Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

IEUA Septic System Conversion Feasibility Study Update

FINAL

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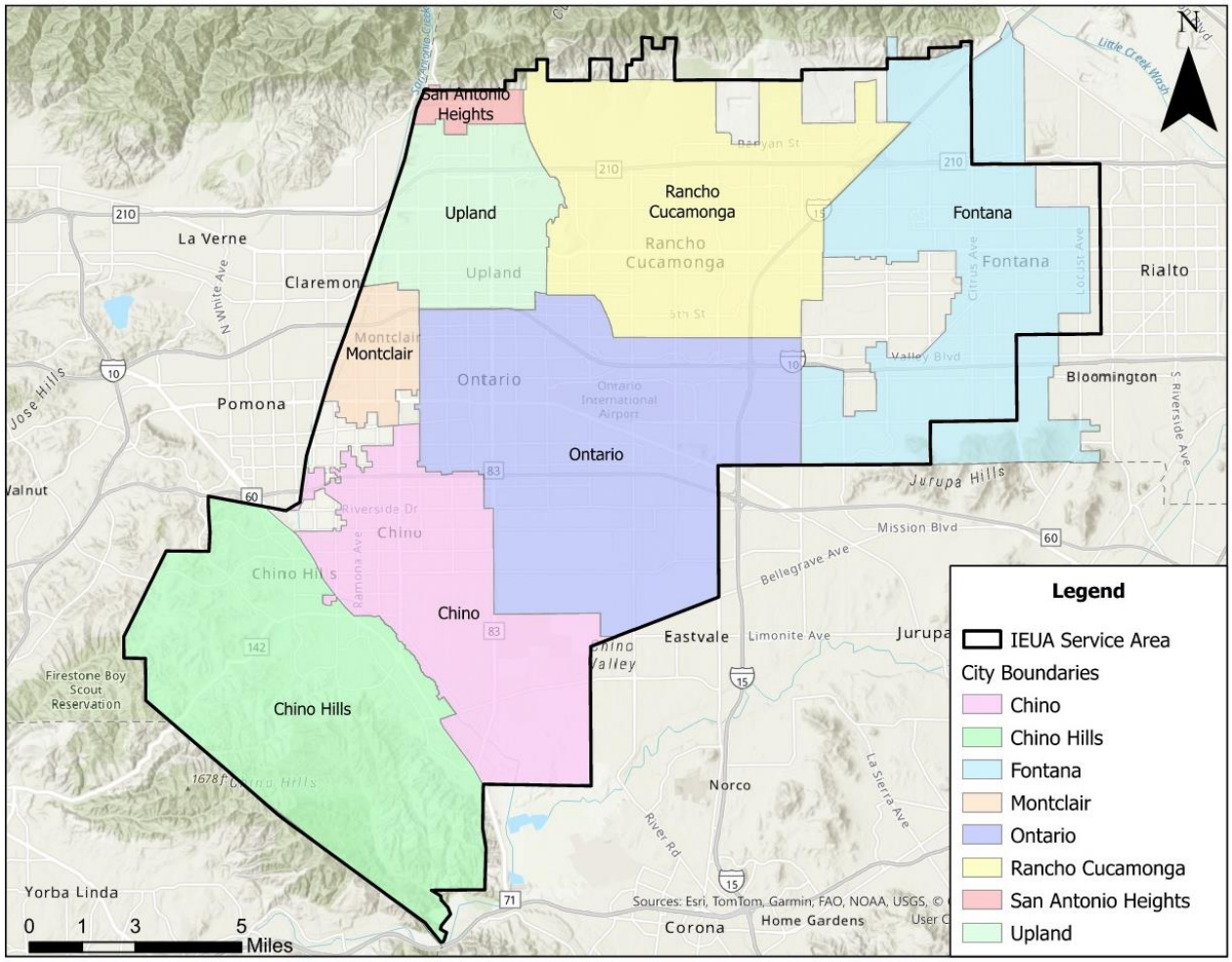
1. INTRODUCTION

The Inland Empire Utilities Agency (IEUA or Agency) serves approximately 950,000 people over 242 square miles in western San Bernardino County as the regional wastewater treatment agency and imported water wholesale distributor. IEUA's main services include imported water distribution, collection and treatment of wastewater, production of recycled water, compost and energy, and promotion of sustainable use of groundwater and development of local water supplies.

As a regional wastewater treatment agency, IEUA provides sewage utility services to seven Sewage Collection Agencies (SCAs) under the Chino Basin Regional Sewage Service Contract and the Regional Sewage Service Ordinance No. 114: the cities of Chino, Chino Hills, Fontana, Montclair, Ontario, Upland, and Cucamonga Valley Water District (CVWD) in the city of Rancho Cucamonga.

In addition to the contracting agencies, IEUA provides wholesale imported water from Metropolitan Water District (MWD) to nine retail agencies: the cities of Chino, Chino Hills, Ontario, Upland, Cucamonga Valley Water District (CVWD) in the city of Rancho Cucamonga, Fontana Water Company in the city of Fontana, Monte Vista Water District (MVWD) in the city of Montclair, San Antonio Water Company in the city of Upland, and West Valley Water District in the city of Rialto. **Figure 1** shows the IEUA service area and SCAs included in this study.

FIGURE 1: IEUA SERVICE AREA



The purpose of this 2025 Septic System Conversion Feasibility Study Update (Study Update) is to evaluate properties with existing septic systems within the Agency's service area and assess the feasibility, costs, and funding opportunities for potential septic to sewer conversions by building on IEUA's 2018 Study efforts. This Study Update incorporates reconciliation of discrepancies between 2018 and 2025 datasets and coordination with local jurisdictions to validate known septic system property locations. The Study Update provides general prioritization criteria to create a path forward for IEUA and SCAs to address cost-effective retrofits.

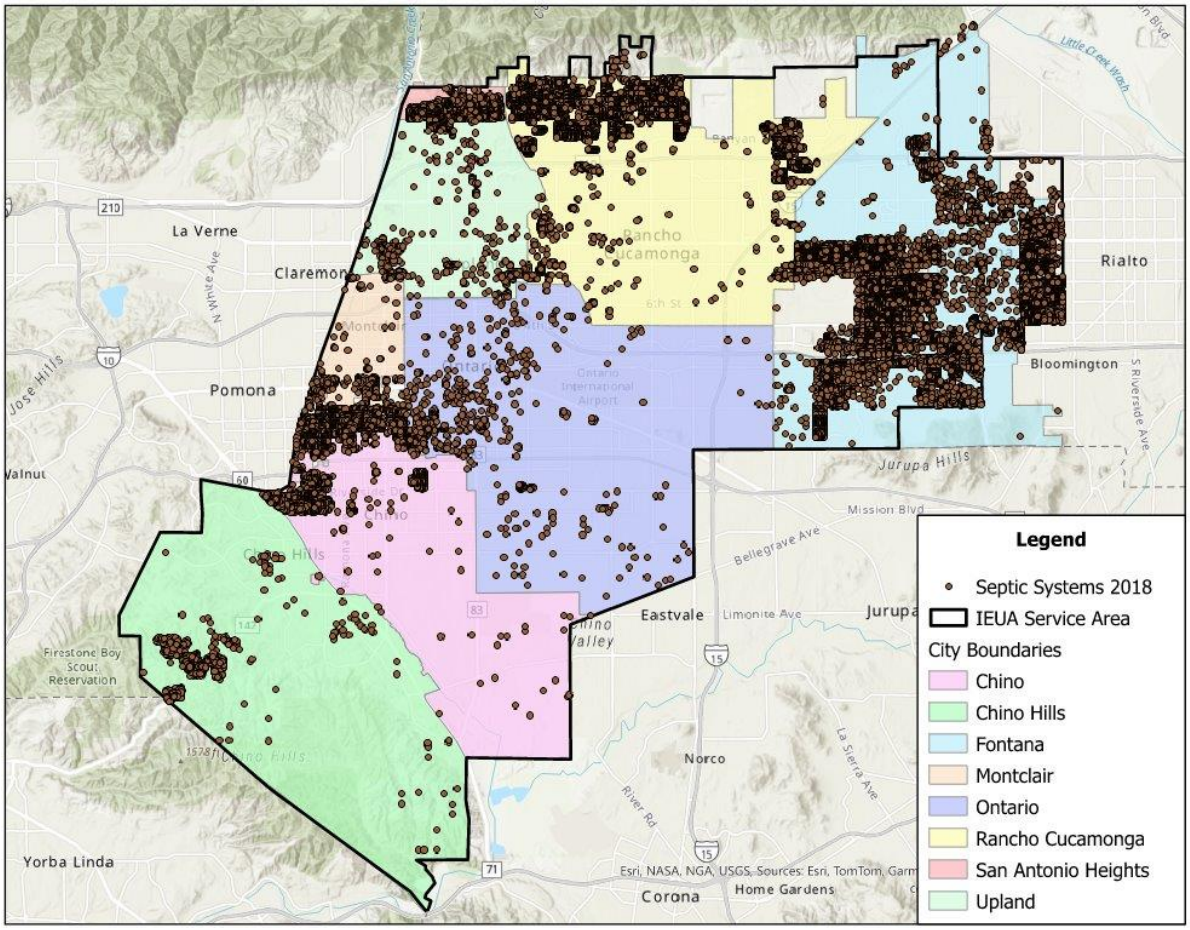
The Study Update is not intended to result in the SCAs or any local agencies, which have established Local Agency Management Programs (LAMPs), immediately initiating septic to sewer conversions. The results of this Study Update provide a planning document for the SCAs, and the Study Update is a supporting tool for further planning of septic systems to sewer conversions. The Study Update is intended as a planning-level engineering document to support the SCAs in decision-making, capital improvement planning and pursuit of external funding opportunities.

2. SUMMARY OF THE 2018 SEPTIC SYSTEM CONVERSION FEASIBILITY STUDY

IEUA conducted the 2018 Study to evaluate the feasibility of converting septic systems to centralized sewer service across its service area in western San Bernardino County. The 2018 Study identified septic system locations, grouped them into Sewer Service Regions (SSRs), estimated infrastructure and costs, prioritized areas for conversion based on benefits and cost-effectiveness, and identified potential funding opportunities. This section provides an overall summary of the 2018 Study, the 2018 Septic System Conversion Feasibility Study can be found in **Appendix A**.

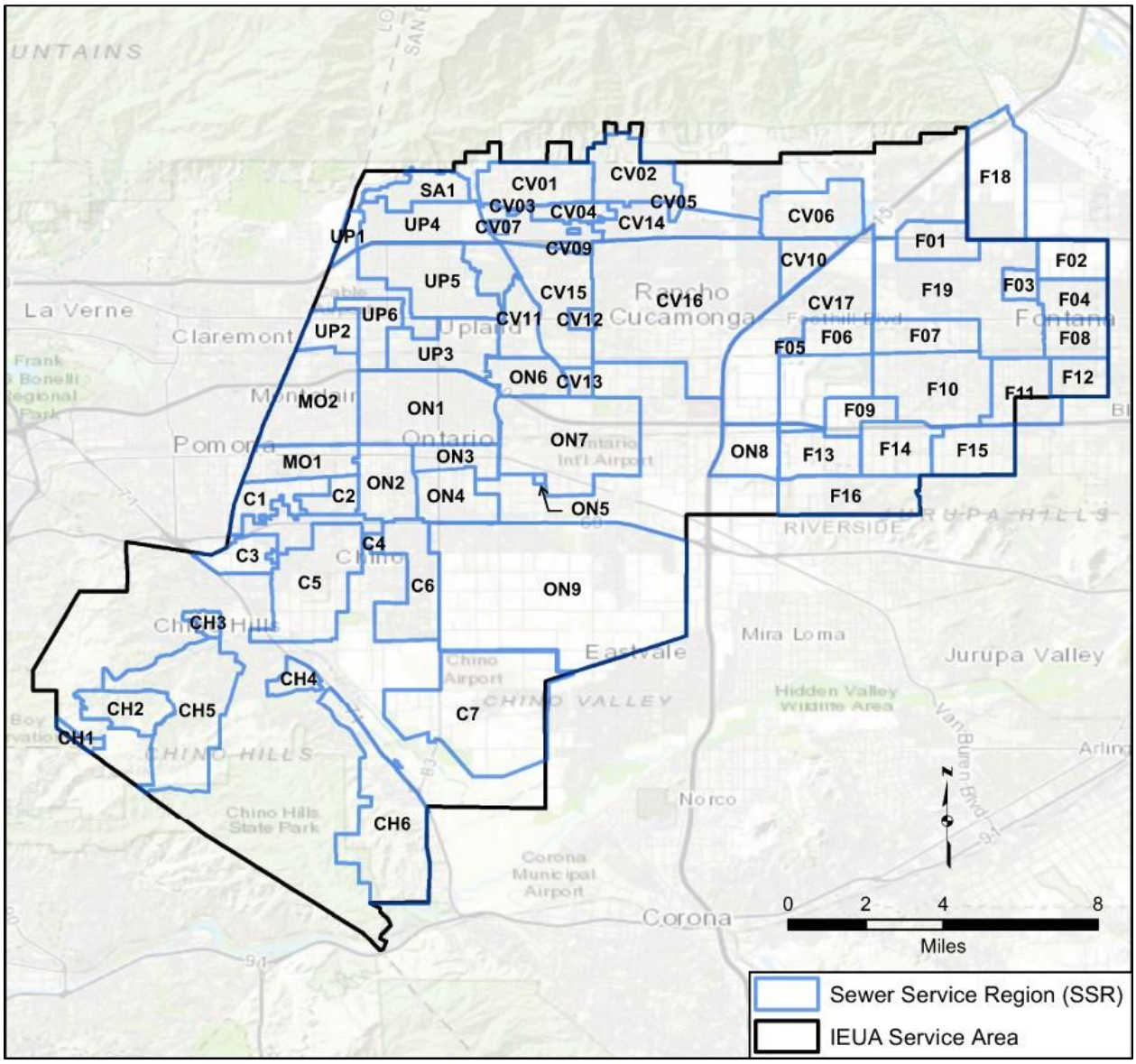
The 2018 Study identified approximately 21,800 septic systems within IEUA's service area. The process to identify the locations of septic systems involved first obtaining a shapefile of potential parcels with septic systems (provided by IEUA) and from the SCAs with septic system location data available. Woodard & Curran (W&C) compared the datasets to remove any duplicates, then provided data to the SCAs to confirm the locations. Using the SCAs comments, W&C incorporated changes into the respective dataset. **Figure 2** shows the location of septic systems in the IEUA service area in 2018. The approximate locations of septic systems were based on street address and were not intended to represent the exact locations of septic systems.

FIGURE 2: 2018 STUDY SEPTIC SYSTEM LOCATIONS



The 2018 Study delineated SSRs using several considerations including: density of septic systems, physical boundaries (such as waterways or roads), parcel boundaries, political boundaries (such as sewer collection agency boundaries or census block groups). Use of these considerations led to development of SSRs that, while irregular in shape and size, have SSR boundaries that can define discrete areas of septic systems. IEUA provided 2018 SSR boundary maps to the SCAs and the team incorporated comments into the final SSR boundaries map, shown in Figure 3.

FIGURE 3: SSR BOUNDARIES



A high-level analysis was conducted to evaluate the cost of potential new or improved sewer needs to convert the septic systems within each SSR to public sewer so that adequate CIP budgets and funding sources could be identified in the future. In addition to identifying costs, a high-level review of existing sewer master plans was performed to determine if sewer systems may be impacted by wastewater flow from septic systems. The second step involved developing potential pipeline alignments and identifying additional facility needs to serve parcels currently using septic systems based on a set of planning-level assumptions.

Impacts to existing sewers may be mitigated by changing the proposed sewer alignments to pipes with more capacity or adding a new connection to the IEUA interceptor. Further detailed hydraulic analysis, including discussion with agency personnel, should be performed in the next phase of the project to

determine if any impacts would occur at these locations by adding additional sewer flows from septic systems. The construction cost for these potential improvements is included in the SSR construction costs estimate. Note that proposed sewer facilities were developed for costing purposes only and will require additional engineering studies and design be completed prior to conversion and implementation.

2.1.1 Planning Basis

In general, adding parcels to any sewer system impacts both the conveyance system and the treatment plants. The cost of these impacts to IEUA's system is included in the IEUA sewer connection fee. Therefore, one IEUA sewer connection fee for each converted septic parcel has been added to the cost estimates.

To assess potential capacity impacts of connecting parcels on septic systems to each SCA Sanitary Sewer Master Plan were reviewed to determine if the sewer capacity analysis within the plans included the additional flow from septic system conversions. If these septic flows were included, then these Master Plans were used to determine if an SSR would connect to an identified capacity deficient sewer. Other factors considered when connecting septic flows to existing sewers included existing pipe sizes, ground elevation slopes, and any known pipe capacity deficiencies; these factors were all analyzed as part of the proposed sewer configurations.

The sewer pipeline alignments were developed to avoid easements and conflicts with private property, and therefore primarily follow roadways. Proposed sewer alignments were chosen to maximize gravity flow and avoid grinder pumps or pump stations, unless necessary. To achieve this, proposed sewers typically follow the surface grade.

Sewer sizing was based on previous experience in developing sewer master plans, resulting in a required diameter pipe per area served. Sizing is based on the existing septic systems requiring service and is summarized in **Table 1**. This sizing process is conservative and was selected in order to have a conservative cost estimate. Note that these are assumptions developed for costing purposes only, and that individual agencies have their own design criteria. Final sewer sizing will be determined during the preliminary design phase of the project.

TABLE 1: 2018 STUDY – PIPELINE SIZING ASSUMPTIONS BASED ON AREA SERVED

Diameter of Pipe	Area Served
8-inch	0 acres to 50 acres
10-inch	50 acres to 75 acres
12-inch	75 acres to 100 acres
15-inch	100 acres to 200 acres

Note: These are assumptions used for costing purposes only. Each agency or city providing wastewater service has their own design criteria.

Pump stations and force mains were located where wastewater could not be conveyed via gravity. Additional analysis would be needed to select the actual sites. The cost for grinder pumps was added to parcels where the topography sloped away from the road and it was assumed that the parcel could not be served via gravity. A new grinder pump would be placed in the existing septic tank and the septic tank converted to a wetwell. A small diameter discharge pipe would extend from the grinder pump to the gravity sewer in the street. During the predesign phase it may be possible to locate the sewer in the street at a depth where a grinder pump is not necessary. Trenchless crossings were assumed to be necessary where

pipelines cross railroads, freeways, and flood control channels. Crossing lengths were determined based on aerial photographs.

2.1.2 Planning Level Cost Basis

Cost criteria include baseline unit construction costs for gravity sewers using open-cut methods, upper laterals (lateral from the building structure to the property line), lower laterals (lateral from the property line to the street), pump stations, force mains, trenchless crossings, grinder pumps, and easements. Costs for gravity trunk sewers vary with pipe diameter. "Pipe bursting" (a trenchless method of replacing buried pipelines) or an equivalent technology is assumed for upsizing projects, which were identified as deficient through the SCAs Master Plans. As a simplification, upsizing costs are assumed to be the same as new sewers for a given diameter. Existing sewers that would be upsized as part of the Master Plan are not directly considered in the Study or Study Update. Their costs should be accounted for in the relevant sewer connection fees from the local agency and IEUA. Pipes that have not been constructed yet, despite being in a Master Plan, are directly considered as they are necessary for completion of work. Construction of new sewers would be open cut; trenchless construction would be required for major crossings (e.g., railroad crossings).

Allowances added to the baseline construction cost are noted in Table 2 and include 5% mobilization/demobilization allowance applied to the Subtotal. A 30% allowance for contingencies for unknown conditions was also included for all projects applied to the Construction Cost Subtotal. A 30% contingency aligns with the high planning level of this Study (Class 5 estimate). An allowance of 25% of construction cost for engineering, administration, and legal costs was applied to the Construction Cost. This is intended to account for engineering/design, construction management, ESDC, internal administrative work at IEUA, and legal costs.

TABLE 2: 2018 STUDY – ALLOWANCES

Item	Percent Adder
Mobilization and Demobilization	5%
Contingency	30%
Engineering, Administration, and Legal Costs	25%

IEUA Sewer Impact Fees and Local Sewer Impact Fees were added to determine the Capital Improvement Cost after application of these allowances. The IEUA Sewer Impact Fee (also known as the Capital Capacity Reimbursement Account [CCRA] fee) is required to be applied to all residential structures with a building permit issued on or after July 1, 1979. For the purposes of this Study, the IEUA Sewer Impact Fee was not applied to those residential properties listed in the County's parcel data with a "base year" prior to 1979. For those residential parcels where base year data was missing or where land use data was missing, it was assumed that the IEUA Sewer Impact Fee would be required.

These construction costs were based on a combination of company experience and IEUA Engineering team's developed unit costs, using National Estimator software. IEUA provided costs for 8-inch, 10-inch, 12-inch and 15-inch sewer pipeline. For the remaining diameter sewers and facilities, bid results from similar projects were used to determine unit costs shown in **Table 3**.

TABLE 3: 2018 STUDY – UNIT COST ASSUMPTIONS

Item	Unit Cost (2017$)	Units
New Gravity Sewer		
8-inch diameter	$160	$/LF
10-inch diameter	$210	$/LF
12-inch diameter	$264	$/LF
15-inch diameter	$345	$/LF
18-inch diameter	$432	$/LF
21-inch diameter	$525	$/LF
24-inch diameter	$614	$/LF
27-inch diameter	$702	$/LF
30-inch diameter	$792	$/LF
36-inch diameter	$972	$/LF
Force Main	$120	$/LF
Trenchless Crossing	$3,000	$/LF
Septic System Abandonment	$1,000	$/EA
Lower Lateral (lateral from the property line to the street)	$6,000	$/EA
Upper Lateral (lateral from the building structure to the property line)	$6,000	$/EA
Pump Station	$800,000	$/EA
Grinder Pump	$15,000	$/EA
Easements	$20	$/SF

2.1.3 Cost Estimate Summary

Table 4 provides a summary of planning-level costs to convert all septic systems within an SSR to sewer. Unit costs by SSR vary widely, with a low of $23,000 per septic system and a high of $720,00 per septic system. Those SSRs with high unit costs generally require a significant amount of infrastructure in order to connect to a local sewer system and those SSRs with low unit costs generally require only a lateral. In total, it is estimated that conversion of all septic systems to sewer will have a capital cost of approximately $1.2 billion dollars with an average unit cost of $54,000 per septic system.

TABLE 4: 2018 STUDY – SSR CONVERSION CAPITAL COST

SSR	Estimated Number of Septic Systems	Estimated Total Capital Improvement Cost (2017$) *	Cost per Septic System ($/septic system)
C1	885	$44,086,000	$50,000
C2	193	$9,816,000	$51,000
C3	607	$33,406,000	$60,000
C4	132	$3,859,000	$29,000
C5	52	$1,495,000	$28,000
C6	6	$169,000	$28,000
C7	19	$8,051,000	$420,000
Chino Subtotal	**1,894**	**$100,882,000**	**$53,000**

SSR	Estimated Number of Septic Systems	Estimated Total Capital Improvement Cost (2017$) *	Cost per Septic System ($/septic system)
CH1	160	$13,434,000	$84,000
CH2	445	$42,884,000	$96,000
CH3	20	$1,121,000	$56,000
CH4	22	$663,000	$28,000
CH5	18	$545,000	$26,000
CH6	19	$2,991,000	$150,000
Chino Hills Subtotal	**684**	**$61,638,000**	**$89,000**
CV01	1,487	$81,152,000	$55,000
CV02	1,226	$89,336,000	$73,000
CV03	31	$1,334,000	$43,000
CV04	576	$29,154,000	$51,000
CV05	206	$9,545,000	$46,000
CV06	308	$16,993,000	$55,000
CV07	112	$8,310,000	$74,000
CV08	26	$1,131,000	$43,000
CV09	66	$2,815,000	$43,000
CV10	279	$13,180,000	$47,000
CV11	208	$11,621,000	$56,000
CV12	14	$401,000	$29,000
CV13	20	$700,000	$35,000
CV14	18	$1,432,000	$80,000
CV15	35	$1,668,000	$48,000
CV16	28	$1,108,000	$40,000
CV17	26	$1,028,000	$40,000
Cucamonga Valley	**4,666**	**$270,908,000**	**$58,000**
F01	274	$15,553,000	$57,000
F02	58	$8,798,000	$150,000
F03	120	$5,280,000	$44,000
F04	638	$25,528,000	$40,000
F05	50	$2,656,000	$53,000
F06	936	$48,259,000	$52,000
F07	1131	$63,844,000	$56,000
F08	916	$37,499,000	$41,000
F09	467	$25,969,000	$56,000
F10	3700	$156,799,000	$42,000
F11	645	$24,208,000	$38,000
F12	1149	$52,329,000	$46,000
F13	241	$12,363,000	$51,000

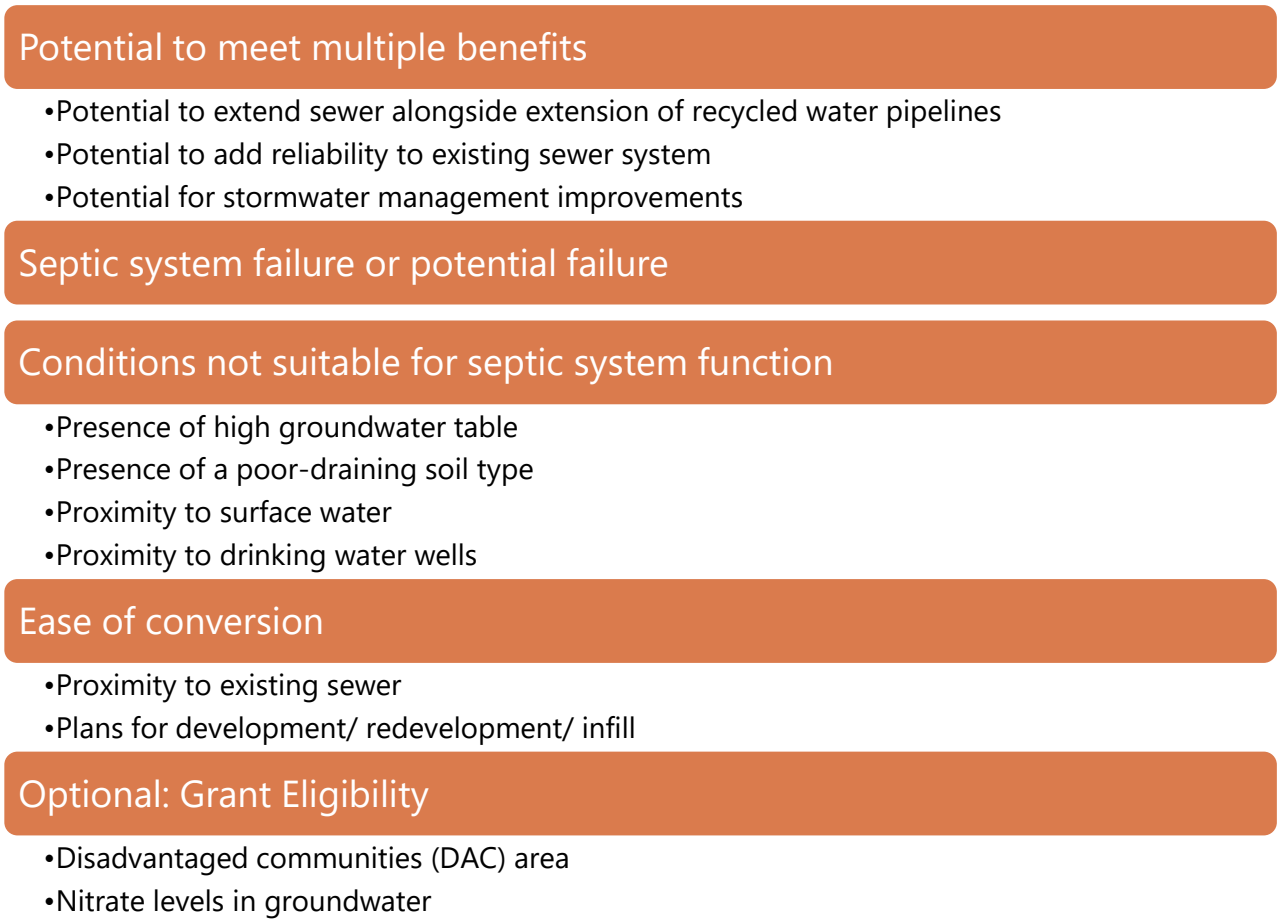
SSR	Estimated Number of Septic Systems	Estimated Total Capital Improvement Cost (2017$) *	Cost per Septic System ($/septic system)
F14	372	$25,231,000	$68,000
F15	485	$21,982,000	$45,000
F16	132	$6,889,000	$52,000
F18	35	$13,789,000	$394,000
F19	417	$13,922,000	$33,000
Fontana Subtotal	**11,766**	**$560,898,000**	**$48,000**
MO1	463	$19,471,000	$42,000
MO2	47	$1,598,000	$33,000
Montclair Subtotal	**510**	**$21,069,000**	**$41,000**
ON1	86	$2,602,000	$30,000
ON2	292	$9,345,000	$32,000
ON3	50	$1,594,000	$32,000
ON4	78	$2,428,000	$31,000
ON5	5	$253,000	$51,000
ON6	18	$658,000	$37,000
ON7	20	$552,000	$26,000
ON8	5	$117,000	$23,000
ON9	105	$75,915,000	$720,000
Ontario Subtotal	**659**	**$93,464,000**	**$142,000**
SA1	1,231	$63,494,000	$53,000
San Antonio Heights	**1,231**	**$63,494,000**	**$53,000**
UP1	1	$49,000	$49,000
UP2	158	$6,040,000	$38,000
UP3	147	$6,826,000	$46,000
UP4	51	$1,721,000	$34,000
UP5	57	$1,905,000	$32,000
Upland Subtotal	**414**	**$16,541,000**	**$40,000**
Total	**21,838**	**$1,188,894,000**	**$54,000**

Note: Costs rounded to the nearest $1,000 and presented in 2017 dollars.

2.1.4 Cost Benefit Analysis

In 2018, W&C conducted a cost benefit analysis for the purposes of prioritizing SSRs for conversion. The SSR prioritization process focused on the categories and scoring criteria listed in **Figure 4**. The team developed a numeric scoring approach to rank the SSRs.

FIGURE 4: COST-BENEFIT ANALYSIS SCORING CATEGORIES



Benefit Scoring

In 2018, several criteria were developed to assign a score to the benefits associated with converting septic systems in each SSR to sewer and were divided into four categories that include: (1) potential to meet multiple benefits, (2) septic system failure or potential failure, (3) conditions not suitable to septic system function, and (4) ease of conversion. Grant eligibility was evaluated but not included in the prioritization scoring as different grant programs have different priorities. Each scoring criterion consisted of a threshold that must be reached to be considered as having "high" potential for helping to meet the criterion. Based on the number of criteria met under each category, a score was given and then weighted according to the priorities of the 2018 Study.

As a result of the benefit evaluation, points were awarded for each of the scoring categories based on the number of "highs" received. Next, weights were applied to the scores to emphasize those categories that are a higher priority for septic conversion. **Figure 5** summarizes the scoring categories, numerical scores, and weighting used to create a total score for each SSR, while **Table 5** provides a summary of the points received by each SSR by category and the total benefit score from the 2018 Study.

FIGURE 5: 2018 STUDY – SCORING CATEGORIES

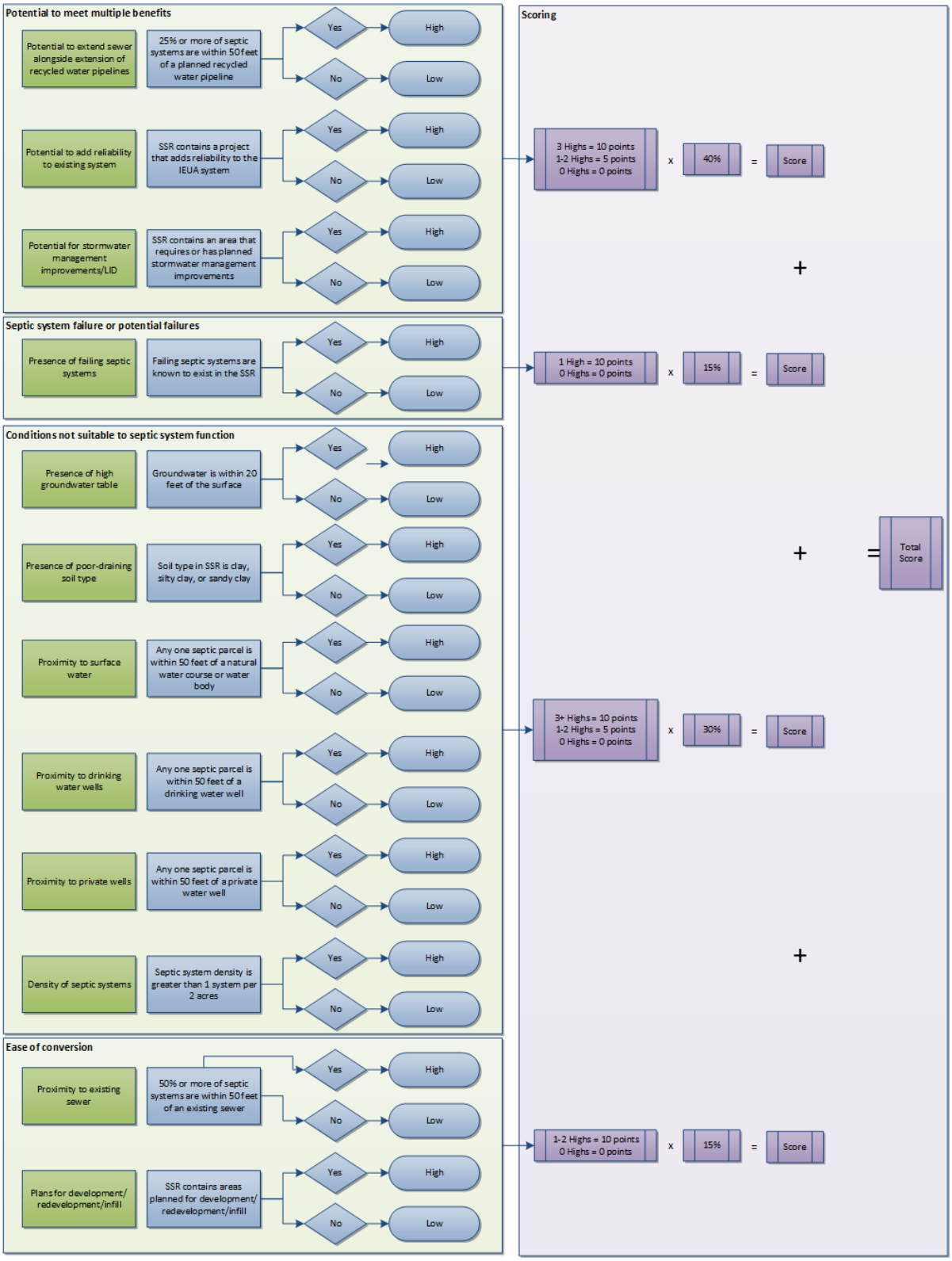


TABLE 5: 2018 STUDY – BENEFIT SCORES

SSR	Multiple benefits (40% wt.)	Septic system failure (15% wt.)	Conditions not suitable for septic (30% wt.)	Ease of conversion (15% wt.)	Total Benefit Score
C1	0	0	3	1.5	4.5
C2	2	0	1.5	1.5	5.0
C3	0	0	3	1.5	4.5
C4	0	0	1.5	1.5	3.0
C5	0	0	0	1.5	1.5
C6	0	0	0	1.5	1.5
C7	0	0	3	1.5	4.5
CH1	0	0	3	1.5	4.5
CH2	0	0	1.5	1.5	3.0
CH3	0	0	1.5	1.5	3.0
CH4	0	0	1.5	1.5	3.0
CH5	0	0	1.5	1.5	3.0
CH6	0	0	1.5	1.5	3.0
CV01	0	0	3	1.5	4.5
CV02	0	0	3	1.5	4.5
CV03	0	0	1.5	0	1.5
CV04	0	0	1.5	1.5	3.0
CV05	0	0	1.5	0	1.5
CV06	0	0	0	1.5	1.5
CV07	0	0	1.5	0	1.5
CV08	0	0	1.5	0	1.5
CV09	0	0	1.5	0	1.5
CV10	0	0	0	1.5	1.5
CV11	0	0	0	1.5	1.5
CV12	0	0	0	1.5	1.5
CV13	0	0	0	1.5	1.5
CV14	0	0	0	1.5	1.5
CV15	0	0	0	1.5	1.5
CV16	0	0	0	1.5	1.5
CV17	0	0	1.5	1.5	3.0
F01	0	0	0	1.5	1.5
F02	0	0	0	0	0.0
F03	0	0	0	1.5	1.5
F04	0	0	1.5	1.5	3.0

SSR	Multiple benefits (40% wt.)	Septic system failure (15% wt.)	Conditions not suitable for septic (30% wt.)	Ease of conversion (15% wt.)	Total Benefit Score
F05	0	0	1.5	1.5	3.0
F06	0	0	1.5	1.5	3.0
F07	0	0	1.5	1.5	3.0
F08	0	0	1.5	1.5	3.0
F09	0	0	0	1.5	1.5
F10	0	0	1.5	1.5	3.0
F11	0	0	0	1.5	1.5
F12	0	0	1.5	1.5	3.0
F13	0	0	0	0	0.0
F14	0	0	1.5	1.5	3.0
F15	0	0	1.5	1.5	3.0
F16	0	0	1.5	0	1.5
F18	0	0	0	0	0.0
F19	0	0	0	1.5	1.5
MO1	0	0	0	1.5	1.5
MO2	0	0	0	1.5	1.5
ON1	0	0	0	1.5	1.5
ON2	2	0	0	1.5	3.5
ON3	0	0	0	1.5	1.5
ON4	2	0	0	1.5	3.5
ON5	0	0	0	1.5	1.5
ON6	0	0	1.5	1.5	3.0
ON7	0	0	1.5	1.5	3.0
ON8	0	0	0	1.5	1.5
ON9	0	0	1.5	1.5	3.0
SA1	0	0	3	1.5	4.5
UP1	0	0	0	0	0.0
UP2	0	0	0	1.5	1.5
UP3	0	0	1.5	1.5	3.0
UP4	0	0	0	1.5	1.5
UP5	0	0	0	1.5	1.5

Cost Scoring

In 2018, the SSR conversion unit costs were used to develop a cost score for each SSR. **Table 6** provides a summary of how scores were assigned to each unit cost, while **Table 7** provides a summary of the cost scores received by each SSR.

