential. The easterly 3 lots are currently R3 with two structures existing. The westerly apartments discharge to Argyle on the west and the existing residential to Vista Del Mar on the east. The sewer line in Vista Del Mar traverses to Argyle south of our project and all flow is concentrated in Argyle before reaching Hollywood Boulevard, the next street south. There are two existing laterals in Argyle and 2 existing laterals in Vista Del Mar. It is likely that the majority of the flow will be discharged to Argyle with a possible 80%/20% split. The existing laterals are all 6" and should be adequate for the flows expected, with up to nine (9) additional laterals being required to be connected to. Sewer connections exist as shown in the enclosed Existing Sewer System Exhibit.

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A separate proposed project in construction to the north of the site, across Yucca, has sewer lines that flow westerly toward Vine and will confluence its flow with the project's flow at a 21" sewer line at Vine and Sunset.

The project site is located near the most upstream ends of the existing sewer mains in both Argyle, and Vista Del Mar. At Argyle, the site is the first connection to the main, and no other upstream flow is expected. At Vista Del Mar, the sewer main built in 1916 stops at the property frontage. A new extension to that line was built in 1944 by the City for apparent maintenance purposes to join the manhole located at Vista Del Mar and Yucca. The only offsite flow contributing to this point may be from the property at 6201 Yucca and would have been accounted for in the provided WWSI as current flow.

The existing mains in both Argyle and Vista Del Mar are considered relatively steep, and do not pose a concern regarding flow capacity. Per the WWSI, the 8" main in Argyle has greater capacity than the downstream 8" main in Sunset while having less flow. The larger sewer main pipes in Vine, downstream of the Sunset main contain capacity in the order of millions of gallons per day, and do not pose a concern regarding flow capacity. Therefore, the 8" main in Sunset is critical.

The 8" main in Sunset is metered, and per the WWSI has a design flow capacity of 229,323 GPD (equal to 0.355 cfs) and per as-built plan has a slope of 0.04%. Per Manning's formula for open channel flow the material "n" value (the only unknown variable) can be derived and equals 0.014. The flow in the pipe is metered at 41% d/D (depth of flow to pipe diameter ratio) per the WWSI. Per Manning's formula for open channel flow, the existing flow can be derived to be 0.254 cfs at the metered depth.

The project proposes a net increase in peak dry weather flow of 0.322 cfs. The City Sewer Design Manual section on Trigger Flow (enclosed hereto) states the following:

- *"The trigger flow in a sanitary sewer is the quantity of flow that, once reached, would initiate the planning for a relief or replacement sewer."*
- *"The time required to complete a new sewer relief or replacement project is at least five years."*
- *"Currently, hydraulic relief is needed when the depth of flow reaches three fourths of the pipe diameter."*

In order to evaluate the potential of trigger flow at the 8" main in Sunset, the net increase in flow from the project shall be added to the estimate 5-year increase in current metered flow. The 5-year increase in flow is estimated per the table below:

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Los Angeles, CA Population Growth Trends*			
2008	2013	2018	2023
3,966,800	4,119,462	4,287,704	4,451,647
5 yrs. Increment	1.0385	1.0408	1.0382
For a 5-year projected population growth, an increase of 0.0408 is used as the most conservative increase.			

(*Source: Fig. 1.4.4 of 2009 Los Angeles Recreation and Parks Department Community-Wide Needs Assessment Summary Report)

The projected 5-year increase of 0.0408 applied to the current flow of 0.254 cfs in the Sunset main yields a project flow of 0.264 cfs. Adding the peak flow from the project of 0.322 cfs, results in a projected total flow of 0.586 cfs, which per Manning's formula results in a flow depth to pipe diameter ratio of 0.69, which is less than the 0.75 "trigger flow". Therefore, the project will not generate a trigger flow when added to the projected 5-year growth.

It is estimated that construction of any new sewer laterals will take one week and any connections to existing laterals can be performed out of the public right-of-way. Although four existing laterals currently are approved to serve the property, the project team has indicated that up to thirteen laterals may be necessary and coordination of the location and number will be required to satisfy plumbing code requirements and Bureau of Sanitation and Bureau of Engineering requirements.

