

APPENDIX PD-4
SEWER STUDY

DRAFT

North Watt Specific Plan Level 1 Sanitary Sewer Study

June 12, 2026

Prepared for



Prepared by



WOOD RODGERS

BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

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1.0 Executive Summary

1.1 Introduction and Project Description

The purpose of this study is to support the environmental and specific plan documents by identifying the sanitary sewer upgrades required to redevelop the North Watt Specific Plan (NWSP) area (Plan Area). This study will demonstrate the capacity constraints and potential system upgrades necessary to provide service to the Plan Area and technical compliance with the SASD Sewer System Capacity Plan 2020 update (SCP). This study has been submitted to SacSewer as a Level 1 study. To complete this study, proposed Equivalent Single-Family Dwelling (ESD) calculations were completed and provided to SacSewer to use in their system hydraulic model. For Plan Area parcels currently being served by SacSewer, the respective existing demands were removed and replaced with the proposed demands.

1.2 Proposed Sewer Infrastructure

SacSewer utilized their hydraulic model to study the proposed densification of the NWSP area. The model incorporates the NWSP demands and the SCP assumptions to predict potential spill and system surcharge locations and potential offsite infrastructure improvements to mitigate the potential spills.

SacSewer also noted that per DR UN Rio Linda East expansion trunk shed and has identified the ultimate offsite infrastructure necessary to provide service to Parcels 77 – 80. Those parcels are required to connect to a proposed trunk main on 32nd Street, which will connect to the Upper Northwest Interceptor, located within Elkhorn Boulevard. The proposed infrastructure includes:

- Construct minimum 8-inch sewer main in I Street from parcel 80 to 32nd Street. (Approximately 1,800 lineal feet),
- Construct 15-inch sewer main from I Street to Elkhorn Boulevard and connect to existing Upper Northeast Interceptor. (Approximately 2,500 lineal feet).

The NWSP would like to propose two potential interim sanitary sewer alignment alternatives to serve Parcels 77 – 80. The interim alternatives are:

- Construct minimum 8-inch sewer main in I Street from Parcel 80 to Watt Avenue (approximately 850 lineal feet), and construct minimum 8-inch sewer main in Watt Avenue from I Street to Elkhorn Boulevard, (approximately 2,600 lineal feet); or
- Propose a trunk shed swap and include Parcels 77 – 80 in the ARD trunk shed. Construct 8-inch minimum sewer in Watt Avenue from Parcel 77 to existing 6-inch sewer at the southern corner of Parcel 84, (approximately 800 lineal feet) and connect Parcel 80 into existing 6 – inch sewer in I Street.

The densification of multiple parcels within the McClellan trunk shed contributes to increases in the number of predicted spills. The predicted spills occur within James Way east of Watt Ave, outside of the Plan Area. SacSewer has identified a scope of work for a relief project to address the capacity deficiencies. If the SacSewer relief project is not complete prior to the redevelopment

of parcels 141-144, 147, and 151-152, the system upgrades would be required as part of the parcel redevelopment. The offsite upgrades include:

- Upsize existing S121 pump station, located by James Way and Pierce Avenue, from 0.89 mgd to 3.49 mgd,
- Upsize existing force main from 8-inches to 10-inches,
- Upsize existing gravity main, downstream of the force main to larger diameter pipes.

2.0 Introduction

The NWSP Level 1 Sewer Study provides an analysis of the existing sanitary sewer infrastructure within and adjacent to the Plan Area. The purpose of this sewer study is to identify existing sewer infrastructure upgrades required to provide service to NWSP parcels once they are redeveloped. This study will determine new ESD counts, evaluate system capacity constraints and propose sewer system upgrades.

The NWSP's purpose is to encourage infill development. In order to identify the sanitary sewer system improvements required to serve development within the Plan Area, the planning team identified 160 of the 384 total parcels for assumed redevelopment, land use types and development intensity to guide the sanitary sewer system analysis.

The NWSP area is covered by five trunk sewer sheds. This study will identify which sheds are capacity deficient and where potential surcharging and predicted overflows occur. Proposed system upgrades will be detailed. This study incorporates information contained in the following documents which are on file at SacSewer.

- 2020 SASD System Capacity Plan Update, (SCP),
- The Sacramento Area Sewer District (SASD) Design Standards, approved September 27, 2023, and;
- SASD Minimum Sewer Study Requirements, dated January 2024.

2.1 Project Location

The NWSP area encompasses approximately 639 acres and is in the North Highlands area of unincorporated Sacramento County. The NWSP extends along Watt Avenue from Antelope Road south to Interstate 80. The existing topography varies from elevation 63 feet to elevation 104 feet (NAVD 88).

2.2 Land Use

NWSP area is primarily a commercial corridor. The Plan Area is comprised of 384 parcels consisting of retail/commercial, residential, office and industrial land uses. The existing land use summary is shown in Table 1.

Table 1: Existing Project Land Use

Source: AECOM

Land Use Designation	Acres	% of Acres
Retail/Commercial	135.94	21%
Residential	40.54	6%
Office	28.07	4%
Industrial	205.00	32%
Church/Welfare	40.71	6%
Public/Utilities	2.31	0%
Recreational	3.40	1%
Miscellaneous	42.94	7%
Vacant	139.77	22%
Total	638.68	100%

The project is proposing to redevelop 160 parcels by changing their respective land uses. The proposed land uses are small lot multi-family, medium lot mixed use and large lot mixed use. The medium lot and large lot mixed use are proposed to have commercial and multi-family components. The multi-family portion will be apartment style dwelling units. The proposed redevelopment parcels and their respective land uses are shown on the Proposed Land Use Plan in Appendix A. The proposed redevelopment parcel, land use and densities are shown in Table 2.

Table 2: Proposed Redevelopment Parcel Land Use

Source: AECOM

Land Use	Area (acres)	Number of Parcels	Target Density (DU/acre)	Estimated Dwelling Units (DU)	Estimate Gross Square Feet (SF)
Small Lot Multi-Family	2.94	22	15	45	
Medium Lot Mixed-Use	47.65	81	25	1,192	518,906
Large Lot Mixed-Use	158.91	57	40	5,986	1,703,504
Total	209.50	160		7,223	2,249,409

2.3 Existing Sewer Sheds

The NWSP area parcels encompass a wide area and cross five different trunk sewer sheds. No sewer shed shifts are proposed by the NWSP, although an interim alternative to serve Parcels 77 – 80 if approved will require a sewer shed shift. The five trunk sewer sheds are:

- DRY
- ARD
- DR Un Rio Linda East
- NEA
- McClellan

Trunk sewer sheds were defined utilizing the existing sewer shed GIS maps provided by SacSewer, dated November 26, 2025. Refer to the Trunk Sewer Shed Map in Appendix B. Table 3 lists the trunk sewer sheds and respective redevelopment parcels.

Table 3: Trunk Sewer Sheds
Source: SacSewer and AECOM

Trunk Sewer Shed	Parcel Number
DRY	3, 9, 12, 13
ARD	4, 24, 54-55, 57, 61, 63, 80, 83, 85-100, 102-106, 109, 112, 114-117, 119, 127-132, 134, 135, 155, 157-162, 165-170, 174-175, 180, 185, 188, 190-192, 194-195, 198-, 225-227, 243-245, 252-253, 258, 263, 384
DR UN Rio Linda East	14-17, 19-20, 27-34, 37-38, 41-42, 44-47, 50, 62, 67-68, 70-71, 73, 76-79
NEA	193, 200-204, 207, 209-213, 238-240, 266, 268, 271, 273, 275-276, 301, 304-305, 316, 335, 354-355, 360, 365, 376, 379, 381
McClellan	141-144, 147, 151-152, 182

2.4 Future Studies

The NWSP Level 1 Sewer Study has been prepared to identify potential existing infrastructure upgrades necessary to serve the Plan Area. Future studies may be required on a project-by-project basis per SacSewer standard.

3.0 Project Demands

The proposed redevelopment parcels include a total of 7,223 dwelling units (DU) from residential and mixed-use land areas. The proposed land uses include small lot multi-family, medium lot mixed use and large lot mixed use. The medium lot and large lot mixed-use parcels have both a residential and commercial component. The residential component is assumed to be multi-family residential. The total number of dwelling units was converted to Equivalent Single Dwelling (ESD) by parcel and provided to SacSewer. Individual parcel ESD's are shown in Appendix E. Table 4 is a summary of the project build-out ESD's for the different redevelopment parcels. The build-out ESD column reflects actual number of equivalent single-dwellings as required by SacSewer. The build-out ESD's were determined using the following formulas:

Small Lot Multi-Family $\text{One (1) Unit} = \text{One (1) ESD}$

Medium Lot Mixed Use $(0.75 \times \text{DU's} + \text{Commercial Gross Acres}) \times 6 \text{ ESD/acre} = \text{Build-out ESD}$

Large Lot Mixed Use $(0.75 \times \text{DU's} + \text{Commercial Gross Acres}) \times 6 \text{ ESD/acre} = \text{Build-out ESD}$

Table 4: Project Build-out ESD's by Land Use for Redevelopment Parcels

Source: AECOM and SacSewer

Description	Actual Units	Area Gross Acres	Ave. Residential Build-out Planned Density	Ave. Commercial Build-out Density	Build-out ESD
Small Lot Multi-Family	45	2.95	15		45
Medium Lot Mixed Use	1,192	47.65	25	6	1,180
Large Lot Mixed Use	5,982	158.91	40	6	5,443
Total	7,223	209.50			6,668

4.0 Existing Sewer Facilities

The NWSP is served by a series of collection systems. The collection systems include 6-inch to 15-inch gravity sewer mains. The collection system conveys flows to the two existing sewer interceptors which bisect the Plan Area. The Upper Northwest Interceptor located in Elkhorn Boulevard and the McClellan Interceptor located in Roseville Road.

There are no existing or proposed sewer pump stations within the Plan Area. The existing S121 pump station is located within the McClellan trunk sewer shed and serves proposed redevelopment parcels 141-144, 147, and 151-152.

The existing sewer facilities are shown on the Existing Sewer System Exhibit in Appendix C.