TABLE 6: 2018 STUDY COST – SCORING CRITERIA

Unit Cost Range ($/septic system)	Score
≤$39,000	10
$40,000 to $49,000	8
$50,000 to $59,000	6
$60,000 to $89,000	4
$90,000 to $199,000	2
≥$200,000	0

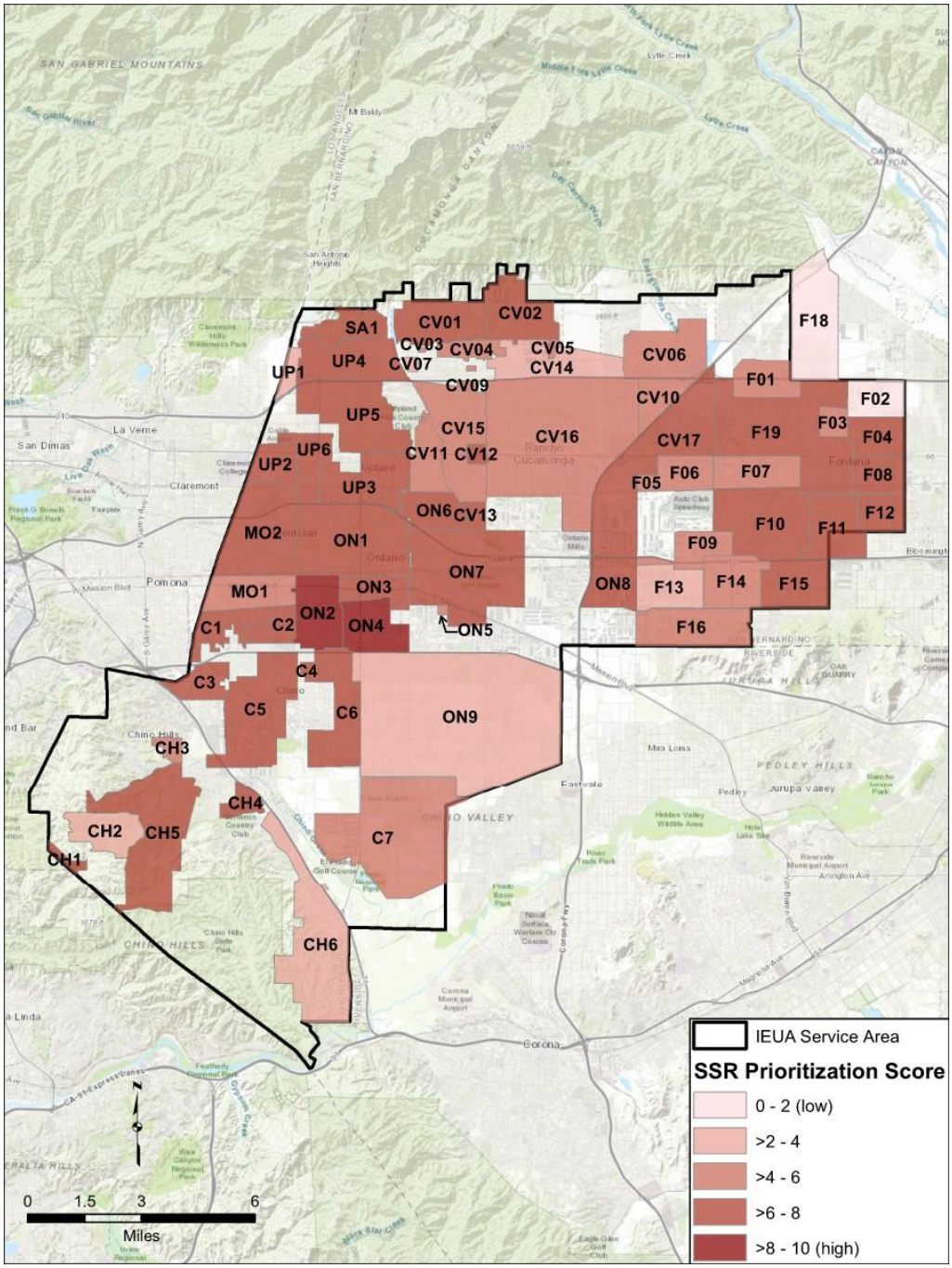
TABLE 7: 2018 STUDY – COST SCORES

SSR	Capital Cost per Septic System Conversion ($/septic system)	Cost per Septic System Score
C1	$50,000	6
C2	$51,000	6
C3	$60,000	4
C4	$29,000	10
C5	$28,000	10
C6	$28,000	10
C7	$420,000	0
CH1	$84,000	4
CH2	$96,000	2
CH3	$56,000	6
CH4	$28,000	10
CH5	$26,000	10
CH6	$150,000	2
CV01	$55,000	6
CV02	$73,000	4
CV03	$43,000	8
CV04	$51,000	6
CV05	$46,000	8
CV06	$55,000	6
CV07	$74,000	4
CV08	$43,000	8
CV09	$43,000	8
CV10	$47,000	8
CV11	$56,000	6
CV12	$29,000	10
CV13	$35,000	10
CV14	$80,000	4
CV15	$48,000	8

SSR	Capital Cost per Septic System Conversion ($/septic system)	Cost per Septic System Score
CV16	$40,000	8
CV17	$40,000	8
F01	$57,000	6
F02	$150,000	2
F03	$44,000	8
F04	$40,000	8
F05	$53,000	6
F06	$52,000	6
F07	$56,000	6
F08	$41,000	8
F09	$56,000	6
F10	$42,000	8
F11	$38,000	10
F12	$46,000	8
F13	$51,000	6
F14	$68,000	4
F15	$45,000	8
F16	$52,000	6
F18	$394,000	0
F19	$33,000	10
MO1	$42,000	8
MO2	$33,000	10
ON1	$30,000	10
ON2	$32,000	10
ON3	$32,000	10
ON4	$31,000	10
ON5	$51,000	6
ON6	$37,000	10
ON7	$26,000	10
ON8	$23,000	10
ON9	$720,000	0
SA1	$53,000	6
UP1	$49,000	6
UP2	$38,000	10
UP3	$46,000	8
UP4	$34,000	10
UP5	$32,000	10

The benefit scores and cost scores combined to form an overall prioritization score. Note that to allow for evenly weighting of the scores, the benefits scores scaled such that the highest score possible is 10 to align with the highest possible cost scores. For the purposes of this exercise, W&C weighted the benefit scores and cost scores evenly at 50% each to reflect equal levels of importance. **Figure 6** provides a map that illustrates the weighted scores. Within this scoring, high scores align with those of higher conversion priority, while low scores align with those of lower conversion priority.

FIGURE 6: 2018 STUDY SSR PRIORITIZATION SCORES



2.1.5 Next Steps and Implementation Considerations

The results of the 2018 Study indicated that there were approximately 21,800 septic systems within the IEUA service area and that conversion of those septic systems came with a range of costs and benefits. Conversion to sewer was driven by situations where either the property owner wants to convert, or when the property owner must convert due to septic system failure and is in a location that is not permitted according to the SWRCB's OWTS Policy.

Any proposed project would need to be consistent with the local jurisdiction's Sewer Master Plan and Sewer Design Criteria. Where new pipe would be managed by IEUA, it would need to follow IEUA's Sewer Master Plan and Sewer Design Criteria. Current considerations are at the planning level and are not intended for design or construction. Facility and cost estimates developed as part of the Study serve to gauge the magnitude of project costs and will need to be further refined before conversions are implemented.

A variety of funding and financing options are available to facilitate conversion of septic systems to sewer. Currently, onsite septic tank conversion costs, including fees, are paid by the property owner(s), while mainline sewer construction is paid for by the local agency that provides wastewater service.

3. 2025 SEPTIC SYSTEM IDENTIFICATION AND APPROACH

For the 2025 Update, W&C used a similar process to the 2018 Study to identify the locations of septic systems within the IEUA service area. This process involved:

1. Obtained a shapefile or list of potential parcels/ locations with septic systems provided by the IEUA SCAs.
2. Reviewed the final shapefile of septic systems from the 2018 Study as a starting point.
3. Compared the two datasets (2018 dataset and updated 2025 dataset) to remove any duplicates.
4. Reviewed datasets against active laterals provided by the SCAs to identify any potential septic conversions.
5. Provided updated datasets and septic location maps to SCAs to confirm the septic system locations.
    a. The City of Fontana had the most significant changes in septic systems between the 2018 Study and the 2025 Study Update; therefore, IEUA and W&C staff met with Fontana to confirm changes and finalize their known septic locations.
    b. IEUA and W&C staff also met with the City of Ontario staff to discuss the 2018 Study septic data and confirm changes for the Study Update.
6. Incorporated the SCAs comments on septic system locations into the dataset. The approximate locations of septic systems are based on address and are not intended to represent the exact locations of septic systems.

3.1 City of Chino

The City of Chino is bordered by the Cities of Ontario, Pomona, Chino Hills, Eastvale, and Montclair, with a service area approximately 30 square miles serving a population of nearly 95,000. The City of Chino's sewer service area encompasses the City as well as the Sphere of Influence (SOI) located adjacent to the northern areas of the City. The service area includes approximately 23,000 individual sewer service lateral connections for residents and businesses. According to the City's latest 2022 Sewer Master Plan Update (City of Chino, 2022) the City's sanitary sewer collection system consists of approximately 271 miles of gravity sewer pipelines ranging from 6-inch to 21-inch in diameter, 0.5 miles of 4-inch diameter force main sewers, 5,000 sewer manholes with 23 individual diversion manholes in place, 4 gravity siphons, and three sanitary sewage lift stations.

The City of Chino's 2022 Sewer Master Plan Update was reviewed to assess potential impacts of connecting septic systems to the existing sewer system. The future buildout capacity analysis within the plan is unclear as to whether it considers a future buildout that includes accepting wastewater flows from parcels on septic systems (unsewered) flows within their service area into their existing collection system. There is mention of an ultimate future buildout, but this may only be considering future developments and annexing the Northern and Southern SOIs, not existing parcels with septic systems. Several pipelines were listed in the City of Chino's 2022 Sewer Master Plan Update as being capacity deficient, see **Table 8**.

Further detailed hydraulic analysis, including discussion with agency personnel, should be performed in the next phase of the project to determine if any impacts would occur at these locations by adding additional sewer flows from septic systems. The construction cost for these potential improvements is not included in the SSR construction costs estimate as they have been identified as part of the Chino Sewer CIP.

TABLE 8: SEWER CAPACITY DEFICIENCIES IN THE CITY OF CHINO

Location of Issue	Existing Diameter (in)	Length (LF)	Assumed Improvements to Existing Sewers
Existing PDWF			
12th St from 390 LF north of Edison Ave to Edison Ave	8	390	Upsize 340 LF of 8-inch to 12-inch and 50 LF of 8-inch to 15-inch. Not included in SSR construction costs.
Vista del Rio Ave from 240 LF northwest of La Palma Dr to 250 LF southeast of Sierra Bonita Ln	8	1,270	Upsize to 12-inch. Not included in SSR construction costs.
Remington Ave from Van Vliet Ave to Flight Ave and Flight Ave from Remington Ave to Kimball Ave	8	3,990	Upsize to 12-inch. Not included in SSR construction costs.
Buckeye St from 280 LF east of Fern Ave to Fern Ave and Fern Ave from Buckeye St to 215 LF south of Buckeye St	8	520	Upsize to 12-inch. Not included in SSR construction costs.
Magnolia Ave across 60 Freeway	8	350	Not affected by septic conversions. Not included in SSR construction costs.
Cypress Ave at Germantown Rd	8	380	Upsize to 12-inch. Not included in SSR construction costs.
Schaefer Ave from 310 LF west of Roswell Ave to Roswell Ave	8	310	Upsize to 12-inch. Not included in SSR construction costs.
Near Term PDWF			
Oaks Ave from 680 LF north of Edison Ave to Edison Ave	10	680	Upsize to 12-inch. Not included in SSR construction costs.
Flight Ave & Van Vliet Ave from 1,620 LF north of Remington Ave to Remington Ave, Remington Ave from 390 LF west of Van Vliet Ave to Van Vliet Ave[1]	8	3,230	Developer driven, not included in SSR construction costs.
Ultimate PDWF			
Chino Corona Rd from 1,820 LF east of Cucamonga Ave to 340 LF east of Cucamonga Ave	16	1,820	Upsize to 20-inch. Not included in SSR construction costs.
East Preserve Loop and Pine Ave	10	60	Upsize to 12-inch. Not included in SSR construction costs.
Yorba Ave from Doheny Dr to 110 LF south of Doheny Dr[2]	10	110	Upsize to 12-inch. Not included in SSR construction costs.
Yorba Ave from Davis St to Roosevelt St[2]	10	200	Upsize to 12-inch. Not included in SSR construction costs.
Orgren Ct from 120 LF north of Walnut Ave to Walnut Ave[2]	8	120	Upsize to 12-inch. Not included in SSR construction costs.

Location of Issue	Existing Diameter (in)	Length (LF)	Assumed Improvements to Existing Sewers
Telephone Ave from 800 LF north of Walnut Ave to Walnut Ave[2]	8	820	Upsize to 12-inch. Not included in SSR construction costs.

Notes:

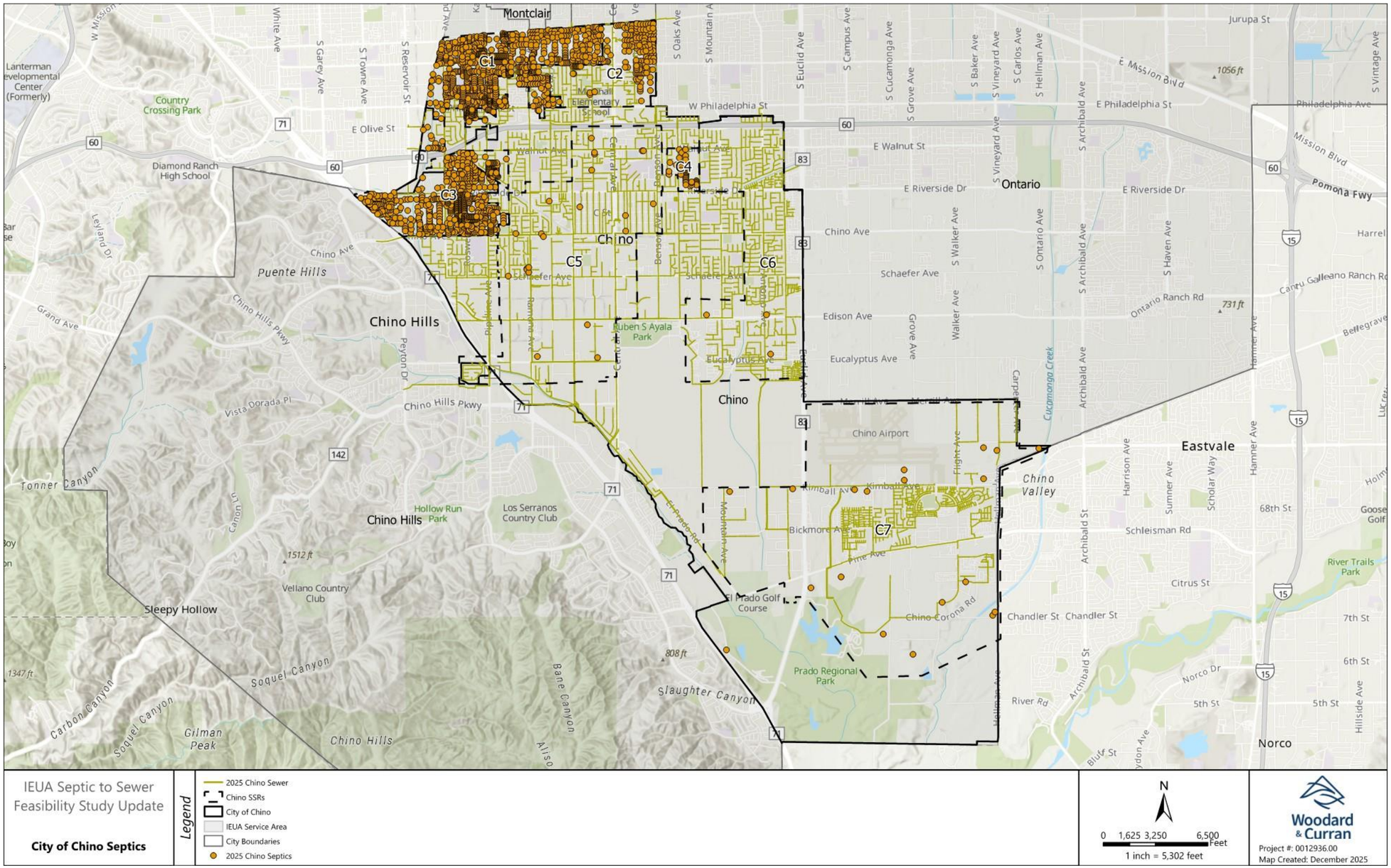
1. Expands on deficiency of existing Remington Ave. Deficiency is due to backwater effect; therefore, upsizing downstream pipelines rectifies upstream d/D deficiencies. This is a developer-driven project.
2. Project resulting from additional flows in the City's collection system as a result of the annexation of the North SOI area. South SOI area assumed to discharge directly into the IEUA system and therefore would not impact existing City infrastructure.
3. Information modified from Chino 2022 Sewer Master Plan Update Tables 6.2, 6.3 and 6.4.

The City of Chino provided IEUA updated GIS shapefiles for septic locations and City sewer infrastructure in addition to a spreadsheet summarizing properties requesting future sewer connections. **Table 9** shows the estimated number of septic properties as compared to the 2018 Study. **Figure 7** is a map of the 2025 septic and sewer infrastructure in the City of Chino. Overall, the City of Chino experienced approximately a 10% reduction in septic properties since the 2018 Study.

TABLE 9: CITY OF CHINO – NUMBER OF SEPTIC PROPERTIES SUMMARY

SCA	SSR	No. Septic Properties (2018 Study)	No. Septic Properties (2025 Study Update)	Change in Septic Properties Since 2018 Study
Chino	C1	885	876	-9
	C2	193	150	-43
	C3	607	606	-1
	C4	132	36	-96
	C5	52	22	-30
	C6	6	3	-3
	C7	19	18	-1
Total		**1,894**	**1,711**	**-183**

FIGURE 7: CITY OF CHINO SEPTIC LOCATIONS – 2025 UPDATE



3.2 City of Chino Hills

The City of Chino Hills is located in the southwestern portion of San Bernardino County. The service area is approximately 45 square miles and provides wastewater collection services to a population of approximately 83,000. The Chino Hills wastewater collection system is comprised of 200 miles of wastewater pipelines and 8 lift stations (City of Chino Hills, 2023).

The City of Chino Hills' 2022 Citywide Wastewater Master Plan Update was reviewed to assess potential impacts of connecting septic systems to the existing sewer system. The future buildout capacity analysis within the plan is unclear as to whether it considers a future buildout that includes accepting wastewater flows from parcels on septic systems (unsewered) flows within their service area into their existing collection system. Several pipelines were listed in the City of Chino Hills' 2022 Wastewater Master Plan Update as being capacity deficient, see **Table 10**.

TABLE 10: SEWER CAPACITY DEFICIENCIES IN THE CITY OF CHINO HILLS

Location of Issue	Existing Diameter (in)	Length (LF)	Assumed Improvements to Existing Sewers
Pipeline Avenue, between Chino Hills Parkway and Eucalyptus Avenue	21, 24	1,400	Upsize to 27-inch. Not included in SSR construction costs.
Pipeline Avenue at Chino Hills Plaza	15	50	Upsize to 21-inch. Not included in SSR construction costs.
Along Boys Republic Drive	12	100	Upsize to 12-inch. Not included in SSR construction costs.
Along Bird Farm Drive and Los Serranos Boulevard, between Country Club Drive and North of El Molino Boulevard	8	250	Upsize to 12-inch. Not included in SSR construction costs.
Pipeline Avenue and Hickory Lane between Glen Ridge Drive and Pecan Ct	8	600	Upsize to 10-inch. Not included in SSR construction costs.
Eucalyptus Avenue SW of Calle Lomita	8	700	Upsize to 10-inch. Not included in SSR construction costs.
Hawk Road between Chino Hills Parkway and Paddington Circle	8	550	Upsize to 10-inch. Not included in SSR construction costs.
Bayberry Drive and Autumn Avenue	8	1,100	Upsize to 12-inch. Not included in SSR construction costs.
Chino Avenue between Peyton Drive and Rolling Village Drive	8	600	Upsize to 10-inch. Not included in SSR construction costs.
Chino Avenue at Chino Creek	8	250	Upsize to 15-inch. Not included in SSR construction costs.
Woodview Road between Rolling Ridge Drive and Bayberry Drive	10	2,600	Upsize to 15-inch. Not included in SSR construction costs.
Fairway Boulevard and Yorba Avenue between Esther Street and 370-ft W. of Yorba Avenue	8	2,600	Upsize to 10-inch. Not included in SSR construction costs.
Windmill Creek Road between Cactus Road and Chino Hills Parkway	8	400	Upsize to 10-inch. Not included in SSR construction costs.
Bayberry Drive between Peyton Drive and Oakcreek Road	8	550	Upsize to 10-inch. Not included in SSR construction costs.

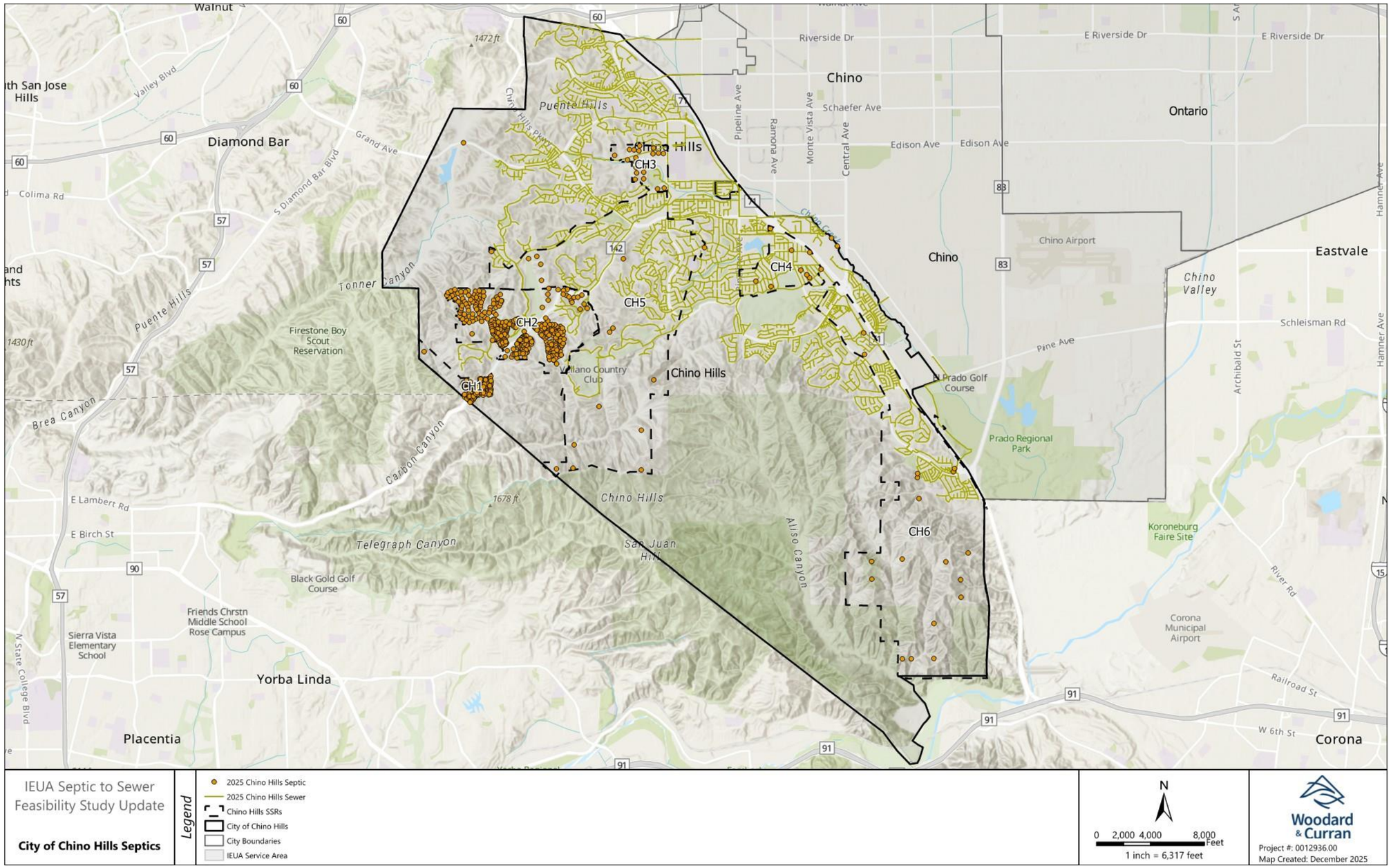
Location of Issue	Existing Diameter (in)	Length (LF)	Assumed Improvements to Existing Sewers
Pipeline Avenue and N. of Little Chino Creek	21	150	Upsize to 27-inch. Not included in SSR construction costs.
Eucalyptus Avenue SW of Calle Lomita	8	550	Upsize to 10-inch. Not included in SSR construction costs.

The City of Chino Hills provided updated GIS shapefiles for septic locations and City sewer infrastructure in addition to their 2022 Wastewater Master Plan Update. **Table 11** summarizes the updated number of septic properties while **Figure 8** shows the 2025 septic and sewer infrastructure within the City of Chino Hills SSRs. Overall, the City of Chino Hills experienced approximately a 4% reduction in septic properties since the 2018 Study.

TABLE 11: CHINO HILLS NUMBER OF SEPTIC PROPERTIES SUMMARY

SCA	SSR	No. Septic Properties (2018 Study)	No. Septic Properties (2025 Study Update)	Change in Septic Properties Since 2018 Study
Chino Hills	CH1	160	160	0
	CH2	445	437	-8
	CH3	20	20	0
	CH4	22	9	-13
	CH5	18	15	-3
	CH6	19	18	-1
Total		**684**	**659**	**-25**

FIGURE 8: CITY OF CHINO HILLS SEPTIC LOCATIONS – 2025 UPDATE



3.3 Cucamonga Valley Water District

CVWD owns, operates, and maintains a sanitary sewer collection system that provides wastewater conveyance services to residential, commercial, industrial, and institutional customers throughout its service area. CVWD's sewer system serves a population of 213,375 in a 46.8-square mile service area. CVWD encompasses most of the community of Rancho Cucamonga and portions of the cities of Fontana, Ontario, Upland, and some of the unincorporated areas of San Bernardino County.

The CVWD sewer system serves 37,598 service connections as of May 2025. The CVWD sewer system consists of 414 miles of gravity sewers, 8,284 manholes, 0.83 miles of force mains, and 2 pump stations. The sewer lines range in size from 4- to 36-inches in diameter and the piping system includes 6 siphons with a total length of 0.23 miles. The property owner is fully responsible for installation, maintenance and repair of the private sewer lateral(s) (CVWD, 2025).

CVWD's 2017 Sewer Master Plan was reviewed to assess potential impacts of connecting septic systems to the existing sewer system. The future buildout capacity analysis within this plan includes accepting wastewater flows from parcels on septic systems (unsewered) flows into their collection system. No new construction costs were added to the SSR construction cost estimate because these costs have already been identified.

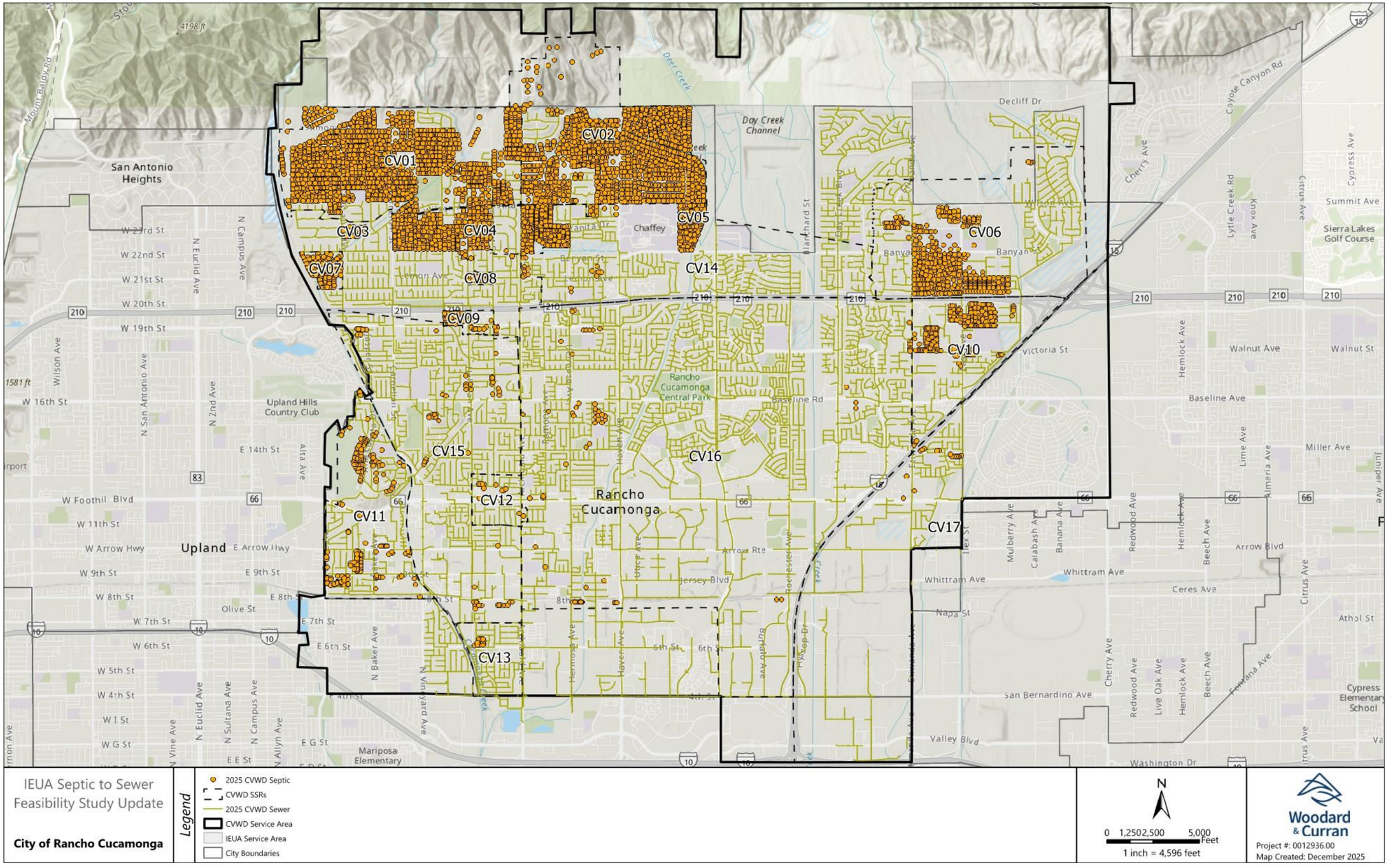
CVWD provided updated GIS shapefiles for septic locations and existing sewer infrastructure within the CVWD service area. In addition, CVWD provided information on a planned sewer project along East Avenue, located in the northeastern portion of the CVWD service area. Planned sewer projects were not accounted for in project cost estimating as they are already accounted for in CVWD's budget. **Table 12** summarizes the updated number of septic properties within CVWD, also shown in **Figure 9**. Overall, the CVWD SCA service area experienced an approximate 5% increase in septic properties since the 2018 Study, likely due to improved data not additional septic systems installed.

TABLE 12: RANCHO CUCAMONGA/ CVWD NUMBER OF SEPTIC PROPERTIES SUMMARY

SCA	SSR	No. Septic Properties (2018 Study)	No. Septic Properties (2025 Study Update)	Change in Septic Properties Since 2018 Study
Rancho Cucamonga/ CVWD	CV01	1,487	1,537	50
	CV02	1,226	1,280	54
	CV03	31	31	0
	CV04	576	585	9
	CV05	206	206	0
	CV06	308	414	106
	CV07	112	111	-1
	CV08	26	26	0
	CV09	66	67	1
	CV10	279	271	-8
	CV11	208	197	-11
	CV12	14	13	-1

SCA	SSR	No. Septic Properties (2018 Study)	No. Septic Properties (2025 Study Update)	Change in Septic Properties Since 2018 Study
	CV13	20	16	-4
	CV14	18	22	4
	CV15	35	59	24
	CV16	28	63	35
	CV17	26	15	-11
	Totals	**4,666**	**4,913**	**247**

FIGURE 9: CVWD SEPTIC LOCATIONS – 2025 UPDATE



3.4 City of Fontana

The City of Fontana's sewer service area encompasses the entire City as well as its SOI. This area includes residential, commercial, industrial, and undeveloped land expected to be serviced by the City's sewer infrastructure. The population of Fontana, as of 2022, is approximately 212,800 (Webb Associates, 2024). The existing wastewater collection system contains approximately 457 miles of sewer lines, 8 active lift stations, 9 inverted siphons, roughly 44,000 service connections, and 5 regional discharge outlets. The City does not own or operate a wastewater treatment facility; instead, Fontana meets its treatment needs through discharge capacity rights with IEUA and the City of Rialto (Webb Associates, 2023).

The City of Fontana's 2023 Wastewater Master Plan was reviewed to assess potential impacts of connecting septic systems to the existing sewer system. The 2023 Master Plan identifies existing and future ultimate deficiencies, with the future flows including building out vacant land and connecting development to the existing sewer system. The future buildout capacity analysis within this plan includes accepting wastewater flows from parcels on septic systems (unsewered) flows into their existing collection system. No new construction costs were added to the SSR construction cost estimate because these costs have already been identified.

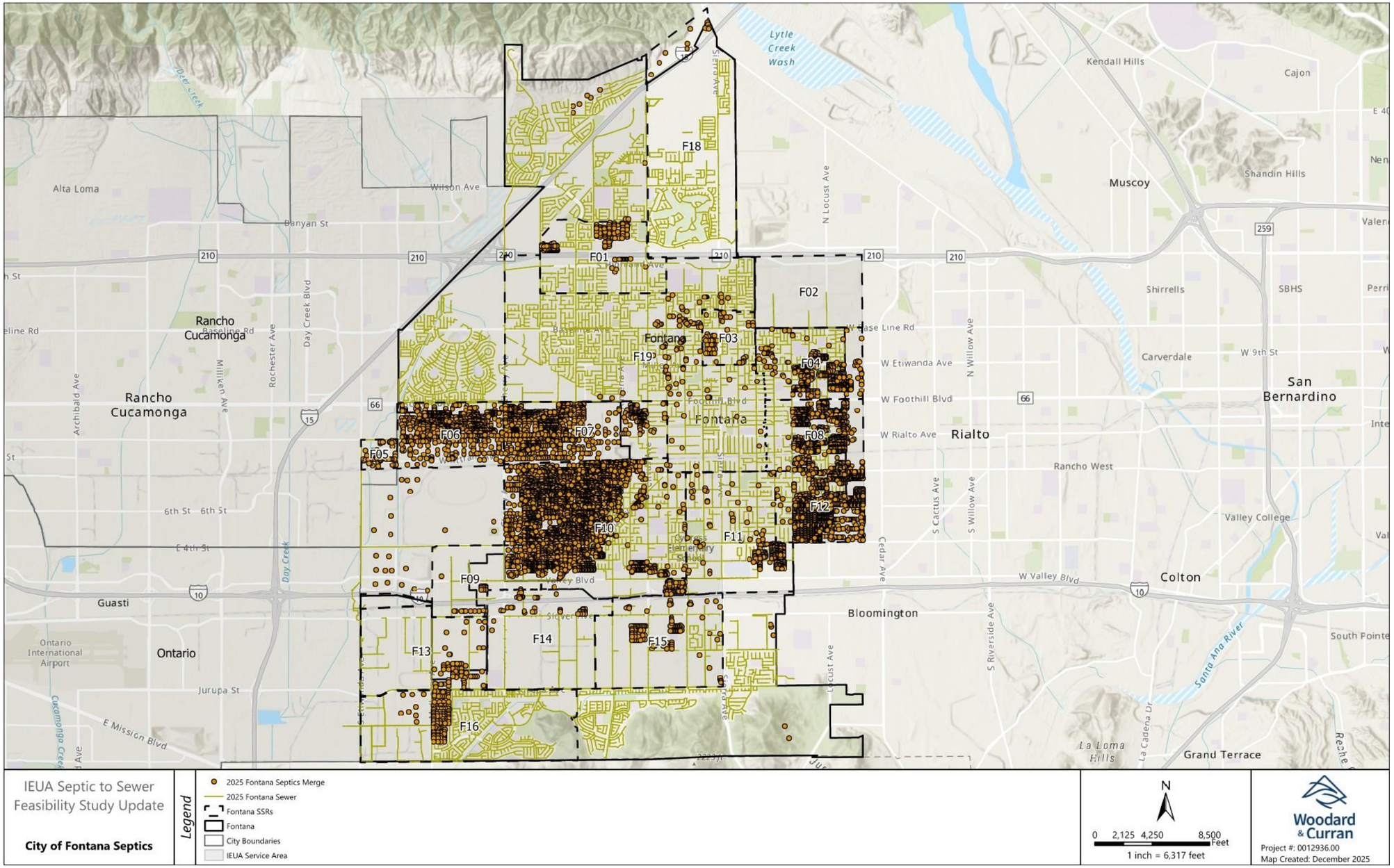
The City of Fontana provided updated GIS shapefiles for septic locations and City sewer infrastructure. Additional data items provided include the 2023 City of Fontana Sewer Master Plan and a spreadsheet of known abandoned septic systems from 2017 through 2025. **Table 13** summarizes the updated number of septic properties within the Fontana SCA. **Figure 10** shows the 2025 septic and sewer infrastructure within the City's SOI. Overall, Fontana experienced approximately a 24% reduction in septic properties since the 2018 Study. As Fontana had one of the highest changes in number of septic systems since the previous 2018 Study, additional map reviews and meetings were held with City of Fontana Staff to confirm the estimated changes and finalize known septic locations. Substantial changes from Fontana have been attributed to data improvement to show additional septic properties since 2018 and significant septic conversions that have taken place to connect to the collection system.

TABLE 13: CITY OF FONTANA NUMBER OF SEPTIC PROPERTIES SUMMARY

SCA	SSR	No. Septic Properties (2018 Study)	No. Septic Properties (2025 Study Update)	Change in Septic Properties Since 2018 Study
Fontana	F01	274	156	-118
	F02	58	0	-58
	F03	120	55	-65
	F04	638	473	-165
	F05	50	50	0
	F06	936	857	-79
	F07	1131	1059	-72
	F08	916	782	-134
	F09	467	261	-206
	F10	3700	3372	-328
	F11	645	312	-333
	F12	1149	1060	-89
	F13	241	61	-180

SCA	SSR	No. Septic Properties (2018 Study)	No. Septic Properties (2025 Study Update)	Change in Septic Properties Since 2018 Study
	F14	372	49	-323
	F15	485	108	-377
	F16	132	121	-11
	F18	35	11	-24
	F19	417	96	-321
Totals		**11,766**	**8,918**	**-2,813**

FIGURE 10: CITY OF FONTANA SEPTIC LOCATIONS – 2025 UPDATE



3.5 City of Montclair

The City of Montclair's sanitary system serves a population 37,500 residents in a 5.5-square mile service area within San Bernardino County. Montclair encompasses the entire sewer service area within the City of Montclair jurisdiction as well as its Sphere of Influence (SOI) located adjacent to the southern areas of the City. The City owns and operates 87 miles of gravity wastewater collection system pipeline that ranges from 8 to 36 inches in diameter and one siphon. There are currently 9,182 service laterals. The upper and lower service laterals connected to the main pipeline are owned and maintained by individual private property owners. The City's sewer system also receives some flow from the City of Upland (Montclair Public Works, 2025).