Please refer to the enclosed documents for a table of the existing versus proposed uses and the approved City Will Serve Letter as support of the information on these requirements.

Sincerely,

SOUTHLAND CIVIL ENGINEERING & SURVEY, LLP

Stephen H. Lewis, P.E.
Partner

ENCLOSURES

1. Existing vs. Proposed Sewer Flow Comparison
2. Waste Water Service Information (WWSI) Letter
3. BOE Sewer Design Manual F257 Trigger Flow
4. Existing Sewer System Exhibit



Project Name: 6220 West Yucca

Project address: 6220 West Yucca Street, Los Angeles, California 90028

Existing Sewage Generation

Type of Facility	Sewage Generation Factor	gpd/Facility	No. of units or sf	Average Dry Weather Flow (gpd)	Average Dry Weather Flow (cfs)	Peak Dry Weather Flow (cfs)
Bachelor Apart. unit	75	gpd/DU	1	75	0.0001	0.0004
1-bedroom Apart. unit	110	gpd/DU	26	2,860	0.004	0.015
2-bedroom Apart. unit	150	gpd/DU	14	2,100	0.003	0.011
Multi-family	150	gpd/DU	2	300	0.000	0.002
Single family residence	185	gpd/DU	1	185	0.000	0.001
Parking Lot	20	gpd/1,000sf	28,000	560	0.001	0.003
Total existing flow				6,080	0.009	0.031

Proposed Sewage Generation

Type of Facility	Sewage Generation Factor	gpd/Facility	No. of units or sf	Average Dry Weather Flow (gpd)	Average Dry Weather Flow (cfs)	Peak Dry Weather Flow (cfs)
Parking Lot	20	gpd/1,000sf	190,605	3,812	0.006	0.019
1-bedroom Apart. unit	110	gpd/DU	104	11,440	0.018	0.058
2-bedroom Apart. unit	150	gpd/DU	96	14,400	0.022	0.074
3-bedroom Apart. unit	190	gpd/DU	10	1,900	0.003	0.010
Hotel rooms*	120	gpd/room	156	18,720	0.029	0.096
Restaurant seat	30	gpd/seat	500	15,000	0.023	0.077
Retail area	25	gpd/1,000sf	3,450	86	0.000	0.000
Bar	720	gpd/1,000sf	920	662	0.001	0.003
Spa	650	gpd/1,000sf	3,850	2,503	0.004	0.013
Meeting Space	120	gpd/1,000sf	4,600	552	0.001	0.003
Total proposed flow				69,075	0.107	0.353
Net increased flow				62,995	0.097	0.322

*Hotel count includes 116 conventional rooms and 20 suites counted as 2 rooms each (116 + 2 x 20 = 156)

Reference:

Sewage Generation Factor per BOE Table F229, Effective Dated April 06, 2012

Per BOE Figure F235, 3.3*Average Dry Weather Flow is used for the Peak Dry Weather Flow

Existing Pipe Capacity adjoining the property

Adjoining Pipe Location	Pipe Dia. (in)	Pipe Slope	Full Flow Capacity (cfs)	Half Flow Depth Capacity (cfs)	3/4 Flow (Trigger) Capacity (cfs)	Total proposed flow (cfs)
Argyle Ave.	8	0.066	2.883	1.441	2.628	0.353
Vista Del Mar Ave.	8	0.144	4.258	2.129	3.883	

For connection to adjoining existing pipes, the proposed flow is well within the pipe capacities.

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CALIFORNIA



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TIMEYIN DAFETA
HYPERION EXECUTIVE PLANT MANAGER

July 7, 2017

WASTEWATER ENGINEERING SERVICES DIVISION
2714 MEDIA CENTER DRIVE
LOS ANGELES, CA 90065
FAX: (323) 342-6210
WWW.LACITYSAN.ORG

Mr. Henry L. Gray, Assistant Project Engineer
Southland Civil Engineering & Surveying, LLP
87 N. Raymond Avenue, Suite 300
Pasadena, CA 91103

Dear Mr. Gray:

6220 YUCCA STREET – REQUEST FOR WASTEWATER SERVICES INFORMATION

This is in response to your July 5, 2017 email requesting a review of your proposed mixed-use project located at 6220 Yucca Street, Los Angeles, CA 90028. The proposed project will consist of hotel rooms, residential apartment, spa, conference rooms, restaurant, bar, retail, and auto parking. LA Sanitation has conducted a preliminary evaluation of the potential impacts to the wastewater and stormwater systems for the proposed project.