5.0 System Analysis and Results

The existing sanitary sewer system was evaluated using SCP build-out assumptions and calculated build-out ESD's for the redevelopment parcels. The calculated build-out ESD's were provided to SacSewer and used in the SacSewer hydraulic model to identify potential capacity constraints, potential surcharge areas and potential spill areas.

According to SacSewer, there are currently areas within and adjacent to the NWSP, which are capacity deficient or are currently experiencing predicted overflows. Those areas are shown in Table 5 below.

Table 5: Pre-project Conditions

Source: SacSewer

Trunk Sewer Shed	Location	Existing Constraint
NEA and ARD	South of Roseville Road and south of Palm Street	Capacity deficient
ARD and McClellan	West of Watt Avenue surrounding James Way	Capacity deficient with predicted overflows at two (2) offsite manholes

The densification of the NWSP was modeled by SacSewer and resulted predicted overflows or potentially significant surcharging, those areas are shown in Table 6 below.

Table 6: Post Project Conditions

Source: SacSewer

Trunk Sewer Shed	Location	Result
DRY, ARD and DR UN Rio Linda East	North of Elkhorn Boulevard and east side of Watt Avenue, north of Palm Street	Potentially significant surcharging
ARD and McClellan	West of Watt Avenue surrounding James Way	Predicted overflows at four (4) additional offsite manholes

No hydraulic modeling was completed for the two alternatives to provide service to Parcels 77 – 80. The first alternative, which includes remaining in the DR UN Rio Linda East trunk shed and connecting into the same sewer interceptor as the SacSewer option may not require additional hydraulic modeling.

The second alignment alternative for service will require additional hydraulic modeling since it proposes to add Parcels 77 – 80 to the ARD trunk sewer shed. The ARD trunk sewer shed is capacity deficient in multiple locations adjacent to the Plan Area. The second alignment alternative also proposes connecting into an existing 6-inch sewer main. Confirmation the existing downstream infrastructure can adequately convey the additional flow will be necessary to determine if any existing facilities require upsizing.

6.0 Recommendations

SacSewer's hydraulic analysis shows multiple areas within the plan area which are capacity deficient or have predicted overflows under current SCP build-out conditions. SacSewer has preliminarily identified the scope of a relief project to address the capacity deficiencies within the McClellan and ARD trunk sewer sheds. The relief project impacts seven parcels within the plan area. If any of these parcels are developed prior to SacSewer proceeding with the relief project, the redevelopment projects may be required to make these. The system upgrades and affected parcels are listed in Table 7 and shown on the Proposed Sewer System Exhibit in Appendix D.

Table 7: Required System Upgrades due to Capacity Issues

Source: SacSewer

Trunk Sewer Shed	Sewer System Upgrades	Parcels
ARD and McClellan	Upsize existing S121 pump station, located at James Way and Price Ave, from 0.89 mgd to 3.49 mgd.	141-144, 147 and 151-152
	Upsize approximately 860 lineal feet of S121 force main, adjacent to James Way, from 8-inches to 10-inches.	
	Upsize approximately 900 lineal feet of downstream gravity main to larger diameter pipe.	

SacSewer has designated trunk sewer shed DR UN Rio Linda an expansion shed, which will require the construction of offsite improvements prior to or in conjunction with the development of four parcels. There is currently no timeline for SacSewer to construct the expansion area improvements. The expansion improvements and affected parcels are listed in Table 8 and shown on the Proposed Sewer Exhibit in Appendix D.

Table 8: Proposed Expansion Area Improvements

Source: SacSewer

Trunk Sewer Shed	Expansion Area Improvements	Parcels
DR UN Rio Linda East	Construct approximately 1,800 lineal feet of 8-inch minimum sewer main in I Street from Parcel 80 to 32 nd Street.	77-80
	Construct approximately 2,500 lineal feet of 15-inch sewer main in 32 nd Street from I Street to Elkhorn Boulevard.	

Table 9 lists the infrastructure improvements required for each of the two alternative alignments to serve Parcels 77 – 80. These improvements are shown in various alternative exhibits in Appendix D.

Table 9: Proposed Alignment Alternative Improvements for Parcels 77 – 80

Source: Wood Rodgers

Trunk Sewer Shed	Proposed Improvements	Parcels
DR UN Rio Linda East	Construct approximately 850 lineal feet of 8-inch minimum sewer main in I Street to Watt Avenue.	77-80
	Construct approximately 2,600 lineal feet of 8-inch sewer main in Watt Avenue from I Street to Elkhorn Boulevard.	
ARD	Process Trunk Sewer Shed Swap	77-80
	Construct approximately 800 lineal feet of 8-inch sewer main in Watt Ave from Parcel 77 to existing 6-inch sewer at southern corner of Parcel 84.	
	Construct 8-inch sewer service for Parcel 80 and connect to existing 6-inch main in I Street.	
	Additional hydraulic modeling to determine any required downstream infrastructure upgrades.	

The existing collection system along with the collection system improvements identified in Table 7 and Table 8 will provide adequate service to the Plan Area.

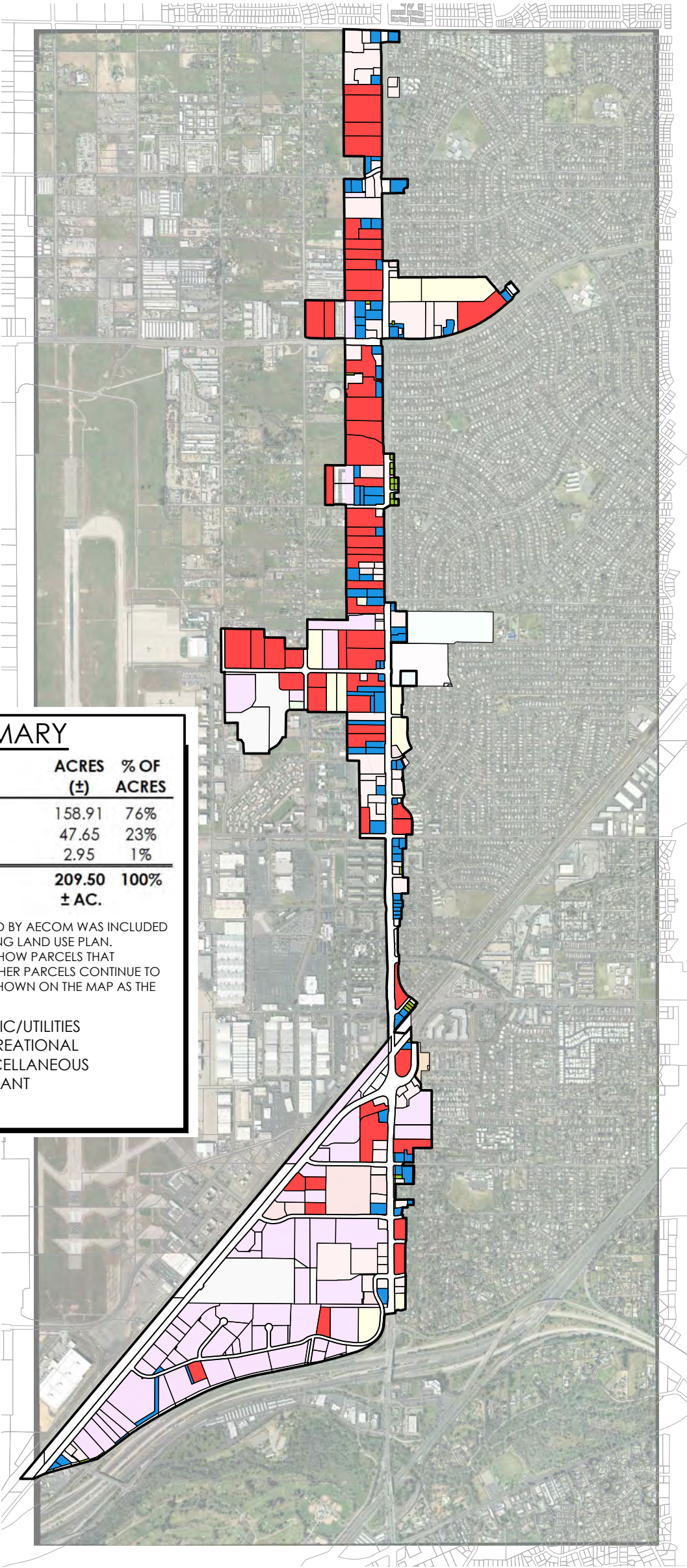
APPENDIX A: Land Use Plan

PROPOSED LAND USE PLAN

NORTH WATT SPECIFIC PLAN

COUNTY OF SACRAMENTO, CALIFORNIA

MARCH 18, 2026

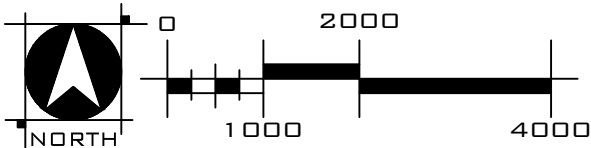


LAND USE SUMMARY

LAND USE DESIGNATION	ACRES (±)	% OF ACRES
LARGE LOT MIXED-USE	158.91	76%
MEDIUM LOT MIXED-USE	47.65	23%
SMALL MULTI-FAMILY	2.95	1%
Total	209.50	100%
	± AC.	