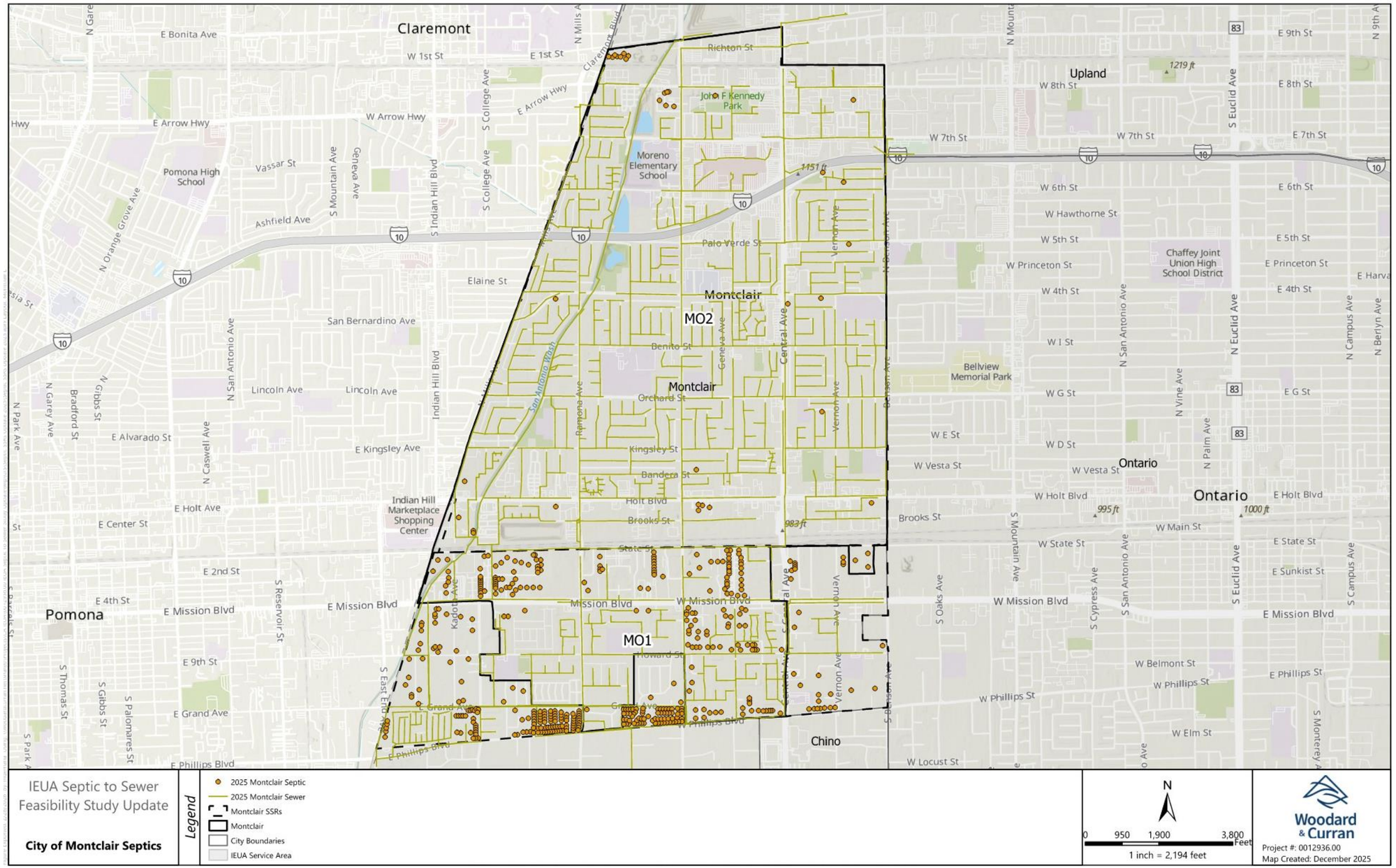
The City of Montclair's 2022 Sewer Master Plan was reviewed to assess potential impacts of connecting septic systems to the existing sewer system. The future buildout capacity analysis within this plan includes accepting wastewater flows from parcels on septic systems (unsewered) flows into their existing collection system as the base model uses the buildout scenario from the 2017 plan that included all septic flows in buildout. No new construction costs were added to the SSR construction cost estimate because these costs have already been identified.

The City of Montclair provided updated GIS shapefiles for City sewer infrastructure, 2018 septic data was reviewed against updated active laterals to remove converted septic properties. Montclair also provided their 5-year capital improvement program (CIP) for 2024-2029 in addition to their 2022 Sewer Master Plan. **Table 14** summarizes the updated number of septic properties within the City and unincorporated SOI, also shown in **Figure 11**. Overall, the City of Montclair saw approximately an 8% reduction in septic properties since the 2018 Study.

TABLE 14: CITY OF MONTCLAIR NUMBER OF SEPTIC PROPERTIES SUMMARY

SCA	SSR	No. Septic Properties (2018 Study)	No. Septic Properties (2025 Study Update)	Change in Septic Properties Since 2018 Study
Montclair	MO1	463	433	-30
	MO2	47	34	-13
Totals		**510**	**467**	**-43**

FIGURE 11: CITY OF MONTCLAIR SEPTIC LOCATIONS – 2025 UPDATE



3.6 City of Ontario

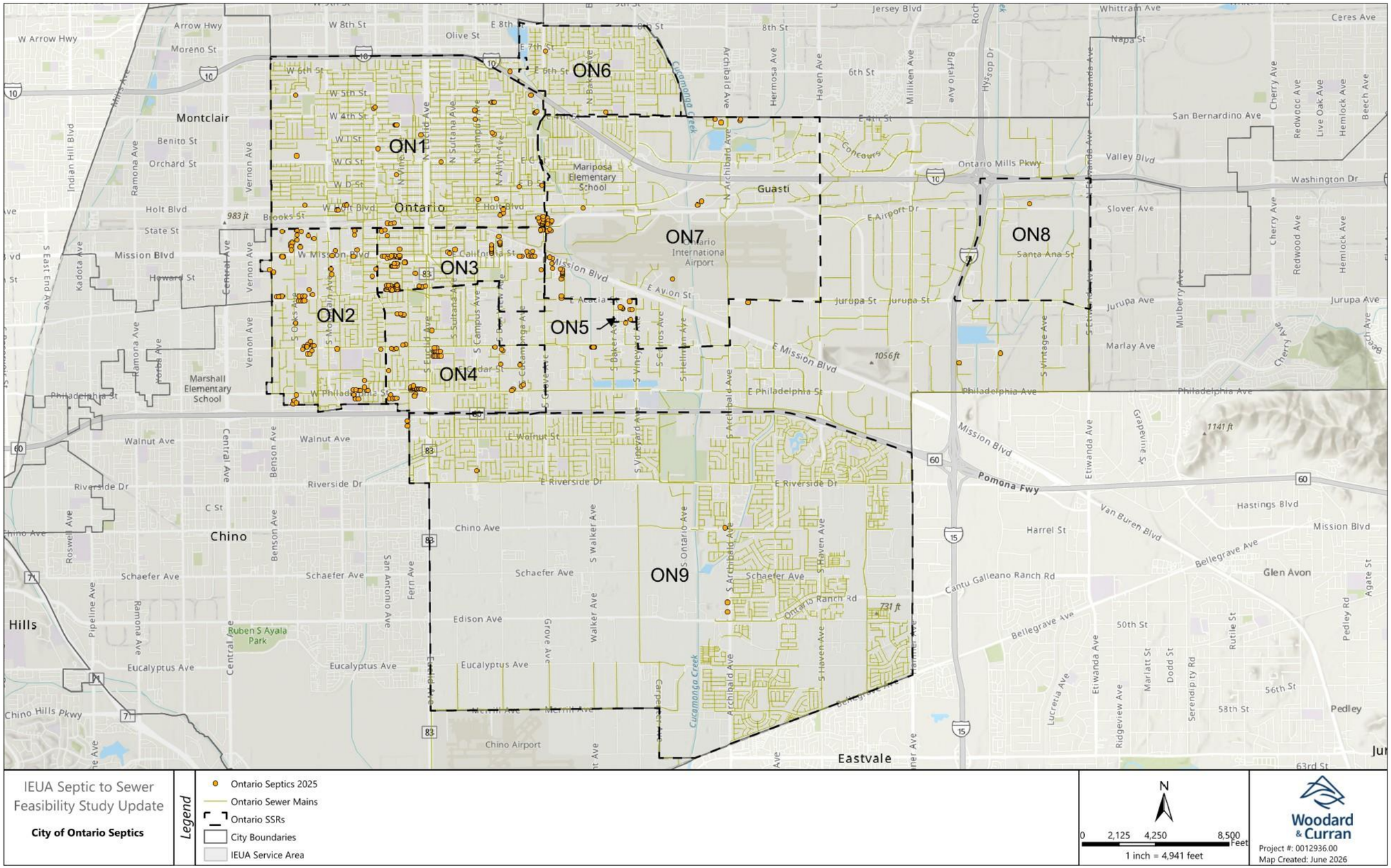
The City of Ontario operates and maintains the City's sewer system. The Ontario Municipal Utilities Company (OMUC) currently serves the Model Colony area and will serve the Ontario Ranch area upon buildout. The City's sewer collection system consists of approximately 459 miles of gravity sewer mains. The system operates largely by gravity but also utilizes 3 lift stations and approximately 11,000 feet force mains.

The City of Ontario provided updated GIS shapefiles for septic locations and City sewer infrastructure, along with the City's Approved 2025-2026 Sewer CIP, Ontario's updated sewer master plan was not provided nor found online for review. **Table 15** summarizes the updated number of septic properties within the City, as shown in **Figure 12**. Overall, Ontario experienced a 54% reduction in septic properties since the 2018 Study. The City of Ontario staff requested additional map reviews and meetings to confirm the estimated changes and finalize known septic locations. Changes from Ontario have been due to data improvement to show additional septic properties since 2018 in addition to the septic conversions that have taken place.

TABLE 15: CITY OF ONTARIO NUMBER OF SEPTIC PROPERTIES SUMMARY

SCA	SSR	No. Septic Properties (2018 Study)	No. Septic Properties (2025 Study Update)	Change in Septic Properties Since 2018 Study
Ontario	ON1	86	47	-39
	ON2	292	68	-224
	ON3	50	90	40
	ON4	78	56	-22
	ON5	5	7	2
	ON6	18	2	-16
	ON7	20	29	9
	ON8	5	1	-4
	ON9	105	4	-101
Totals		**659**	**304**	**-355**

FIGURE 12: CITY OF ONTARIO SEPTIC LOCATIONS – 2025 UPDATE



3.7 City of Upland

The City of Upland occupies approximately 15 square miles and is bordered by the cities of Montclair and Claremont on the west, Ontario to the south, Rancho Cucamonga to the east, and the unincorporated areas of San Antonio Heights to the north. As of 2024, the City had a population of approximately 79,600. The sewer system is a gravity flow system consisting of approximately 207 miles of pipe ranging from 3 inches to 21 inches in diameter. The City provides sewer service to most businesses and residents within Upland, as well as the unincorporated areas of San Antonio Heights within Upland's SOI. Several areas in the southwest quadrant of Upland cannot be served by gravity flow through the city's system to the IEUA Regional Sewer System. The sewer mains in these areas are connected to the sewer systems of Montclair and Claremont. The City is responsible for operations and maintenance of the system within its boundaries. In addition, the City pays a fee to adjacent cities or agencies for conveying flows from these areas to regional treatment plants operated by IEUA (via the Montclair system) or the Los Angeles County Sanitation District (LACSD) (via the Claremont system) (Brown and Caldwell, 2025).

The City of Upland provided updated GIS shapefiles for septic locations and City sewer infrastructure in addition to providing the 2025 Sewer System Management Plan, Upland's updated sewer master plan was not provided nor found online for review. **Table 16** summarizes the updated number of septic properties within the City of Upland while **Figure 13** depicts the 2025 septic and sewer infrastructure in the City of Upland and San Antonio Heights. Overall, the City of Upland experienced approximately a 10% reduction in septic properties since the 2018 Study.

TABLE 16: CITY OF UPLAND NUMBER OF SEPTIC PROPERTIES SUMMARY

SCA	SSR	No. Septic Properties (2018 Study)	No. Septic Properties (2025 Study Update)	Change in Septic Properties Since 2018 Study
Upland	UP1	1	0	-1
	UP2	158	152	-6
	UP3	147	137	-10
	UP4	51	45	-6
	UP5	57	41	-16
	UP6	14	11	-3
Total		**428**	**386**	**-42**

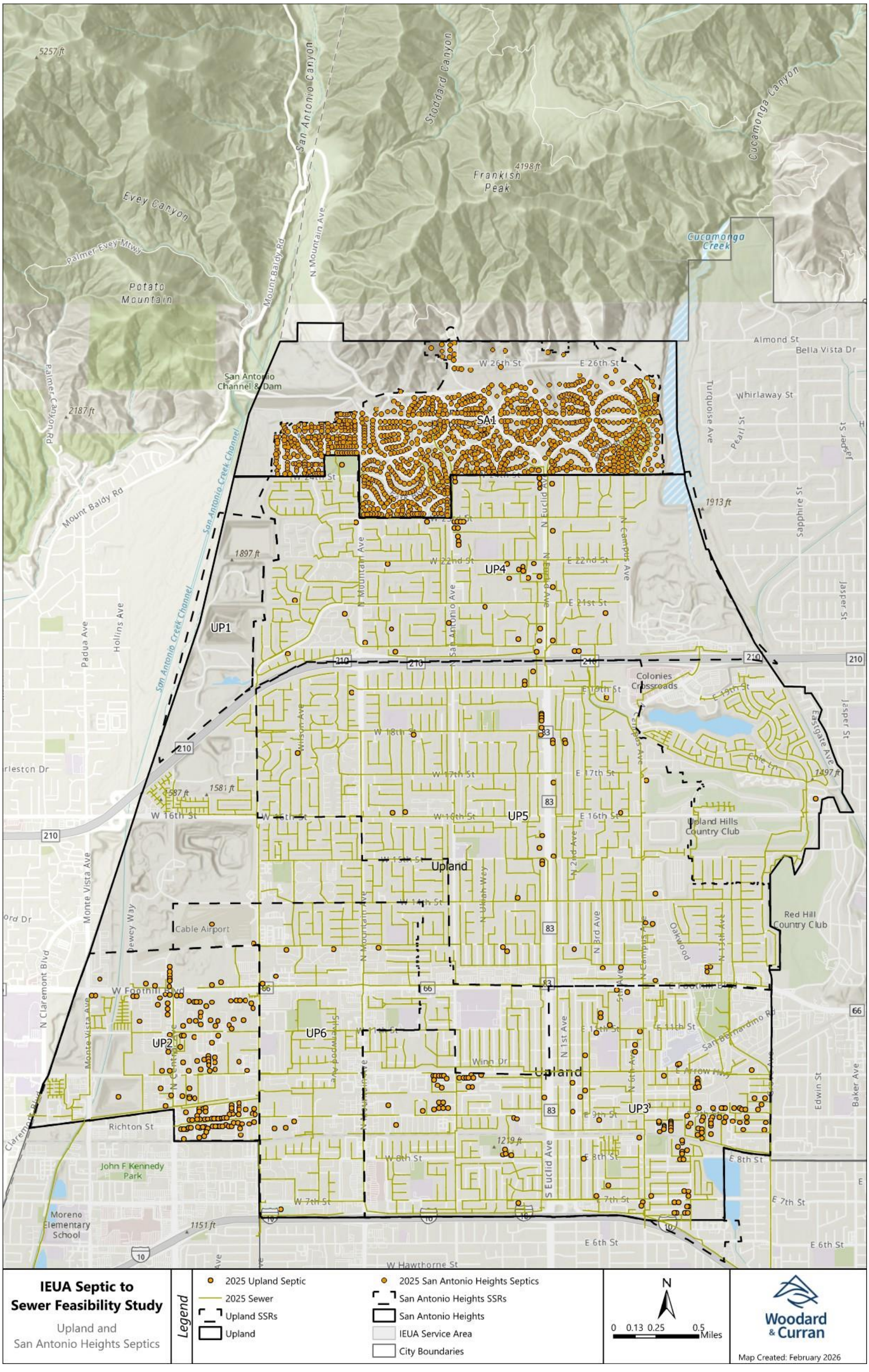
San Antonio Heights

Although the City of Upland provides wastewater service to San Antonio Heights, the unincorporated area is outside of the City's jurisdiction and any new facilities or improvements would be the responsibility of San Bernardino County. **Figure 13** depicts the 2025 septic and sewer infrastructure in the City of Upland and San Antonio Heights. Overall, San Antonio Heights experienced a 1% reduction in septic properties since the 2018 Study as shown in **Table 17**.

TABLE 17: SAN ANTONIO HEIGHTS NUMBER OF SEPTIC PROPERTIES SUMMARY

SCA	SSR	No. Septic Properties (2018 Study)	No. Septic Properties (2025 Study Update)	Change in Septic Properties Since 2018 Study
San Antonio Heights	SA1	1,231	1,223	-8
Total		**1,231**	**1,223**	**-8**

FIGURE 13: CITY OF UPLAND AND SAN ANTONIO HEIGHTS SEPTIC LOCATIONS – 2025 UPDATE



4. 2025 SEPTIC SYSTEM CONVERSION AND PROPOSED SEWER FACILITIES

W&C conducted a high-level analysis to evaluate the cost of potential new or improved sewer infrastructure to convert the septic systems within each SSR. This analysis is based on planning level assumptions consistent with the 2018 Study (summarized in **Section 2.1.1**) and identifying possible alignments and additional facility needs (e.g., pump stations) to serve parcels currently using septic systems. In addition to identifying costs, W&C performed a high-level review of existing sewer master plans to determine if sewer systems may be impacted by wastewater flow from septic systems. Detailed hydraulic analysis, including discussion with agencies, should be performed to confirm additional flow impacts from septic systems.

4.1 City of Chino

The 2018 Study estimated a total of 1,895 septic systems in the City of Chino and proposed a total of 128,800 linear feet (LF) of new sewer lines to convert all septic systems to sewer. The Study Update has estimated 1,711 septic systems and is proposing a total of 123,700 LF of new sewer lines.

The following list describes the new facilities and improvements to existing facilities that are needed to serve all parcels currently on septic systems with wastewater service within the City of Chino. An overview map of the proposed sewer infrastructure is shown on **Figure 14,** infrastructure maps per SSR can be found in **Appendix B.**

- **C1:** 59,725 linear feet (LF) of new mainline sewer (1,300 LF of 15-inch sewer, 1,325 LF of 12-inch sewer, 3,480 LF of 10-inch sewer, and 54,620 LF of 8-inch sewer), and 876 new upper and lower laterals. The proposed sewer design also involves encroachment of parcel boundaries and may require easements.

- **C2:** 12,390 LF of new mainline sewer (1,335 LF of 15-inch sewer and 11,055 LF of 8-inch sewer), 985 feet of sewer upsized to 12-inch, and 150 new upper and lower laterals.

- **C3:** 30,600 LF of new mainline sewer (2,125 LF of 10-inch sewer and 28,475 LF of 8-inch sewer), 1,280 LF of sewer upsized (415 LF to 10-inch and 865 LF to 12-inch), 4 pump stations, 2,800 LF of new sewer force main, and 606 new upper and lower laterals. Approximately 130 LF of mainline sewer will require trenchless crossings. The proposed sewer design also involves encroachment of parcel boundaries and may require easements.

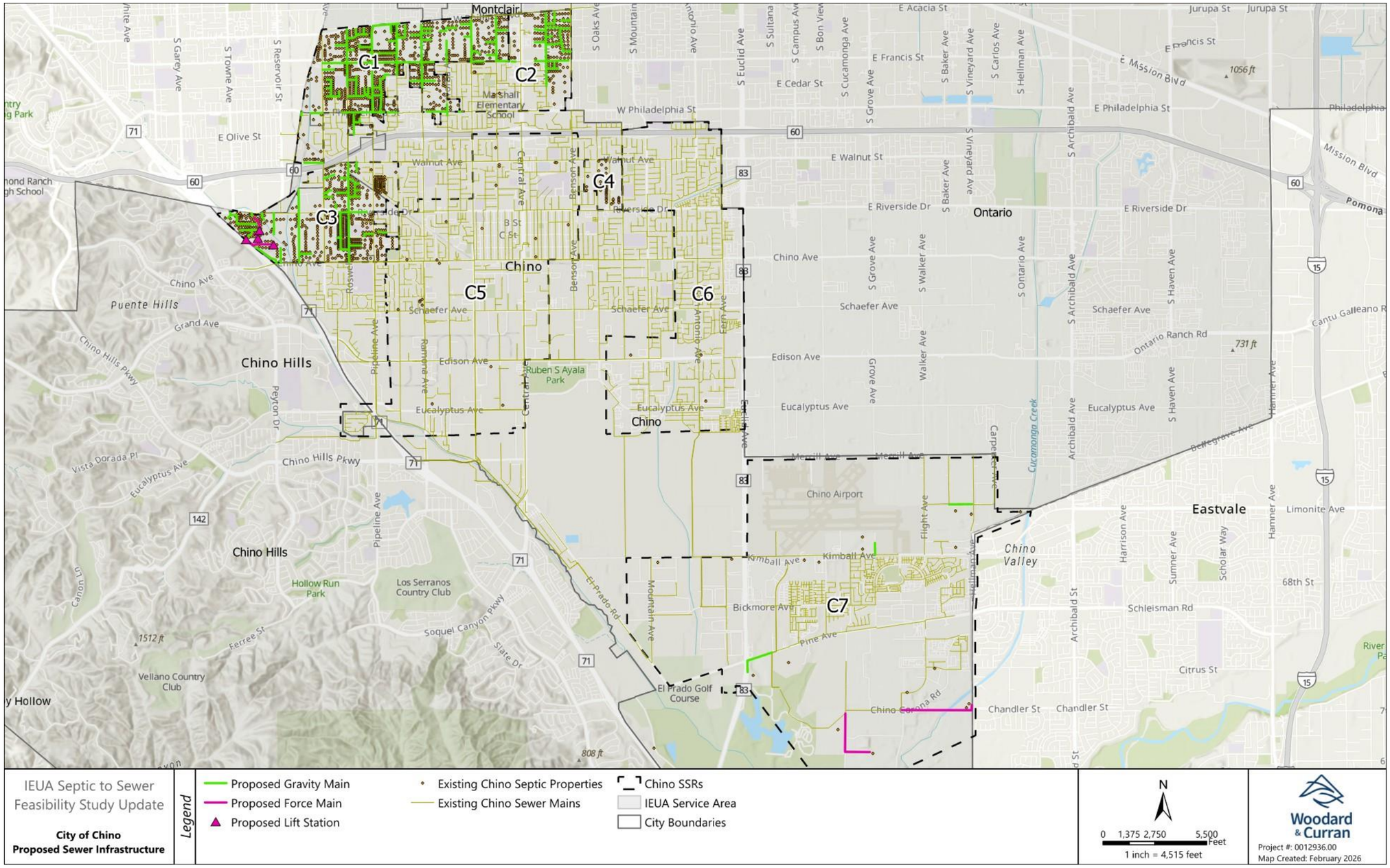
- **C4:** No new sewer mains were identified as required for conversion of septic systems in this SSR. It is assumed that 36 new upper and lower laterals will be needed. Parcels on septic systems will connect to the existing sewer system.

- **C5:** No new sewer mains were identified as required for conversion of septic systems in this SSR. It is assumed that 22 new upper and lower laterals will be needed. Parcels on septic systems will connect to the existing sewer system.

- **C6:** No new sewer mains were identified as required for conversion of septic systems in this SSR. It is assumed that 3 new upper and lower laterals will be needed. Parcels on septic systems will connect to the existing sewer system.

- **C7:** 8,565 LF of new mainline sewer (4,715 LF of 12-inch sewer and 3,860 LF of 8-inch sewer), 2 grinder pumps (with 7,340 LF of 2-inch force main in-lieu of laterals), and 18 new upper and lower laterals.

FIGURE 14: CITY OF CHINO PROPOSED SEWER INFRASTRUCTURE – 2025 UPDATE



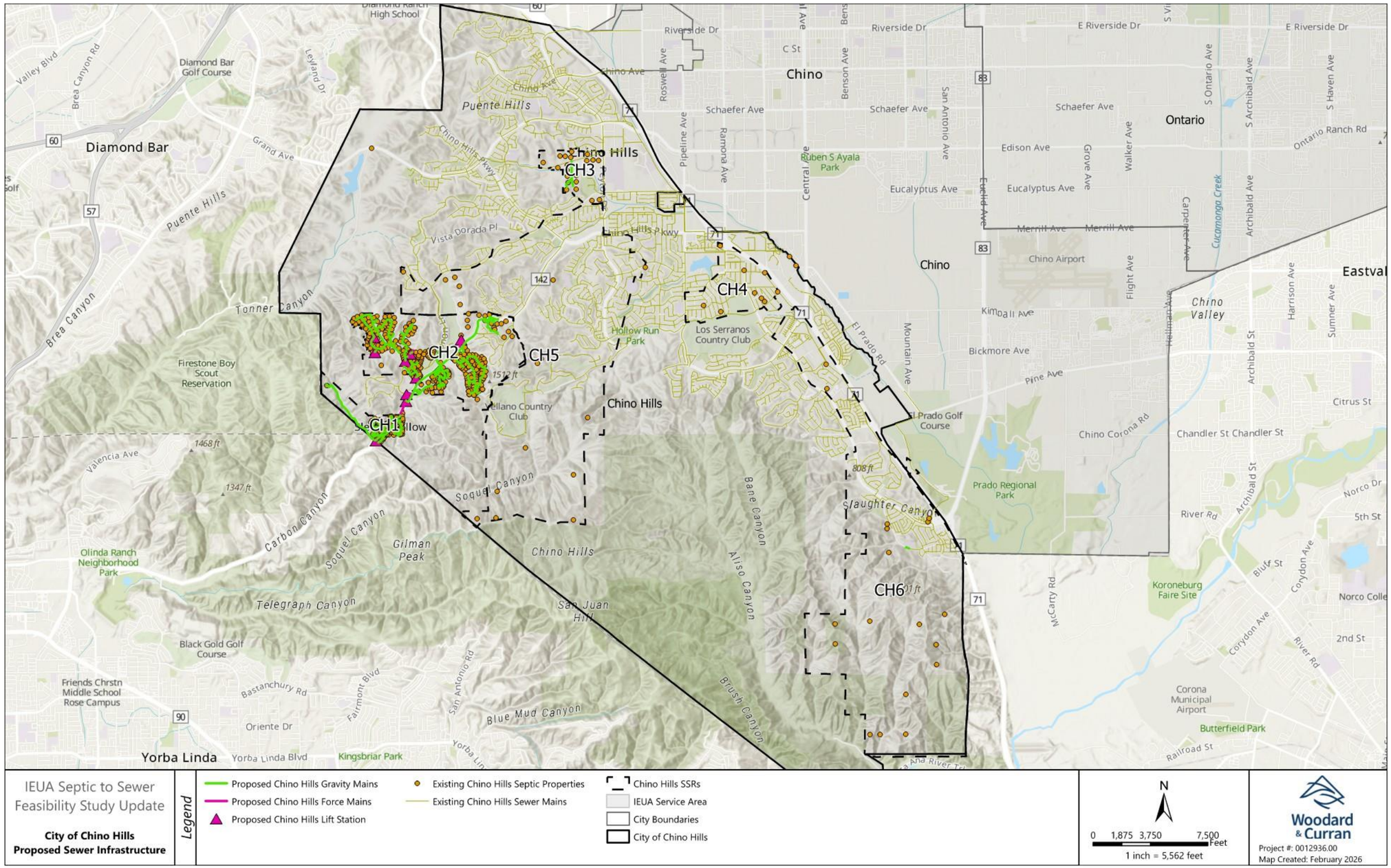
4.2 City of Chino Hills

The 2018 Study estimated a total of 689 septic systems in the City of Chino Hills and proposed a total of 84,700 LF of new sewer lines to convert all septic systems to sewer. The Study Update has estimated 659 septic systems and is proposing a total of 74,900 LF of new sewer lines.

The following list describes the new facilities and improvements to existing facilities that are needed to serve all parcels currently on septic systems with wastewater service within the City of Chino Hills. The proposed sewer infrastructure is shown on **Figure 15**, infrastructure maps per SSR can be found in **Appendix C.**

- **CH1:** 19,130 LF of new mainline sewer (2,330 LF of 10-inch sewer and 16,800 LF of 8-inch sewer), 2 pump stations, 3,400 LF of new sewer force main, and 160 new upper and lower laterals.
- **CH2:** 46,400 LF of new mainline sewer (3,400 LF of 15-inch sewer, 3,500 LF of 12-inch sewer, 3,070 LF of 10-inch sewer, and 36,430 LF of 8-inch sewer), 6 pump stations, 3,340 LF of new sewer force main and 437 new upper and lower laterals. It may be possible to eliminate a pump station on Esquiline Drive and the associated force main by having a sewer cross a parcel.
- **CH3:** 2,400 LF of new mainline sewer (2,400 LF of 8-inch sewer) and 20 new upper and lower laterals.
- **CH4:** No new sewer mains were identified as required for conversion of septic systems in this SSR. Parcels on septic systems will connect to the existing sewer system. It is assumed that 9 new upper and lower laterals will be needed.
- **CH5:** No new sewer mains were identified as required for conversion of septic systems in this SSR. Parcels on septic systems will connect to the existing sewer system. It is assumed that 15 new upper and lower laterals will be needed.
- **CH6:** 200 LF of new mainline sewer (200 LF of 8-inch sewer) and 18 new upper and lower laterals.

FIGURE 15: CITY OF CHINO HILLS PROPOSED SEWER INFRASTRUCTURE – 2025 UPDATE



4.3 Cucamonga Valley Water District

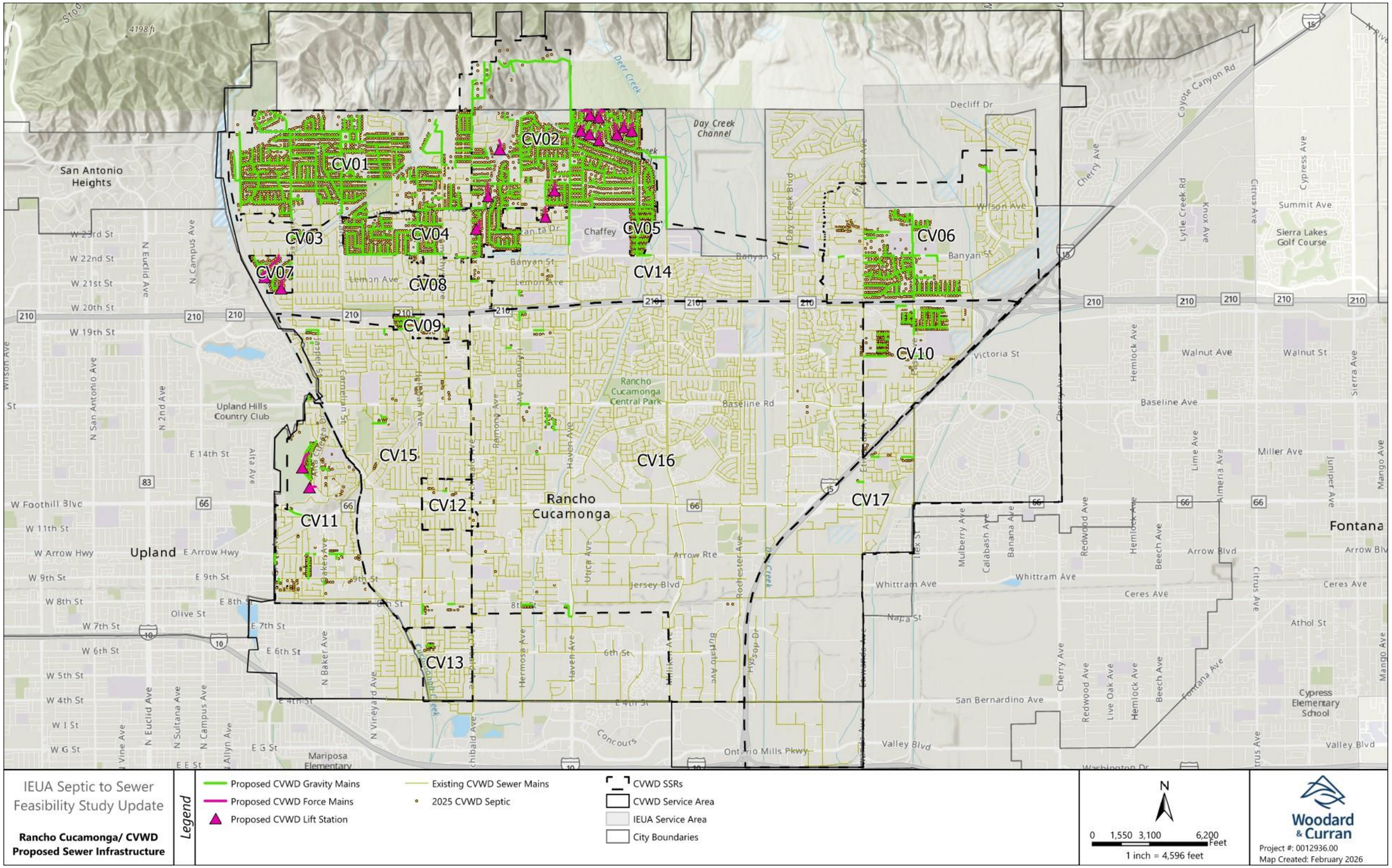
The 2018 Study estimated a total of 4,666 septic systems in the CVWD service area and proposed a total of 375,200 linear feet (LF) of new sewer lines to convert all septic systems to sewer. The Study Update has estimated 4,913 septic systems and is proposing a total of 352,900 LF of new sewer lines.

The following list describes the new facilities and improvements to existing facilities that are needed to serve all parcels currently on septic systems with wastewater service within the CVWD service area. The proposed sewer infrastructure is shown on **Figure 16**, infrastructure maps per SSR can be found in **Appendix D.**

- **CV01:** 120,340 LF of new mainline sewer (120,340 LF of 8-inch sewer) and 1,537 new upper and lower laterals. Approximately 560 LF of mainline sewer will require trenchless crossings. The proposed sewer design also involves encroachment of parcel boundaries and may require easements.
- **CV02:** 119,965 LF of new mainline sewer (119,965 LF of 8-inch sewer), 12 pump stations, 6,200 LF of new sewer force main, and 1,280 new upper and lower laterals. Approximately 245 LF of mainline sewer will require trenchless crossings. The proposed sewer design also involves encroachment of parcel boundaries and may require easements.
- **CV03:** 1,460 LF of new mainline sewer (1,460 LF of 8-inch sewer) and 31 new upper and lower laterals.
- **CV04:** 38,705 LF of new mainline sewer (265 LF of 12-inch sewer and 38,440 LF of 8-inch sewer), 1 pump station, 650 LF of new sewer force main, and 585 new upper and lower laterals.
- **CV05:** 10,445 LF of new mainline sewer (10,455 LF of 8-inch sewer) and 206 new upper and lower laterals. Approximately 65 LF of mainline sewer will require trenchless crossings.
- **CV06:** 33,810 LF of new mainline sewer (530 LF of 12-inch sewer, 480 LF of 10-inch sewer, and 32,800 LF of 8-inch sewer) and 414 new upper and lower laterals.
- **CV07:** 6,435 LF of new mainline sewer (6,435 LF of 8-inch sewer), 2 pump stations, 2,400 LF of new sewer force main, and 111 new upper and lower laterals.
- **CV08:** 1,270 LF of new mainline sewer (1,270 LF of 8-inch sewer) and 26 new upper and lower laterals.
- **CV09:** 3,090 LF of new mainline sewer (3,090 LF of 8-inch sewer) and 67 new upper and lower laterals.
- **CV10:** 13,320 LF of new mainline sewer (1,320 LF of 10-inch sewer and 12,000 LF of 8-inch sewer) and 271 new upper and lower laterals.
- **CV11:** 9,810 LF of new mainline sewer (9,810 LF of 8-inch sewer), 2 pump stations, 1,215 LF of new sewer force main, and 211 new upper and lower laterals.
- **CV12:** 150 LF of new mainline sewer (150 LF of 8-inch sewer) and 13 new upper and lower laterals.
- **CV13:** 375 LF of new mainline sewer (375 LF of 8-inch sewer) and 16 new upper and lower laterals.

- **CV14:** 3,030 LF of new mainline sewer (3,030 LF of 8-inch sewer) and 22 new upper and lower laterals.
- **CV15:** 3,230 LF of new mainline sewer (3,230 LF of 8-inch sewer) and 59 new upper and lower laterals.
- **CV16:** 5,145 LF of new mainline sewer (5,145 LF of 8-inch sewer) and 63 new upper and lower laterals.
- **CV17:** 1,830 LF of new mainline sewer (1,830 LF of 8-inch sewer) and 15 new upper and lower laterals.

FIGURE 16: CVWD PROPOSED SEWER INFRASTRUCTURE – 2025 UPDATE



4.4 City of Fontana

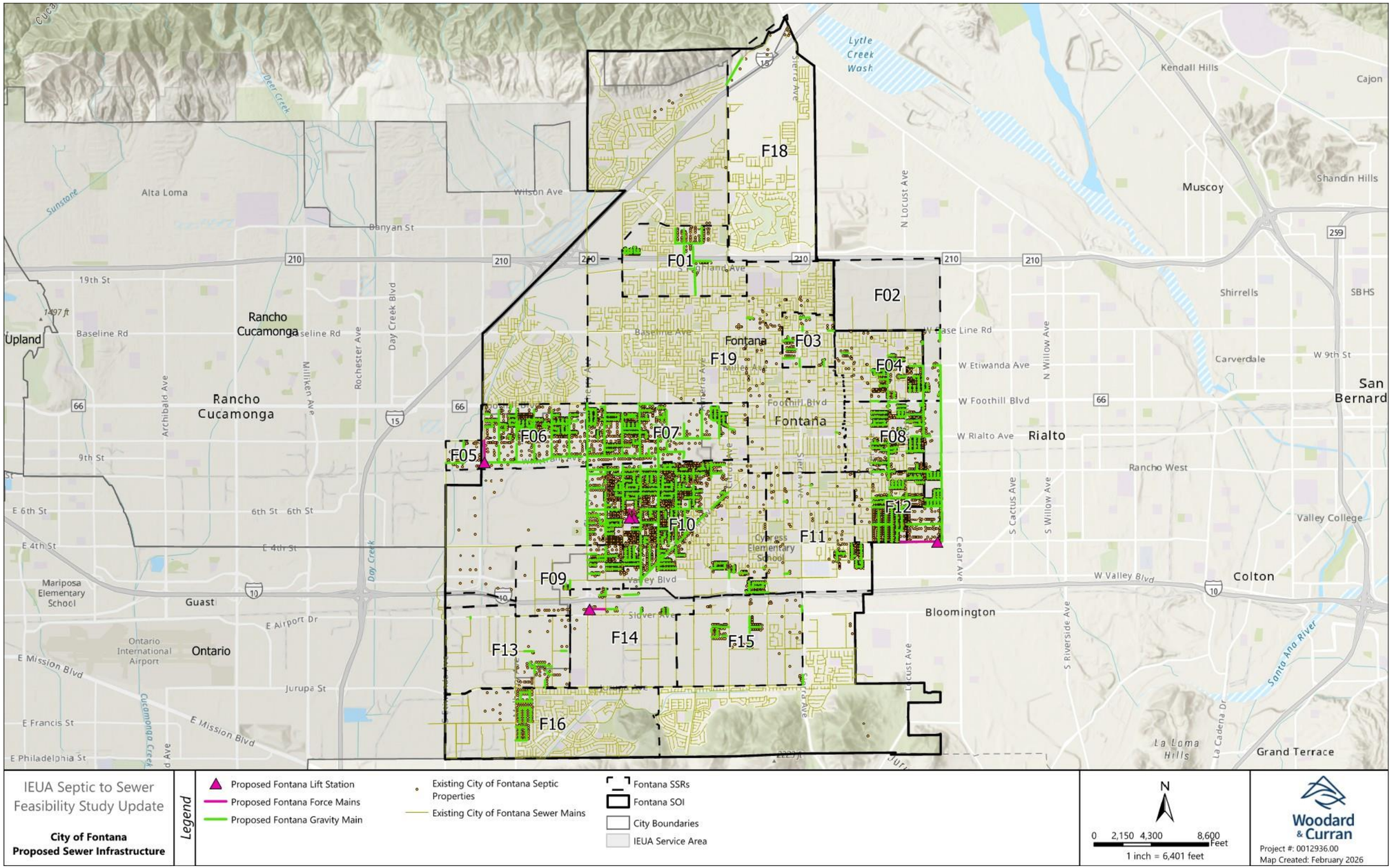
The 2018 Study estimated a total of 11,766 septic systems in the City of Fontana and proposed a total of 639,600 LF of new sewer lines to convert all septic systems to sewer. The Study Update has estimated 8,883 septic systems and is proposing a total of 430,300 LF of new sewer lines.