WASTEWATER REQUIREMENT

LA Sanitation, Wastewater Engineering Services Division (WESD) is charged with the task of evaluating the local sewer conditions and to determine if available wastewater capacity exists for future developments. The evaluation will determine cumulative sewer impacts and guide the planning process for any future sewer improvement projects needed to provide future capacity as the City grows and develops.

Projected Wastewater Discharges for the Proposed Project:

Type Description	Average Daily Flow per Type Description (GPD/UNIT)	Proposed No. of Units	Average Daily Flow (GPD)
<i>Proposed</i>			
Auto Parking	20 GPD/1000 SQ.FT	190,605 SQ.FT	3,812
Bar: Cocktail, Public Table Area	720 GPD/1000 SQ.FT	920 SQ.FT	662
Conference Room	120 GPD/1000 SQ.FT	4,600 SQ.FT	552
Health Club/ Spa	650 GPD/1000 SQ.FT	3,850 SQ.FT	2,503
Hotel Guest Rooms	120 GPD/ROOM	156 ROOMS	18,720
Residential: Apt – 1 BDR	110 GPD/ DU	104 UNITS	11,440
Residential: Apt – 2 BDR	150 GPD/ DU	96 UNITS	14,400
Residential: Apt – 3 BDR	190 GPD/DU	10 UNITS	1,900
Restaurant	30 GPD/SEAT	500 SEATS	15,000
Retail	25 GPD/1000 SQ.FT	3,450 SQ. FT	86
Total			69,075

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SEWER AVAILABILITY

The sewer infrastructure in the vicinity of the proposed project includes an existing 8-inch line on Argyle Avenue. The sewage from the existing 8-inch line feeds into a 27-inch line on Vine Street before discharging into a 33-inch sewer line on Vine Street. Figure 1 shows the details of the sewer system within the vicinity of the project. The current flow level (d/D) in the 8-inch line cannot be determined at this time without additional gauging.

The current approximate flow level (d/D) and the design capacities at d/D of 50% in the sewer system are as follows:

Pipe Diameter (in)	Pipe Location	Current Gauging d/D (%)	50% Design Capacity
8	Argyle Ave	*	931,513 GPD
8	Sunset Blvd	41	229,323 GPD
21	Vine St	*	7.96 MGD
27	Vine St	*	12.43 MGD
33	Vine St	20	21.11 MDP

* No gauging available

Based on the estimated flows, it appears the sewer system might be able to accommodate the total flow for your proposed project. Further detailed gauging and evaluation will be needed as part of the permit process to identify a specific sewer connection point. If the public sewer has insufficient capacity then the developer will be required to build sewer lines to a point in the sewer system with sufficient capacity. A final approval for sewer capacity and connection permit will be made at that time. Ultimately, this sewage flow will be conveyed to the Hyperion Water Reclamation Plant, which has sufficient capacity for the project.

If you have any questions, please call Christopher DeMonbrun at (323) 342-1567 or email at chris.demonbrun@lacity.org.

STORMWATER REQUIREMENTS

LA Sanitation, Watershed Protection Program (WPP) is charged with the task of ensuring the implementation of the Municipal Stormwater Permit requirements within the City of Los Angeles. We anticipate the following requirements would apply for this project.

POST-CONSTRUCTION MITIGATION REQUIREMENTS

In accordance with the Municipal Separate Storm Sewer (MS4) National Pollutant Discharge Elimination System (NPDES) Permit (Order No. R4-2012-0175, NPDES No. CAS004001) and the City of Los Angeles Stormwater and Urban Runoff Pollution Control requirements (Chapter VI, Article 4.4, of the Los Angeles Municipal Code), the Project shall comply with all mandatory provisions to the Stormwater Pollution Control Measures for Development Planning (LID Ordinance) and as it may be subsequently amended or modified. Prior to issuance of grading or building permits, the Applicant shall submit a LID Plan to the City of Los Angeles, Bureau of Sanitation, Watershed Protection Division (WPD), for review and approval. The LID Plan shall be prepared consistent with the requirements of the Development Best Management Practices Handbook.