NOTE 1: ONLY PARCEL INFORMATION PROVIDED BY AECOM WAS INCLUDED IN THE ACREAGE CALCULATION FOR THE EXISTING LAND USE PLAN.
NOTE 2: ALL LAND USE DESIGNATIONS ABOVE SHOW PARCELS THAT PROPOSED NEW DEVELOPMENT ONSITE. ALL OTHER PARCELS CONTINUE TO HAVE THE SAME EXISTING LAND USE AND ARE SHOWN ON THE MAP AS THE COLORS BELOW:

- RETAIL/COMMERCIAL
- RESIDENTIAL
- OFFICE
- INDUSTRIAL
- CHURCH/WELFARE
- PUBLIC/UTILITIES
- RECREATIONAL
- MISCELLANEOUS
- VACANT





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APPENDIX B: Existing Trunk Sewer Shed Map

SACSEWER TRUNK SHED MAP

NORTH WATT SPECIFIC PLAN

COUNTY OF SACRAMENTO, CALIFORNIA

MAY 6, 2026

SACSEWER TRUNK SHEDS

DR UN Rio Linda East

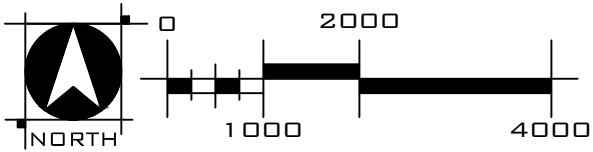
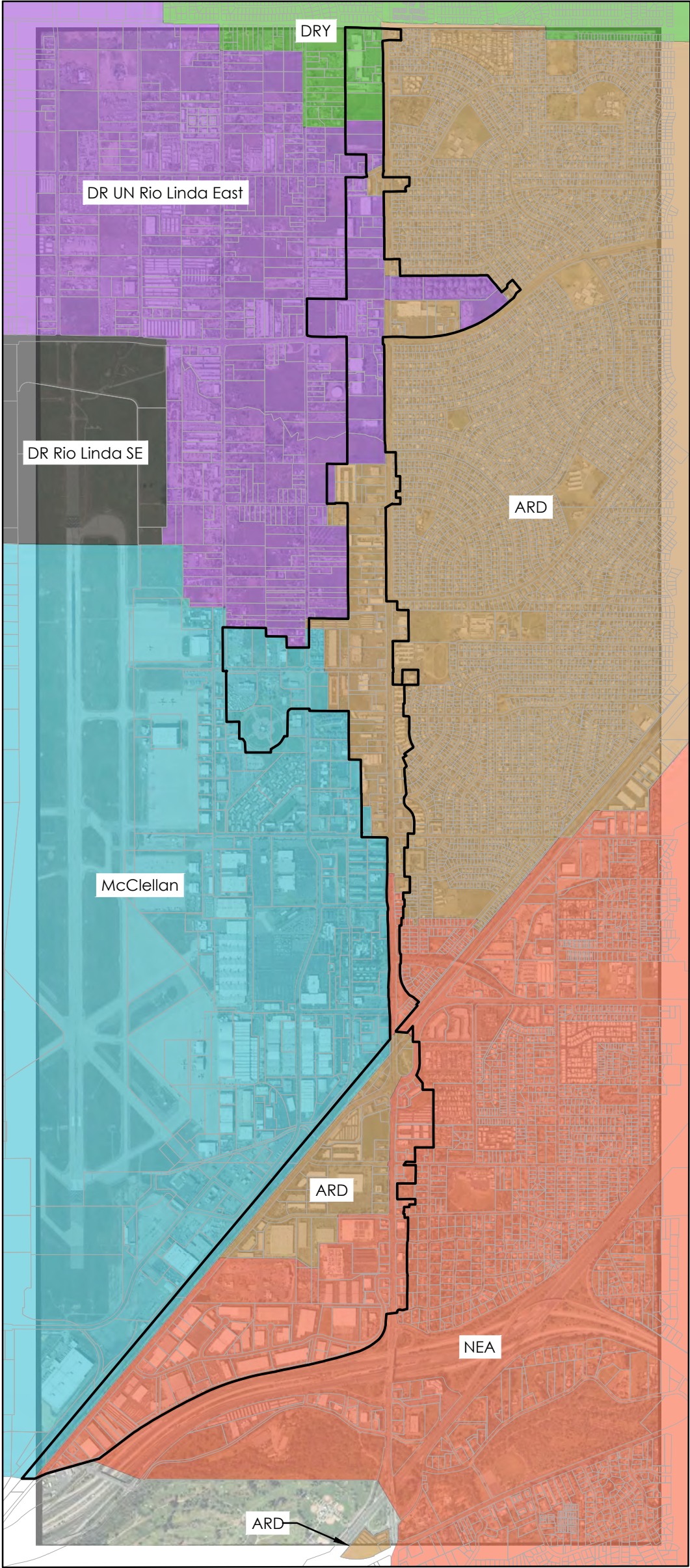
DRY

DR Rio Linda SE

ARD

McClellan

NEA



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Sacramento, CA 95816

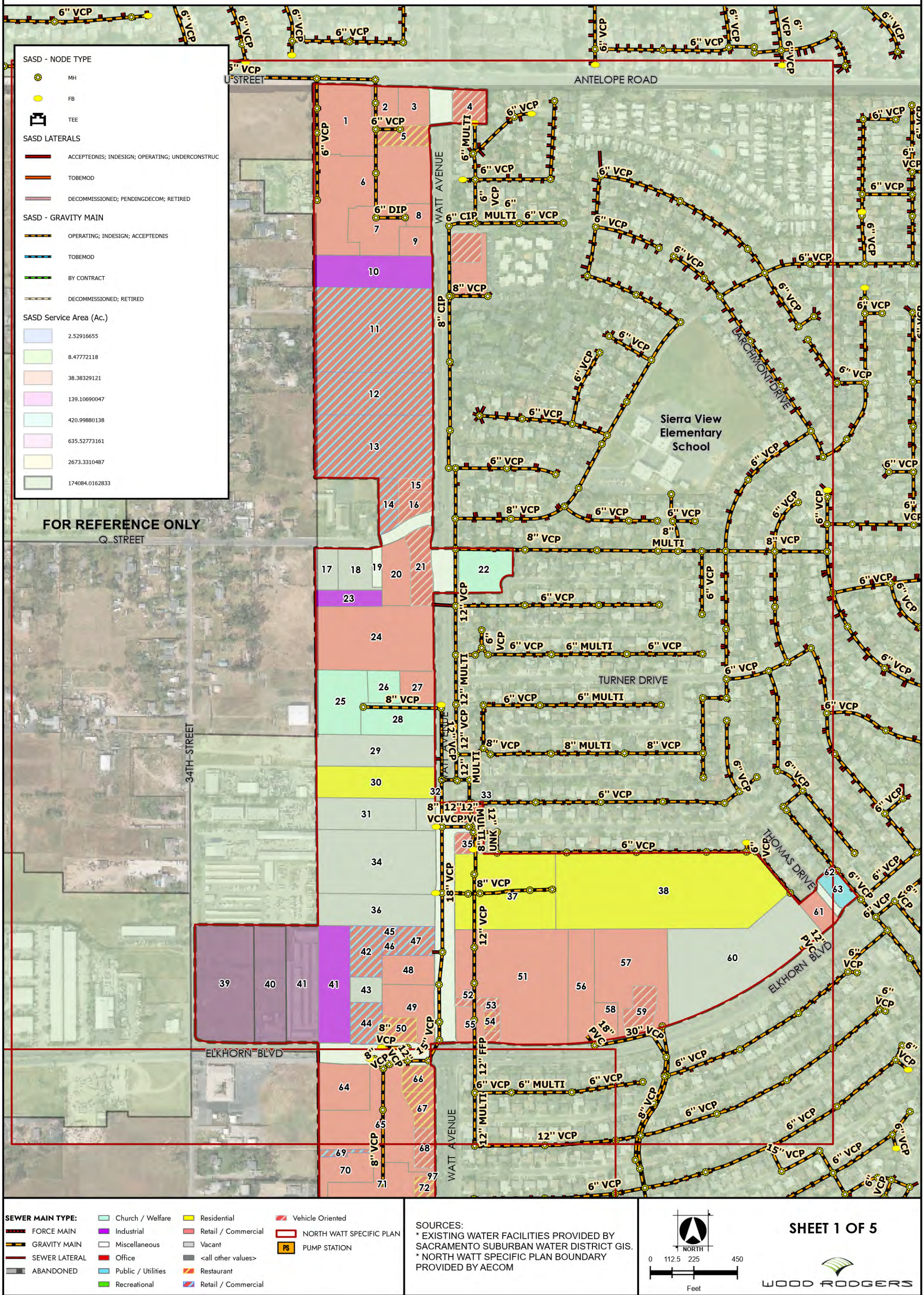
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APPENDIX C: Existing Infrastructure