The following list describes the new facilities and improvements to existing facilities that are needed to serve all parcels currently on septic systems with wastewater service within the City of Fontana. The proposed sewer infrastructure is shown on **Figure 17**, infrastructure maps per SSR can be found in **Appendix E**.

- **F01:** 14,000 LF of new mainline sewer (1,290 LF of 10-inch sewer and 12,710 LF of 8-inch sewer), and 156 new upper and lower laterals.
- **F02:** No septic systems were identified as required for conversion in this SSR.
- **F03:** 5,500 LF of new mainline sewer (5,500 LF of 8-inch sewer) and 55 new upper and lower laterals. The proposed sewer design also involves encroachment of parcel boundaries and may require easements.
- **F04:** 23,200 LF of new mainline sewer (23,200 LF of 8-inch sewer) and 473 new upper and lower laterals.
- **F05:** 3,000 LF of new mainline sewer (3,000 LF of 8-inch sewer) and 50 new upper and lower laterals.
- **F06:** 46,785 LF of new mainline sewer (6,435 LF of 12-inch sewer, 5,300 LF of 10-inch sewer, and 33,450 LF of 8-inch sewer), 1 pump station, 1,600 LF of new sewer force main, and 857 new upper and lower laterals.
- **F07:** 72,520 LF of new mainline sewer (2,550 LF of 27-inch sewer, 9,710 LF of 21-inch sewer, 2,060 LF of 15-inch sewer, 1,980 LF of 12-inch sewer, 3,800 LF of 10-inch sewer, and 52,410 LF of 8-inch sewer) and 1,059 new upper and lower laterals. A number of these lines correspond with planned lines in the Fontana Sewer Master Plan and were sized based on the plan.
- **F08:** 36,820 LF of new mainline sewer (1,320 LF of 12-inch sewer, 1,100 LF of 10-inch sewer, and 34,400 LF of 8-inch sewer) and 782 new upper and lower laterals. Approximately 105 LF of mainline sewer will require trenchless crossings.
- **F09:** 9,450 LF of new mainline sewer (9,450 LF of 8-inch sewer) and 261 new upper and lower laterals.
- **F10:** 133,900 LF of new mainline sewer (9,000 LF of 21-inch sewer, 3,725 LF of 15-inch sewer, 5,350 LF of 12-inch sewer, 5,000 LF of 10-inch sewer, and 108,550 LF of 8-inch sewer), 2 pump stations, 2,275 LF of new sewer force main, and 3,372 new upper and lower laterals. The pump stations on Morning Glory Place and Papaya Place off Randall Avenue may not be needed, depending on the depth of the existing sewer and the depth of the laterals on the south end of the street.
- **F11:** 10,100 LF of new mainline sewer (10,100 LF of 8-inch sewer) and 312 new upper and lower laterals. The proposed sewer design involves encroachment of parcel boundaries and would require easements.

- **F12:** 51,620 LF of new mainline sewer (1,250 LF of 10-inch sewer, and 47,600 LF of 8-inch sewer), 1 pump station, 2,770 LF of new sewer force main, and 1,060 new upper and lower laterals.
- **F13:** 4,770 LF of new mainline sewer (4,770 LF of 8-inch sewer) and 61 new upper and lower laterals.
- **F14:** 4,670 LF of new mainline sewer (4,670 LF of 8-inch sewer), 1 pump station, 1,220 LF of new sewer force main, and 49 new upper and lower laterals.
- **F15:** 7,510 LF of new mainline sewer (7,510 LF of 8-inch sewer) and 108 new upper and lower laterals.
- **F16:** 10,600 LF of new mainline sewer (10,600 LF of 8-inch sewer) and 121 new upper and lower laterals.
- **F17:** Not included in 2018 Study or Study Update per IEUA/ Fontana direction on January 19, 2017 stating "All parcels are connected to sewer and this area is scheduled to be annexed into IEUA service area."
- **F18:** 2,235 LF of new mainline sewer (2,235 LF of 8-inch sewer) and 11 new upper and lower laterals.
- **F19:** 535 LF of new mainline sewer (535 LF of 8-inch sewer) and 96 new upper and lower laterals. The proposed sewer design involves encroachment of parcel boundaries and would require easements.

FIGURE 17: CITY OF FONTANA PROPOSED SEWER INFRASTRUCTURE – 2025 UPDATE



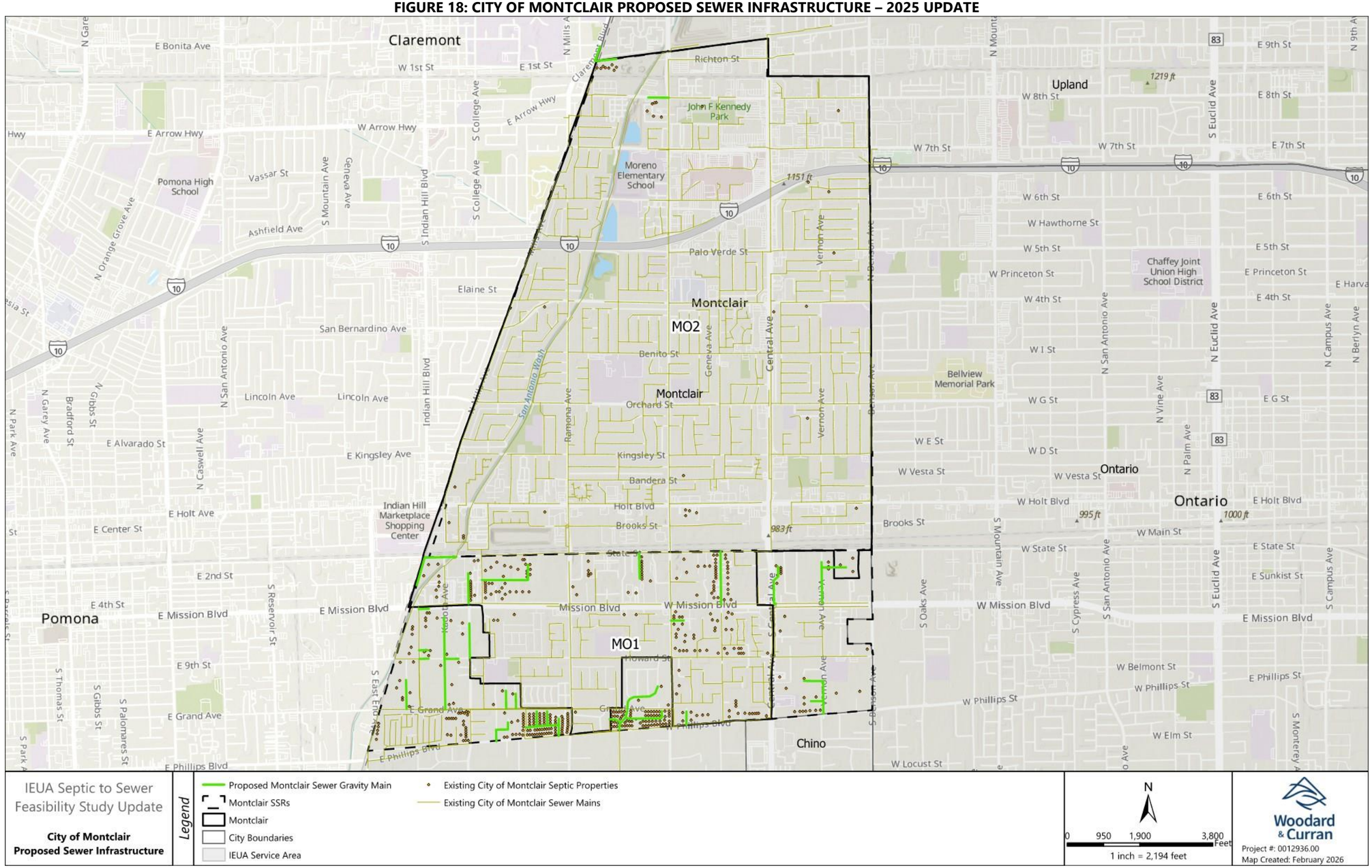
4.5 City of Montclair

The 2018 Study estimated a total of 510 septic systems in the City of Montclair and proposed a total of 24,700 LF of new sewer lines to convert all septic systems to sewer. The Study Update has estimated 467 septic systems and is proposing a total of 24,600 LF of new sewer lines.

The following list describes the new facilities and improvements to existing facilities that are needed to serve all parcels currently on septic systems with wastewater service within the City of Montclair. The proposed sewer infrastructure is shown on Figure 18**,** infrastructure maps per SSR can be found in **Appendix F.**

- **MO1:** 23,100 LF of new mainline sewer (1,300 LF of 10-inch sewer and 21,800 LF of 8-inch sewer) and 433 new upper and lower laterals.
- **MO2:** 1,500 feet of new mainline sewer (1,500 feet of 8-inch sewer) and 34 new upper and lower laterals.

FIGURE 18: CITY OF MONTCLAIR PROPOSED SEWER INFRASTRUCTURE – 2025 UPDATE



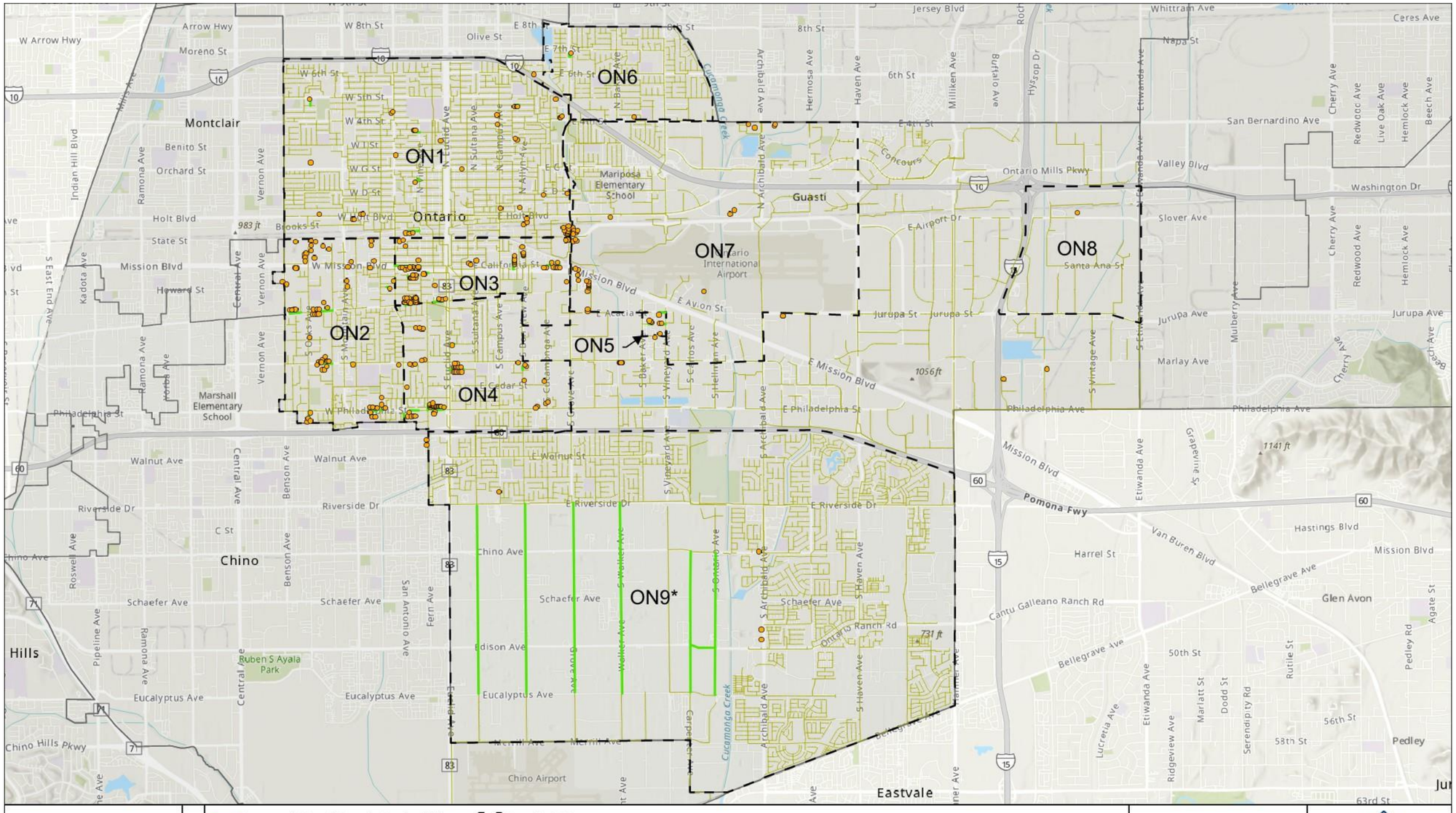
4.6 City of Ontario

The 2018 Study estimated a total of 661 septic systems in the City of Ontario and proposed a total of 116,200 LF of new sewer lines to convert all septic systems to sewer. The Study Update has estimated 304 septic systems and is proposing a total of 15,000 LF of new sewer lines.

The following list describes the new facilities and improvements to existing facilities that are needed to serve all parcels currently on septic systems with wastewater service within the City of Ontario. The proposed sewer infrastructure is shown on **Figure 19**, infrastructure maps per SSR can be found in **Appendix G.**

- **ON1:** 1,850 LF of new 8-inch mainline sewer and 47 new upper and lower laterals. The proposed sewer design involves encroachment of parcel boundaries and would require easements.
- **ON2:** 4,000 LF of new 8-inch mainline sewer and 68 new upper and lower laterals.
- **ON3:** 5,250 LF of new 8-inch mainline sewer and 90 new upper and lower laterals.
- **ON4:** 2,720 LF of new 8-inch mainline sewer and 56 new upper and lower laterals.
- **ON5:** 900 LF of new 8-inch mainline sewer and 7 new upper and lower laterals.
- **ON6:** 290 LF of new 8-inch mainline sewer and 2 new upper and lower laterals.
- **ON7:** No new sewer mains were identified as required for conversion of septic systems in this SSR. It is assumed that 29 new upper and lower laterals will be needed. Parcels on septic systems will connect to the existing sewer system.
- **ON8:** No new sewer mains were identified as required for conversion of septic systems in this SSR. It is assumed that 1 new upper and lower laterals will be needed. Parcels on septic systems will connect to the existing sewer system.
- **ON9:** No new sewer mains were identified as required for conversion of septic systems in this SSR. It is assumed that 4 new upper and lower laterals will be needed. Parcels on septic systems will connect to the existing sewer system.

FIGURE 19: CITY OF ONTARIO PROPOSED SEWER INFRASTRUCTURE – 2025 UPDATE



4.7 City of Upland

The 2018 Study estimated a total of 1,617 septic systems in the City of Upland and the unincorporated San Antonio Heights. A total of 95,300 LF of proposed new sewer lines to convert all septic systems to sewer. The Study Update has estimated 386 septic systems in the City of Upland and is proposing a total of 13,000 LF of new sewer lines.

The following list describes the new facilities and improvements to existing facilities that are needed to serve all parcels currently on septic systems with wastewater service within the City of Upland. The proposed sewer infrastructure is shown on **Figure 20**, infrastructure maps per SSR can be found in **Appendix H**.

- **UP1:** No septic systems were identified as required for conversion in this SSR.
- **UP2:** 7,100 LF of new 8-inch mainline sewer and 158 new upper and lower laterals.
- **UP3:** 3,900 LF of new 8-inch mainline sewer, 1 pump station, 400 LF of new sewer force main, and 137 new upper and lower laterals. The proposed sewer design involves encroachment of parcel boundaries and would require easements. To avoid the need for a pump station, the proposed pipeline could be designed deep enough to provide the slope required for a gravity sewer. This option should be investigated during preliminary design.
- **UP4:** 900 LF of new 8-inch mainline sewer and 45 new upper and lower laterals.
- **UP5:** 700 LF of new 8-inch mainline sewer and 41 new upper and lower laterals.
- **UP6:** 370 LF of new 8-inch mainline sewer and 11 new upper and lower laterals.

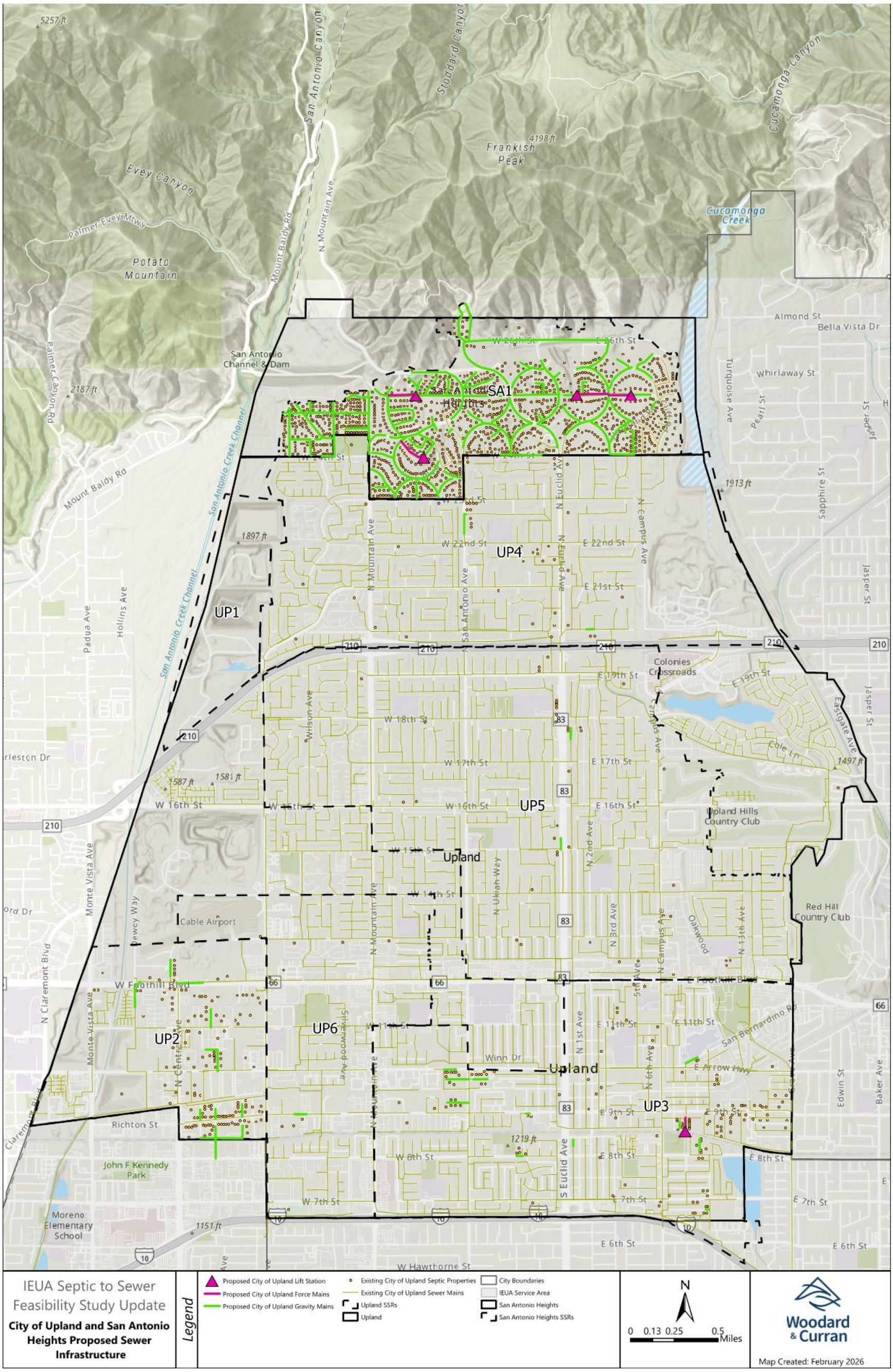
San Antonio Heights

The Study Update has estimated 1,223 septic systems in San Antonio Heights and is proposing a total of 82,300 LF of new sewer lines.

The following list describes the new facilities and improvements to existing facilities that are needed to serve all parcels currently on septic systems with wastewater service within San Antonio Heights. The proposed sewer infrastructure is shown on **Figure 20**, infrastructure maps per SSR can be found in **Appendix I**.

- **SA1:** Located in San Antonio Heights. 79,100 LF of new 8-inch mainline sewer 4 pump stations, 3,200 LF of new sewer force main, and 1,223 new upper and lower laterals.

FIGURE 20: CITY OF UPLAND AND SAN ANTONIO HEIGHTS PROPOSED SEWER INFRASTRUCTURE – 2025 UPDATE



5. SEPTIC CONVERSION COST ESTIMATES

W&C developed planning-level cost estimates for conversion of septic systems to sewer. The following section provides a discussion of the cost estimate approach, assumptions and a summary of the capital cost and unit cost to convert all septic systems within each SSR to sewer.

5.1 Cost Estimate Approach and Assumptions

The Association for the Advancement of Cost Engineering International (AACE International) has developed a cost estimate classification system that provides guidelines for applying the general principles of estimate classification to project cost estimates. The five estimate classes are presented in AACE International Recommended Practice No. 18R-97 (Cost Estimate Classification System – As Applied in Engineering, Procurement, and Construction for the Process Industries). The guideline establishes a relationship between the project maturity (i.e., project definition as percent of complete definition) and the accuracy and methodology used to produce the cost estimate. Based on the level of project definition, comparable to project evaluation, the cost estimates developed for the Study Update are Class 4 as defined by Publication 18R-97.

Table 18 provides a summary of the estimate classes and expected accuracy range. The highlighted row in the table indicates the class under which this Study Update falls (Class 4). For Class 4 estimates, the expected accuracy range is -15% to -30% on the low end and +20% to +50% on the high end.

TABLE 18: COST ESTIMATE CLASSIFICATION MATRIX (AACE INTERNATIONAL)

Estimate Class	Level of Project Definition	Purpose of Estimate	Methodology	Expected Accuracy Range
Class 5	0% to 2%	Concept screening	Capacity factored, parametric models, judgement, or analogy	Low: -20% to -50% High: +30% to +100%
Class 4	1% to 15%	Study or feasibility	Equipment factored or parametric models	Low: -15% to -30% High: +20% to +50%
Class 3	10% to 40%	Budget authorization or control	Semi-detailed unit costs with assembly level line items	Low: -10% to -20% High:+10% to +30%
Class 2	30% to 75%	Control or bid/tender	Detailed unit cost with forced detailed take-off	Low: -5% to -15% High: +5% to +20%
Class 1	65% to 100%	Check estimate or bid/tender	Detailed unit cost with detailed take-cost	Low: -3% to -10% High: +3% to +15%

Source: AACE International Recommended Practice No. 18R-97

For each facilities plan, cost estimates are based on preliminary pipeline alignments and required facilities and include "Total Capital Cost Estimates". W&C estimated construction costs using unit costs developed from past construction projects and industry cost estimate resources (primarily prior project experience and IEUA unit costs). W&C developed each cost estimate through unit costs applied based on facility items, with variation for gravity sewers depending on diameter of pipe and local connection costs. The quantities and required facilities are based on GIS data analysis. The planning goals were to provide all IEUA parcels on

septic systems with a viable sewer connection, to follow existing master plans where applicable, and to include consideration of lift stations.

Cost criteria include baseline unit construction costs for gravity sewers using open-cut methods, upper laterals (lateral from the building structure to the property line), lower laterals (lateral from the property line to the street), pump stations, force mains, trenchless crossings, grinder pumps, and easements. Costs for gravity trunk sewers vary with pipe diameter. "Pipe bursting" (a trenchless method of replacing buried pipelines) or an equivalent technology is assumed for upsizing projects, which were identified as deficient through the SCAs Master Plans. As a simplification, upsizing costs are assumed to be the same as new sewers for a given diameter. Existing sewers that would be upsized as part of the Master Plan are not directly considered in the Study Update. Their costs should be accounted for in the relevant sewer connection fees from the local agency and IEUA. Pipes that have not been constructed yet, despite being in a Master Plan, are directly considered as they are necessary for completion of work. Construction of new sewers would be open cut; trenchless construction would be required for major crossings (e.g., railroad crossings).

Allowances added to the baseline construction cost are noted in **Table 19** and include 5% mobilization/demobilization allowance applied to the subtotal. A 30% allowance for contingencies for unknown conditions was also included for all projects applied to the Construction Cost Subtotal. An allowance of 25% of construction cost for engineering, administration, and legal costs was applied to the Construction Cost. This is intended to account for engineering/design, construction management, ESDC, internal administrative work at IEUA, and legal costs.

TABLE 19: ALLOWANCES

Item	Percent Adder
Mobilization and Demobilization	5%
Contingency	30%
Engineering, Administration, and Legal Costs	25%

Unit costs were escalated to 2025 dollars using the Engineering News Record Construction Cost Index (ENR CCI) for Los Angeles in October 15,994. Unit costs increased by 34% between the 2018 Study and this 2025 Study Update. Unit costs are summarized in **Table 20**.

TABLE 20: 2025 UNIT COST ASSUMPTIONS

Item	2025 Unit Cost	Units
New Gravity Sewer		
8-inch diameter	$214	$/LF
10-inch diameter	$281	$/LF
12-inch diameter	$354	$/LF
15-inch diameter	$462	$/LF
18-inch diameter	$579	$/LF
21-inch diameter	$704	$/LF
24-inch diameter	$823	$/LF
27-inch diameter	$941	$/LF
30-inch diameter	$1,061	$/LF
36-inch diameter	$1,302	$/LF
Force Main	$161	$/LF
Trenchless Crossing	$4,020	$/LF
Septic System Abandonment	$1,340	$/EA
Lower Lateral (lateral from the property line to the street)	$8,040	$/EA
Upper Lateral (lateral from the building structure to the property line)	$8,040	$/EA
Pump Station	$1,072,000	$/EA
Grinder Pump	$20,100	$/EA
Easements	$27	$/SF

IEUA Sewer Impact Fees and Local Sewer Impact Fees were added to determine the Capital Improvement Cost after application of these allowances. The IEUA Sewer Impact Fee (also known as the Capital Capacity Reimbursement Account [CCRA] fee) is required to be applied to all residential structures with a building permit issued on or after July 1, 1979. For the purposes of this Study Update, the IEUA Sewer Impact Fee was not applied to those residential properties listed in the County's parcel data with a "base year" prior to 1979. For those residential parcels where base year data was missing or where land use data was missing, it was assumed that the IEUA Sewer Impact Fee would be required.

These construction costs were based on a combination of company experience and IEUA Engineering team's developed unit costs, using the ENR CCI from October 2025 to escalate previous project unit costs. IEUA provided costs for 8-inch, 10-inch, 12-inch and 15-inch sewer pipeline. For the remaining diameter sewers and facilities, bid results from similar projects were used to determine a unit cost.

5.2 Cost Estimate Summary

Table 21 provides a summary of planning-level costs to convert all septic systems within an SCA to sewer. **Table 22** provides a costs per SSR. Unit costs by SSR vary widely, with a low of $30,000 and a high of $393,000 per septic system. Those SSRs with high unit costs generally require a significant amount of infrastructure in order to connect to a local sewer system and those SSRs with low unit costs generally require only a lateral. In total, it is estimated that conversion of all septic systems to sewer will have a capital cost of approximately $1.2 billion dollars with an average unit cost of $65,000 per septic system. Grant funding may be used to offset these costs and is discussed further in **Chapter 7.** Detailed planning level cost estimates per SCA can be found in their respective Appendix.

TABLE 21: 2025 SUMMARY OF CAPITAL COST PER SCA

	Chino	Chino Hills	CVWD	Fontana	Montclair	Ontario	Upland	San Antonio Heights
No. of Septic Systems	1,711	659	4,913	8,883	467	304	386	1,223
Sewer Lines (LF)	123,700	74,900	352,900	430,300	24,600	15,000	13,000	82,300
Estimated Capital Cost	$108M	$63.9M	$312M	$454M	$23.0M	$14.7M	$16.2M	$66.2M
Connection Fees	$15M	$4.5M	$39M	$73M	$3.8M	$2.1M	$3.1M	$3.3M
Total Cost	$123M	$68.5M	$352M	$527M	$26.8M	$16.8M	$19.3M	$69.5M
Cost per Septic	$72,000	$104,000	$72,000	$59,000	$57,000	$55,000	$50,000	$57,000

TABLE 22: 2025 SSR CONVERSION CAPITAL COST

SSR	No. Septic Systems	Estimated Total Capital Improvement Cost (2025$)*	Cost per Septic System
C1	876	$57,298,000	$66,000
C2	150	$11,475,000	$77,000
C3	606	$44,876,000	$75,000
C4	36	$1,380,000	$39,000
C5	22	$812,000	$37,000
C6	3	$120,000	$40,000
C7	18	$7,057,000	$393,000
Chino Subtotal	**1,711**	**$123,018,000**	**$72,000**
CH1	160	$17,811,000	$112,000
CH2	437	$47,449,000	$109,000
CH3	20	$1,535,000	$77,000
CH4	9	$275,000	$31,000
CH5	15	$576,000	$39,000
CH6	18	$747,000	$42,000
Chino Hills Subtotal	**659**	**$68,393,000**	**$104,000**
CV01	1,537	$105,514,000	$69,000
CV02	1,280	$118,363,000	$93,000
CV03	31	$1,660,000	$54,000
CV04	585	$38,326,000	$66,000
CV05	206	$12,073,000	$59,000
CV06	414	$17,268,000	$42,000
CV07	111	$10,803,000	$98,000
CV08	26	$1,423,000	$55,000
CV09	67	$3,662,000	$55,000
CV10	271	$15,135,000	$56,000
CV11	197	$14,976,000	$77,000
CV12	13	$531,000	$41,000
CV13	16	$745,000	$47,000
CV14	22	$2,164,000	$99,000
CV15	59	$3,335,000	$57,000
CV16	63	$4,165,000	$67,000
CV17	15	$1,444,000	$97,000
Cucamonga Valley Subtotal	**4,913**	**$351,587,000**	**$72,000**
F01	156	$13,711,000	$88,000
F02	0	$0	$0
F03	55	$4,263,000	$78,000
F04	473	$26,367,000	$56,000
F05	50	$3,027,000	$61,000

SSR	No. Septic Systems	Estimated Total Capital Improvement Cost (2025$)*	Cost per Septic System
F06	857	$54,215,000	$64,000
F07	1,059	$73,133,000	$70,000
F08	782	$43,554,000	$56,000
F09	261	$13,216,000	$51,000
F10	3,372	$190,235,000	$57,000
F11	312	$14,163,000	$46,000
F12	1,060	$60,697,000	$58,000
F13	61	$4,018,000	$66,000
F14	49	$5,703,000	$117,000
F15	108	$6,971,000	$65,000
F16	121	$8,508,000	$71,000
F18	11	$1,152,000	$105,000
F19	96	$4,115,000	$43,000
Fontana Subtotal	**8,883**	**$527,048,000**	**$60,000**
MO1	433	$24,997,000	$58,000
MO2	34	$1,809,000	$54,000
Montclair Subtotal	**467**	**$26,806,000**	**$58,000**
ON1	47	$2,358,000	$51,000
ON2	68	$4,016,000	$60,000
ON3	90	$5,201,000	$58,000
ON4	56	$3,052,000	$55,000
ON5	7	$885,000	$127,000
ON6	2	$184,000	$92,000
ON7	29	$913,000	$32,000
ON8	1	$30,000	$30,000
ON9	4	$129,000	$33,000
Ontario Subtotal	**304**	**$16,768,000**	**$56,000**
UP1	0	$0	$0
UP2	152	$8,381,000	$56,000
UP3	137	$6,514,000	$48,000
UP4	45	$2,026,000	$46,000
UP5	41	$1,789,000	$44,000
UP6	11	$561,000	$51,000
Upland Subtotal	**386**	**$19,271,000**	**$50,000**
SA1	1223	$69,485,000	$57,000
San Antonio Heights Subtotal	**1223**	**$69,485,000**	**$57,000**
Total	**18,546**	**$1,202,376,000**	**$65,000**

**Costs rounded to the nearest $1,000.*

6. PRIORITIZATION CRITERIA

W&C, with input from IEUA staff, developed several guiding criteria to assist the SCAs in prioritization of converting septic systems in each SSR to sewer. The criteria were divided into three broad categories that support the Agency's level of service objectives: (1) Opportunistic, (2) Environmental Protection, and (3) Supporting Historically Underserved Areas.

The proposed prioritization criteria discussed in the following sections follow the State Water Board's Water Quality Control Policy for Siting, Design, Operation and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy). The State Water Board adopted the OWTS Policy in June of 2012 and renewed its conditional waiver in April of 2018, for the first renewal and in April 2023 for the second renewal. The OWTS Policy authorizes subsurface disposal of domestic strength wastewater, and in limited instances high strength wastewater, and establishes minimum requirements for the permitting, monitoring, and operation of OWTS to protect beneficial uses of waters of the state and to prevent or correct conditions of pollution or nuisance. The adopted OWTS policy can be found on the State Water Board website: Onsite Waste Water Treatment Systems | California State Water Resources Control Board.

6.1 Category 1: Opportunistic Conversion of Septic to Sewer

The ability for an SSR conversion project to meet multiple benefits is desirable from the standpoint of both costs and community improvements. Potential opportunities identified for meeting multiple benefits include extension of sewer alongside extension of recycled water pipelines, potential for adding reliability to the existing sewer system, and new or re-development of areas.

Sewer System Level of Service

IEUA and its sewer collection agencies work throughout their respective systems to maintain and improve level of service for customers. This activity includes evaluating existing infrastructure (e.g. pipelines, pump stations and other utilities) to meet current and future demands. As improvements are made, each agency should consider if septic systems are better served by the local sewer system. That decision can also be planned by installing stub-outs and cleanouts for future use along properties within the rights-of-way. This effort would support minimizing street disruption for multiple projects within the same corridor.

Plans for development/redevelopment/infill

Areas planned for development, redevelopment, or infill may provide for greater ease of conversion as conversion can occur in conjunction with the other project. This situation is the most opportunistic for all agencies to connect new customers through fees and development requirements; it will allow costs to be efficiently spread across multiple providers and enhance the community with utilities and services. Each SCA is familiar with their area and future developments and are in the best position to align with conversion projects.

Potential to extend sewer alongside extension of recycled water pipelines

IEUA is working to expand its recycled water system to increase non-potable use of recycled water and increase recycled water recharge. It may be possible to extend sewer pipelines along with recycled water

pipelines to allow for streets to be disturbed only once, which would minimize both cost and neighborhood disturbance.

Potential for stormwater management improvements/LID

Some communities in the IEUA service area do not currently have storm drain systems in place. Those communities that have been included in future storm drain planning may benefit from concurrent construction of storm drain systems and sewer systems as streets would need to be disturbed only once, which would minimize both cost and neighborhood disturbance.

Proximity of existing sewer

Most SSRs already have sewers in place, meaning minimal construction is necessary to connect parcels on septic systems to sewers. Even with minimal construction, the cost of connection can exceed many customers ability to afford; therefore, unless other factors noted are facilitating connection, it is unlikely properly functioning septic systems would convert to sewer service.

6.2 Category 2: Environmental Protection

Septic tank failure is typically considered to be a cause of nitrate, phosphate, bacteria, and virus contamination in groundwater. Septic system failures can also cause a house to be "red-tagged" and be considered uninhabitable and unsafe. Aging or failing septic systems can leak untreated or partially treated wastewater into nearby soil, groundwater, and stormwater pathways, which eventually discharge into creeks, rivers, and coastal waters.

Salt and Nutrient Management Plans (SNMP) generally view septic systems as sources of salt and nutrient loading to groundwater. These findings assess the contribution of septic systems to nitrate and total dissolved solids concentrations, consider the assimilative capacity of the groundwater basin, and determine whether continued reliance on septic systems is consistent with applicable water quality objectives. Where impacts are significant or exceed allowable thresholds, SNMP findings establish the technical basis for management actions, including conversion from septic systems to centralized sewer systems or implementation of advanced treatment alternatives.

Possible Septic System failure

The typical useful life of a conventional septic system in California ranges from approximately 20 to 40 years, depending on system design, soil conditions, loading, and maintenance practices. While the septic tank itself may remain serviceable for 30 to 50 years or more, the leach field typically reaches the end of its functional life within 15 to 30 years.

Septic systems, when designed, installed, and maintained correctly, provide a reliable and cost-effective method for on-site wastewater treatment and disposal. Proper maintenance (including routine inspection, scheduled pumping of the septic tank, and responsible water usage) is critical to ensuring long-term system performance. Additionally, effective leach field management plays a key role in the system's ability to safely disperse treated effluent into the surrounding soil. This includes preventing excessive loading, avoiding soil compaction from vehicle traffic, and ensuring proper surface drainage to avoid saturation.

A possible failure may be indicated by symptoms such as slow drainage, sewage odors, ponding water above the drain field, or unusually lush vegetation in the area. These conditions can result from a variety of factors, including clogging of the soil pores, biological overloading, root intrusion, or hydraulic overloading due to excessive water usage.

Septic system failures could be verified by reviewing the available groundwater monitoring data from the State Water Board at the following website: GAMA - Online Tools | California State Water Resources Control Board or through the Chino Basin Watermaster State of the Basin report found here: 2024 State of the Basin Story Map to determine any impacted areas.

Presence of high groundwater table

High groundwater under a septic system can cause soil saturation that impacts a septic system's ability to treat waste; groundwater can also encounter untreated wastewater that can further impact water quality. Generally, high groundwater does not pose a concern for septic system function in the IEUA service area, except for the southern-most part of the service area near Prado Dam where groundwater has been observed at the surface.

Presence of poor-draining soil type

Poorly draining soils could impede the ability of a septic system to properly treat wastewater as the septic system leach field could become saturated. Desirable soils are typically sandy (though not too coarse), well drained, and undisturbed, while clay soils are made up of very small particles and therefore water moves through the clayey soil very slowly. This situation can lead to a drain field failure that requires repair beyond typical expenses.

Proximity to surface water

Septic systems that are too near to streams, rivers, and lakes have the potential to contaminate these local surface waters. The State Water Board recommends establishing protective setbacks from surface waters, wetlands and floodplains to reduce nitrate and phosphate loading, and prevent contamination with bacteria and viruses. In its OWTS Policy,1 the SWRCB sets the minimum horizontal setback for septic systems at 100 feet from the banks of springs and flowing surface water bodies.

Proximity to drinking water wells

As with surface waters, septic systems that are too near to drinking water wells have the potential to contaminate drinking water. The SWRCB recommends establishing protective setbacks from wells to reduce nitrate and phosphate loading, and prevent contamination with bacteria and viruses. In its OWTS Policy, the SWRCB sets the minimum horizontal setback for septic systems at 100 feet from water wells and monitoring wells.

Nitrate levels in groundwater

[1] State Water Resources Control Board, 2012. *OWTS Policy Water Quality Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems*. http://www.waterboards.ca.gov/water_issues/programs/owts/docs/owts_policy.pdf

Wastewater-related grant programs generally emphasize the water quality benefits of septic system conversion. Based on this priority, it was determined that nitrate levels in groundwater would be a good representation of the potential for septic system conversion to prevent further groundwater quality degradation or even improve groundwater quality. Those SSRs that overlay wells that have exceeded the nitrate MCL of 10 mg/L are considered to have septic systems that either contribute to or have the potential to spread nitrate to drinking water.