Current regulations prioritize infiltration, capture/use, and then biofiltration as the preferred stormwater control measures. The relevant documents can be found at: www.lacitysan.org. It is advised that input regarding LID requirements be received in the early phases of the project from WPD's plan-checking staff.

The City is developing a Green Street Initiative that will require projects to implement Green Street elements in the parkway areas between the roadway and sidewalk of the public right-of-way to capture and retain stormwater and urban runoff to mitigate the impact of stormwater runoff and other environmental concerns. The goals of the Green Street elements are to improve the water quality of stormwater runoff, recharge local ground water basins, improve air quality, reduce the heat island effect of street pavement, enhance pedestrian use of sidewalks, and encourage alternate means of transportation. The Green Street elements may include infiltration systems, biofiltration swales, and permeable pavements where stormwater can be easily directed from the streets into the parkways and can be implemented in conjunction with the LID requirements. Green Street standard plans can be found at: www.eng2.lacity.org/techdocs/stdplans/

CONSTRUCTION REQUIREMENTS

All construction sites are required to implement a minimum set of BMPs for erosion control, sediment control, non-stormwater management, and waste management. In addition, construction sites with active grading permits are required to prepare and implement a Wet Weather Erosion Control Plan during the rainy season between October 1 and April 15. Additionally, construction sites that disturb more than one-acre of land are subject to the NPDES Construction General Permit issued by the State of California, and are required to prepare, submit, and implement the Storm Water Pollution Prevention Plan (SWPPP).

If there are questions regarding the stormwater requirements, please call WPP's plan-checking counter at (213) 482-7066. WPD's plan-checking counter can also be visited at 201 N. Figueroa, 3rd Fl, Station 18.

GROUNDWATER DEWATERING REUSE OPTIONS

The Los Angeles Department of Water and Power (LADWP) is charged with the task of supplying water and power to the residents and businesses in the City of Los Angeles. One of the sources of water includes groundwater. The majority of groundwater in the City of Los Angeles is adjudicated, and the rights of which are owned and managed by various parties. Extraction of groundwater within the City from any depth by law requires metering and regular reporting to the appropriate Court-appointed Watermaster. LADWP facilitates this reporting process, and may assess and collect associated fees for the usage of the City's water rights. The party performing the dewatering should inform the property owners about the reporting requirement and associated usage fees.

On April 22, 2016 the City of Los Angeles Council passed Ordinance 184248 amending the City of Los Angeles Building Code, requiring developers to consider beneficial reuse of groundwater as a conservation measure and alternative to the common practice of discharging groundwater to the storm drain (SEC. 99.04.305.4). It reads as follows: "Where groundwater is being extracted and discharged, a system for onsite reuse of the groundwater, shall be developed and constructed. Alternatively, the groundwater may be discharged to the sewer."

Groundwater may be beneficially used as landscape irrigation, cooling tower make-up, and construction (dust control, concrete mixing, soil compaction, etc.). Different applications may require various levels of treatment ranging from chemical additives to filtration systems. When onsite reuse is not available the groundwater may be discharged to the sewer system. This allows the water to be potentially reused as recycled water once it has been treated at a water reclamation plant. If groundwater is discharged into the storm drain it offers no potential for reuse. The onsite beneficial reuse of groundwater can reduce or eliminate costs associated with sewer and storm drain permitting and monitoring. Opting for onsite reuse or discharge to the sewer system are the preferred methods for disposing of groundwater.


To help offset costs of water conservation and reuse systems, LADWP offers the Technical Assistance Program (TAP), which provides engineering and technical assistance for qualified projects. Financial incentives are also available. Currently, LADWP provides an incentive of \$1.75 for every 1,000 gallons of water saved during the first two years of a five-year conservation project. Conservation projects that last 10 years are eligible to receive the incentive during the first four years. Other water conservation assistance programs may be available from Metropolitan Water District of Southern California. To learn more about available water conservation assistance programs, please contact LADWP Rebate Programs 1-888-376-3314 and LADWP TAP 1-800-544-4498, selection “3”.