SEWER STUDY PLAN - EXISTING CONDITIONS

NORTH WATT SPECIFIC PLAN

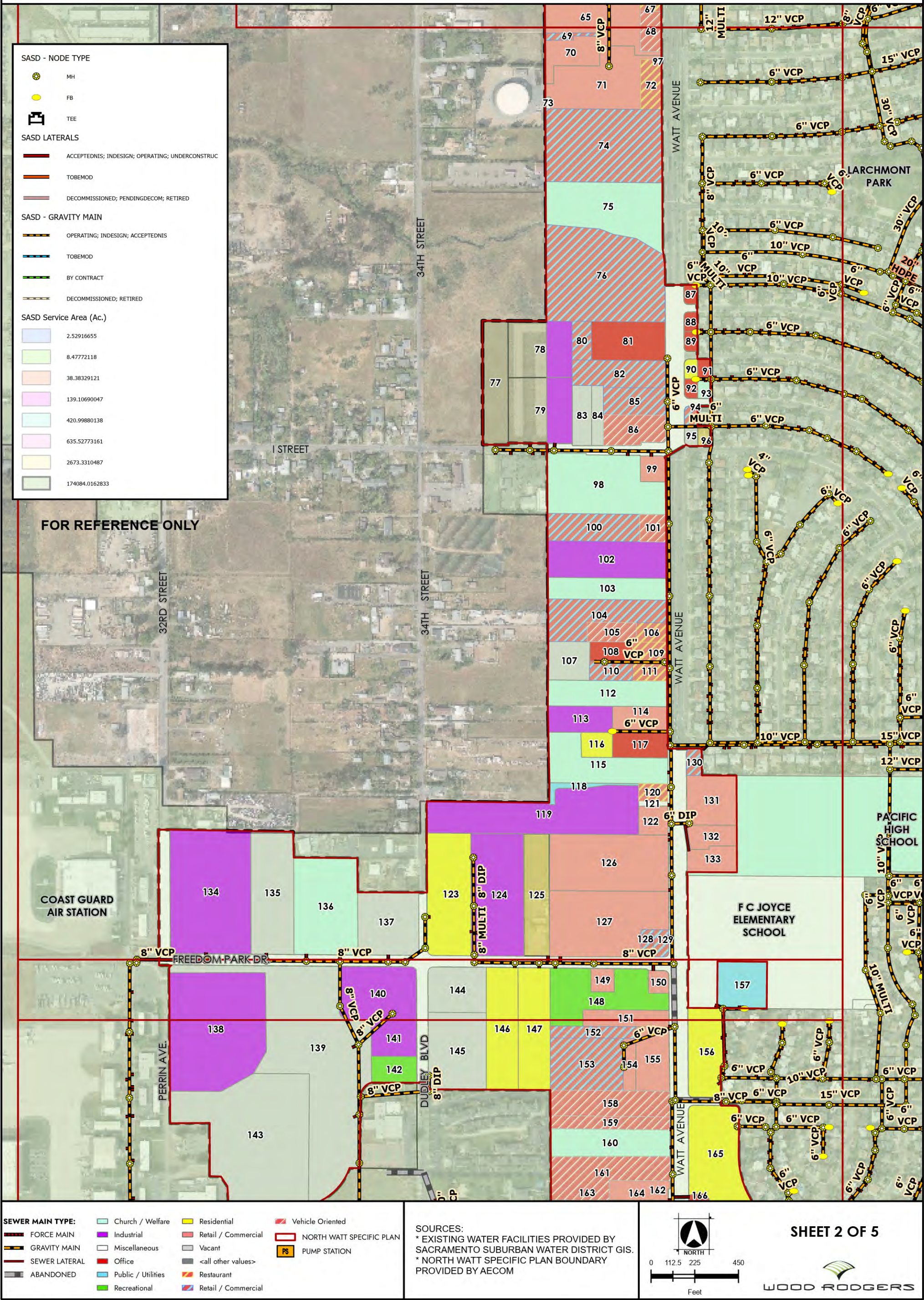
COUNTY OF SACRAMENTO, CA
JUNE 2026



SEWER STUDY PLAN - EXISTING CONDITIONS

NORTH WATT SPECIFIC PLAN

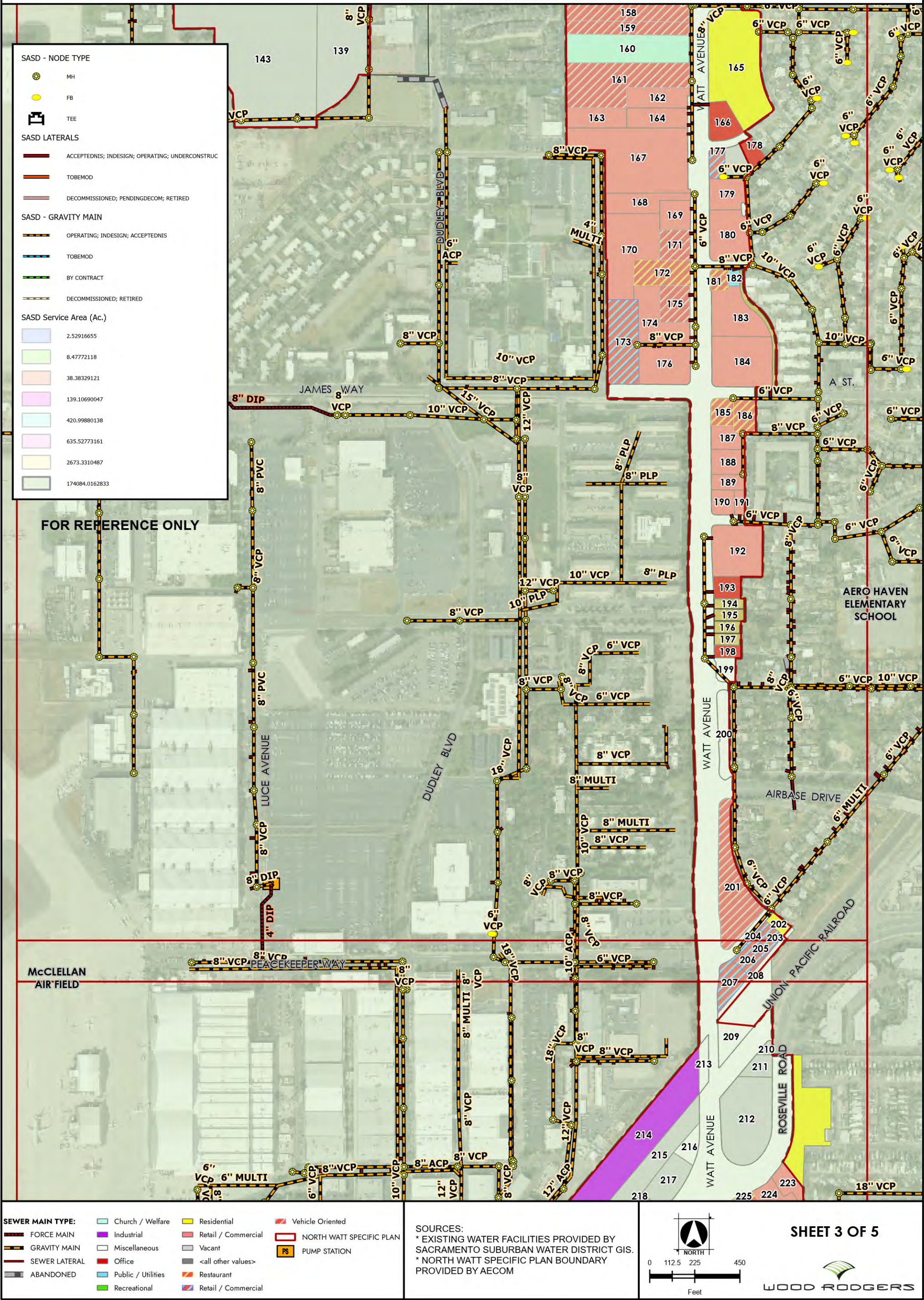
COUNTY OF SACRAMENTO, CA
JUNE 2026



SEWER STUDY PLAN - EXISTING CONDITIONS

NORTH WATT SPECIFIC PLAN

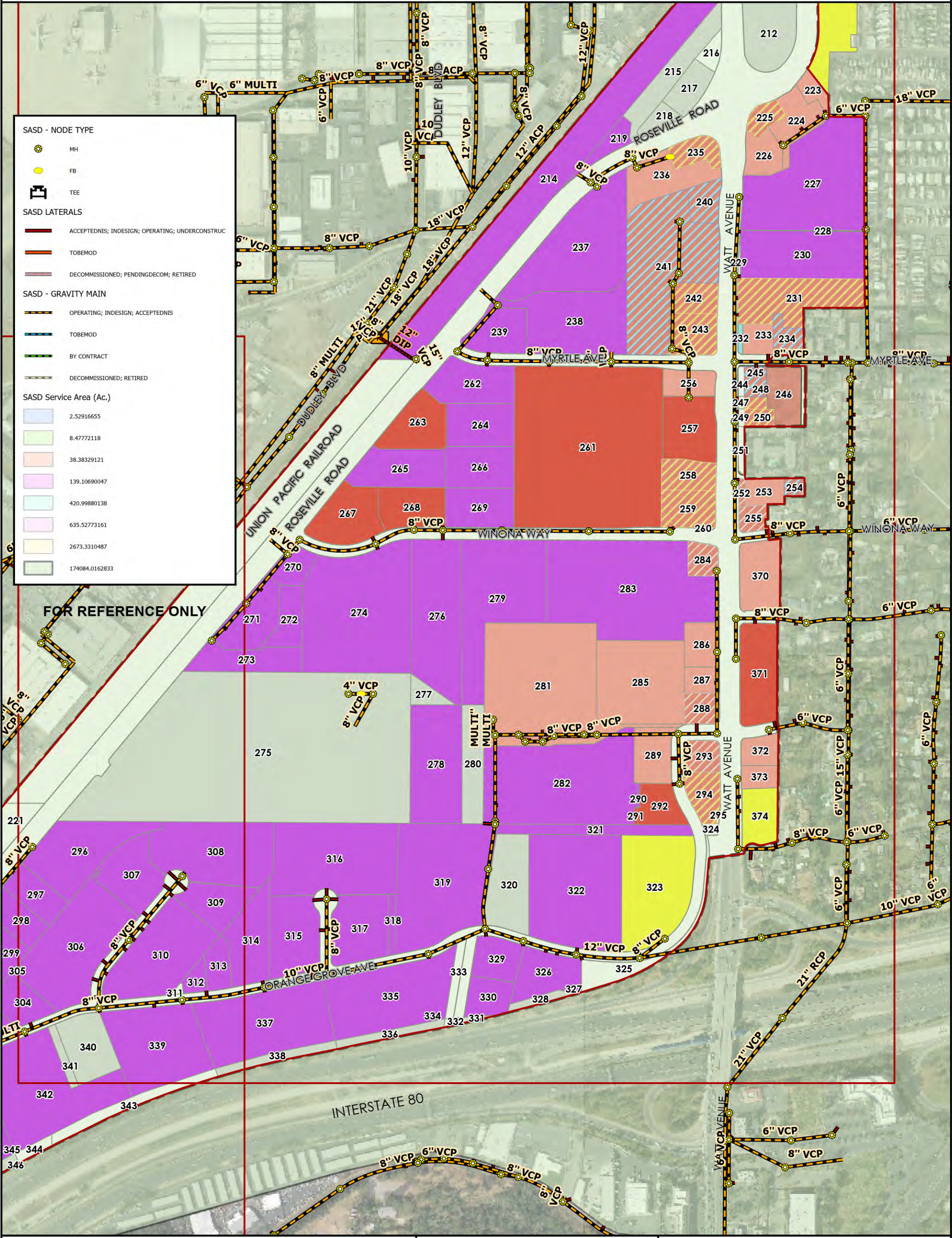
COUNTY OF SACRAMENTO, CA
JUNE 2026



SEWER STUDY PLAN - EXISTING CONDITIONS

NORTH WATT SPECIFIC PLAN

COUNTY OF SACRAMENTO, CA
JUNE 2026



SEWER MAIN TYPE:

- FORCE MAIN
- GRAVITY MAIN
- SEWER LATERAL
- ABANDONED

SEWER MAIN TYPE:

- Church / Welfare
- Industrial
- Miscellaneous
- Public / Utilities
- Recreational

SEWER MAIN TYPE:

- Residential
- Retail / Commercial
- Vacant
- <all other values>
- Restaurant
- Retail / Commercial

SEWER MAIN TYPE:

- Vehicle Oriented
- NORTH WATT SPECIFIC PLAN
- PUMP STATION

SOURCES:
* EXISTING WATER FACILITIES PROVIDED BY SACRAMENTO SUBURBAN WATER DISTRICT GIS.
* NORTH WATT SPECIFIC PLAN BOUNDARY PROVIDED BY AECOM

SHEET 4 OF 5

WOOD RODGERS

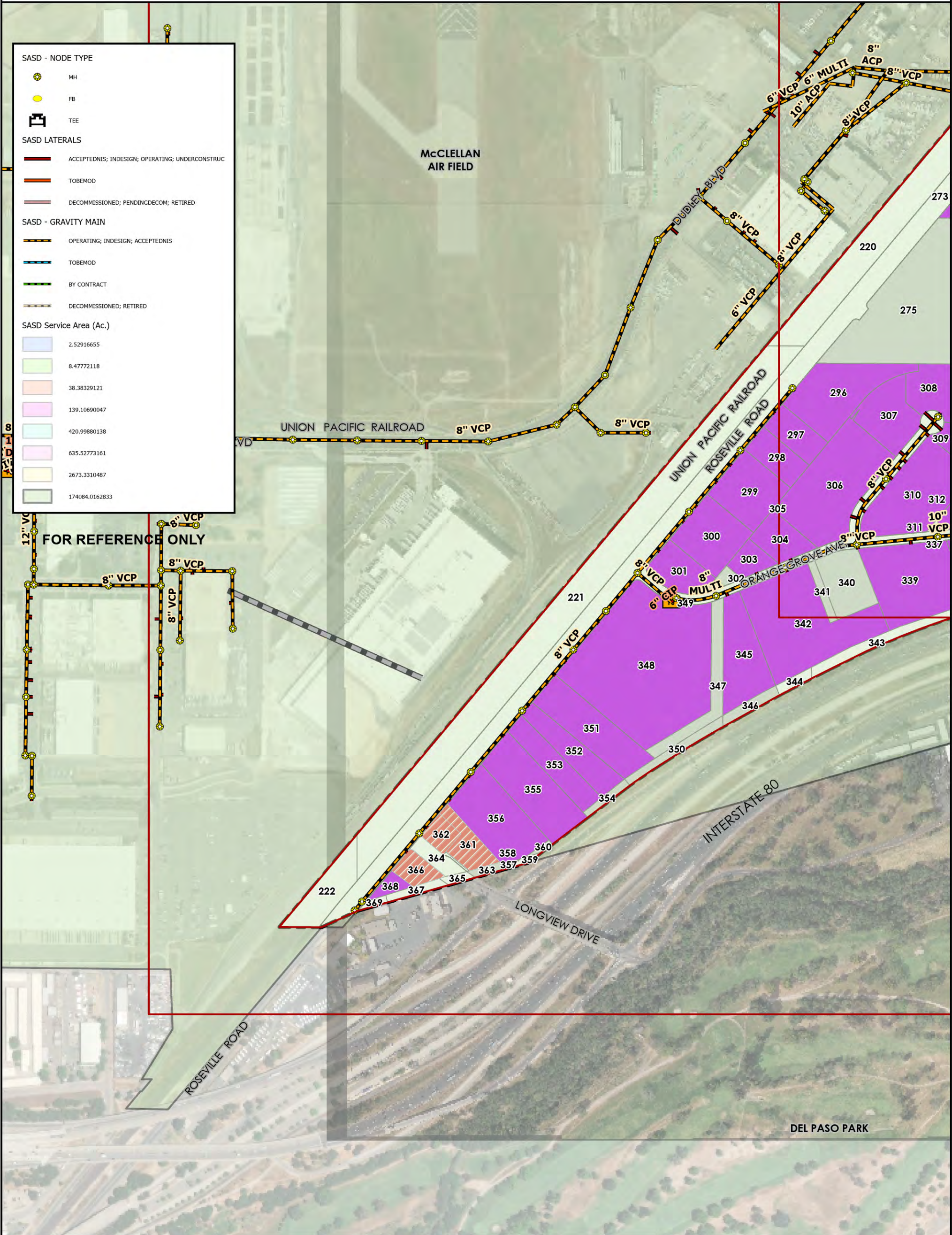
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SEWER STUDY PLAN - EXISTING CONDITIONS

NORTH WATT SPECIFIC PLAN

COUNTY OF SACRAMENTO, CA
JUNE 2026



SEWER MAIN TYPE:

- FORCE MAIN
- GRAVITY MAIN
- SEWER LATERAL
- ABANDONED

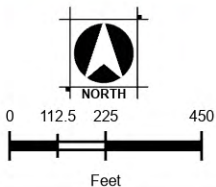
Land Use:

- Church / Welfare
- Industrial
- Miscellaneous
- Office
- Public / Utilities
- Recreational
- Residential
- Retail / Commercial
- Vacant
- <all other values>
- Restaurant
- Retail / Commercial

Other:

- Vehicle Oriented
- NORTH WATT SPECIFIC PLAN
- PUMP STATION

SOURCES:
* EXISTING WATER FACILITIES PROVIDED BY SACRAMENTO SUBURBAN WATER DISTRICT GIS.
* NORTH WATT SPECIFIC PLAN BOUNDARY PROVIDED BY AECOM

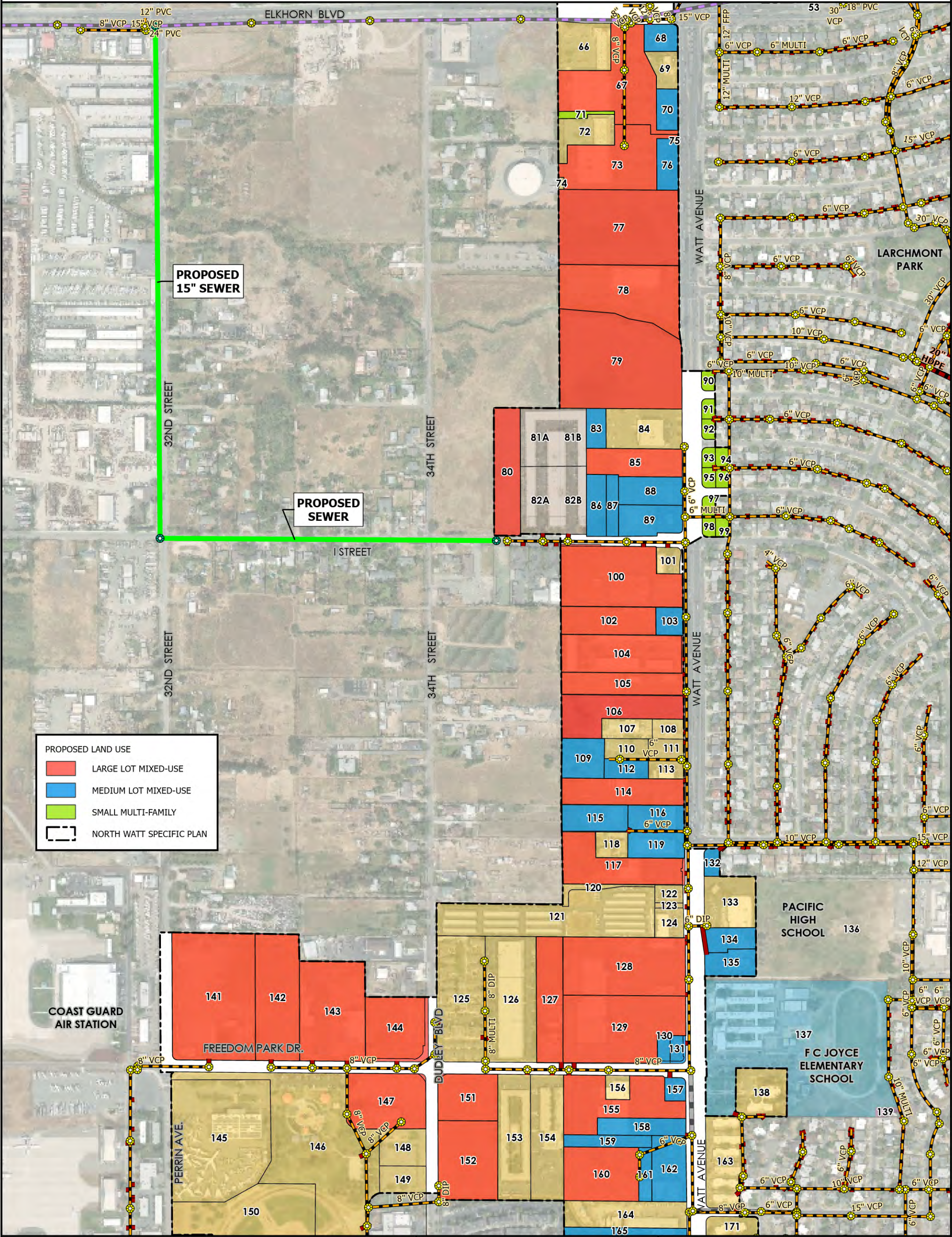


SHEET 5 OF 5



APPENDIX D: Proposed Infrastructure

SEWER STUDY PLAN - PROPOSED INFRASTRUCTURE
SAC SEWER ALTERNATIVE
NORTH WATT SPECIFIC PLAN
COUNTY OF SACRAMENTO, CA
JUNE 2026



SEWER MAIN TYPE		(E) SEWER INTERCEPTOR	SEWER NODE TYPE
(E) FORCE MAIN	(E) MH	ABANDONED	
(E) GRAVITY MAIN	(P) FORCE MAIN	(P) MH	
(E) SEWER LATERAL	(P) GRAVITY MAIN		