6.3 Category 3: Supporting Historically Underserved Areas

Several of the descriptions above align with supporting historically underserved areas. The major factor in providing sewer service or converting to sewer service can be cost. The cost to convert septic systems to sewers can be high, particularly in cases where new sewer lines must be constructed, or sewers must be upgraded, and obtaining grants to offset these costs would allow for conversions to occur more quickly.

Grant programs typically prioritize those projects that will benefit disadvantaged communities (DAC) and severely disadvantaged communities (SDAC); in particular, the SWRCB has wastewater-related grant programs available that prioritize projects that benefit areas where the area's median household income (MHI) is 80% or less of the statewide MHI. Based on this priority, it was determined that DAC/ SDAC areas would be a good representation for the ability of an SSR conversion project to receive grant funding. Using 2020–2024 American Community Survey (ACS) data, the California statewide Median Household Income (MHI) ranges from $92,824 in 2020 to $100,600 in 2024, corresponding to DAC thresholds (80% of MHI) ranging from $74,259 to $80,480.

7. FUNDING OPPORTUNITIES

Septic-to-sewer conversions are capital-intensive and, at the planning level, will require a stacked funding approach that blends available grant-like assistance (where eligible) with low-cost, long-term financing. This Study Update provides planning-level costs intended to support future budgeting and implementation planning and should be used to frame a practical funding/financing strategy for priority SSRs.

In the current funding environment, the most applicable and scalable financing tools for wastewater collection and conveyance improvements are the Clean Water State Revolving Fund (CWSRF), Water Infrastructure Finance and Innovation Act (WIFIA), and the Infrastructure and Economic Development Bank (IBank) Infrastructure State Revolving Fund (ISRF). Each program differs in timing certainty, compliance requirements, and whether it supports early phase planning versus construction financing needs.

This section covers priorities for septic-to-sewer within available state and federal funding and financing, including grants from revenue proceeds of bond issuances through Proposition 4 (2024). Proposition 4 (2024), the Safe Drinking Water, Wildfire Prevention, Drought Preparedness, and Clean Air Bond Act, authorizes approximately $10 billion in state bond funding, including $3.8 billion for water quality and infrastructure projects. While not a dedicated septic-to-sewer program, Proposition 4 provides substantial funding through existing State Water Resources Control Board grant and loan programs that support wastewater infrastructure improvements. These funding mechanisms can be applied to septic-to-sewer conversion projects where such projects are necessary to reduce nutrient and salt loading to groundwater, improve water quality, and comply with RWQCB Basin Plan and SNMP objectives. Priority funding is given to projects serving disadvantaged communities and those addressing documented water quality impairments.

7.1 Clean Water State Revolving Fund (CWSRF)

The California State Water Resources Control Board's (State Water Board) CWSRF program provides low cost financing for a wide variety of water quality projects, including wastewater treatment plants and sewer systems, and is capable of financing projects ranging from less than $1 million to $50 million. The State Water Board notes that the CWSRF interest rate is one-half of the most recent General Obligation (GO) bond rate, and the most common construction financing term is 30 years (subject to program terms and useful life considerations).

For CWSRF participation, IEUA/SCAs should anticipate program-driven requirements and documentation, including federal requirements that apply when funding sources include U.S. Environmental Protection Agency (EPA) capitalization funds. Internal financing guidance used on similar projects emphasizes that, during bidding and construction, requirements can include federal procurement and labor compliance such as Build America, Buy America (BABA) and Davis Bacon wage requirements, among others.

CWSRF may also offer grants or principal forgiveness in certain cases; the State Water Board indicates that grants or principal forgiveness may be available for small, disadvantaged communities, and details are addressed through annual program materials.

Key considerations (CWSRF):

- Readiness and annual programming: CWSRF participation is tied to State Water Board processes (including annual intended use planning), and readiness (environmental documentation, design maturity, and application completeness) is a typical differentiator in practice.
- Compliance planning: Budget and schedule should account for federal/state compliance and associated administrative needs identified in similar CWSRF efforts.
- Affordability strategy: Where applicable, evaluate disadvantaged community eligibility early to determine whether principal forgiveness/grant-like features may reduce local rate impacts.

The State Water Board's Division of Financial Assistance (DFA) serves as the central source of loans and grants for municipal wastewater infrastructure, including sewage collection, conveyance, and treatment. Its programs explicitly cover septic to sewer conversions, offering both planning and construction funding for projects that connect unsewered, septic reliant areas to centralized wastewater systems. When the communities being connected meet disadvantaged criteria, they may qualify for grant or principal forgiveness support rather than standard loans.

A major pathway for these projects is the Small Community Wastewater (SCWW) program, which provides grant and principal forgiveness (PF) funding through the CWSRF. A "small disadvantaged community" (DAC) is defined as having fewer than 20,000 residents and a median household income below 80% of the statewide median. It may be possible for larger agencies to pursue this path of funding if projects can demonstrate benefits solely to a DAC. Planning grants have no formal dollar cap, though they typically represent 10–20% of construction costs and count toward overall project maximums. Construction funding for eligible small DACs can reach up to $50 million in grant/PF (or $75 million when paired with a loan), with per connection limits for septic to sewer projects that can be exceeded with approval. Consolidation incentives also exist: receiving systems that absorb small DAC wastewater systems may receive up to $10 million in 0% financing for projects that benefit the receiving system itself.

The State Water Board maintains a dedicated septic to sewer funding page that consolidates eligibility criteria, application steps, and examples of funded projects. Technical Assistance (TA), administered by the Office of Sustainable Water Solutions, plays a critical enabling role for disadvantaged communities by supporting project development, engineering and environmental work, financial analysis, and Technical, Managerial and Financial (TMF) assessments. TA demand is high, and priority is given to service extension and consolidation projects—directly aligning with septic to sewer needs.

Regulatory support comes from the Wastewater Consolidation Program established under Senate Bill (SB) 1215, which empowers Regional Water Boards to facilitate or require consolidation when onsite systems are inadequate. This framework links identification of failing septic systems with coordination among local agencies and access to State Water Board funding tools.

7.2 Proposition 4

Proposition 4 (2024) adds another future funding avenue. Under Public Resources Code §91011, $610 million is designated for State Water Board grants or loans that improve water quality, explicitly including wastewater system consolidation and extension of service to homes currently using inadequate onsite systems. At least 40% of these funds must benefit disadvantaged or vulnerable communities, and certain very small severely disadvantaged communities are exempt from per connection caps.

The mechanism for the use of Proposition 4 funding is through the CWSRF. Half of the total funding for water supply and water quality ($610 million noted above) is made available through the CWSRF for grants and loans to support septic-to-sewer projects, primarily in disadvantaged areas. Should project costs exceed the amount of available Proposition 4 grant funding, the balance may be available through a traditional CWSRF loan.

7.3 Water Infrastructure Finance and Innovation Act (WIFIA)

WIFIA is a federal credit program administered by EPA that provides long-term, low cost loans for eligible water and wastewater projects. EPA describes WIFIA as funding both development-phase activities (e.g., planning, design, environmental review) and construction/rehabilitation/replacement activities for eligible projects.

EPA notes that Letters of Interest (LOIs) may be submitted at any time, and projects are selected based on eligibility, creditworthiness, engineering feasibility, and alignment with program priorities, after which selected projects are invited to submit a full application. WIFIA loans are limited to 49 percent of eligible project costs.

WIFIA interest rates are set at or above comparable U.S. Treasury yields and are locked at execution of the credit agreement. EPA also notes that repayment can be deferred up to five years following substantial completion. Federal requirements apply, including but not limited to the National Environmental Policy Act (NEPA), BABA, Davis Bacon, and EPA will not close a loan and obligate funds prior to completing its NEPA review.

Key considerations (WIFIA):

- Best fit for larger program bundles: WIFIA is typically most effective for larger, creditworthy financing packages (e.g., bundling multiple SSRs or program phases under a common repayment pledge).
- Coordinate environmental pathway: NEPA timing should be integrated with California Environmental Quality Act (CEQA) and project delivery milestones early, particularly if WIFIA is contemplated for construction-phase financing.
- Pairing with CWSRF is allowed: EPA indicates WIFIA can be used with CWSRF loans (with WIFIA up to 49% and CWSRF financing remaining eligible costs).

7.4 California Infrastructure State Revolving Fund (ISRF)

The California I-Bank ISRF program provides direct public financing for eligible infrastructure, including water and wastewater projects. I-Bank states ISRF financing is available from $1 million to $65 million with loan terms up to the useful life of the project and a maximum of 30 years. Public program descriptions emphasize a preliminary review approach and continuous access to the program.

Internal planning materials used for similar wastewater financing strategies highlight ISRF as a potential tool where time certainty is needed and note compliance expectations such as CEQA and state labor requirements, and that interest accrual begins upon loan closing.

Key considerations (ISRF):

- Schedule and gap financing: ISRF can be used to maintain delivery schedules for priority SSRs when annual SRF timing or federal processing becomes a constraint.
- Right-sizing: ISRF can be meaningful for discrete phases or SSR groupings within a broader capital stack (especially where total program costs exceed a single-loan approach).
- Prepare CEQA and financing package early: Early project definition supports faster movement through preliminary review to full application, consistent with how ISRF is commonly pursued.

TABLE 23: SUMMARY OF FUNDING AND FINANCING TOOLS

Program	Typical Eligible Use (for this Study Update)	Typical Amounts	Interest Rate / Term	Environmental / Labor Requirements
CWSRF	Wastewater treatment plants and sewer system projects	State Water Board indicates capability from < $1M to > $50M	Interest rate is ½ of most recent GO bond rate; common term 30 years	Federal requirements can apply, including BABA and Davis Bacon during bidding/construction
Prop. 4	Wastewater service extension to residences currently served by inadequate onsite sewer treatment systems	Up to $30M	Non-repayable grant	CEQA and state labor standards; federal requirements will apply if combined with a CWSRF loan
WIFIA	Development-phase (planning/design/ environmental review) and construction/ rehab for eligible water/wastewater projects	Loan limited to 49% of eligible project costs	Rate ≥ comparable U.S. Treasury; repayment may be deferred up to 5 years after substantial completion	Requires compliance with federal laws including BABA, Davis Bacon, and NEPA; EPA will not close a loan prior to completing NEPA review
ISRF	Public infrastructure including water/wastewater improvements	$1M to $65M	Rate ≥ comparable U.S. Treasury; up to 30-year term (useful life)	CEQA and state labor standards, and interest accrues upon loan closing

8. SUMMARY AND NEXT STEPS

The results of this Study Update indicate that there are approximately 18,500 septic systems within the IEUA service area and that conversion of those septic systems comes with a range of costs. The following sections provide a discussion of implementation considerations.

8.1 Implementation Considerations

Any proposed project would need to be consistent with the local jurisdiction's Sewer Master Plan and Sewer Design Criteria. Where new pipe would be managed by IEUA, it would need to follow IEUA's Sewer Master Plan and Sewer Design Criteria. Current considerations are at the planning level and are not intended for design or construction. W&C developed planning level facility and project cost estimates to support CIP and planning needs; agencies will need to further define their projects, conduct hydraulic analysis and then refine these estimates before conversions.

- SCAs to determine which conversion projects, if any, they wish to pursue. Pre-Design Report(s) are needed to move forward with conversions for each SSR
- IEUA to determine if local projects impact regional trunk lines
- IEUA to assist SCA in identifying potential grant opportunities for obtaining grant funding for their local projects
- SCAs to investigate potential impact of septic systems on water quality and update the SSR prioritization as-needed to reflect septic system impacts on water quality
- IEUA to update its sewer model based on updated flows at connection points from SCAs, and update master plan if needed

8.2 Funding and Financing Strategies for Consideration

For IEUA SCAs, the practical next steps could include screening each septic to sewer priority area for small DAC eligibility, using the State Water Board's septic to sewer funding pathways, engaging technical assistance early as needed, potentially structuring consolidation incentive packages for receiving systems, and tracking Proposition 4 implementation as a potentially significant new funding lane.

Consistent with the implementation approach described in **Section 8.1**, the following actions are recommended to move from planning-level results to executable funding/financing packages:

- Develop a phased funding/financing plan by SSR priority. Use the Study Update's prioritization framework (Chapter 6) to recommend prioritization of SSRs to the SCAs that are best suited for near term funding pursuits and that can be packaged into logical project phases.
- Establish "funding readiness" milestones for priority SSRs. For each priority tranche that is recommended, define minimum readiness criteria (e.g., environmental pathway identified; design progression plan; procurement approach) aligned with CWSRF/WIFIA/ISRF expectations described in program sources and similar funding strategies.
- Initiate early coordination calls with each financing agency.
    - For Prop 4 (2024): coordinate with State Water Board program contacts to confirm most appropriate application pathway for sewer extension/conversion projects.

    - For CWSRF: coordinate with State Water Board program contacts to confirm fit and the most appropriate application pathway for sewer extension/conversion projects.
    - For WIFIA: request an initial discussion with EPA WIFIA staff and outline potential program packaging (bundled SSR phases) and the environmental schedule approach.
    - For I-Bank ISRF: pursue preliminary review discussions and confirm expected submittal items for candidate phases that may require time certainty.
- Screen for DAC eligibility and affordability tools. Where applicable, evaluate whether project boundaries and benefit documentation support eligibility for principal forgiveness/grant-like features noted by the State Water Board.
- Plan for compliance and delivery requirements early. Incorporate known compliance items into scope, schedule, and cost (e.g., WIFIA NEPA pathway; CWSRF federal construction compliance considerations; ISRF CEQA and state labor compliance considerations identified in similar financing strategies).
- Provide information to the SCAs that allows them to develop a preferred "capital stack" by tranche. For each tranche, identify the intended mix (e.g., CWSRF primary financing; WIFIA supplemental up to its share; ISRF gap financing for schedule certainty) consistent with program constraints stated in sources.

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APPENDIX A: 2018 SEPTIC SYSTEM CONVERSION FEASIBILITY STUDY

Inland Empire Utilities Agency Septic System Conversion Feasibility Study

Final

Prepared by:

WOODARD &CURRAN

July 2018

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Appendices

Appendix A - SSR Fact Sheets

List of Abbreviations

AACE International	Association for the Advancement of Cost Engineering International
CVWD	Cucamonga Valley Water District
DAC	Disadvantaged community
IEUA	Inland Empire Utilities Agency
OTWS Policy	Onsite Wastewater Treatment System Policy
RWQCB	Regional Water Quality Control Board
SSR	Sewer Service Region
SWRCB	State Water Resources Control Board
VCP	Vitrified Clay Pipe

Chapter 1 Introduction

The Inland Empire Utilities Agency (IEUA) serves approximately 875,000 people over 242 square miles in western San Bernardino County as their regional wastewater treatment agency and imported water wholesale distributor. IEUA main services are imported water; collection and treatment of wastewater; production of recycled water, compost and energy; and promotion of sustainable use of groundwater and development of local water supplies.

Currently, IEUA member agencies include:

City of Chino

City of Chino Hills

Cucamonga Valley Water District (CVWD)

City of Fontana

City of Montclair

City of Ontario

City of Upland

Fontana Water Company

Monte Vista Water District

IEUA provides sewage utility services under the Chino Basin Regional Sewage Service Contract (Regional Contract) to the following cities: Chino, Chino Hills, Fontana, Montclair, Ontario, Upland, and Cucamonga Valley Water District (CVWD) in Rancho Cucamonga.

The purpose of this study is to identify septic system parcels in the IEUA service area, group those parcels to determine the costs required for conversion to the sewer system, and prioritize opportunities based on a set of criteria. The concentration of septic parcels is grouped into Sewer Service Regions (SSRs) and the prioritization of SSRs create a path forward for IEUA and member agencies to address cost-effective septic-to-sewer retrofits. The study prioritizes the SSRs based on criteria that can improve grant funding success, including service to disadvantaged communities (DACs), meeting multiple benefits (i.e. new stormwater infrastructure), likelihood of septic system failure, conditions not suitable for septic system function, and ease of conversion. It also allows for IEUA and member agencies to easily determine what infrastructure exists that could support conversion of septic systems to sewer service.

The study also considers the current regulations and policies that are established by the SWRCB, RWQCB, and San Bernardino County. Specifically, the SWRCB's OWTS Policy which establishes statewide standards for the siting, design, operation, and maintenance of septic systems was considered during the ranking and prioritization of the SSRs.

The study is not intended to have member agencies or any local agencies which have established Local Agency Management Programs (LAMPs) to immediately initiate septic to sewer conversions. The results of this study are intended to provide a planning document for the member agencies within IEUA's service area. The document can be used as a tool by those interested member agencies for further planning and considerations of septic systems to sewer conversions within their respective service areas.

The remainder of this Study is organized as follows:

- Chapter 2: Septic System Identification and Sewer Service Region Development
- Chapter 3: Potential Sewer Facilities

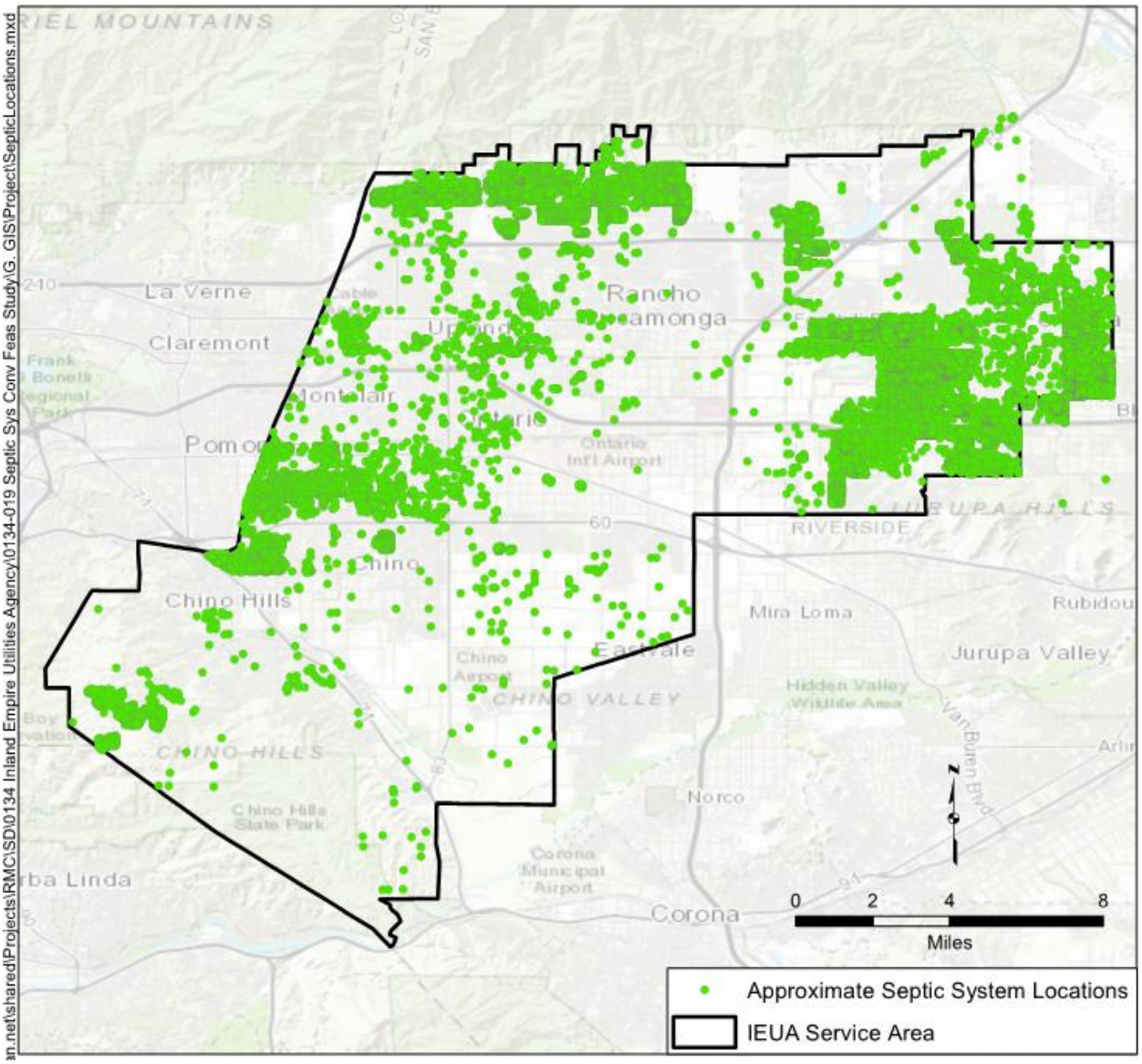
- Chapter 4: SSR Conversion Cost Estimates
- Chapter 5: SSR Cost Benefit Analysis
- Chapter 6: Summary and Next Steps

Chapter 2 Septic System Identification and Sewer Service Region Development

There are approximately 21,800 septic systems within IEUA's service area. The process used to identify the locations of septic systems involved first obtaining a shapefile of potential parcels with septic systems (provided by IEUA) and from member agencies with septic system location data available. The two datasets were compared to remove any duplicates, then provided to member agencies to confirm the septic system locations. Member agencies comments on septic system locations were then incorporated into the dataset. The approximate locations of septic systems are based on address, and are not intended to represent the exact locations of septic systems.

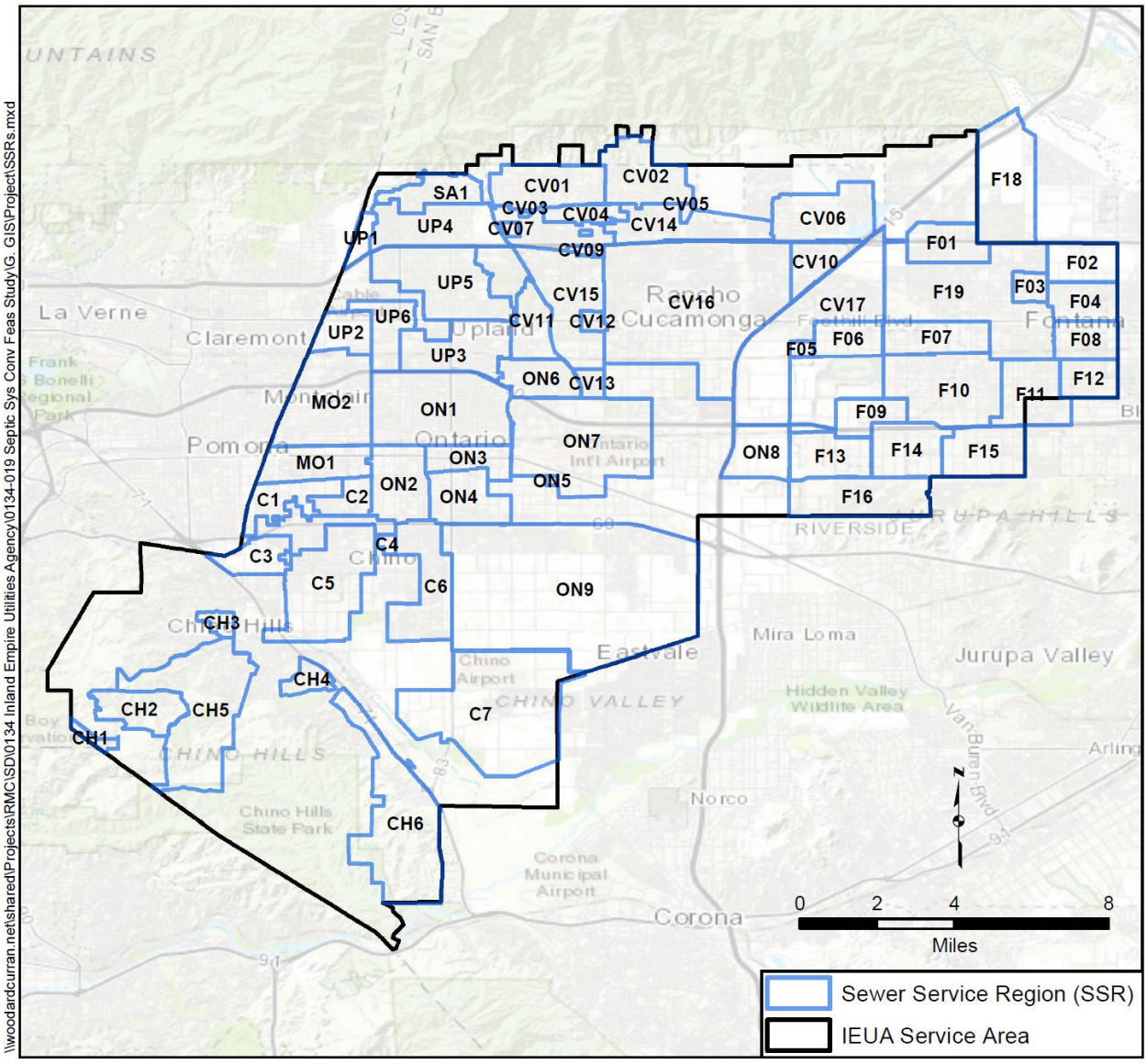
Figure 1 shows the general location of septic systems in the IEUA service area. Detailed maps that show local streets and member agency boundaries are provided in Appendix A.

Figure 1: Septic System Locations



Sewer Service Regions (SSRs) were delineated using several considerations, including: densities of septic systems, physical boundaries (such as waterways or roads), parcel boundaries, and political boundaries (such as member agency boundaries, city boundaries or census block groups). Use of these considerations led to development of SSRs that, while irregular in shape and size, have SSR boundaries that can define discrete areas of septic systems. The SSR boundary maps were provided to member agencies and comments on the boundaries were incorporated into the final SSR boundaries map, shown in Figure 2. Detailed maps of the SSRs are provided in Appendix A.

Figure 2: SSR Boundaries



Chapter 3 Potential Sewer Facilities

A high-level analysis was conducted to evaluate the cost of potential new or improved sewer needs to convert the septic systems within each SSR to public sewer so that adequate CIP budgets could be identified in the future. In addition to identifying costs, a high-level review of existing sewer master plans was performed to determine if sewer systems may be impacted by wastewater flow from septic systems. The second step involved developing potential pipeline alignments and identifying additional facility needs to serve parcels currently using septic systems based on a set of planning-level assumptions.

3.1 Potential Impact to IEUA's Existing Sewer System

In general, adding parcels to any sewer system has impacts to both the conveyance system and the treatment plants. The cost of these impacts to IEUA's system is covered by the IEUA sewer connection fee. Therefore, one IEUA sewer connection fee for each converted septic parcel has been added to the cost estimates.

The IEUA Master Plan[1] was examined to determine which interceptors might be impacted by converting existing septic parcels to sewered parcels. In general, IEUA's collection system is expected to have adequate capacity to convey existing peak wastewater flows for its entire service area, with one exception. According to the IEUA Master Plan, the 30-inch Montclair Interceptor currently has portions that are deficient for existing and future flow conditions. There are thousands of septic systems upstream of the Montclair Interceptor. As part of the next phase of this project, IEUA should determine the timing of Montclair Interceptor improvements with respect to the timing of upstream septic conversions.

The Master Plan states that buildout flow projections (year 2060) were developed using population, employment, and land use information[2]. Using these factors would indicate that the projected buildout flows assume that all existing septic parcels are converted to sewered parcels and generate flow conveyed by the IEUA interceptor system to the wastewater treatment plants. Therefore, other than the deficient pipe described in the previous paragraph, no other interceptors are identified as deficient due to the septic conversion.

3.2 Potential Impact to Member Agencies' Existing Sewer Systems

To assess potential capacity impacts of connecting parcels on septic systems to the member agencies' existing sewers, each agency's Sanitary Sewer Master Plan was reviewed to determine if the sewer capacity analysis within the plans included the additional flow from septic system conversions. If these septic flows were included, then these Master Plans were used to determine if an SSR would connect to an identified capacity deficient sewer. Other factors considered when connecting septic flows to existing sewers included existing pipe sizes, ground elevation slopes, and any known pipe capacity deficiencies; these factors were all analyzed as part of the proposed sewer configurations.

City of Chino

The City of Chino's 1993 Sewer Master Plan was reviewed to assess potential impacts of connecting septic systems to the existing sewer system. The future buildout capacity analysis within the plan is unclear as to whether it considers a future buildout that includes accepting wastewater flows from parcels on septic systems (unsewered) flows into their existing collection system. There is mention of an ultimate future buildout, but this may only be considering future developments, and not existing parcels with septic systems. During the analysis, one connection point was listed in the City of Chino's wastewater master plan

[1] IEUA Wastewater Facilities Master Plan, TM 3 Regional Trunk Sewer Analysis dated August 18, 2014 prepared by Carollo Engineers.
[2] IEUA Wastewater Facilities Master Plan, Section 4 of TM 4 Wastewater Flow Loading Forecast, dated August 21, 2014 prepared by CH2M Hill.

as being at capacity, as well as several other areas that have the potential to exceed existing capacity (see Table 1).

Impacts to existing sewers may be mitigated by changing the proposed sewer alignments to pipes with more capacity or adding a new connection to the IEUA interceptor. Further detailed hydraulic analysis, including discussion with agency personnel, should be performed in the next phase of the project to determine if any impacts would occur at these locations by adding additional sewer flows from septic systems. The construction cost for these potential improvements is included in the SSR construction costs estimate.

Table 1: Potential Sewer Capacity Deficiencies in the City of Chino

Capacity Deficiency	Location of Issue	Number of Upstream Septic Systems	Deficiency Identified in Master Plan?	SSR	Assumed Improvements to Existing Sewers
Existing Sewer at Capacity	Chino Avenue from Pipeline to Ramona	126	Yes	C3 & C5	2,400 feet of existing 18-inch upsized to 21-inch.
Potential Capacity Deficiency	Philadelphia Street at Roswell Ave	223	No	C1	1,900 feet of existing 10-inch upsized to 12-inch.
Potential Capacity Deficiency	Francis Avenue at Monte Vista Avenue	54	No	C1	N/A – new connection will be made to 30-inch Interceptor.
Potential Capacity Deficiency	Riverside Drove at East End Avenue	102	No	C3	N/A – new connection will be made to 30-inch Interceptor.
Potential Capacity Deficiency	Roswell Avenue at Pamela and Christina Road	146	No	C3	400 feet of existing 8-inch upsized to 10-inch; 900 feet of existing 8-inch upsized into 12-inch.
Potential Capacity Deficiency	Vernon Avenue at Locust Street	65	No	C2	1000 feet of existing 8-inch upsized to 12-inch; 1,300 feet of 15-inch relief sewer paralleling existing 8-inch.

City of Chino Hills

The City of Chino Hills' 2005 Water, Recycled Water and Sewer Master Plan was reviewed to assess potential impacts of connecting septic systems to the existing sewer system. The future buildout capacity analysis within this plan includes accepting wastewater flows from parcels on septic systems (unsewered) flows into their collection system. Since no new projects associated with upsizing existing sewers were identified, no new construction costs were added to the SSR construction cost estimate because these costs have already been identified.

Cucamonga Valley Water District (CVWD)

CVWD's 2003 Wastewater System Master Plan was reviewed to assess potential impacts of connecting septic systems to the existing sewer system. The future buildout capacity analysis within this plan includes accepting wastewater flows from parcels on septic systems (unsewered) flows into their collection system. Since no new projects associated with upsizing existing sewers were identified, no new construction costs were added to the SSR construction cost estimate because these costs have already been identified.

City of Fontana

The City of Fontana's 2013 Sewer System Master Plan was reviewed to assess potential impacts of connecting septic systems to the existing sewer system. The future buildout capacity analysis within this plan includes accepting wastewater flows from parcels on septic systems (unsewered) flows into their existing collection system. Since no new projects associated with upsizing existing sewers were identified, no new construction costs were added to the SSR construction cost estimate because these costs have already been identified.

City of Montclair

The City of Montclair's Draft 2017 Sewer Master Plan was reviewed to assess potential impacts of connecting septic systems to the existing sewer system. The future buildout capacity analysis within this plan includes accepting wastewater flows from parcels on septic systems (unsewered) flows into their existing collection system. Since no new projects associated with upsizing existing sewers were identified, no new construction costs were added to the SSR construction cost estimate because these costs have already been identified.

City of Ontario

The City of Ontario's 2012 Sewer Master Plan Update (Ontario's Master Plan) was reviewed to assess potential impacts of connecting septic systems to the existing sewer system. Ontario's Master Plan identifies existing and future ultimate deficiencies, with the future flows including building out vacant land and connecting development to the existing sewer system. The future buildout capacity analysis within this plan includes accepting wastewater flows from some parcels on septic systems (unsewered) flows into their existing collection system. As the 2012 Sewer Master Plan update did not identify new projects associated with upsizing existing sewers, no new construction costs were added to the SSR construction cost estimate at this time. The City of Ontario has noted that further studies may need to be conducted to identify the impacts of connecting multiple septic systems.

City of Upland

The City of Upland's 2006 Sewer Master Plan Update was reviewed to assess potential impacts of connecting septic systems to the existing sewer system. The future buildout capacity analysis within this plan includes accepting wastewater flows from parcels on septic systems (unsewered) flows into their existing collection system. Since no new projects associated with upsizing existing sewers were identified, no new construction costs were added to the SSR construction cost estimate because these costs have already been identified.

3.3 Proposed Sewer Facilities

In many locations, new sewers would need to be extended to serve the septic parcels. Proposed new sewer facilities were identified and mapped. Note that proposed sewer facilities were developed for costing purposes only, and will require additional engineering studies and design be completed prior to conversion.

3.3.1 Planning Basis

The sewer pipeline alignments were developed to avoid easements and conflicts with private property, and therefore primarily follow roadways. Proposed sewer alignments were chosen to maximize gravity flow and avoid grinder pumps or pump stations, unless necessary. To achieve this, proposed sewers typically follow the surface grade. Avoiding unnecessary mechanical systems is important to lowering a sewer collection system's anticipated operating costs and failure frequency. Alignments followed master plan alignments, where alignment information was available and relevant. Alignments aimed to follow sewersheds. Where this did not appear feasible, flows into and out of sewersheds were balanced.

Sewer sizing was based on previous experience in developing sewer master plans, resulting in a required diameter pipe per area served. Sizing is based on the existing septic systems requiring service and is summarized in Table 2. This sizing process is conservative and was selected in order to have a conservative cost estimate. Note that these are assumptions developed for costing purposes only, and that individual agencies have their own design criteria. Final sewer sizing will be determined during the preliminary design phase of the project.

Table 2: Pipeline Sizing Assumptions based on Area Served

Diameter of Pipe	Area Served
8-inch	0 acres to 50 acres
10-inch	50 acres to 75 acres
12-inch	75 acres to 100 acres
15-inch	100 acres to 200 acres

Note: These are assumptions used for costing purposes only. Each agency or city providing wastewater service has their own design criteria.

Exceptions were made when the master plan indicated a different approach. In steeply sloped areas, specifically in Cucamonga Valley Water District's service area, smaller diameter sewers provide sufficient capacity due to the steeper pipe slopes, which are greater than minimum design slopes.

Pump stations and force mains were located where wastewater could not be conveyed via gravity. Additional analysis would be needed to select the actual sites. Also, as vacant land is developed, and new road alignments are selected, it may be possible to use these proposed road alignments as alignments for proposed gravity sewers and eliminate the need for pump stations.

The cost for grinder pumps was added to parcels where the topography sloped away from the road and it was assumed that the parcel could not be served via gravity. A new grinder pump would be placed in the existing septic tank and the septic tank converted to a wetwell. A small diameter discharge pipe would extend from the grinder pump to the gravity sewer in the street. During the predesign phase it may be possible to locate the sewer in the street at a depth where a grinder pump is not necessary. Trenchless crossings were assumed to be necessary where pipelines will cross railroads, freeways, and flood control channels. Crossing lengths were determined based on aerial photographs.

3.3.2 SSR Infrastructure Descriptions

The following infrastructure descriptions are excerpted from the SSR Fact Sheets, which can be found in Appendix A, and include maps that depict the pipeline alignments of existing and proposed sewers and additional necessary facilities. For all required improvements and costs, please see the Cost sheets, also found in Appendix A.

City of Chino

The following list describes the new facilities and improvements to existing facilities that are needed to serve all parcels currently on septic systems with wastewater service within the City of Chino.

- **C1:** 60,400 feet of new mainline sewer (1,300 feet of 15-inch sewer, 1,300 feet of 12-inch sewer, 3,500 feet of 10-inch sewer, and 54,300 feet of 8-inch sewer), 1,900 feet of sewer upsized to 12-inch, and 885 new upper and lower laterals. The proposed sewer design also involves encroachment of parcel boundaries and may require easements.
- **C2:** 12,400 feet of new mainline sewer (1,300 feet of 15-inch sewer and 11,100 feet of 8-inch sewer), 1,300 feet of sewer upsized to 12-inch, and 193 new upper and lower laterals.

- **C3:** 29,900 feet of new mainline sewer (2,100 feet of 10-inch sewer and 27,800 feet of 8-inch sewer), 1,300 feet of sewer upsized (400 feet to 10-inch and 900 feet to 12-inch), 4 pump stations, 2,800 feet of new sewer force main, and 607 new upper and lower laterals. Approximately 130 feet of mainline sewer will require trenchless crossings. The proposed sewer design also involves encroachment of parcel boundaries and may require easements.
- **C4:** No new sewer mains were identified as required for conversion of septic systems in this SSR. It is assumed that 132 new upper and lower laterals will be needed. Parcels on septic systems will connect to the existing sewer system.
- **C5:** No new sewer mains were identified as required for conversion of septic systems in this SSR. It is assumed that 53 new upper and lower laterals will be needed. Parcels on septic systems will connect to the existing sewer system.
- **C6:** No new sewer mains were identified as required for conversion of septic systems in this SSR. It is assumed that 6 new upper and lower laterals will be needed. Parcels on septic systems will connect to the existing sewer system.
- **C7:** 13,900 feet of new mainline sewer (7,400 feet of 12-inch sewer and 6,500 feet of 8-inch sewer), 1 pump station, 2 grinder pumps (with 5,200 feet of 2-inch force main in-lieu of laterals), 5,200 feet of new sewer force main, and 19 new upper and lower laterals.

City of Chino Hills

The following list describes the new facilities and improvements to existing facilities that are needed to serve all parcels currently on septic systems with wastewater service within the City of Chino Hills.

- **CH1:** 19,100 feet of new mainline sewer (2,300 feet of 10-inch sewer and 16,800 feet of 8-inch sewer), 2 pump stations, 3,400 feet of new sewer force main, and 159 new upper and lower laterals.
- **CH2:** 48,900 feet of new mainline sewer (3,400 feet of 15-inch sewer, 3,500 feet of 12-inch sewer, 4,000 feet of 10-inch sewer, and 38,000 feet of 8-inch sewer), 10 pump stations, 5,300 feet of new sewer force main and 445 new upper and lower laterals. It may be possible to eliminate a pump station on Esquiline Drive and the associated force main by having a sewer cross a parcel.
- **CH3:** 2,400 feet of new mainline sewer (2,400 feet of 8-inch sewer) and 20 new upper and lower laterals.
- **CH4:** No new sewer mains were identified as required for conversion of septic systems in this SSR. Parcels on septic systems will connect to the existing sewer system. It is assumed that 24 new upper and lower laterals will be needed.
- **CH5:** No new sewer mains were identified as required for conversion of septic systems in this SSR. Parcels on septic systems will connect to the existing sewer system. It is assumed that 21 new upper and lower laterals will be needed.
- **CH6:** 200 feet of new mainline sewer (200 feet of 8-inch sewer), 1 pump station, 5,400 feet of new sewer force main, and 20 new upper and lower laterals.

CVWD

The following list describes the new facilities and improvements to existing facilities that are needed to serve all parcels currently on septic systems with wastewater service within the CVWD service area.