For more information related to beneficial reuse of groundwater, please contact Greg Reed, Manager of Water Rights and Groundwater Management, at (213)367-2117 or greg.reed@ladwp.com.

SOLID RESOURCE REQUIREMENTS

The City has a standard requirement that applies to all proposed residential developments of four or more units or where the addition of floor areas is 25 percent or more, and all other development projects where the addition of floor area is 30 percent or more. Such developments must set aside a recycling area or room for onsite recycling activities. For more details of this requirement, please contact Daniel Hackney of the Special Project Division at (213) 485-3684.

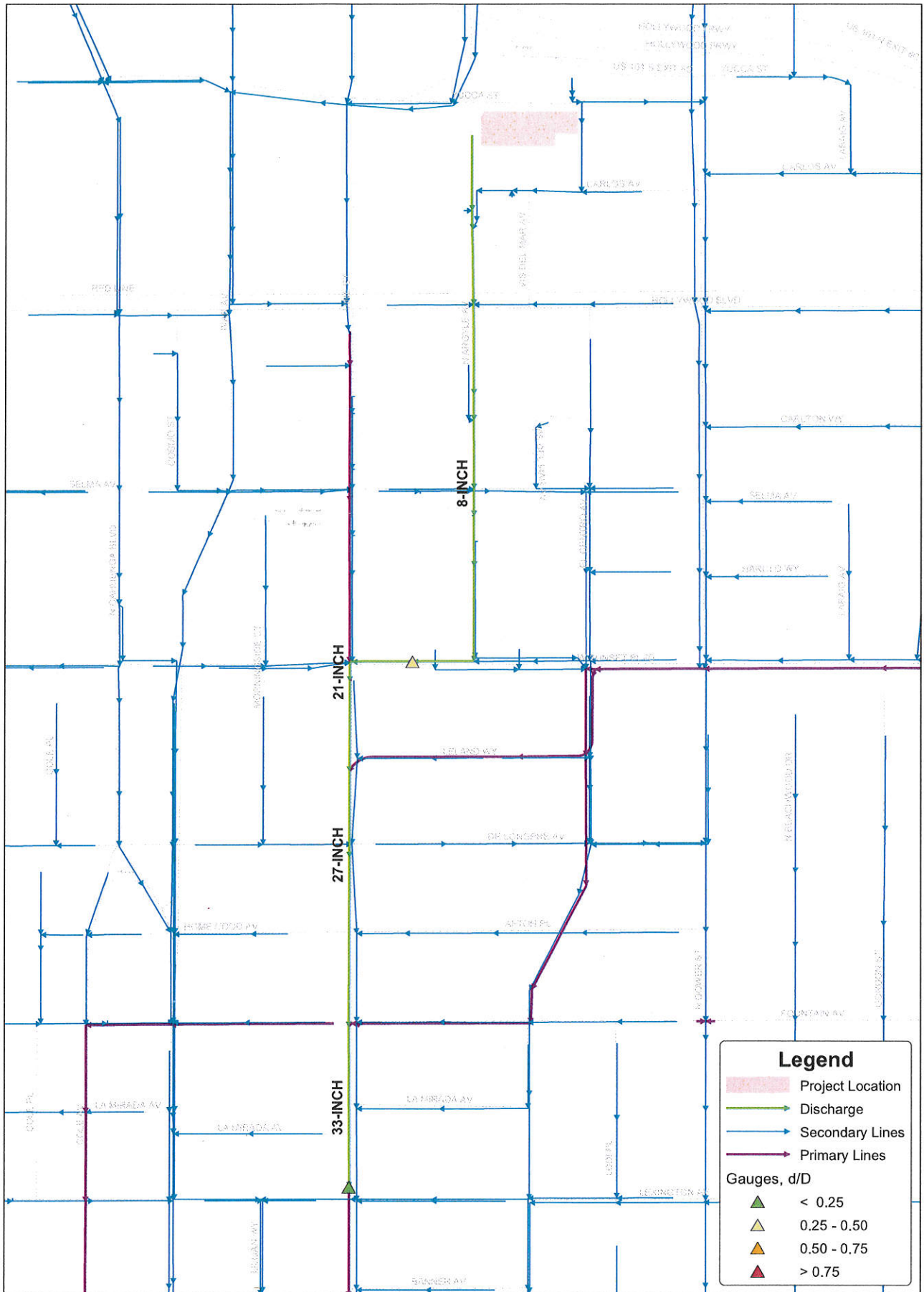
Sincerely,


Ali Poosti, Division Manager *for*
Wastewater Engineering Services Division
LA Sanitation