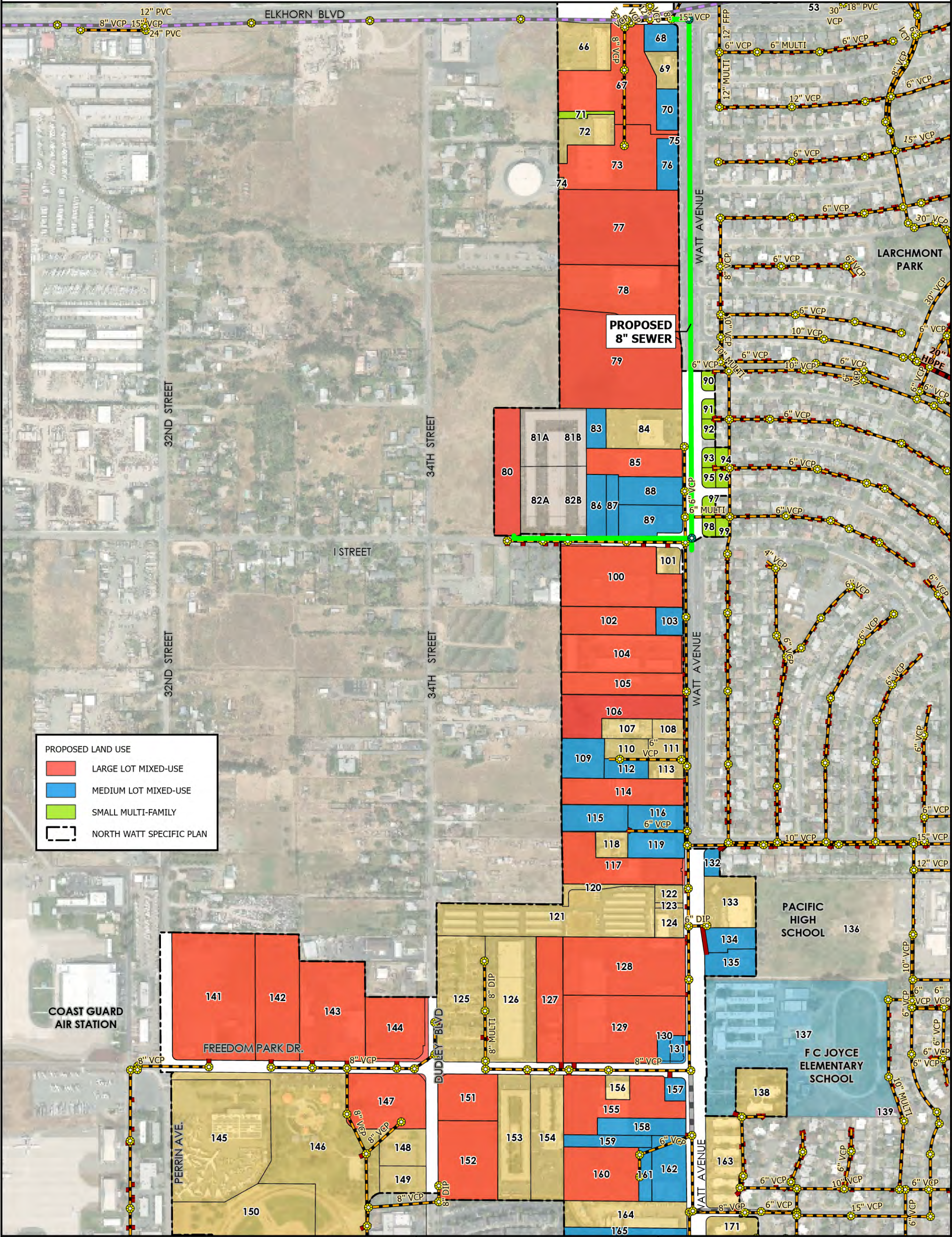
SOURCES:
* EXISTING SEWER FACILITIES PROVIDED BY SACRAMENTO COUNTY GIS WEB PORTAL.
* NORTH WATT SPECIFIC PLAN BOUNDARY PROVIDED BY AECOM.

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SHEET 1 OF 2

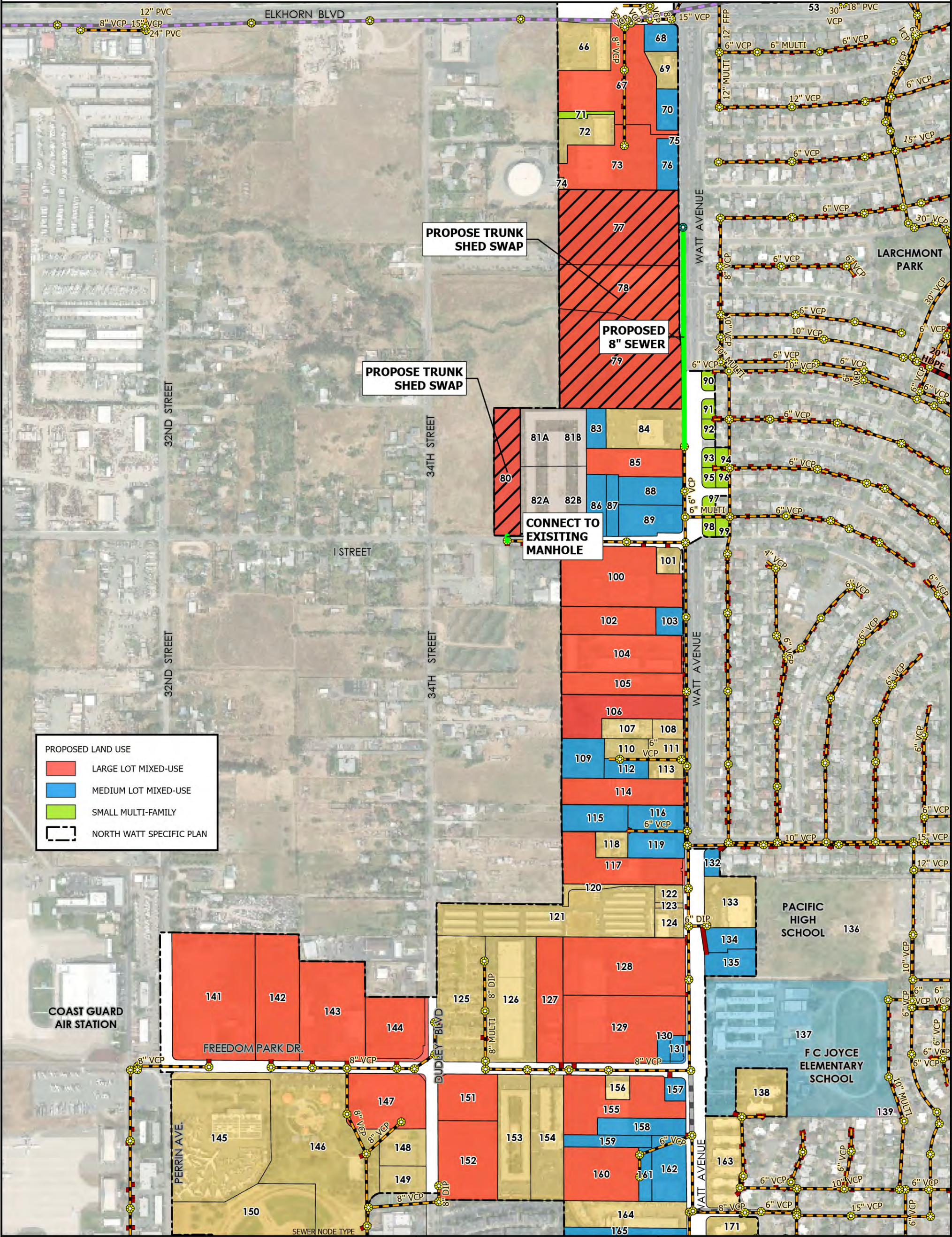
WOOD RODGERS

SEWER STUDY PLAN - PROPOSED INFRASTRUCTURE
PARCELS 77-80 ALTERNATIVE 1
NORTH WATT SPECIFIC PLAN
COUNTY OF SACRAMENTO, CA
JUNE 2026



SEWER MAIN TYPE		SEWER NODE TYPE		SOURCES: * EXISTING SEWER FACILITIES PROVIDED BY SACRAMENTO COUNTY GIS WEB PORTAL. * NORTH WATT SPECIFIC PLAN BOUNDARY PROVIDED BY AECOM.		SHEET 1 OF 2	
	(E) FORCE MAIN		ABANDONED				
	(E) GRAVITY MAIN		(P) FORCE MAIN		(E) TEE		
	(E) SEWER LATERAL		(P) GRAVITY MAIN		(P) MH		

SEWER STUDY PLAN - PROPOSED INFRASTRUCTURE
PARCELS 77-80 ALTERNATIVE 2
NORTH WATT SPECIFIC PLAN
COUNTY OF SACRAMENTO, CA
JUNE 2026



SOURCES:
* EXISTING SEWER FACILITIES PROVIDED BY SACRAMENTO COUNTY GIS WEB PORTAL.
* NORTH WATT SPECIFIC PLAN BOUNDARY PROVIDED BY AECOM.