- **CV01:** 119,290 feet of new mainline sewer (119,290 feet of 8-inch sewer) and 1,487 new upper and lower laterals. Approximately 810 feet of mainline sewer will require trenchless crossings.

The proposed sewer design also involves encroachment of parcel boundaries and may require easements.

- **CV02:** 120,610 feet of new mainline sewer (120,610 feet of 8-inch sewer), 12 pump stations, 6,200 feet of new sewer force main, and 1,226 new upper and lower laterals. Approximately 390 feet of mainline sewer will require trenchless crossings. The proposed sewer design also involves encroachment of parcel boundaries and may require easements.
- **CV03:** 1,500 feet of new mainline sewer (1,500 feet of 8-inch sewer) and 31 new upper and lower laterals.
- **CV04:** 38,200 feet of new mainline sewer (300 feet of 12-inch sewer and 37,900 feet of 8-inch sewer), 1 pump station, 600 feet of new sewer force main, and 576 new upper and lower laterals.
- **CV05:** 10,390 feet of new mainline sewer (10,390 feet of 8-inch sewer) and 206 new upper and lower laterals. Approximately 110 feet of mainline sewer will require trenchless crossings.
- **CV06:** 28,200 feet of new mainline sewer (500 feet of 12-inch sewer, 500 feet of 10-inch sewer, and 27,200 feet of 8-inch sewer) and 308 new upper and lower laterals.
- **CV07:** 6,400 feet of new mainline sewer (6,400 feet of 8-inch sewer), 2 pump stations, 2,400 feet of new sewer force main, and 112 new upper and lower laterals.
- **CV08:** 1,300 feet of new mainline sewer (1,300 feet of 8-inch sewer) and 26 new upper and lower laterals.
- **CV09:** 3,100 feet of new mainline sewer (3,100 feet of 8-inch sewer) and 66 new upper and lower laterals.
- **CV10:** 17,500 feet of new mainline sewer (1,300 feet of 10-inch sewer and 16,200 feet of 8-inch sewer) and 279 new upper and lower laterals.
- **CV11:** 9,700 feet of new mainline sewer (9,700 feet of 8-inch sewer), 2 pump stations, 1,200 feet of new sewer force main, and 208 new upper and lower laterals.
- **CV12:** 100 feet of new mainline sewer (100 feet of 8-inch sewer) and 14 new upper and lower laterals.
- **CV13:** 400 feet of new mainline sewer (400 feet of 8-inch sewer) and 20 new upper and lower laterals.
- **CV14:** 3,300 feet of new mainline sewer (3,300 feet of 8-inch sewer) and 18 new upper and lower laterals.
- **CV15:** 2,400 feet of new mainline sewer (2,400 feet of 8-inch sewer) and 35 new upper and lower laterals.
- **CV16:** 1,300 feet of new mainline sewer (1,300 feet of 8-inch sewer) and 28 new upper and lower laterals.
- **CV17:** 1,200 feet of new mainline sewer (1,200 feet of 8-inch sewer) and 26 new upper and lower laterals.

City of Fontana

The following list describes the new facilities and improvements to existing facilities that are needed to serve all parcels currently on septic systems with wastewater service within the City of Fontana. Note that F17 is purposefully omitted based on comments on earlier deliverables.

- **F01:** 10,700 feet of new mainline sewer (1,300 feet of 10-inch sewer and 9,400 feet of 8-inch sewer), 3 pump stations, 2,900 feet of new sewer force main, and 274 new upper and lower laterals.

- **F02:** 17,900 feet of new mainline sewer (4,800 feet of 15-inch sewer, 8,100 feet of 10-inch sewer, and 5,000 feet of 8-inch sewer) and 58 new upper and lower laterals.
- **F03:** 6,400 feet of new mainline sewer (6,400 feet of 8-inch sewer) and 120 new upper and lower laterals. The proposed sewer design also involves encroachment of parcel boundaries and may require easements.
- **F04:** 23,800 feet of new mainline sewer (2,700 feet of 15-inch sewer and 21,100 feet of 8-inch sewer) and 638 new upper and lower laterals.
- **F05:** 5,500 feet of new mainline sewer (5,500 feet of 8-inch sewer) and 50 new upper and lower laterals.
- **F06:** 56,300 feet of new mainline sewer (7,700 feet of 15-inch sewer, 1,000 feet of 12-inch sewer, 7,600 feet of 10-inch sewer, and 40,000 feet of 8-inch sewer), 2 pump stations, 3,900 feet of new sewer force main, and 936 new upper and lower laterals.
- **F07:** 81,900 feet of new mainline sewer (500 feet of 36-inch sewer, 2,500 feet of 27-inch sewer, 9,300 feet of 21-inch sewer, 2,100 ft of 15-inch sewer, 2,000 feet of 12-inch sewer, 5,100 feet of 10-inch sewer, and 60,400 feet of 8-inch sewer) and 1,131 new upper and lower laterals. A number of these lines correspond with planned lines in the Fontana Sewer Master Plan and were sized based on the plan.
- **F08:** 37,650 feet of new mainline sewer (1,300 feet of 12-inch sewer, 1,100 feet of 10-inch sewer, and 35,250 feet of 8-inch sewer) and 916 new upper and lower laterals. Approximately 150 feet of mainline sewer will require trenchless crossings.
- **F09:** 21,000 feet of new mainline sewer (700 feet of 12-inch sewer, 500 feet of 10-inch sewer and 19,800 feet of 8-inch sewer), 2 pump stations, 7,600 feet of new sewer force main, and 467 new upper and lower laterals. Approximately 800 feet of mainline sewer will require trenchless crossings.
- **F10:** 139,100 feet of new mainline sewer (9,100 feet of 21-inch sewer, 3,700 feet of 15-inch sewer, 5,300 feet of 12-inch sewer, 5,300 feet of 10-inch sewer, and 115,700 feet of 8-inch sewer), 4 pump stations, 3,000 feet of new sewer force main, and 3,700 new upper and lower laterals. The pump stations on Morning Glory Place and Papaya Place off Randall Avenue may not be needed, depending on the depth of the existing sewer and the depth of the laterals on the south end of the street. There are numerous industrial/commercial parcels that did not correspond with building locations. Where these appeared to be a compound or continuous facility, the parcels were considered combined when determining the need for an 8-inch adjacent sewer line.
- **F11:** 17,700 feet of new mainline sewer (17,700 feet of 8-inch sewer), 1 pump station, 900 feet of new sewer force main, and 645 new upper and lower laterals. The proposed sewer design involves encroachment of parcel boundaries and would require easements.
- **F12:** 56,800 feet of new mainline sewer (600 feet of 12-inch sewer, 2,200 feet of 10-inch sewer, and 54,000 feet of 8-inch sewer), 2 pump stations, 3,800 feet of new sewer force main, and 1,149 new upper and lower laterals. The pump station and force main at Randall Ave and Locust Ave can be removed and flow can be directed south if the downstream sewer infrastructure has sufficient capacity.
- **F13:** 21,300 feet of new mainline sewer (1,300 feet of 15-inch sewer, 2,600 feet of 12-inch sewer, and 17,400 feet of 8-inch sewer) and 241 new upper and lower laterals.
- **F14:** 34,670 feet of new mainline sewer (5,500 feet of 15-inch sewer, 8,570 feet of 12-inch sewer, 1,300 feet of 10-inch sewer, and 19,300 feet of 8-inch sewer), 1 pump station, 1,200 feet of new sewer force main, and 372 new upper and lower laterals. Approximately 430 feet of mainline sewer will require trenchless crossings.

- **F15:** 34,000 feet of new mainline sewer (2,700 feet of 10-inch sewer and 31,300 feet of 8-inch sewer) and 485 new upper and lower laterals.
- **F16:** 11,300 feet of new mainline sewer (11,300 feet of 8-inch sewer) and 132 new upper and lower laterals.
- **F18:** 33,800 feet of new mainline sewer (1,500 feet of 18-inch sewer, 5,400 of 15-inch sewer, 6,700 feet of 12-inch sewer, and 20,200 feet of 8-inch sewer) and 35 new upper and lower laterals.
- **F19:** 10,700 feet of new mainline sewer (10,700 feet of 8-inch sewer) and 417 new upper and lower laterals.

City of Montclair

- **MO1:** 23,100 feet of new mainline sewer (1,300 feet of 10-inch sewer and 21,800 feet of 8-inch sewer) and 463 new upper and lower laterals. The proposed sewer design involves encroachment of parcel boundaries and would require at least one easement.
- **MO2:** 1,500 feet of new mainline sewer (1,500 feet of 8-inch sewer) and 48 new upper and lower laterals.

City of Ontario

- **ON1:** 700 feet of new mainline sewer (700 feet of 8-inch sewer) and 86 new upper and lower laterals.
- **ON2:** 2,900 feet of new mainline sewer (2,900 feet of 8-inch sewer) and 292 new upper and lower laterals.
- **ON3:** 700 feet of new mainline sewer (700 feet of 8-inch sewer) and 50 new upper and lower laterals.
- **ON4:** 700 feet of new mainline sewer (700 feet of 8-inch sewer) and 78 new upper and lower laterals.
- **ON5:** 500 feet of new mainline sewer (500 feet of 8-inch sewer) and 5 new upper and lower laterals.
- **ON6:** 500 feet of new mainline sewer (500 feet of 8-inch sewer) and 18 new upper and lower laterals.
- **ON7:** No new sewer mains were identified as required for conversion of septic systems in this SSR. It is assumed that 21 new upper and lower laterals will be needed. Parcels on septic systems will connect to the existing sewer system.
- **ON8:** No new sewer mains were identified as required for conversion of septic systems in this SSR. It is assumed that 5 new upper and lower laterals will be needed. Parcels on septic systems will connect to the existing sewer system.
- **ON9:** 103,700 feet of new mainline sewer (5,300 feet of 36-inch sewer, 10,500 feet of 30-inch sewer, 4,500 feet of 24-inch sewer, 7,400 feet of 21-inch sewer, 18,600 feet of 18-inch sewer, 21,900 feet of 15-inch sewer, 12,600 feet of 12-inch sewer, and 22,900 feet of 8-inch sewer) and 105 new upper and lower laterals.

San Antonio Heights

- **SA1:** 79,100 feet of new mainline sewer (79,100 feet of 8-inch sewer), 4 pump stations, 3,200 feet of new sewer force main, and 1,201 new upper and lower laterals.

City of Upland

- **UP1:** No new sewer mains were identified as required for conversion of septic systems in this SSR. It is assumed that 1 new upper and lower lateral will be needed. Parcels on septic systems will connect to the existing sewer system.
- **UP2:** 7,100 feet of new mainline sewer (7,100 feet of 8-inch sewer) and 158 new upper and lower laterals.
- **UP3:** 3,900 feet of new mainline sewer (3,900 feet of 8-inch sewer), 1 pump station, 400 feet of new sewer force main, and 147 new upper and lower laterals. The proposed sewer design involves encroachment of parcel boundaries and would require easements.
- **UP4:** 900 feet of new mainline sewer (900 feet of 8-inch sewer) and 51 new upper and lower laterals.
- **UP5:** 700 feet of new mainline sewer (700 feet of 8-inch sewer) and 59 new upper and lower laterals.

Chapter 4 SSR Conversion Cost Estimates

Planning-level cost estimates for conversion of septic systems to sewer were developed for each SSR for the purposes of conducting a cost benefit analysis. The following provides a discussion of the cost estimate approach and assumptions and a summary of the capital cost and unit cost to convert all septic systems within each SSR to sewer.

Cost Estimate Approach and Assumptions

The Association for the Advancement of Cost Engineering International (AACE International) has developed a cost estimate classification system that provides guidelines for applying the general principles of estimate classification to project cost estimates. The five estimate classes are presented in AACE International Recommended Practice No. 18R-97 (Cost Estimate Classification System – As Applied in Engineering, Procurement, and Construction for the Process Industries). The guideline establishes a relationship between the project maturity (i.e., project definition as percent of complete definition) and the accuracy and methodology used to produce the cost estimate. Based on the level of project definition, comparable to project evaluation, the cost estimates developed for the IEUA Septic System Conversion Study are Class 4 as defined by Publication 18R-97.

Table 3 provides a summary of the estimate classes and expected accuracy range. The highlighted row in the table indicates the class under which this Study falls (Class 4). For Class 4 estimates, the expected accuracy range is -15% to -30% on the low end and +20% to +50% on the high end.

Table 3: Cost Estimate Classification Matrix (AACE International)

Estimate Class	Level of Project Definition	Purpose of Estimate	Methodology	Expected Accuracy Range
Class 5	0% to 2%	Concept screening	Capacity factored, parametric models, judgement, or analogy	Low: -20% to -50% High: +30% to +100%
Class 4	1% to 15%	Study or feasibility	Equipment factored or parametric models	Low: -15% to -30% High: +20% to +50%
Class 3	10% to 40%	Budget authorization or control	Semi-detailed unit costs with assembly level line items	Low: -10% to -20% High:+10% to +30%
Class 2	30% to 75%	Control or bid/tender	Detailed unit cost with forced detailed take-off	Low: -5% to -15% High: +5% to +20%
Class 1	65% to 100%	Check estimate or bid/tender	Detailed unit cost with detailed take-cost	Low: -3% to -10% High: +3% to +15%

Source: AACE International Recommended Practice No. 18R-97

For each facilities plan, cost estimates are based on preliminary pipeline alignments and required facilities and include “Total Capital Cost Estimates”. Construction costs were estimated using unit costs developed from past construction projects and industry cost estimate resources (primarily prior project experience and IEUA unit costs). The cost estimate was developed through unit costs applied based on facility items, with variation for gravity sewers depending on diameter of pipe. They also include local costs associated with connecting to the sewer system. The quantities and required facility pieces are based on design performed with GIS software. The design goals were to provide all IEUA parcels on septic systems with a viable sewer connection, to follow existing master plans where applicable, and to include consideration of lift stations.

Cost criteria include baseline unit construction costs for gravity sewers using open-cut methods, upper laterals (lateral from the building structure to the property line), lower laterals (lateral from the property

line to the street), pump stations, force mains, trenchless crossings, grinder pumps, and easements. Costs for gravity trunk sewers vary with pipe diameter. "Pipe bursting" (a trenchless method of replacing buried pipelines) or an equivalent technology is assumed for upsizing projects, which were identified as deficient through the Member Agency's Master Plans. As a simplification, upsizing costs are assumed to be the same as new sewers for a given diameter. Existing sewers that would be upsized as part of the Master Plan are not directly considered in the Study. Their costs should be accounted for in the relevant sewer connection fees from the local agency and IEUA. Pipes that have not been constructed yet, despite being in a Master Plan, are directly considered as they are necessary for completion of work. Construction of new sewers would be open cut; trenchless construction would be required for major crossings (e.g., railroad crossings).

Allowances added to the baseline construction cost are noted in Table 4 and include 5% mobilization/demobilization allowance applied to the Subtotal. A 30% allowance for contingencies for unknown conditions was also included for all projects applied to the Construction Cost Subtotal. An allowance of 25% of construction cost for engineering, administration, and legal costs was applied to the Construction Cost. This is intended to account for engineering/design, construction management, ESDC, internal administrative work at IEUA, and legal costs.

Table 4: Allowances

Item	Percent Adder
Mobilization and Demobilization	5%
Contingency	30%
Engineering, Administration, and Legal Costs	25%

Costs were developed in 2017 dollars and are shown in Table 5.

Table 5: Unit Cost Assumptions

Item	Unit Cost	Units
New Gravity Sewer		
8-inch diameter	$160	$/LF
10-inch diameter	$210	$/LF
12-inch diameter	$264	$/LF
15-inch diameter	$345	$/LF
18-inch diameter	$432	$/LF
21-inch diameter	$525	$/LF
24-inch diameter	$614	$/LF
27-inch diameter	$702	$/LF
30-inch diameter	$792	$/LF
36-inch diameter	$972	$/LF
Force Main	$120	$/LF
Trenchless Crossing	$3,000	$/LF
Septic System Abandonment	$1,000	$/EA
Lower Lateral (lateral from the property line to the street)	$6,000	$/EA
Upper Lateral (lateral from the building structure to the property line)	$6,000	$/EA
Pump Station	$800,000	$/EA
Grinder Pump	$15,000	$/EA
Easements	$20	$/SF

IEUA Sewer Impact Fees and Local Sewer Impact Fees were added to determine the Capital Improvement Cost after application of these allowances. The IEUA Sewer Impact Fee (also known as the Capital Capacity Reimbursement Account [CCRA] fee) is required to be applied to all residential structures with a building permit issued on or after July 1, 1979. For the purposes of this Study, the IEUA Sewer Impact Fee was not applied to those residential properties listed in the County's parcel data with a "base year" prior to 1979. For those residential parcels where base year data was missing or where land use data was missing, it was assumed that the IEUA Sewer Impact Fee would be required.

These construction costs were based on a combination of company experience and IEUA Engineering team's developed unit costs, using National Estimator software. IEUA provided costs for 8-inch, 10-inch, 12-inch and 15-sewer pipeline. For the remaining diameter sewers and facilities, bid results from similar projects were used to determine a unit cost.

Cost Estimate Summary

Table 6 provides a summary of planning-level costs to convert all septic systems within an SSR to sewer. Detailed cost estimates for each SSR are provided with the fact sheets in Appendix A. Unit costs by SSR vary widely, with a low of $23,000 per septic system and a high of $720,00 per septic system. Those SSRs with high unit costs generally require a significant amount of infrastructure in order to connect to a local sewer system and those SSRs with low unit costs generally require only a lateral. In total, it is estimated that conversion of all septic systems to sewer will have a capital cost of approximately $1.2 billion dollars with an average unit cost of $54,000 per septic system. Grant funding may be used to offset these costs, and is discussed further in Chapter 6.

Table 6: SSR Conversion Capital Cost*

SSR	Estimated Total Capital Improvement Cost (2017$)	Unit Capital Cost per Septic System ($/septic system)
C1	$44,086,000	$50,000
C2	$9,816,000	$51,000
C3	$33,406,000	$60,000
C4	$3,859,000	$29,000
C5	$1,495,000	$28,000
C6	$169,000	$28,000
C7	$8,051,000	$420,000
Chino Subtotal	***$100,882,000***	***$53,000***
CH1	$13,434,000	$84,000
CH2	$42,884,000	$96,000
CH3	$1,121,000	$56,000
CH4	$663,000	$28,000
CH5	$545,000	$26,000
CH6	$2,991,000	$150,000
Chino Hills Subtotal	***$61,638,000***	***$89,000***
CV01	$81,152,000	$55,000
CV02	$89,336,000	$73,000
CV03	$1,334,000	$43,000
CV04	$29,154,000	$51,000
CV05	$9,545,000	$46,000
CV06	$16,993,000	$55,000
CV07	$8,310,000	$74,000
CV08	$1,131,000	$43,000
CV09	$2,815,000	$43,000
CV10	$13,180,000	$47,000
CV11	$11,621,000	$56,000
CV12	$401,000	$29,000
CV13	$700,000	$35,000
CV14	$1,432,000	$80,000
CV15	$1,668,000	$48,000
CV16	$1,108,000	$40,000
CV17	$1,028,000	$40,000
Cucamonga Valley Subtotal	***$270,908,000***	***$58,000***
F01	$15,553,000	$57,000
F02	$8,798,000	$150,000

SSR	Estimated Total Capital Improvement Cost (2017$)	Unit Capital Cost per Septic System ($/septic system)
F03	$5,280,000	$44,000
F04	$25,528,000	$40,000
F05	$2,656,000	$53,000
F06	$48,259,000	$52,000
F07	$63,844,000	$56,000
F08	$37,499,000	$41,000
F09	$25,969,000	$56,000
F10	$156,799,000	$42,000
F11	$24,208,000	$38,000
F12	$52,329,000	$46,000
F13	$12,363,000	$51,000
F14	$25,231,000	$68,000
F15	$21,982,000	$45,000
F16	$6,889,000	$52,000
F18	$13,789,000	$394,000
F19	$13,922,000	$33,000
Fontana Subtotal	***$560,898,000***	***$48,000***
MO1	$19,471,000	$42,000
MO2	$1,598,000	$33,000
Montclair Subtotal	***$21,069,000***	***$41,000***
ON1	$2,602,000	$30,000
ON2	$9,345,000	$32,000
ON3	$1,594,000	$32,000
ON4	$2,428,000	$31,000
ON5	$253,000	$51,000
ON6	$658,000	$37,000
ON7	$552,000	$26,000
ON8	$117,000	$23,000
ON9	$75,915,000	$720,000
Ontario Subtotal	***$93,464,000***	***$142,000***
SA1	$63,494,000	$53,000
San Antonio Heights Subtotal	***$63,494,000***	***$53,000***
UP1	$49,000	$49,000
UP2	$6,040,000	$38,000
UP3	$6,826,000	$46,000
UP4	$1,721,000	$34,000

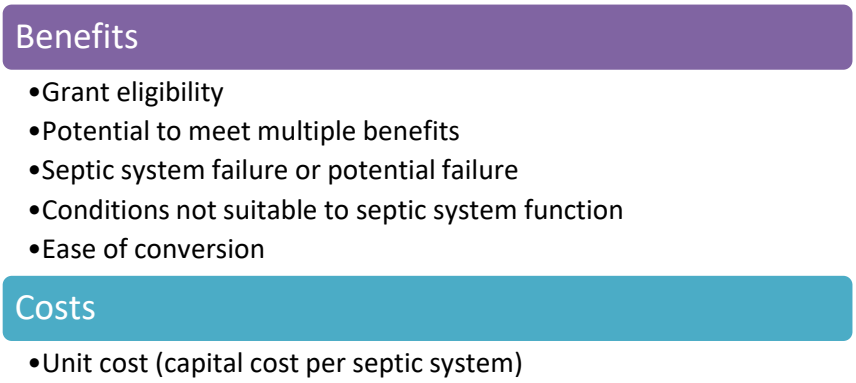
SSR	Estimated Total Capital Improvement Cost (2017$)	Unit Capital Cost per Septic System ($/septic system)
UP5	$1,905,000	$32,000
Upland Subtotal	***$16,541,000***	***$40,000***
Total	**$1,188,894,000**	**$54,000**

*Costs rounded to the nearest $1,000.

Chapter 5 SSR Cost Benefit Analysis

A cost benefit analysis was conducted for the purposes of prioritizing SSRs for conversion. The SSR prioritization process focused on the categories and scoring criteria listed in Figure 3. Specific scoring criteria and score weighting, described below, were developed under each of these general categories to allow for numerical scores to be applied to rank the SSRs. Chapter 5 provides a discussion of the scoring criteria and weightings used to prioritize the SSRS for conversion.

Figure 3: Cost-Benefit Analysis Scoring Categories



5.1 Benefit Scoring

Several criteria were developed to assign a score to the benefits associated with converting septic systems in each SSR to sewer, and were divided into four categories that include: (1) potential to meet multiple benefits, (2) septic system failure or potential failure, (3) conditions not suitable to septic system function, and (4) ease of conversion. Grant eligibility was evaluated, but not included in the prioritization scoring as different grant programs have different priorities. Each scoring criterion consists of a threshold that must be reached to be considered as having "high" potential for helping to meet the criterion. Based on the number of criteria met under each category, a score is given and then weighted according to the priorities of the Study. The following provides a description of each category and criterion, followed by how the categories were scored and weighted.

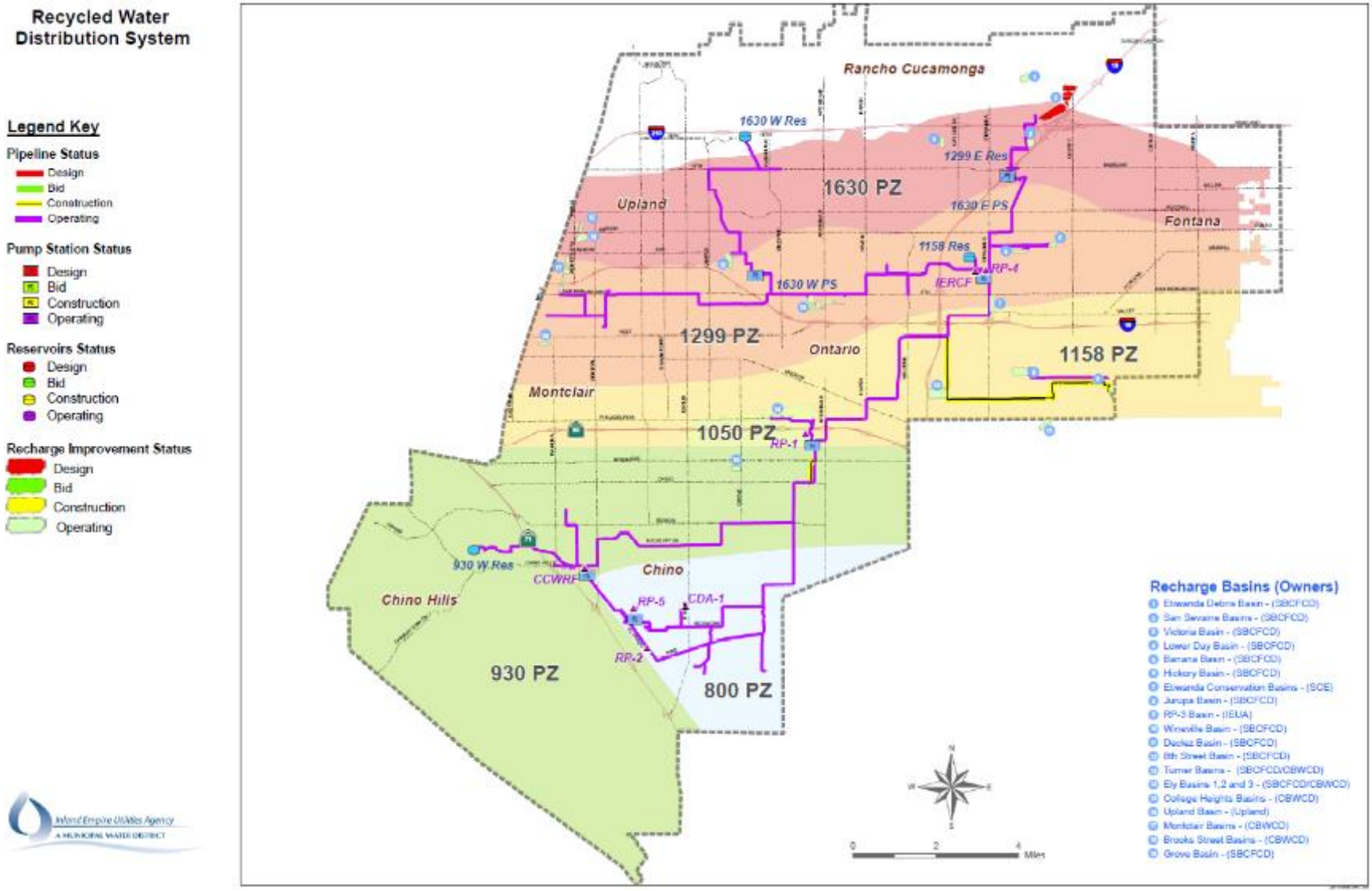
Category 1: Potential to meet multiple benefits

The ability for an SSR conversion project to meet multiple benefits is desirable from the standpoint of both costs and community improvements. Potential opportunities identified for meeting multiple benefits include extension of sewer alongside extension of recycled water pipelines, potential for adding reliability to the existing sewer system, and potential for stormwater management improvements.

Scoring Criterion 1a: Potential to extend sewer alongside extension of recycled water pipelines

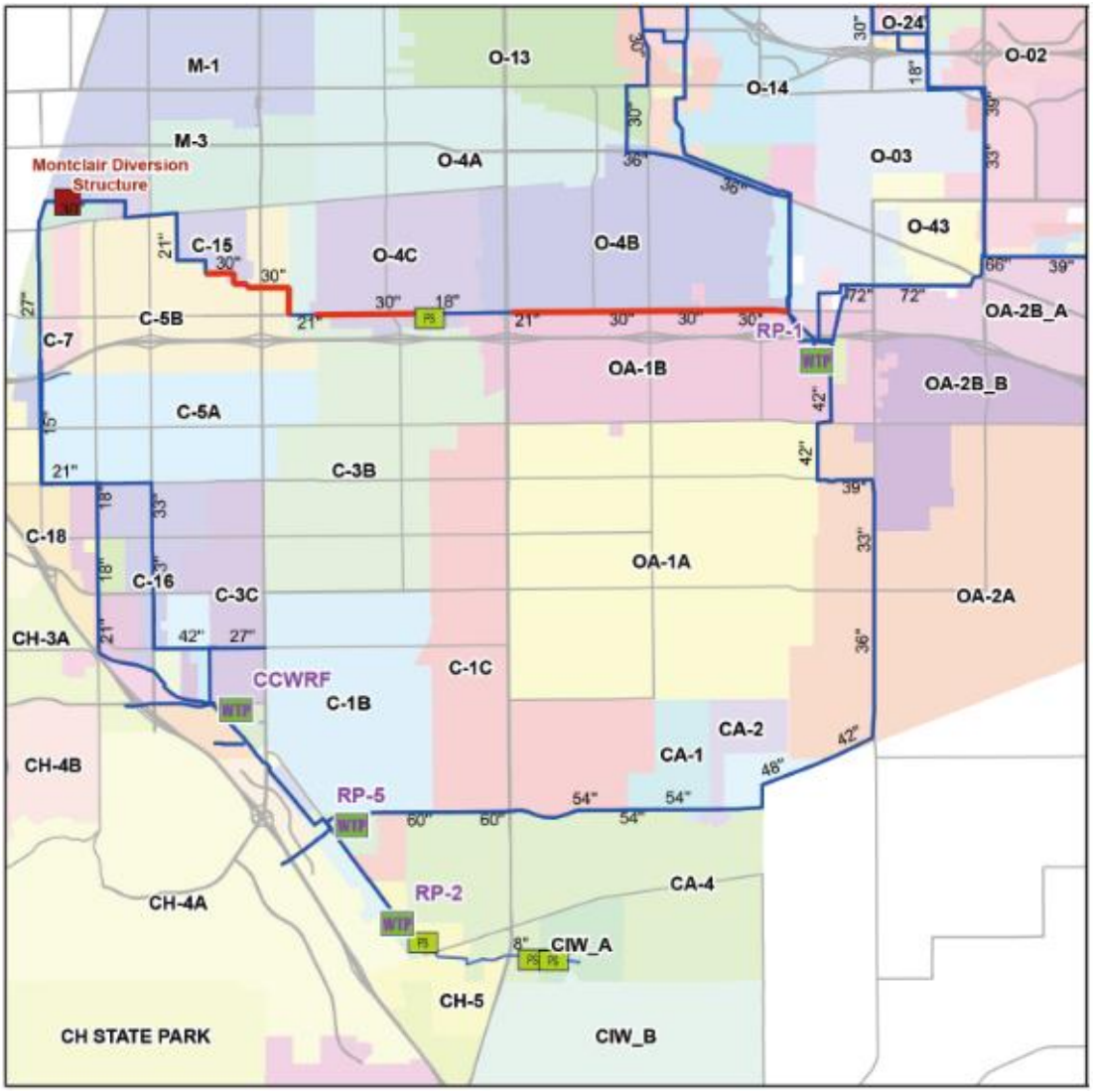
IEUA is working to expand its recycled water system to increase non-potable use of recycled water and increase recycled water recharge. It may be possible to extend sewer pipelines along with recycled water pipelines to allow for streets to be dug only once, which would minimize both cost and neighborhood disturbance. At the time this prioritization was conducted, there were no planned recycled water pipelines (all recycled water pipelines are either operating or under construction, as shown in Figure 4); therefore, this scoring criteria was included as a placeholder only.

Figure 4: Recycled Water Distribution System



Source: IEUA, 2015. https://18x37n2ovtbb3434n48jhbs1-wpengine.netdna-ssl.com/wp-content/uploads/2015/04/RWMap_Master-May-2015.pdf

Figure 5: Potential Areas for System Reliability Improvements (see pipelines in red)



Source: IEUA Wastewater Facilities Master Plan, Technical Memorandum 3 – Regional Trunk Sewer Alternatives Analysis.

Scoring Criterion 1b: Potential to add reliability to the existing sewer system

IEUA has identified a location in its sewer system that has suffered from overflows in the past, and would benefit from upsizing to add system reliability, as shown in Figure 5 as red pipelines. SSRs that overlap the red pipelines are considered to have high potential to add reliability to the existing sewer system as the pipeline could be upgraded at the same time that local sewer pipelines are being constructed.

Scoring Criterion 1c: Potential for stormwater management improvements/LID

Some communities in the IEUA service area do not currently have storm drain systems in place. Those communities that have been included in future storm drain planning may benefit from concurrent construction of storm drain systems and sewer systems as streets would need to be dug only once, which would minimize both cost and neighborhood disturbance. At the time this prioritization was conducted, up-to-date shapefiles of storm drain planning for each member agency was not available; therefore, this scoring criteria was included as a placeholder only.

Category 2: Septic system failure or potential failure

Septic tank failure is typically considered to be a cause of nitrate, phosphate, bacteria, and virus contamination in groundwater, and is therefore a concern that is factored into the SSR prioritization. Septic system failures can also cause a house to be "red-tagged" and be considered uninhabitable.

Scoring Criterion 2a: Septic System failure or potential failure

Currently, there is no history of septic system failure or potential failure in the IEUA service area that might impact groundwater quality; therefore, this scoring criteria was included as a placeholder only. There is potential to prioritize septic systems identified as failed or failing in the future as data becomes available.

Category 3: Conditions not suitable to septic system function

Properly operated and maintained septic systems can be expected to work well under specific situations which are generally considered to be soils with a low clay content, low density of homes, and sufficient distance from wells and surface waters.

Scoring Criterion 3a: Presence of high groundwater table

High groundwater under a septic system can cause soil saturation that impacts a septic system's ability to treat waste; groundwater can also come into contact with untreated wastewater that can further impact water quality. Generally, high groundwater does not pose a concern for septic system function in the IEUA service area, except for the southern-most part of the service area near Prado Dam where groundwater is at the surface, as shown in Figure 6. Those SSRs with septic systems overlying groundwater that is within 20 feet of the surface were given a "high" score.

Scoring Criterion 3b: Presence of poor-draining soil type

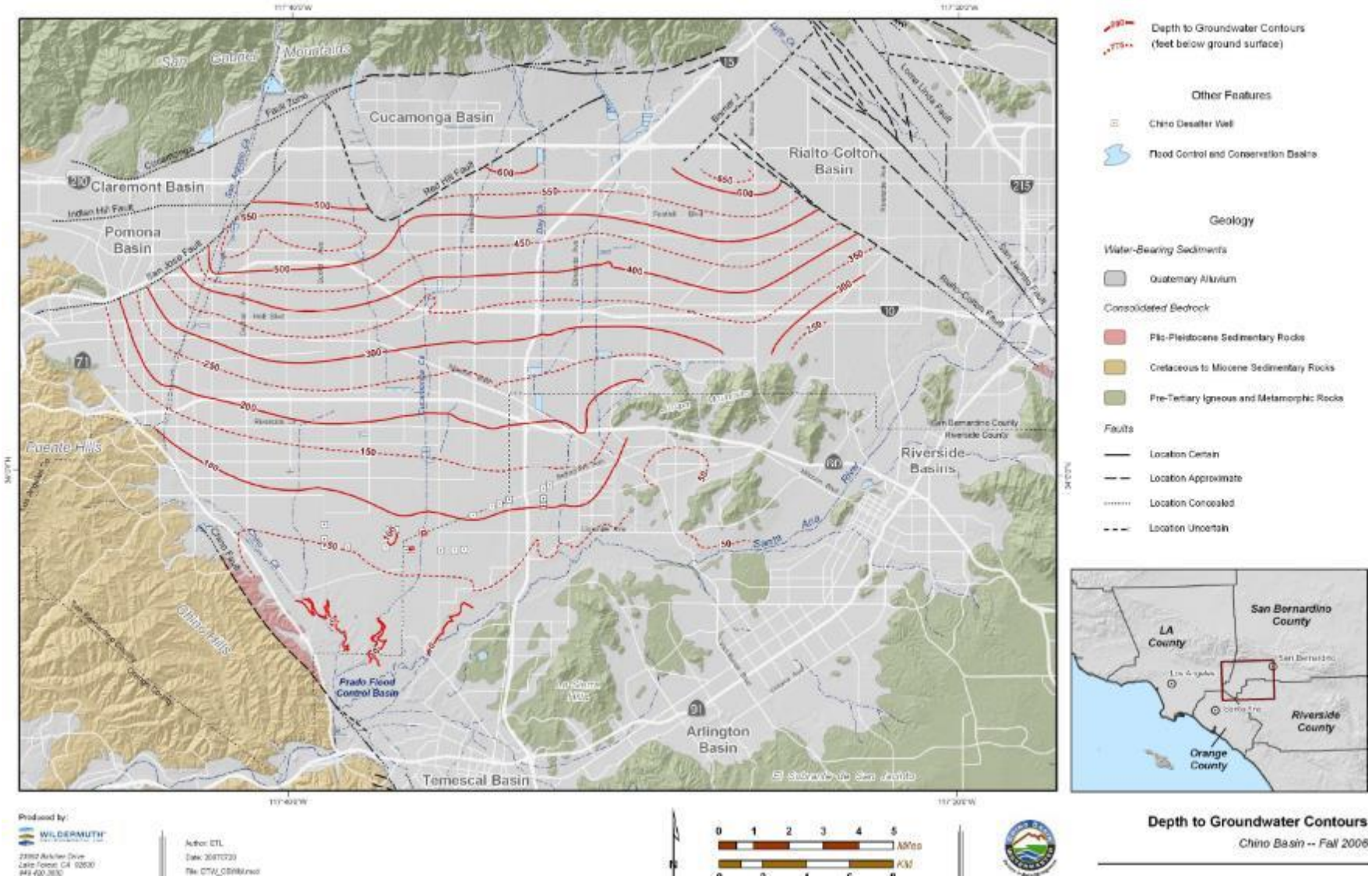
Poorly-draining soils could impede the ability of a septic system to properly treat wastewater as the septic system leach field could become saturated. Desirable soils are typically sandy (though not too coarse), well drained, and undisturbed, while clay soils are made up of very small particles and therefore water moves through the clayey soil very slowly. For the purposes of the SSR prioritization, the hydrologic soil group was used as an indicator of the presence or absence of poorly-draining soil types. Those SSRs with septic systems that overlay hydrologic soil type "D" soils (shown in Figure 7**),** or soils that are primarily clay, received a "high" score.

Scoring Criterion 3c: Proximity to surface water

Septic systems that are too near to streams, rivers, and lakes have the potential to contaminate these local surface waters. The SWRCB recommends establishing protective setbacks from surface waters, wetlands and floodplains to reduce nitrate and phosphate loading, and prevent contamination with bacteria and viruses. In its Onsite Wastewater Treatment System (OWTS) Policy,[3] the SWRCB sets the minimum horizontal setback for septic systems at 100 feet from the banks of springs and flowing surface water bodies. For the purposes of this prioritization, any parcels on septic systems were given a "high" score if they were within 50 feet of local surface water bodies as the specific location of septic systems within each parcel was not assessed.