CD/AP:yv

Attachment: Figure 1 – Sewer Map

c: Kosta Kaporis, LASAN
Daniel Hackney, LASAN
Christopher DeMonbrun, LASAN



Wastewater Engineering Services Division
LA Sanitation
City of Los Angeles



Figure 1
6220 Yucca Street
Sewer Map



0 105 210 420 630 840
Feet

F 257 TRIGGER FLOW

The trigger flow in a sanitary sewer is the quantity of flow that, once reached, would initiate the planning for a relief or replacement sewer. The initiate of the trigger flow is to allow sufficient time, ahead of when additional capacity is needed, for planning, design, and construction of the new relief or replacement sewer. Trigger flow is determined by subtracting a buffer capacity from the capacity of the existing sewer at the flow depth when additional capacity is needed. The buffer capacity is defined as the product of the estimated years to complete the new sewer project and the rate of recent flow increases in the sewer being evaluated. [Figure F257](#) shows a 15-inch-diameter sewer with annual depth of flow gauging to illustrate the trigger flow and buffer capacity concept.

The time required to complete a new sewer relief or replacement project is at least five years.

The depth of flow at which hydraulic relief or replacement is needed can vary from time to time according to policy changes reflecting economic conditions and resources available for collection system improvements. Currently, hydraulic relief is needed when the depth of flow reaches three-fourths of the pipe diameter.

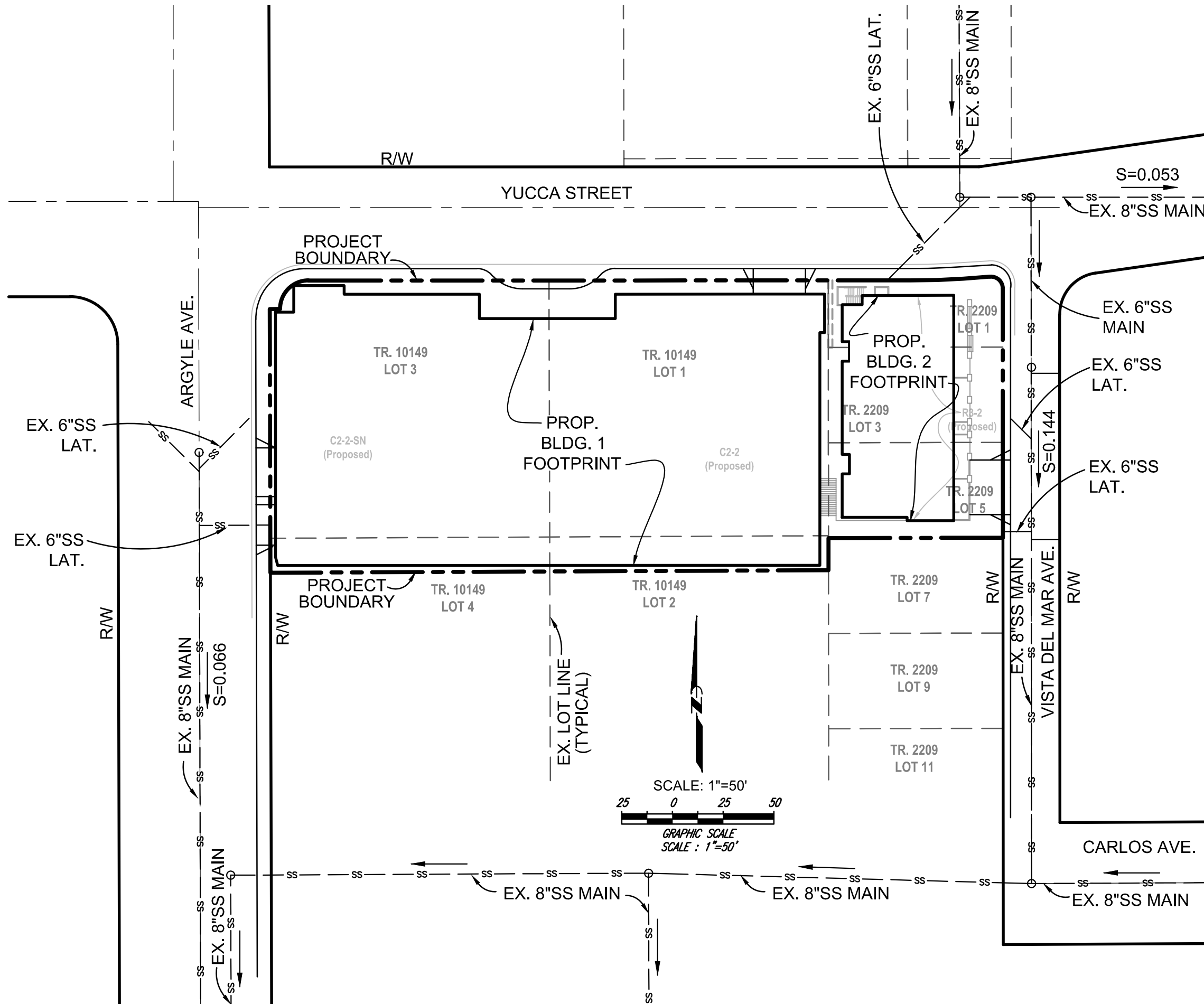
The trigger flow may vary for different service areas, different time periods, and special circumstances. For example, during a given time period, the anticipated rate of population increase may vary for different service areas. Special circumstances such as the rehabilitation of a structurally deficient sewer may alter the capacity of the existing sewer and accelerate the need for hydraulic relief of the sewer. The anticipated sewage discharge from a proposed subdivision or property redevelopment could trigger the need for initiating a sewer or replacement project.