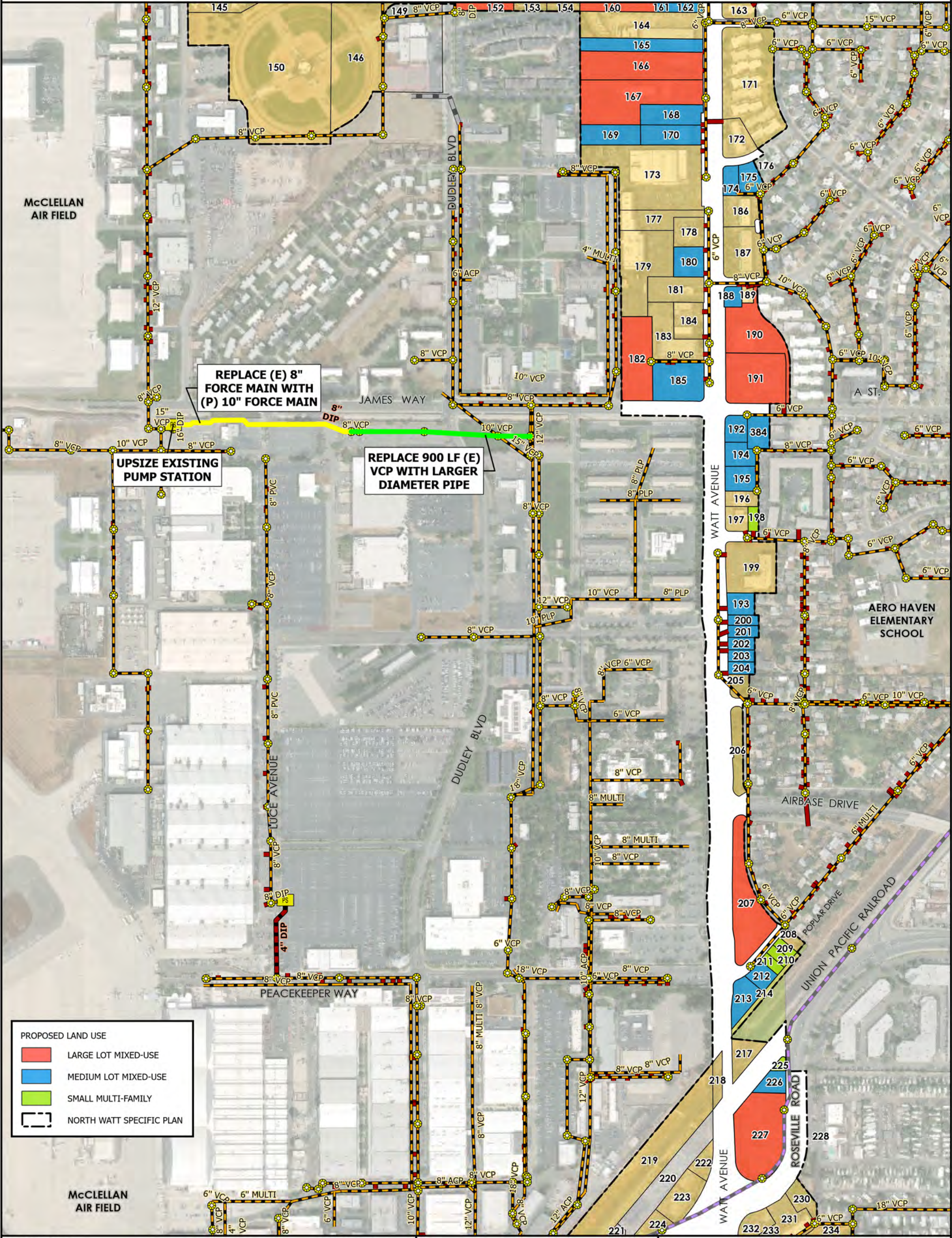
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SHEET 1 OF 2

SEWER STUDY PLAN - PROPOSED INFRASTRUCTURE

NORTH WATT SPECIFIC PLAN

COUNTY OF SACRAMENTO, CA
MAY 2026



PROPOSED LAND USE

- LARGE LOT MIXED-USE
- MEDIUM LOT MIXED-USE
- SMALL MULTI-FAMILY
- NORTH WATT SPECIFIC PLAN

SEWER MAIN TYPE	(E) SEWER INTERCEPTOR	SEWER NODE TYPE
 (E) FORCE MAIN	 ABANDONED	 (E) MH
 (E) GRAVITY MAIN	 (P) FORCE MAIN	 (E) TEE
 (E) SEWER LATERAL	 (P) GRAVITY MAIN	 (E) PUMP STATION

SOURCES:
* EXISTING SEWER FACILITIES PROVIDED BY SACRAMENTO COUNTY GIS WEB PORTAL.
* NORTH WATT SPECIFIC PLAN BOUNDARY PROVIDED BY AECOM.

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Feet

SHEET 2 OF 2

APPENDIX E: Modeling Results

Regina Reusser

From: Wu. Zoe Chi <wuc@sacsewer.com>
Sent: Friday, February 6, 2026 4:33 PM
To: Shen. Jessie; Regina Reusser
Cc: Lewis. Yadira; Mike Motroni; 'Biro, Emily'; 'Gerken, Matthew'
Subject: North Watt Ave Specific Plan - SacSewer Model Summary

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Good afternoon Jessie and Regina,

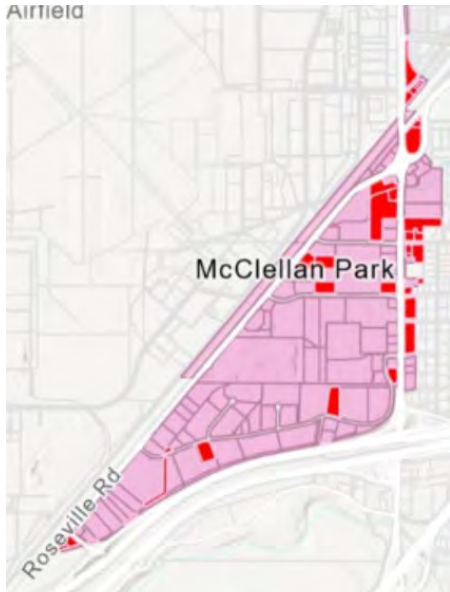
SacSewer has modeled the proposed densification based on the North Watt Ave Specific Plan. Because the densification areas encompass a wide area crossing various trunk sheds, the impact that the proposed densification areas have on the sewer system varies. Included below are a summary of each area's impacts and a figure showing the modeled results.

If you would like to further discuss these results and coordinate on the next steps, we would be happy to schedule a Teams meeting next week. We are available at the following times:

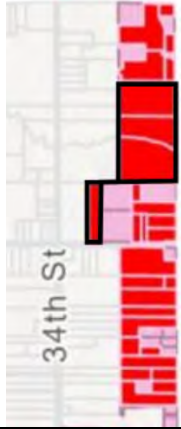
- Tuesday, 2/10: 11 am – 12 pm, 3-4 pm
- Wednesday, 2/11: 3-4 pm
- Friday, 2/13: 10 am – 4 pm

Regina, please also capture the findings below in the sewer study.

Areas with no predicted overflows to the sewer system

Area	Description
<i>South of Palm Ave or south of Roseville Rd</i> Airfield  McClellan Park Roseville Rd	This area is in SacSewer's NEA and ARD trunk sheds. Portions of this area are in an existing capacity-deficient areas, but the proposed densification does not significantly contribute to the predicted overflows.

West side of Watt Ave; north of McClellan Park and south of McClellan Park



This area is in SacSewer's ARD and DN UR Rio Linda East trunk sheds. There are no predicted overflows after the proposed densification.

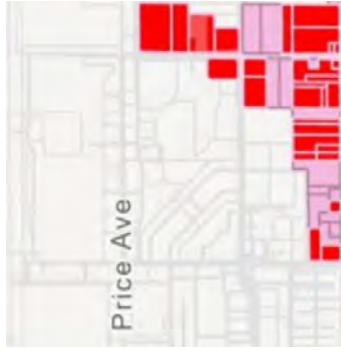
Note that per SacSewer's DN UR Rio Linda East expansion trunk shed, the black-outlined parcels are required to connect to a new trunk on 32nd St, connecting to the interceptor on Elkhorn Blvd.

Areas with no predicted overflows but potentially significant surcharging

Area	Description
<i>North of Elkhorn Blvd and east side of Watt Ave, north of Palm Ave</i>	This area is in SacSewer's DRY, ARD, and DN UR Rio Linda East trunk sheds. Some potentially significant surcharging is observed.

Areas with predicted overflows to the sewer system

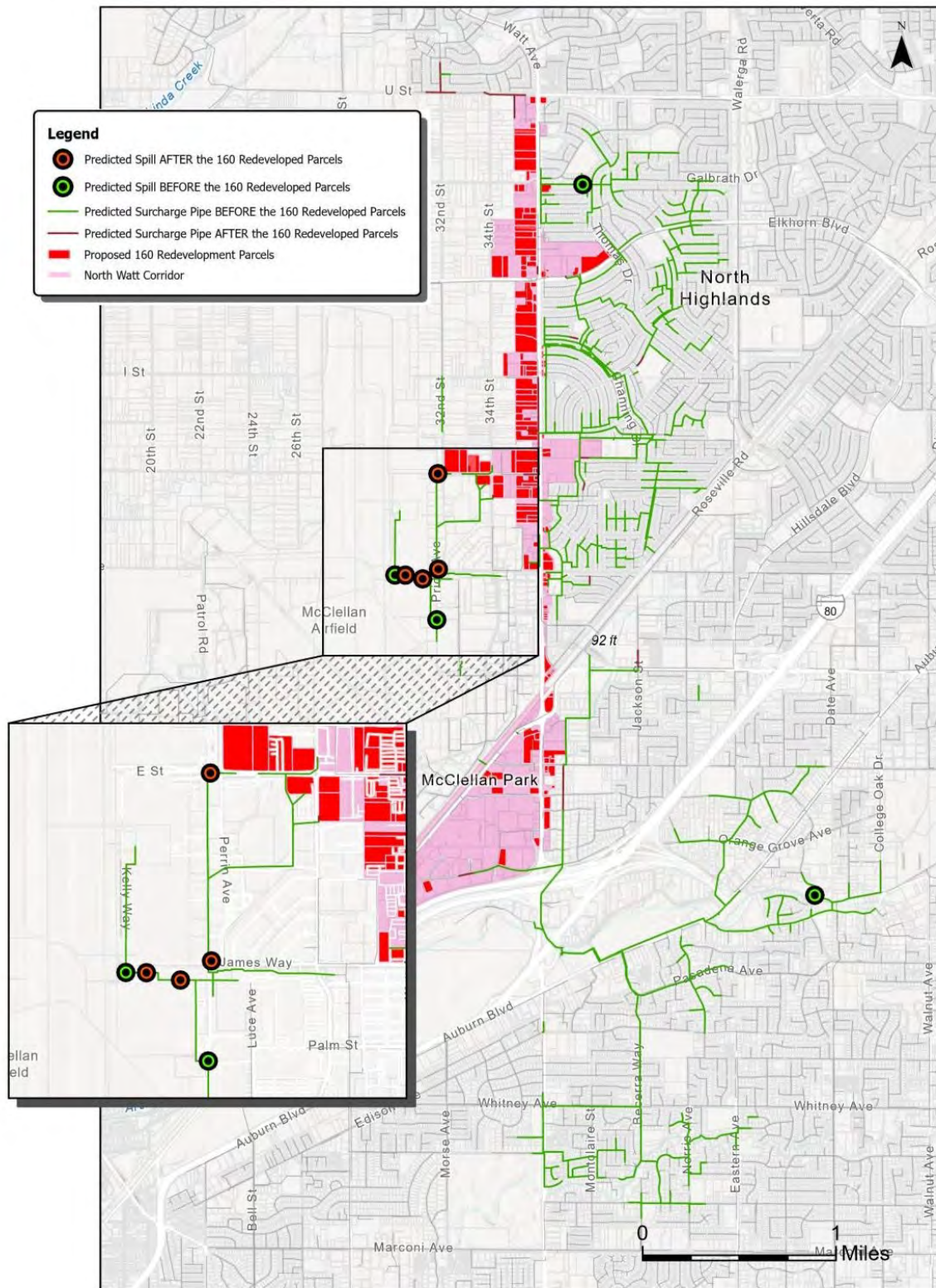
Area	Description
<i>McClellan Park (west of Watt Ave surrounding James Way)</i>	This area is in SacSewer's McClellan and ARD trunk sheds. This is in an existing capacity-deficient area. The proposed