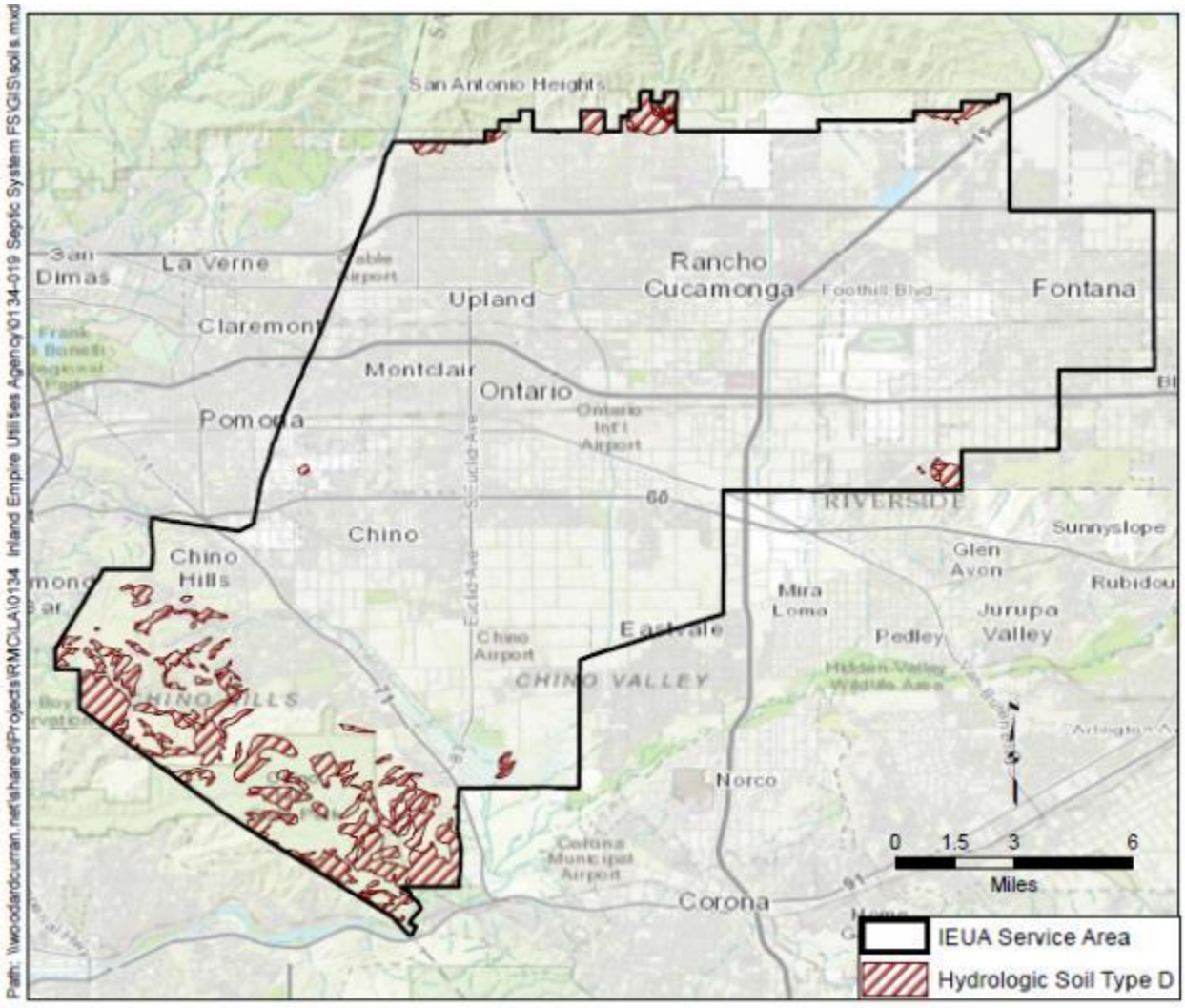
[3] State Water Resources Control Board, 2012. *OWTS Policy Water Quality Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems*. http://www.waterboards.ca.gov/water_issues/programs/owts/docs/owts_policy.pdf

Figure 6: Depth to Groundwater in Chino Basin



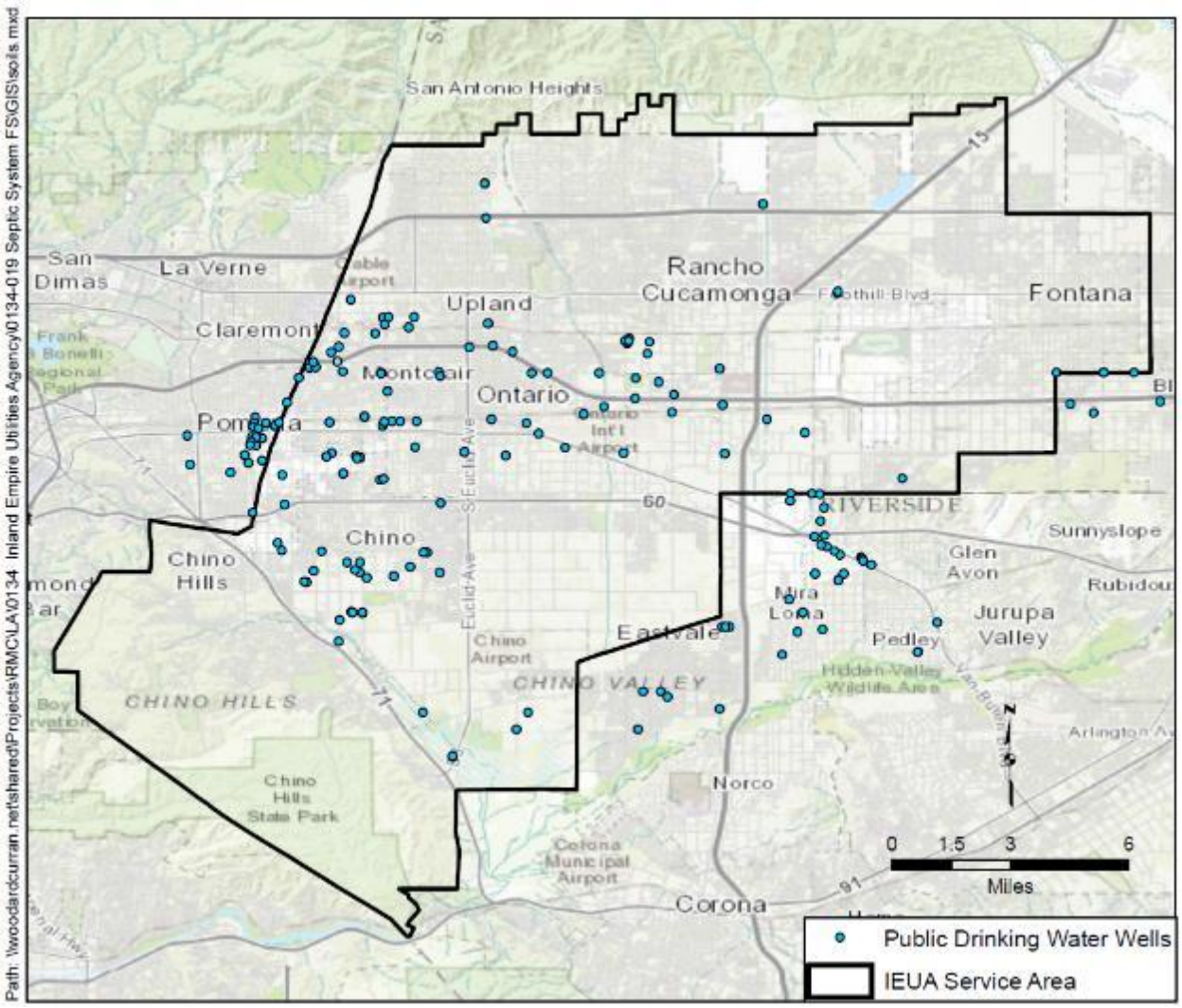
Source: Chino Basin Watermaster, 2007. *Engineering Maps*. http://www.cbwm.org/docs/engdocs/maps/DTW_CBWM.PDF

Figure 7: Hydrologic Soil Type D within IEUA Service Area



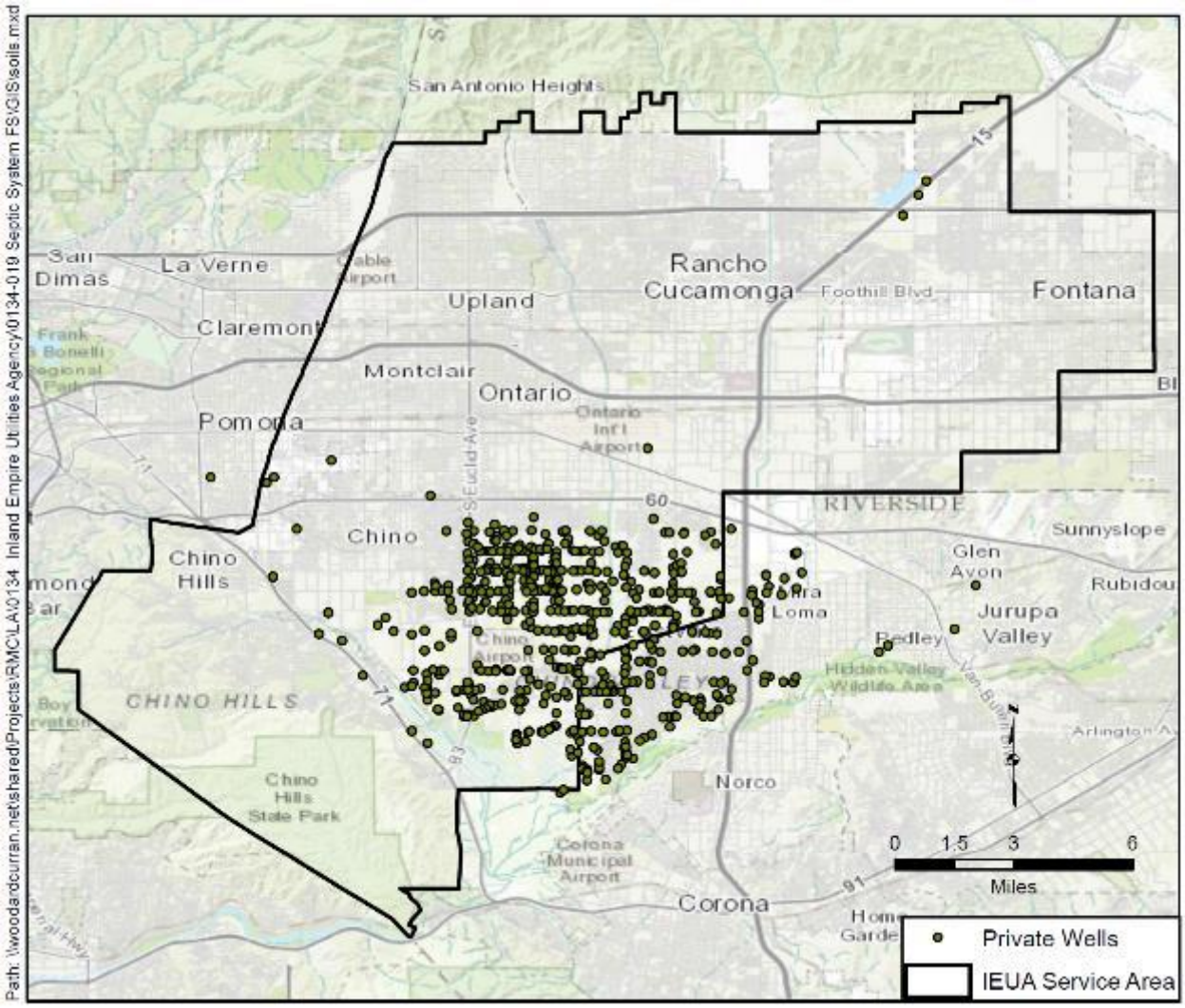
Source: United States Department of Agriculture Natural Resources Conservation Service, 2017. Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

Figure 8: Drinking Water Wells



Source: Map developed with well location data provided by IEUA staff and Chino Basin Watermaster, 2017.

Figure 9: Private Wells



Source: Map developed with well location data provided by Chino Basin Watermaster, 2017.

Scoring Criterion 3d: Proximity to drinking water wells

As with surface waters, septic systems that are too near to drinking water wells have the potential to contaminate drinking water. The SWRCB recommends establishing protective setbacks from wells to reduce nitrate and phosphate loading, and prevent contamination with bacteria and viruses. In its OWTS Policy, the SWRCB sets the minimum horizontal setback for septic systems at 100 feet from water wells and monitoring wells. For the purposes of this prioritization, any parcels on septic systems were given a "high" score if they were within 50 feet of drinking water wells as the specific location of septic systems within each parcel was not assessed. Figure 8 provides the locations of drinking water wells used for this analysis.

Category 4: Ease of conversion

Septic systems that can be readily converted, specifically in those areas where sewer pipelines already exist and areas that are expected to undergo development, redevelopment, or infill, will be prioritized in the IEUA service area.

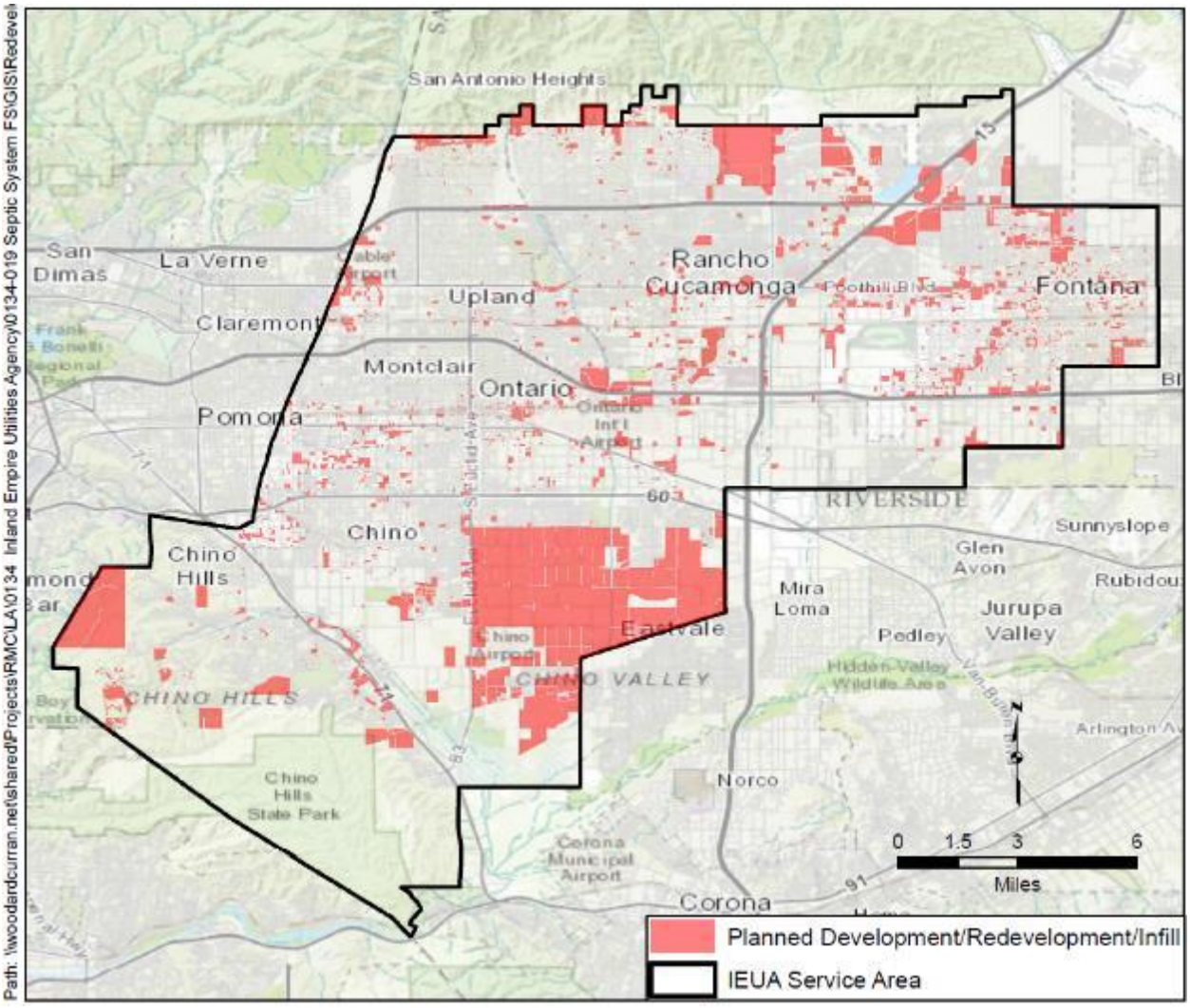
Scoring Criterion 4a: Proximity of existing sewer

Most SSRs already have sewers in place, meaning minimal construction is necessary to connect parcels on septic systems to sewers. This scoring criteria awarded SSRs where 50% or more parcels on septic systems are within 50 feet of an existing sewer a "high" score.

Scoring Criterion 4b: Plans for development/redevelopment/infill

Areas planned for development, redevelopment, or infill may provide for greater ease of conversion as conversion can occur in conjunction with the other project. SSRs with areas slated for development after 2015 (according to general plan GIS shapefiles), shown in Figure 10, received a "high" score.

Figure 10: Planned Development/Redevelopment/Infill Areas



Source: Map created using member agency general plan shapefiles provided by IEUA staff, 2017. Planned development/redevelopment/infill locations where "Year_Devel" field indicates years after 2015.

Optional Category: Grant eligibility

The cost to convert septic systems to sewers can be high, particularly in cases where new sewer lines must be constructed, or sewers must be upgraded, and obtaining grants to offset these costs would allow for conversions to occur more quickly. Grant eligibility criteria were developed but not incorporated into the scores, and can be applied to the SSR scoring in the future as funding opportunities become available.

Optional Scoring Criterion: DAC area

Grant programs typically prioritize those projects that will benefit disadvantaged communities (DAC); in particular, the State Water Resources Control Board (SWRCB) has wastewater-related grant programs available that prioritize projects that benefit areas where the area's median household income (MHI) is 80% or less of the statewide MHI. Based on this priority, it was determined that DAC area would be a good representation for the ability of an SSR conversion project to receive grant funding. Scoring the SSRs according to DAC area was based on MHI data provided in the *US Census American Community Survey (ACS) 5-Year Data: 2010 – 2014*, where the statewide MHI is $61,489 which corresponds to a DAC threshold of $49,191. This data is available as census places, census tracts, or census block groups; for the purposes of the prioritization, the block group geography was used as it provided the greatest amount of DAC coverage in the IEUA service area. Those SSRs where 75% or more of the area is considered DAC were considered to have a higher grant eligibility than those with less than 75%, and therefore received a "high".

Optional Scoring Criterion: Nitrate levels in groundwater

Wastewater-related grant programs generally emphasize the water quality benefits of septic system conversion. Based on this priority, it was determined that nitrate levels in groundwater would be a good representation of the potential for septic system conversion to prevent further groundwater quality degradation or even improve groundwater quality. Chino Basin Watermaster provided a database of nitrate levels in Chino Basin since 2013. Those SSRs that overlay wells that have exceeded the nitrate MCL of 10 mg/L are considered to have septic systems that either contribute to or have the potential to spread nitrate to drinking water, and therefore received a "high".

Benefits Scoring

Based on the results of the analysis described above, points were awarded for each of the scoring categories based on the number of "highs" received. Next, weights were applied to the scores to emphasize those categories that are a higher priority for septic conversion. Figure 11 summarizes the scoring categories, numerical scores, and weighting used to create a total score for each SSR, while Table 7 provides a summary of the points received by each SSR by category and the total benefit score.

Figure 11: Scoring Categories – Ranges and Weightings

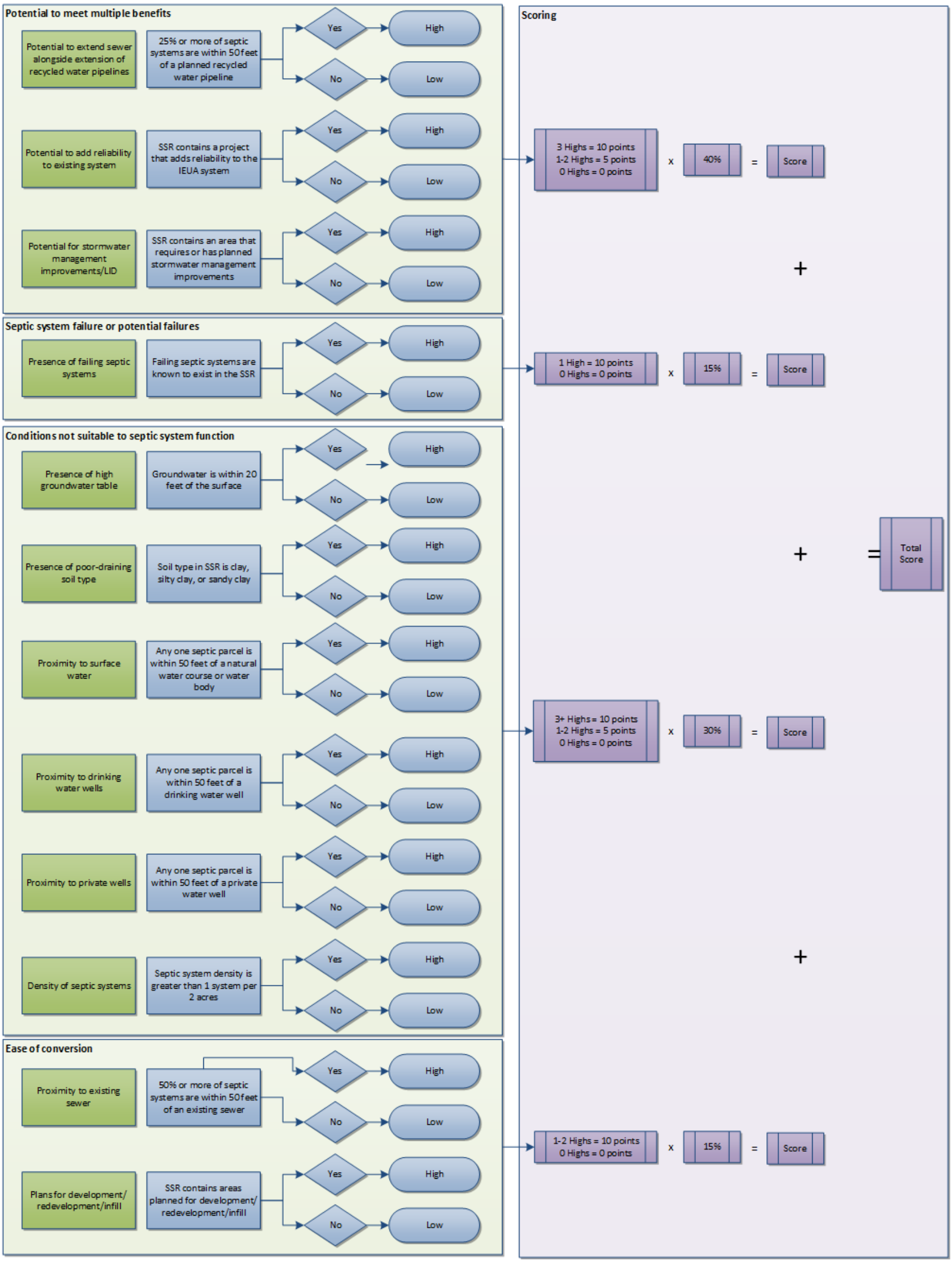


Table 7: Benefit Scores

SSR	Multiple benefits (40% weighted)	Septic system failure (15% weighted)	Conditions not suitable to septic function (30% weighted)	Ease of conversion (15% weighted)	Total Benefit Score
C1	0	0	3	1.5	4.5
C2	2	0	1.5	1.5	5.0
C3	0	0	3	1.5	4.5
C4	0	0	1.5	1.5	3.0
C5	0	0	0	1.5	1.5
C6	0	0	0	1.5	1.5
C7	0	0	3	1.5	4.5
CH1	0	0	3	1.5	4.5
CH2	0	0	1.5	1.5	3.0
CH3	0	0	1.5	1.5	3.0
CH4	0	0	1.5	1.5	3.0
CH5	0	0	1.5	1.5	3.0
CH6	0	0	1.5	1.5	3.0
CV01	0	0	3	1.5	4.5
CV02	0	0	3	1.5	4.5
CV03	0	0	1.5	0	1.5
CV04	0	0	1.5	1.5	3.0
CV05	0	0	1.5	0	1.5
CV06	0	0	0	1.5	1.5
CV07	0	0	1.5	0	1.5
CV08	0	0	1.5	0	1.5
CV09	0	0	1.5	0	1.5
CV10	0	0	0	1.5	1.5
CV11	0	0	0	1.5	1.5
CV12	0	0	0	1.5	1.5
CV13	0	0	0	1.5	1.5
CV14	0	0	0	1.5	1.5
CV15	0	0	0	1.5	1.5
CV16	0	0	0	1.5	1.5
CV17	0	0	1.5	1.5	3.0
F01	0	0	0	1.5	1.5
F02	0	0	0	0	0.0
F03	0	0	0	1.5	1.5

SSR	Multiple benefits (40% weighted)	Septic system failure (15% weighted)	Conditions not suitable to septic function (30% weighted)	Ease of conversion (15% weighted)	Total Benefit Score
F04	0	0	1.5	1.5	3.0
F05	0	0	1.5	1.5	3.0
F06	0	0	1.5	1.5	3.0
F07	0	0	1.5	1.5	3.0
F08	0	0	1.5	1.5	3.0
F09	0	0	0	1.5	1.5
F10	0	0	1.5	1.5	3.0
F11	0	0	0	1.5	1.5
F12	0	0	1.5	1.5	3.0
F13	0	0	0	0	0.0
F14	0	0	1.5	1.5	3.0
F15	0	0	1.5	1.5	3.0
F16	0	0	1.5	0	1.5
F18	0	0	0	0	0.0
F19	0	0	0	1.5	1.5
MO1	0	0	0	1.5	1.5
MO2	0	0	0	1.5	1.5
ON1	0	0	0	1.5	1.5
ON2	2	0	0	1.5	3.5
ON3	0	0	0	1.5	1.5
ON4	2	0	0	1.5	3.5
ON5	0	0	0	1.5	1.5
ON6	0	0	1.5	1.5	3.0
ON7	0	0	1.5	1.5	3.0
ON8	0	0	0	1.5	1.5
ON9	0	0	1.5	1.5	3.0
SA1	0	0	3	1.5	4.5
UP1	0	0	0	0	0.0
UP2	0	0	0	1.5	1.5
UP3	0	0	1.5	1.5	3.0
UP4	0	0	0	1.5	1.5
UP5	0	0	0	1.5	1.5

5.2 Cost Scoring Criteria

The SSR conversion unit costs described in Chapter 4 were used to develop a cost score for each SSR. Table 8 provides a summary of how scores were assigned to each unit cost, while Table 9 provides a summary of the cost scores received by each SSR. The unit cost ranges and scoring were assigned in an effort to evenly spread SSRs across scoring categories, except for those SSRs with especially high costs such that there are fewer SSRs receiving lower scores.

Table 8: Cost Scoring Criteria

Unit Cost Range ($/septic system)	Score
≤$39,000	10
$40,000 to $49,000	8
$50,000 to $59,000	6
$60,000 to $89,000	4
$90,000 to $199,000	2
≥$200,000	0

Table 9: Cost Scores

SSR	Capital Cost per Septic System Conversion ($/septic system)	Cost per Septic System Score
C1	$50,000	6
C2	$51,000	6
C3	$60,000	4
C4	$29,000	10
C5	$28,000	10
C6	$28,000	10
C7	$420,000	0
CH1	$84,000	4
CH2	$96,000	2
CH3	$56,000	6
CH4	$28,000	10
CH5	$26,000	10
CH6	$150,000	2
CV01	$55,000	6
CV02	$73,000	4
CV03	$43,000	8
CV04	$51,000	6
CV05	$46,000	8
CV06	$55,000	6

SSR	Capital Cost per Septic System Conversion ($/septic system)	Cost per Septic System Score
CV07	$74,000	4
CV08	$43,000	8
CV09	$43,000	8
CV10	$47,000	8
CV11	$56,000	6
CV12	$29,000	10
CV13	$35,000	10
CV14	$80,000	4
CV15	$48,000	8
CV16	$40,000	8
CV17	$40,000	8
F01	$57,000	6
F02	$150,000	2
F03	$44,000	8
F04	$40,000	8
F05	$53,000	6
F06	$52,000	6
F07	$56,000	6
F08	$41,000	8
F09	$56,000	6
F10	$42,000	8
F11	$38,000	10
F12	$46,000	8
F13	$51,000	6
F14	$68,000	4
F15	$45,000	8
F16	$52,000	6
F18	$394,000	0
F19	$33,000	10
MO1	$42,000	8
MO2	$33,000	10
ON1	$30,000	10
ON2	$32,000	10
ON3	$32,000	10
ON4	$31,000	10
ON5	$51,000	6

SSR	Capital Cost per Septic System Conversion ($/septic system)	Cost per Septic System Score
ON6	$37,000	10
ON7	$26,000	10
ON8	$23,000	10
ON9	$720,000	0
SA1	$53,000	6
UP1	$49,000	6
UP2	$38,000	10
UP3	$46,000	8
UP4	$34,000	10
UP5	$32,000	10

5.3 Combined Scoring and Prioritization

The benefit scores and cost scores were weighted and combined to develop an overall prioritization that considers both sets of scores. Note that to allow for even weighting of the scores, the benefits scores were scaled such that the highest score possible is 10 to align with the highest possible cost scores. For the purposes of this exercise, the benefit scores and cost scores were weighted evenly at 50% each to reflect equal levels of importance. Table 10 provides a summary of the resulting weighted scores, while Figure 12 provides a map that illustrates the scores. Within this scoring, high scores align with those of higher conversion priority, while low scores align with those of lower conversion priority.

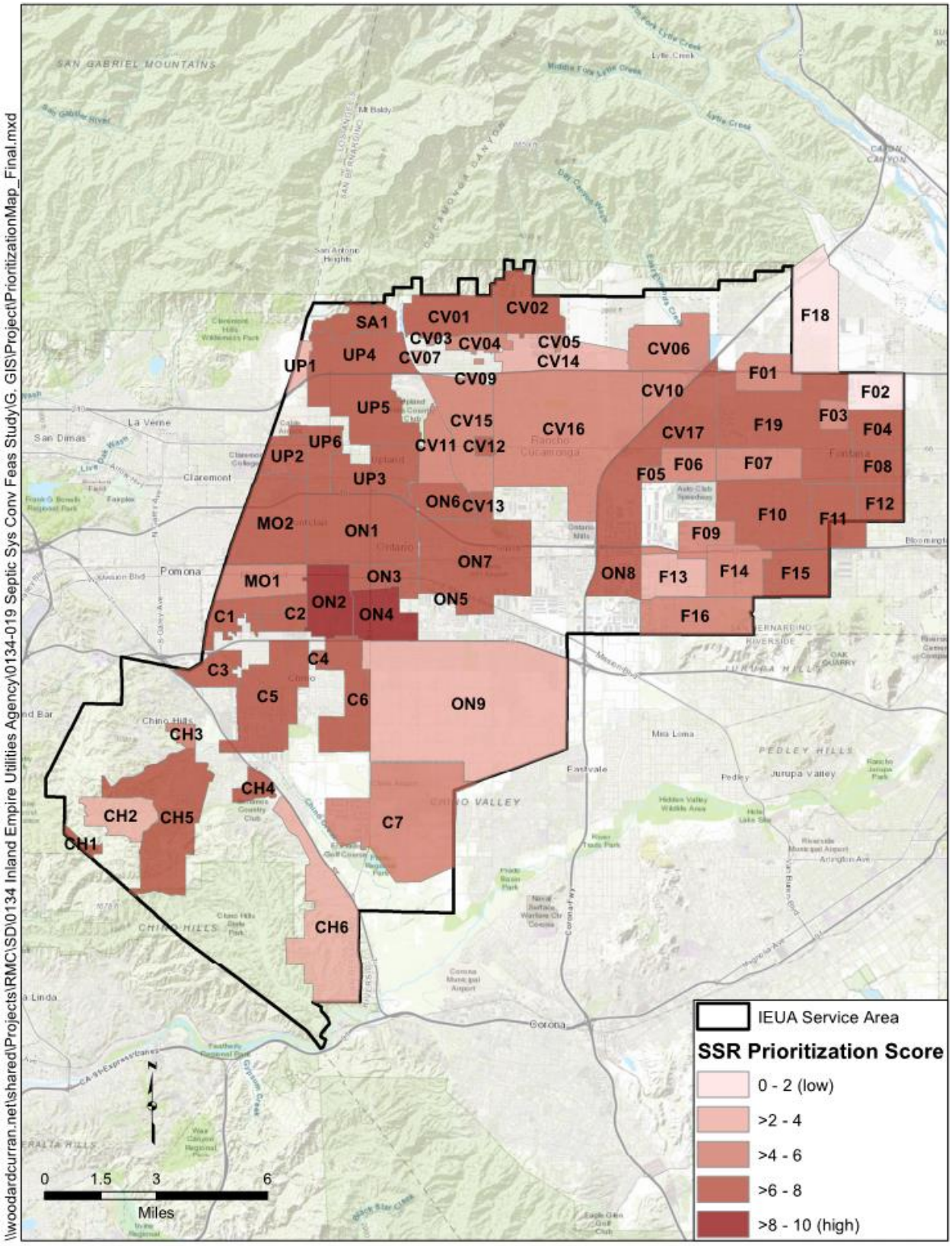
Table 10: SSR Prioritization Score

SSR	Total Benefit Score scaled based on a 10-point scale (50% weighted)	Cost Score (50% weighted)	Overall Score
C1	9	6	7.5
C2	10	6	8.0
C3	9	4	6.5
C4	6	10	8.0
C5	3	10	6.5
C6	3	10	6.5
C7	9	0	4.5
CH1	9	4	6.5
CH2	6	2	4.0
CH3	6	6	6.0
CH4	6	10	8.0
CH5	6	10	8.0
CH6	6	2	4.0
CV01	9	6	7.5
CV02	9	4	6.5
CV03	3	8	5.5

SSR	Total Benefit Score scaled based on a 10-point scale (50% weighted)	Cost Score (50% weighted)	Overall Score
CV04	6	6	6.0
CV05	3	8	5.5
CV06	3	6	4.5
CV07	3	4	3.5
CV08	3	8	5.5
CV09	3	8	5.5
CV10	3	8	5.5
CV11	3	6	4.5
CV12	3	10	6.5
CV13	3	10	6.5
CV14	3	4	3.5
CV15	3	8	5.5
CV16	3	8	5.5
CV17	6	8	7.0
F01	3	6	4.5
F02	0	2	1.0
F03	3	8	5.5
F04	6	8	7.0
F05	6	6	6.0
F06	6	6	6.0
F07	6	6	6.0
F08	6	8	7.0
F09	3	6	4.5
F10	6	8	7.0
F11	3	10	6.5
F12	6	8	7.0
F13	0	6	3.0
F14	6	4	5.0
F15	6	8	7.0
F16	3	6	4.5
F18	0	0	0.0
F19	3	10	6.5
MO1	3	8	5.5
MO2	3	10	6.5
ON1	3	10	6.5
ON2	7	10	8.5
ON3	3	10	6.5
ON4	7	10	8.5
ON5	3	6	4.5
ON6	6	10	8.0

SSR	Total Benefit Score scaled based on a 10-point scale (50% weighted)	Cost Score (50% weighted)	Overall Score
ON7	6	10	8.0
ON8	3	10	6.5
ON9	6	0	3.0
SA1	9	6	7.5
UP1	0	6	3.0
UP2	3	10	6.5
UP3	6	8	7.0
UP4	3	10	6.5
UP5	3	10	6.5

Figure 12: SSR Prioritization Scores



Chapter 6 Summary and Next Steps

The results of this Study indicate that there are approximately 21,800 septic systems within the IEUA service area and that conversion of those septic systems comes with a range of costs and benefits. By assigning these septic systems to SSRs, it is possible to more easily prioritize septic systems for conversion by first converting those septic systems that will provide the highest benefit and/or serve the greatest need at the lowest cost. Conversion to sewer is currently driven by situations where either the property owner wants to convert, or when the property owner must convert due to septic system failure and is in a location that is not permitted according to the SWRCB's OWTS Policy. The results of this Study provide an approach for the member agencies that are interested in proceeding with conversion of those areas. The following sections provide a discussion of implementation considerations, and funding and financing opportunities to facilitate conversion.

6.1 Implementation Considerations

Any proposed project would need to be consistent with the local jurisdiction's Sewer Master Plan and Sewer Design Criteria. Where new pipe would be managed by IEUA, it would need to follow IEUA's Sewer Master Plan and Sewer Design Criteria. Current considerations are at the planning level and are not intended for design or construction. Facility and cost estimates developed as part of the Study serve to gauge the magnitude of project costs and will need to be further refined before conversions are implemented.

- Member agencies to determine which conversion projects, if any, they wish to pursue. IEUA to determine if local projects impact regional trunk lines
- IEUA to assist Member Agency in obtaining grant funding for their local projects
- Develop a funding/financing strategy (including funding assistance programs and continuing to track grant programs) to facilitate conversion to sewer, if desired
- Investigate potential impact of septic systems on water quality and update the SSR prioritization as-needed to reflect septic system impacts on water quality
- Develop regulatory requirements to encourage septic conversion which is consistent with the SWRCB OWTS policy
- IEUA to update its sewer model based on updated flows at connection points from member agencies, and update master plan if needed
- Pre-Design Report(s) needed to move forward with conversions for each SSR

6.2 Funding and Financing Opportunities

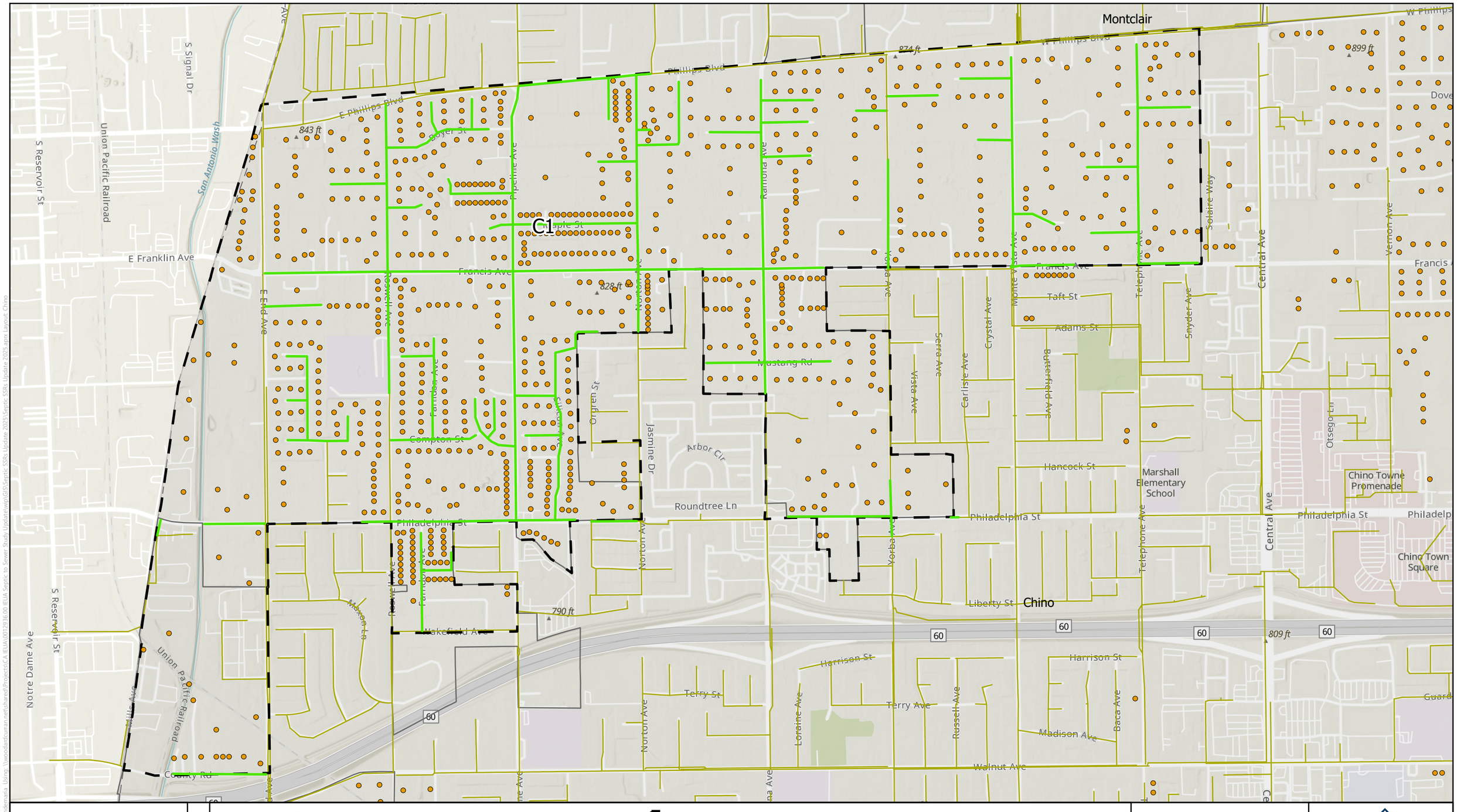
A variety of funding and financing options are available to facilitate conversion of septic systems to sewer. Currently, onsite septic tank conversion costs, including fees, are paid by the property owner(s), while mainline sewer construction is paid for by the local agency that provides wastewater service. Funding and financing opportunities are currently limited to public agencies, and are described in Table 11.