An appropriate level of service area analysis, including depth of flow monitoring in existing sewers as well as other information and data should be considered to substantiate the trigger flow before commencement of sewer relief efforts. A concept report should be used to determine the scope of needed relief and address local problems within the service.

F 258 MINIMUM VELOCITY IN EXISTING SEWERS

When an existing sewer is to be relieved, and also retained as part of the system, the relief method should maintain a velocity of three feet per second if possible, but not less than the minimum velocity

J:\780-15020\EXHIBIT\Sewer Map Exhibit.dwg Jul 11, 2017 11:05 am HGRAY



LEGEND

- EXISTING SS MANHOLE
- SS — EXISTING SEWER MAIN AND LATERAL
- SEWER FLOW DIRECTION

EXISTING SEWER CONNECTIONS

2~6" LATERAL TO 8" MAIN ON ARGYLE AVE. FLOW TO THE SOUTH.
1~6" LATERAL TO 8" MAIN ON YUCCA ST. FLOW TO THE EAST.
2~6" LATERAL TO 8" MAIN ON VISTA DEL MAR AVE. FLOW TO THE SOUTH.

PROPOSED SEWER CONNECTIONS

THE PROPOSED BUILDINGS CAN BE CONNECTED TO ANY OF THE EXISTING 6" LATERALS ON ARGYLE AVENUE, YUCCA ST. AND VISTA DEL MAR AVENUE. IT IS ESTIMATED THAT SUCH SEWER LATERAL RE-CONNECTIONS CAN BE COMPLETED WITHIN A WEEK (INCLUDING THE VIDEO INSPECTION TO VERIFY THE EXISTING PIPE CONDITION). UN-USED LATERALS CAN THEN BE PLUG AND SEALED AT R/W LINE.

'6220 WEST YUCCA'

EXISTING SEWER SYSTEM MAP

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DRAWN BY
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Sheet 1 of 1

EXISTING SEWER INFORMATION FROM 'NavigateLA', CITY OF LOS ANGELES.

APPENDIX I

R.C.E. No. 70304, Stephen H. Lewis

Date