densification results in additional predicted overflows.

SacSewer has identified this area as needing a relief project, but there is no estimated time for when a relief project will be initiated. The proposed densification may also require expanded scope on the relief project. If the densification takes place prior to SacSewer's relief project, the project proponent would need to further coordinate with SacSewer and likely be required to perform upgrades to existing facilities.

Modeled results comparing before and after densification



Thank you,

Zoe Wu, P.E.
Associate Civil Engineer

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APPENDIX E: Build-out ESD by Parcel

Key	APN	General Land Use	Gross Lot Acres	Gross Lot SF	Gross Building SF	Net Building SF	Units	Residntial ESD	Commercial ESD	Total ESD
182	21501900510000	Large Lot Mixed-Use (Commercial and Multi-Family)	1.50	65,309	16,327	13,878	60	45	9.00	54.00
185	21501900530000	Medium Lot Mixed-Use (Commercial and Multi-Family)	1.21	52,689	13,172	11,196	30	22.5	7.26	29.76
188	21801610010000	Medium Lot Mixed-Use (Commercial and Multi-Family)	0.21	9,081	2,270	1,930	5	3.75	1.25	5.00
190	21801610270000	Large Lot Mixed-Use (Commercial and Multi-Family)	1.51	65,892	16,473	14,002	61	45.75	9.08	54.83
191	21801610260000	Large Lot Mixed-Use (Commercial and Multi-Family)	1.73	75,398	18,850	16,022	69	51.75	10.39	62.14
192	21802310010000	Medium Lot Mixed-Use (Commercial and Multi-Family)	0.34	14,973	3,743	3,182	9	6.75	2.06	8.81
193	21802310080000	Medium Lot Mixed-Use (Commercial and Multi-Family)	0.42	18,463	4,616	3,923	11	8.25	2.54	10.79
193	21802330170000	Medium Lot Mixed-Use (Commercial and Multi-Family)	0.35	15,101	3,775	3,209	9	6.75	2.08	8.83
194	21802310020000	Medium Lot Mixed-Use (Commercial and Multi-Family)	0.42	18,235	4,559	3,875	10	7.5	2.51	10.01
195	21802310030000	Medium Lot Mixed-Use (Commercial and Multi-Family)	0.47	20,688	5,172	4,396	12	9	2.85	11.85
198	21802310060000	Small Multi-Family	0.15	6,456			2	2		2.00
200	21802330160000	Medium Lot Mixed-Use (Commercial and Multi-Family)	0.18	7,954	1,988	1,690	5	3.75	1.10	4.85
201	21802330150000	Medium Lot Mixed-Use (Commercial and Multi-Family)	0.21	9,343	2,336	1,985	5	3.75	1.29	5.04
202	21802330140000	Medium Lot Mixed-Use (Commercial and Multi-Family)	0.19	8,325	2,081	1,769	5	3.75	1.15	4.90
203	21802330130000	Medium Lot Mixed-Use (Commercial and Multi-Family)	0.18	7,977	1,994	1,695	5	3.75	1.10	4.85
204	21802330120000	Medium Lot Mixed-Use (Commercial and Multi-Family)	0.19	8,443	2,111	1,794	5	3.75	1.16	4.91
207	21802810010000	Large Lot Mixed-Use (Commercial and Multi-Family)	1.81	78,938	19,734	16,774	72	54	10.87	64.87
209	21802830060000	Small Multi-Family	0.13	5,777			2	2		2.00
210	21802830050000	Small Multi-Family	0.13	5,784			2	2		2.00
211	21802830200000	Small Multi-Family	0.13	5,791			2	2		2.00
212	21802830190000	Medium Lot Mixed-Use (Commercial and Multi-Family)	0.30	12,876	3,219	2,736	7	5.25	1.77	7.02
213	21802830010000	Medium Lot Mixed-Use (Commercial and Multi-Family)	0.51	22,181	5,545	4,714	13	9.75	3.06	12.81
225	22801740010000	Small Multi-Family	0.08	3,475			2	2		2.00
226	22801740020000	Medium Lot Mixed-Use (Commercial and Multi-Family)	0.32	13,932	3,483	2,961	8	6	1.92	7.92
227	22801740030000	Large Lot Mixed-Use (Commercial and Multi-Family)	2.27	99,007	24,752	21,039	91	68.25	13.64	81.89
238	22802510530000	Large Lot Mixed-Use (Commercial and Multi-Family)	2.56	111,498	27,875	23,693	102	76.5	15.36	91.86
239	22802510540000	Medium Lot Mixed-Use (Commercial and Multi-Family)	0.52	22,451	5,613	4,771	13	9.75	3.09	12.84
240	22802510340000	Medium Lot Mixed-Use (Commercial and Multi-Family)	0.51	22,100	5,525	4,696	13	9.75	3.04	12.79
243	24006600140000	Large Lot Mixed-Use (Commercial and Multi-Family)	1.64	71,620	17,905	15,219	66	49.5	9.87	59.37
244	24006600110000	Medium Lot Mixed-Use (Commercial and Multi-Family)	0.65	28,400	7,100	6,035	16	12	3.91	15.91
245	24006600100000	Large Lot Mixed-Use (Commercial and Multi-Family)	5.42	235,978	58,994	50,145	217	162.75	32.50	195.25
252	24005500610000	Large Lot Mixed-Use (Commercial and Multi-Family)	1.55	67,483	16,871	14,340	62	46.5	9.30	55.80
253	24005500630000	Large Lot Mixed-Use (Commercial and Multi-Family)	1.57	68,386	17,097	14,532	63	47.25	9.42	56.67
258	24005500650000	Large Lot Mixed-Use (Commercial and Multi-Family)	1.45	63,347	15,837	13,461	58	43.5	8.73	52.23
263	24005500530000	Medium Lot Mixed-Use (Commercial and Multi-Family)	1.08	46,999	11,750	9,987	27	20.25	6.47	26.72
266	24000110200000	Medium Lot Mixed-Use (Commercial and Multi-Family)	0.35	15,400	3,850	3,272	9	6.75	2.12	8.87
268	24000110280000	Small Multi-Family	0.15	6,398			2	2		2.00
271	24000110290000	Medium Lot Mixed-Use (Commercial and Multi-Family)	1.20	52,263	13,066	11,106	30	22.5	7.20	29.70
273	24000110320000	Small Multi-Family	0.09	4,100			2	2		2.00
275	24000110170000	Medium Lot Mixed-Use (Commercial and Multi-Family)	0.20	8,515	2,129	1,809	5	3.75	1.17	4.92
276	24000110370000	Medium Lot Mixed-Use (Commercial and Multi-Family)	0.38	16,387	4,097	3,482	9	6.75	2.26	9.01
301	24005500080000	Medium Lot Mixed-Use (Commercial and Multi-Family)	0.81	35,297	8,824	7,501	20	15	4.86	19.86
304	24000810120000	Large Lot Mixed-Use (Commercial and Multi-Family)	1.51	65,567	16,392	13,933	60	45	9.03	54.03
305	24000840190000	Large Lot Mixed-Use (Commercial and Multi-Family)	2.01	87,624	21,906	18,620	80	60	12.07	72.07
316	24004800130000	Medium Lot Mixed-Use (Commercial and Multi-Family)	0.22	9,611	2,403	2,042	6	4.5	1.32	5.82
335	24005400750000	Large Lot Mixed-Use (Commercial and Multi-Family)	2.04	88,916	22,229	18,895	82	61.5	12.25	73.75
344	24005400990000	Small Multi-Family	0.05	2,370			2	2		2.00
354	24005401020000	Large Lot Mixed-Use (Commercial and Multi-Family)	1.59	69,291	17,323	14,724	64	48	9.54	57.54
355	24005401010000	Medium Lot Mixed-Use (Commercial and Multi-Family)	0.29	12,429	3,107	2,641	7	5.25	1.71	6.96
360	24005400710000	Medium Lot Mixed-Use (Commercial and Multi-Family)	1.27	55,252	13,813	11,741	32	24	7.61	31.61
365	24005400850000	Medium Lot Mixed-Use (Commercial and Multi-Family)	0.23	10,050	2,512	2,136	6	4.5	1.38	5.88
376	24005400900000	Small Multi-Family	0.15	6,743			2	2		2.00
379	24005400470000	Medium Lot Mixed-Use (Commercial and Multi-Family)	0.58	25,453	6,363	5,409	15	11.25	3.51	14.76
381	24005400460000	Medium Lot Mixed-Use (Commercial and Multi-Family)	0.31	13,298	3,324	2,826	8	6	1.83	7.83