Table 11: Potential Funding and Financing Sources

Potential Funding Source	Description	Certainty / Longevity
Capacity Fees/Local Development Impact Fees	• Used by agencies to maintain equity among its customers and address future users and new development. • Typically charged per connection, measured in equivalent dwelling units (EDUs). A single connection may encompass more than one EDU. In addition to the connection fee aspect of capacity fees, agencies may also assess other fees.	Dependent upon rate structure adopted by project proponents and Proposition 218 process
User Fees/Rates	• Monthly user fees are assessed by some agencies where an argument can be made that new facilities directly benefit existing customers. • In many cases, income from this monthly revenue source is used to pay debt service on debt financed assets. • User fees and rates can only be spent on maintaining public improvements and services, or addressing deficiencies caused by existing system users, not to address the needs/impacts of future users	Dependent upon rate structure adopted by project proponents and Proposition 218 process
Bonded Debt Service	• In cases in which a large facility is needed to support current services and future growth, revenue bonds are issued to pay for new capital. This allows for payment of the facility by bonded debt service at the time of construction with repayment of the debt service over a 20- to 30-year timeframe. • Preferred approach to paying for high cost facilities because it avoids the perceived over-collection of fees from past customers that go toward facilities that serve present and future customers. The downside to bonded debt is that it cannot be accomplished with capacity fees alone due to the variability and uncertainty of new development over time. A user rate is needed as a bond document covenant in the event that development fees are not adequate to make the required annual payment for the debt service.	Dependent upon bond market and existing debt of project proponents
Grants	• Typically require local matching funds. The matching requirement shows a local commitment to promoting and completing the study, plan, or project. • Typically administered and contracted by a single agency within the region that works directly with the state or federal agency administering the grant. • Grants typically carry relatively high administration cost because extensive grant reporting may be required, and typically only a small portion of the grant may be used to cover grant administration.	Grant programs at the local, state, or federal levels are periodically available.

Potential Funding Source	Description	Certainty / Longevity
Low-interest loans	• Several funding agencies administer low-interest loans for implementation of water- and wastewater-related projects. Low-interest loans can save the implementing agency significant amounts of money by reducing interest payments as compared with traditional bonds. • SWRCB offers low-interest loans for wastewater and recycled water projects through its Clean Water State Revolving Fund (SRF) loan program. Approximately $200 million to $300 million available annually. The interest rate is half of the most recent General Obligation (GO) Bond Rate at the time of the funding commitment. Over the last five years, the Clean Water SRF loan interest rate has ranged from 1.8% to 3.0%. • The California Infrastructure and Economic Development Bank (I-Bank) administers the Infrastructure SRF loan program for financing implementation projects such as sewage collection and treatment.	Dependent upon the specific program and federal appropriations to each

APPENDIX B: PROPOSED SEWER INFRASTRUCTURE AND PLANNING LEVEL COST ESTIMATES – CITY OF CHINO



IEUA Septic to Sewer Feasibility Study Update

City of Chino
Proposed Sewer Infrastructure

Legend

- Proposed Gravity Main
- Proposed Force Main
- Proposed Lift Station
- Existing Chino Septic Properties
- Existing Sewer Mains
- Chino SSRs
- IEUA Service Area
- City Boundaries

N

0 287.5 575 1,150 Feet

1 inch = 937 feet

Woodard & Curran

Project #: 0012936.00
Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Chino
Proposed Sewer Infrastructure

Legend

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N

0 190 380 760 Feet

1 inch = 616 feet

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Project #: 0012936.00
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IEUA Septic to Sewer Feasibility Study Update

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- City Boundaries

N

0 190 380 760 Feet

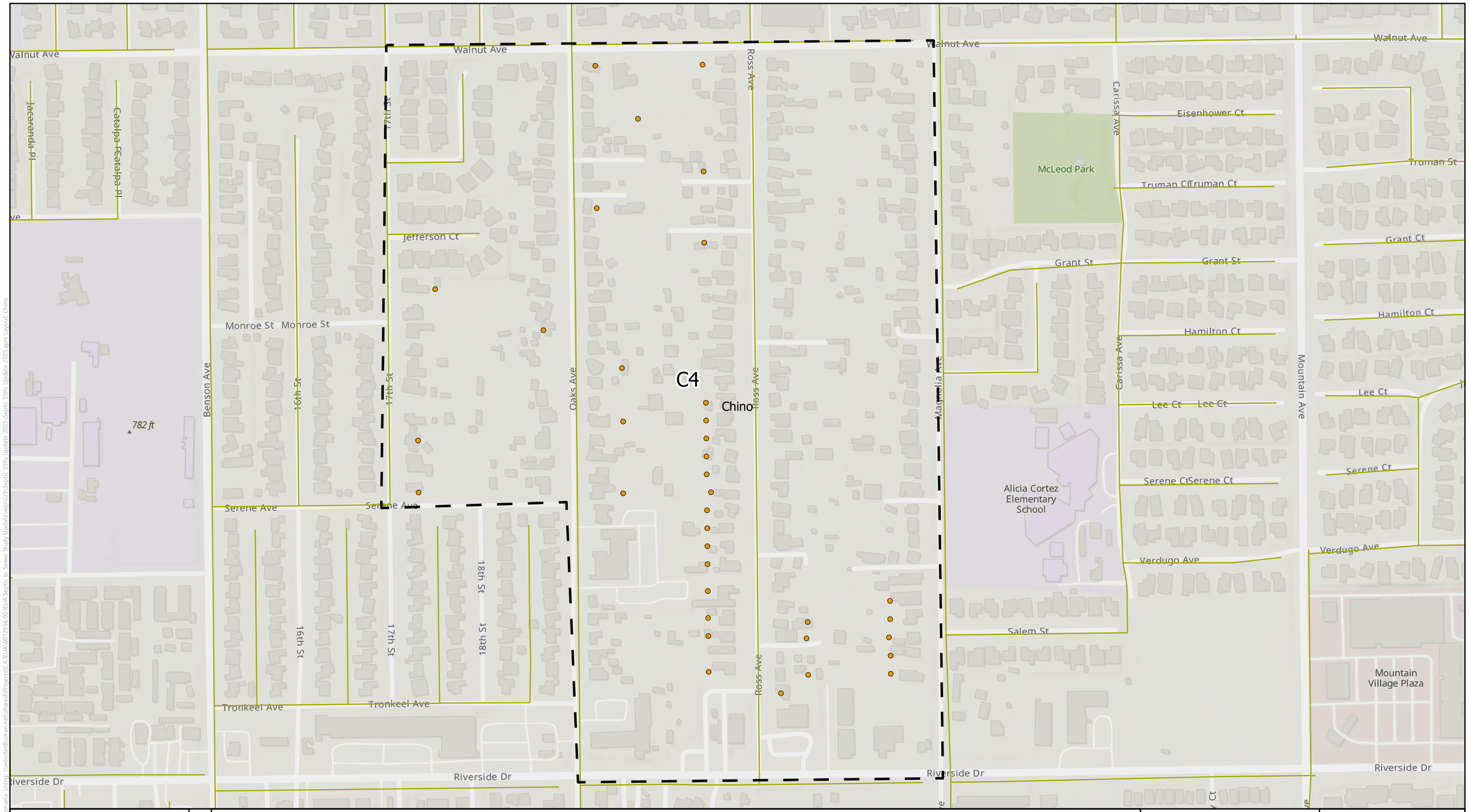
1 inch = 629 feet

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IEUA Septic to Sewer Feasibility Study Update

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N

0 100 200 400 Feet

1 inch = 324 feet

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N

0 580 1,160 2,320 Feet

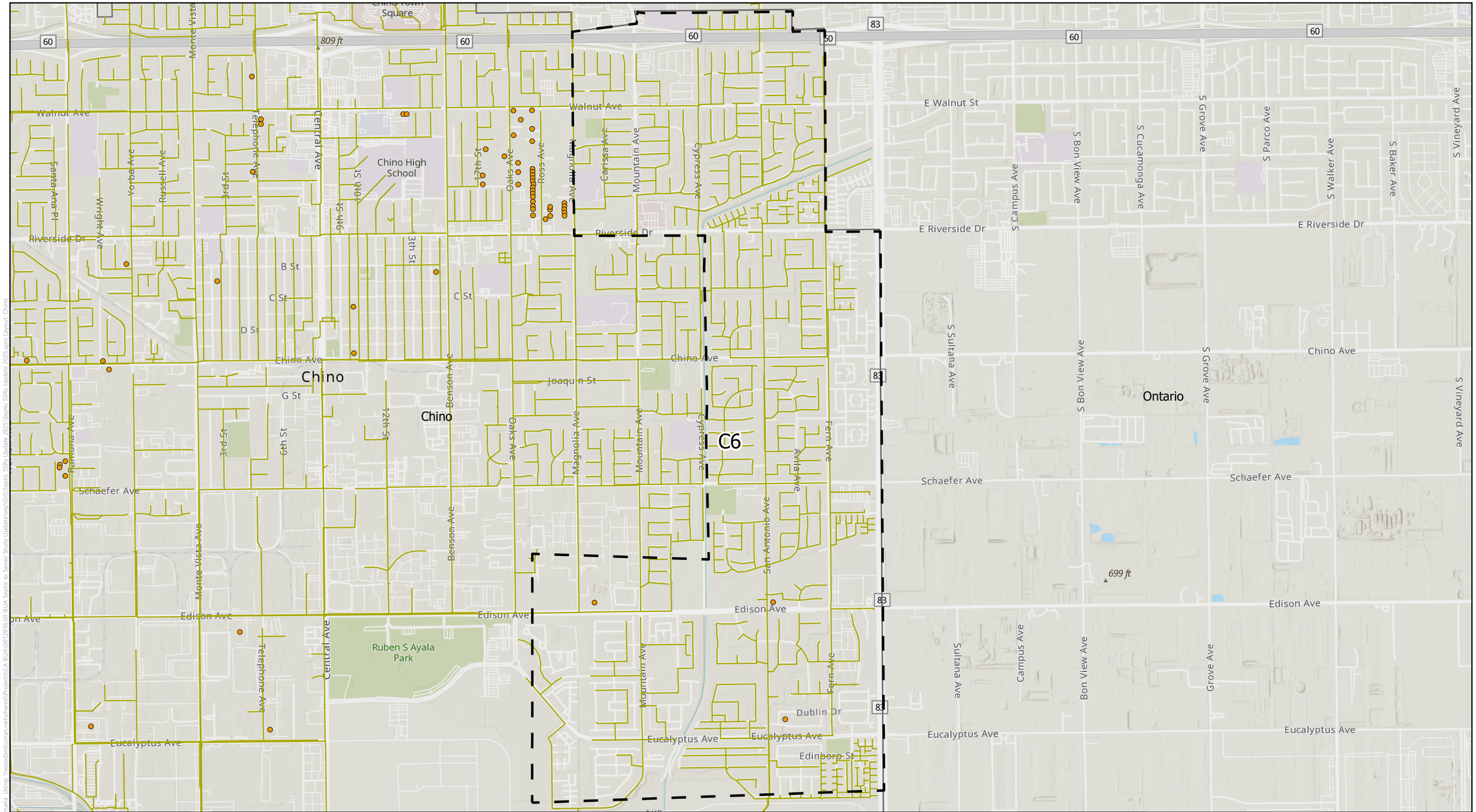
1 inch = 1,881 feet

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N

0 580 1,160 2,320 Feet

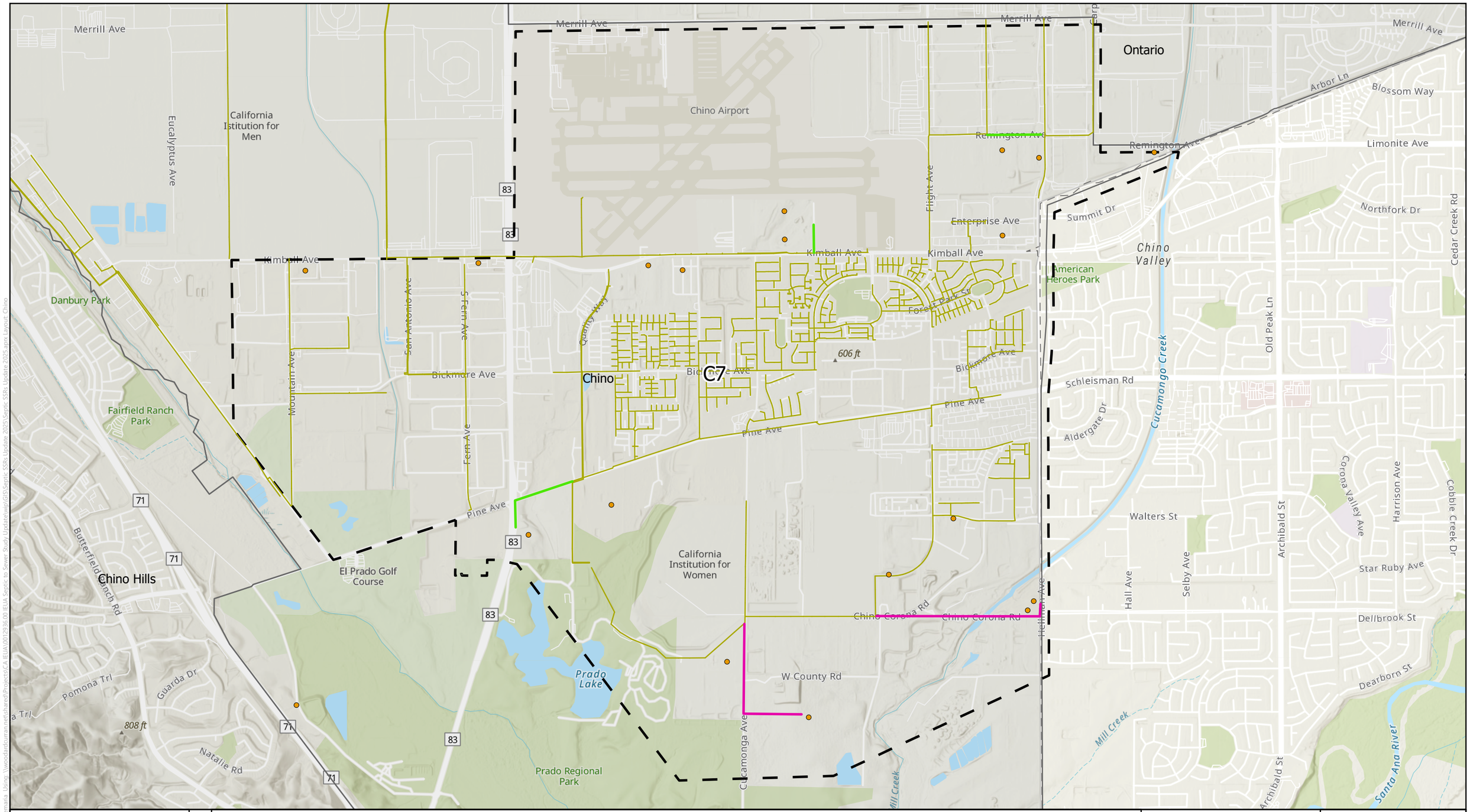
1 inch = 1,881 feet

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N

0 625 1,250 2,500 Feet

1 inch = 2,032 feet

Woodard & Curran

Project #: 0012936.00
Map Created: February 2026

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IEUA Septic to Sewer Study Update

Date: February 2026
Prepared by: MMC
Checked by:
Estimate Type: Planning

	Unit Cost	Unit	Desc.	Chino C1 QTY	Chino C1 Cost	Chino C2 QTY	Chino C2 Cost
New Gravity Sewer	$ 214	$/LF	8"	53,620	$ 11,496,000	11,055	$ 2,370,000
	$ 281	$/LF	10"	3,480	$ 979,000	-	$ -
	$ 354	$/LF	12"	1,325	$ 469,000		$ -
	$ 462	$/LF	15"	1,300	$ 601,000	1,335	$ 617,000
	$ 579	$/LF	18"	-	$ -	-	$ -
	$ 704	$/LF	21"	-	$ -	-	$ -
	$ 823	$/LF	24"	-	$ -	-	$ -
	$ 941	$/LF	27"	-	$ -	-	$ -
	$ 1,061	$/LF	30"	-	$ -	-	$ -
	$ 1,302	$/LF	36"	-	$ -	-	$ -
Upsizing Existing Sewers	$ 281	$/LF	10"	-	$ -	-	$ -
	$ 354	$/LF	12"		$ -	985	$ 348,000
Force Main	$ 161	$/LF		-	$ -	-	$ -
Trenchless Crossing	$ 4,020	$/LF		-	$ -	-	$ -
Septic System Abandonment	$ 1,340	$/EA		876	$ 1,173,840	150	$ 201,000
Lower Lateral	$ 8,040	$/EA		876	$ 7,043,040	150	$ 1,206,000
Upper Lateral	$ 8,040	$/EA		876	$ 7,043,040	150	$ 1,206,000
Pump Station	$ 1,072,000	$/EA		-	$ -	-	$ -
Grinder Pump	$ 20,100	$/EA		-	$ -	-	$ -
Easements	$ 27	$/SF		6,000	$ 161,000	-	$ -
Subtotal				-	**$ 28,965,920**		**$ 5,948,000**
Mobilization and Demobilization			5%	-	$ 1,448,296		$ 297,400
Construction Cost Subtotal				-	**$ 30,414,216**		**$ 6,245,400**
Contingency			30%	-	$ 9,124,265		$ 1,873,620
Construction Cost				-	**$ 39,538,481**		**$ 8,119,020**
Engineering, Administration, and Legal Costs			25%	-	$ 9,884,620		$ 2,029,755
Chino Sewer Impact Fees	$ 1,718	$/EA		876	$ 1,504,968	150	$ 257,700
IEUA Sewer Impact Fees	$ 8,620	$/EA		739	$ 6,370,180	124	$ 1,068,880
Capital Improvement Cost					**$ 57,298,000**		**$ 11,475,000**

IEUA Septic to Sewer

Date: February 2026
Prepared by: MMC
Checked by:
Estimate Type: Planning

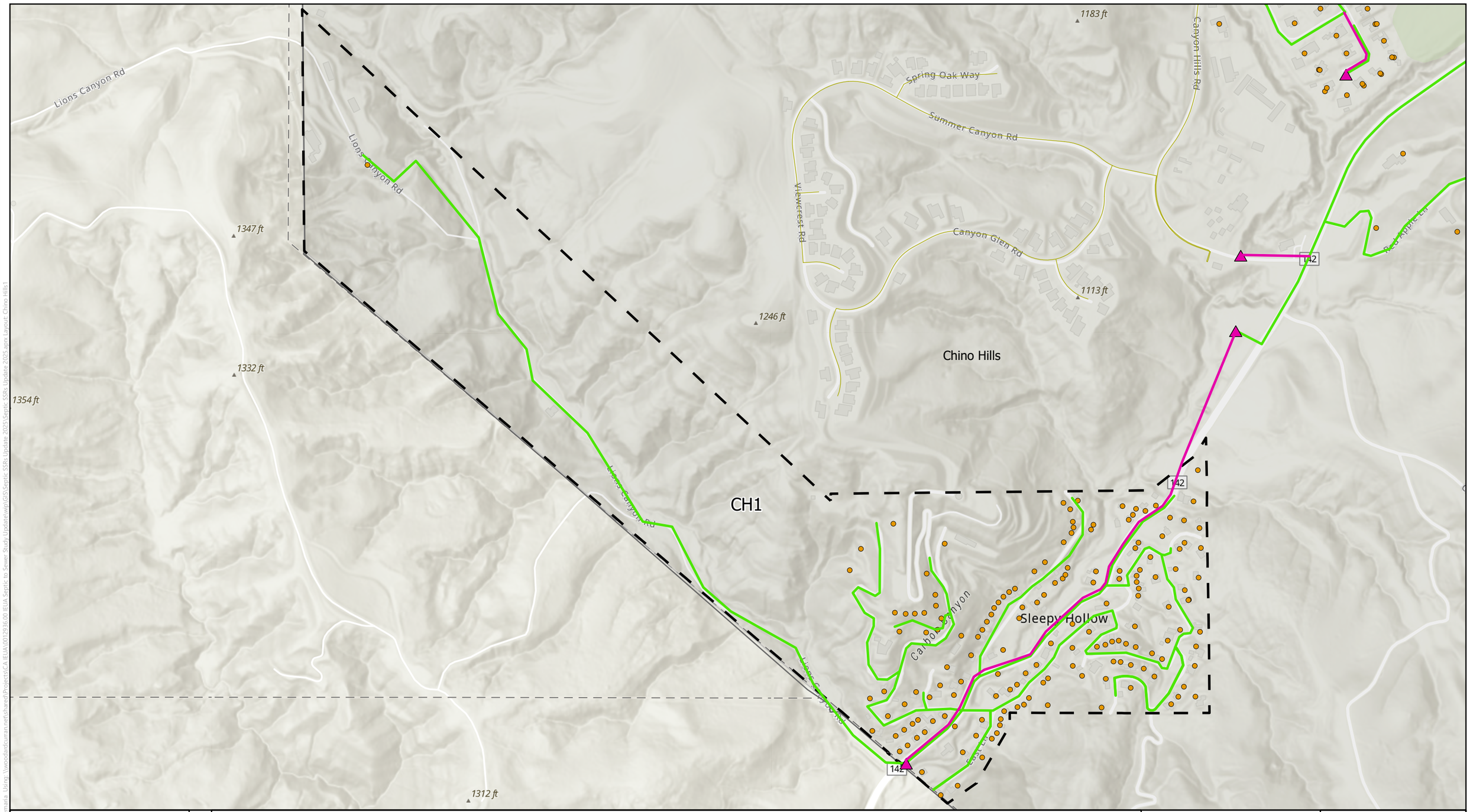
	Unit Cost	Unit	Desc.	Chino C3 QTY	Chino C3 Cost	Chino C4 QTY	Chino C4 Cost	Chino C5 QTY	Chino C5 Cost
New Gravity Sewer	$ 214	$/LF	8"	28,475	$ 6,105,000		$ -		$ -
	$ 281	$/LF	10"	2,125	$ 598,000	-	$ -	-	$ -
	$ 354	$/LF	12"	-	$ -	-	$ -	-	$ -
	$ 462	$/LF	15"	-	$ -	-	$ -	-	$ -
	$ 579	$/LF	18"	-	$ -	-	$ -	-	$ -
	$ 704	$/LF	21"	-	$ -	-	$ -	-	$ -
	$ 823	$/LF	24"	-	$ -	-	$ -	-	$ -
	$ 941	$/LF	27"	-	$ -	-	$ -	-	$ -
	$ 1,061	$/LF	30"	-	$ -	-	$ -	-	$ -
	$ 1,302	$/LF	36"	-	$ -	-	$ -	-	$ -
Upsizing Existing Sewers	$ 281	$/LF	10"	415	$ 117,000		$ -		$ -
	$ 354	$/LF	12"	865	$ 306,000		$ -		$ -
Force Main	$ 161	$/LF		2,800	$ 450,000		$ -		$ -
Trenchless Crossing	$ 4,020	$/LF		130	$ 523,000		$ -		$ -
Septic System Abandonment	$ 1,340	$/EA		606	$ 812,000	36	$ 48,000	22	$ 29,000
Lower Lateral	$ 8,040	$/EA		606	$ 4,872,000	36	$ 289,000	22	$ 177,000
Upper Lateral	$ 8,040	$/EA		606	$ 4,872,000	36	$ 289,000	22	$ 177,000
Pump Station	$ 1,072,000	$/EA		4	$ 4,288,000		$ -		$ -
Grinder Pump	$ 20,100	$/EA		-	$ -	-	$ -	-	$ -
Easements	$ 27	$/SF		6,000	$ 161,000	-	$ -	-	$ -
Subtotal					**$ 23,104,000**		**$ 626,000**		**$ 383,000**
Mobilization and Demobilization			5%		$ 1,155,200		$ 31,300		$ 19,150
Construction Cost Subtotal					**$ 24,259,200**		**$ 657,300**		**$ 402,150**
Contingency			30%		$ 7,277,760		$ 197,190		$ 120,645
Construction Cost					**$ 31,536,960**		**$ 854,490**		**$ 522,795**
Engineering, Administration, and Legal Costs			25%		$ 7,884,240		$ 213,623		$ 130,699
Chino Sewer Impact Fees	$ 1,718	$/EA		606	$ 1,041,108	36	$ 61,848	22	$ 37,796
IEUA Sewer Impact Fees	$ 8,620	$/EA		512	$ 4,413,440	29	$ 249,980	14	$ 120,680
Capital Improvement Cost					**$ 44,876,000**		**$ 1,380,000**		**$ 812,000**

IEUA Septic to Sewer

Date: February 2026
Prepared by: MMC
Checked by:
Estimate Type: Planning

		Unit Cost	Unit	Desc.	Chino C6 QTY	Chino C6 Cost	Chino C7 QTY	Chino C7 Cost
New Gravity Sewer	$	214	$/LF	8"		$ -	3,850	$ 825,000
	$	281	$/LF	10"	-	$ -	-	$ -
	$	354	$/LF	12"	-	$ -	4,715	$ 1,668,000
	$	462	$/LF	15"	-	$ -	-	$ -
	$	579	$/LF	18"	-	$ -	-	$ -
	$	704	$/LF	21"	-	$ -	-	$ -
	$	823	$/LF	24"	-	$ -	-	$ -
	$	941	$/LF	27"	-	$ -	-	$ -
	$	1,061	$/LF	30"	-	$ -	-	$ -
	$	1,302	$/LF	36"	-	$ -	-	$ -
Upsizing Existing Sewers	$	281	$/LF	10"		$ -		$ -
	$	354	$/LF	12"		$ -		$ -
Force Main	$	161	$/LF			$ -	7,340	$ 1,180,000
Trenchless Crossing	$	4,020	$/LF			$ -	-	$ -
Septic System Abandonment	$	1,340	$/EA		3	$ 4,000	18	$ 24,000
Lower Lateral	$	8,040	$/EA		3	$ 24,000	18	$ 145,000
Upper Lateral	$	8,040	$/EA		3	$ 24,000	18	$ 145,000
Pump Station	$	1,072,000	$/EA			$ -		$ -
Grinder Pump	$	20,100	$/EA		-	$ -	2	$ 40,000
Easements	$	27	$/SF		-	$ -	-	$ -
Subtotal						**$ 52,000**		**$ 4,027,000**
Mobilization and Demobilization				5%		$ 2,600		$ 201,350
Construction Cost Subtotal						**$ 54,600**		**$ 4,228,350**
Contingency				30%		$ 16,380		$ 1,268,505
Construction Cost						**$ 70,980**		**$ 5,496,855**
Engineering, Administration, and Legal Costs				25%		$ 17,745		$ 1,374,214
Chino Sewer Impact Fees	$	1,718	$/EA		3	$ 5,154	18	$ 30,924
IEUA Sewer Impact Fees	$	8,620	$/EA		3	$ 25,860	18	$ 155,160
Capital Improvement Cost						**$ 120,000**		**$ 7,057,000**

APPENDIX C: PROPOSED SEWER INFRASTRUCTURE AND PLANNING LEVEL COST ESTIMATES – CITY OF CHINO HILLS



IEUA Septic to Sewer Feasibility Study Update

City of Chino Hills
Proposed Sewer Infrastructure

Legend

- Proposed Chino Hills Gravity Mains
- Proposed Chino Hills Force Mains
- Proposed Chino Hills Lift Station
- Existing Chino Hills Septic Properties
- Existing Chino Hills Sewer Mains
- Chino Hills SSRs
- IEUA Service Area
- City Boundaries

N

0 180 360 720 Feet

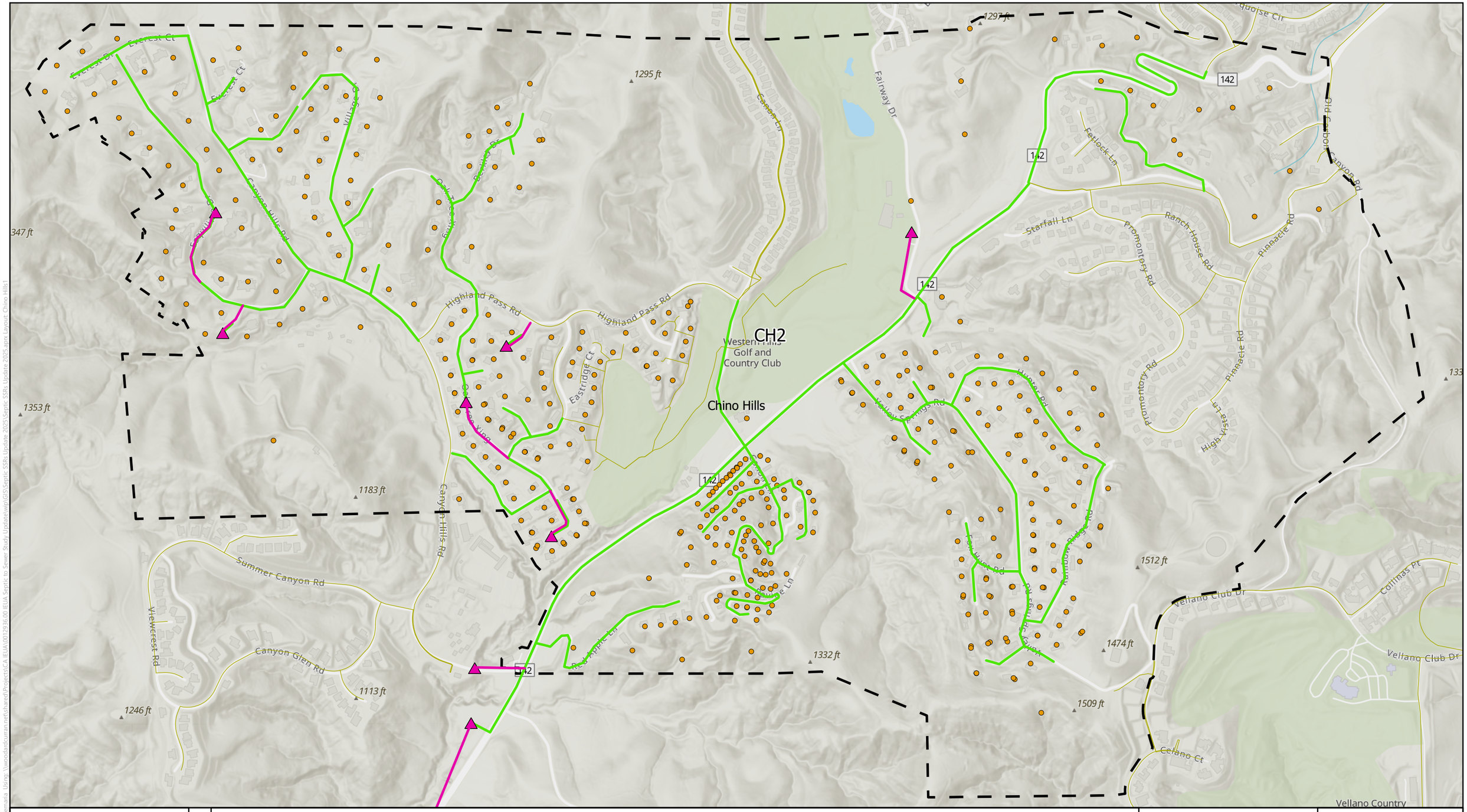
1 inch = 534 feet

Woodard & Curran

Project #: 0012936.00
Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Chino Hills
Proposed Sewer Infrastructure

Legend

- Proposed Chino Hills Gravity Mains
- Proposed Chino Hills Force Mains
- Proposed Chino Hills Lift Station
- Existing Chino Hills Septic Properties
- Existing Chino Hills Sewer Mains
- Chino Hills SSRs
- IEUA Service Area
- City Boundaries

N

0 245 490 980 Feet

1 inch = 732 feet

Woodard & Curran

Project #: 0012936.00
Map Created: February 2026

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Chino Hills
Boys Republic Dr
Peyton Dr
English Rd
736 ft
695 ft
Ruben S. Ayala High School
CH3
English Pl
Chino Hills
Chino Hills Community Park
Litel Elementary
Eucalyptus Ave
Sambar St
Honeysuckle Ave
1063 ft
Clipping Hills Rd
Buckhaven Rd

IEUA Septic to Sewer Feasibility Study Update

City of Chino Hills
Proposed Sewer Infrastructure

Legend

- Proposed Chino Hills Gravity Mains
- Proposed Chino Hills Force Mains
- Proposed Chino Hills Lift Station
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- Existing Chino Hills Sewer Mains
- Chino Hills SSRs
- IEUA Service Area
- City Boundaries

N

0 140 280 560 Feet

1 inch = 419 feet

Woodard & Curran

Project #: 0012936.00
Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Chino Hills
Proposed Sewer Infrastructure

Legend

- Proposed Chino Hills Gravity Mains
- Proposed Chino Hills Force Mains
- Proposed Chino Hills Lift Station
- Existing Chino Hills Septic Properties
- Existing Chino Hills Sewer Mains
- Chino Hills SSRs
- IEUA Service Area
- City Boundaries

N

0 212.5 425 850 Feet

1 inch = 628 feet

Woodard & Curran

Project #: 0012936.00
Map Created: February 2026

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Figure Exported: 6/12/2026 By: mdemaria Using: \\woodardcurran.net\shared\Projects\CA IEUA\0012936.00 IEUA Septic to Sewer Study Update\wip\GIS\Septic SSRs Update 2025\Septic SSRs Update 2025.aprx Layout: Chino Hills1

IEUA Septic to Sewer Feasibility Study Update

City of Chino Hills
Proposed Sewer Infrastructure

Legend

- Proposed Chino Hills Gravity Mains
- Proposed Chino Hills Force Mains
- Proposed Chino Hills Lift Station
- Existing Chino Hills Septic Properties
- Existing Chino Hills Sewer Mains
- Chino Hills SSRs
- IEUA Service Area
- City Boundaries

N

0 800 1,600 3,200 Feet

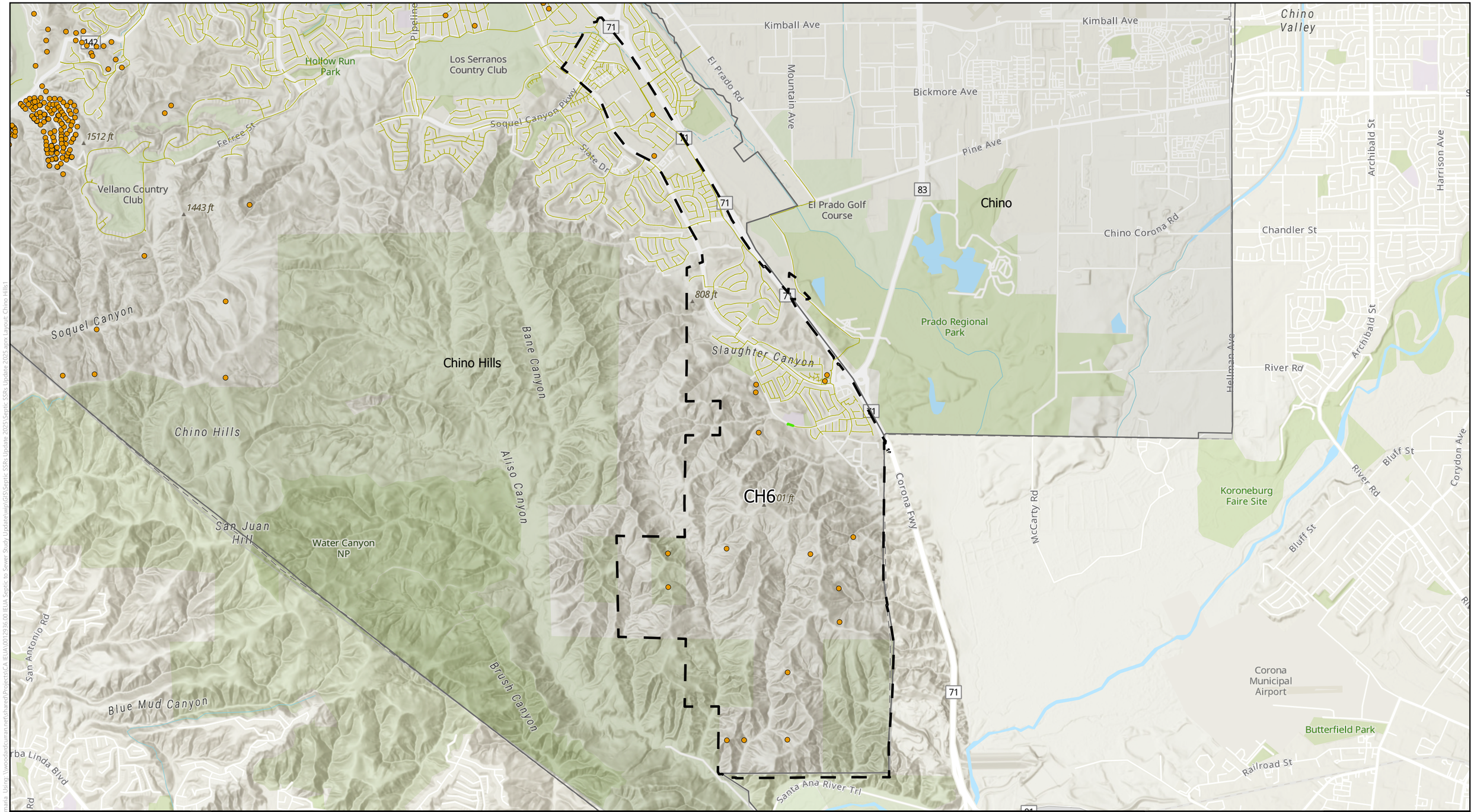
1 inch = 2,397 feet

Woodard & Curran

Project #: 0012936.00
Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Chino Hills
Proposed Sewer Infrastructure

Legend

- Proposed Chino Hills Gravity Mains
- Proposed Chino Hills Force Mains
- Proposed Chino Hills Lift Station
- Existing Chino Hills Septic Properties
- Existing Chino Hills Sewer Mains
- Chino Hills SSRs
- IEUA Service Area
- City Boundaries

N

0 1,150 2,300 4,600 Feet

1 inch = 3,473 feet

Woodard & Curran

Project #: 0012936.00
Map Created: February 2026

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IEUA Septic to Sewer Study Update

Date: February 2026
Prepared by: MMC
Checked by:
Estimate Type: Planning

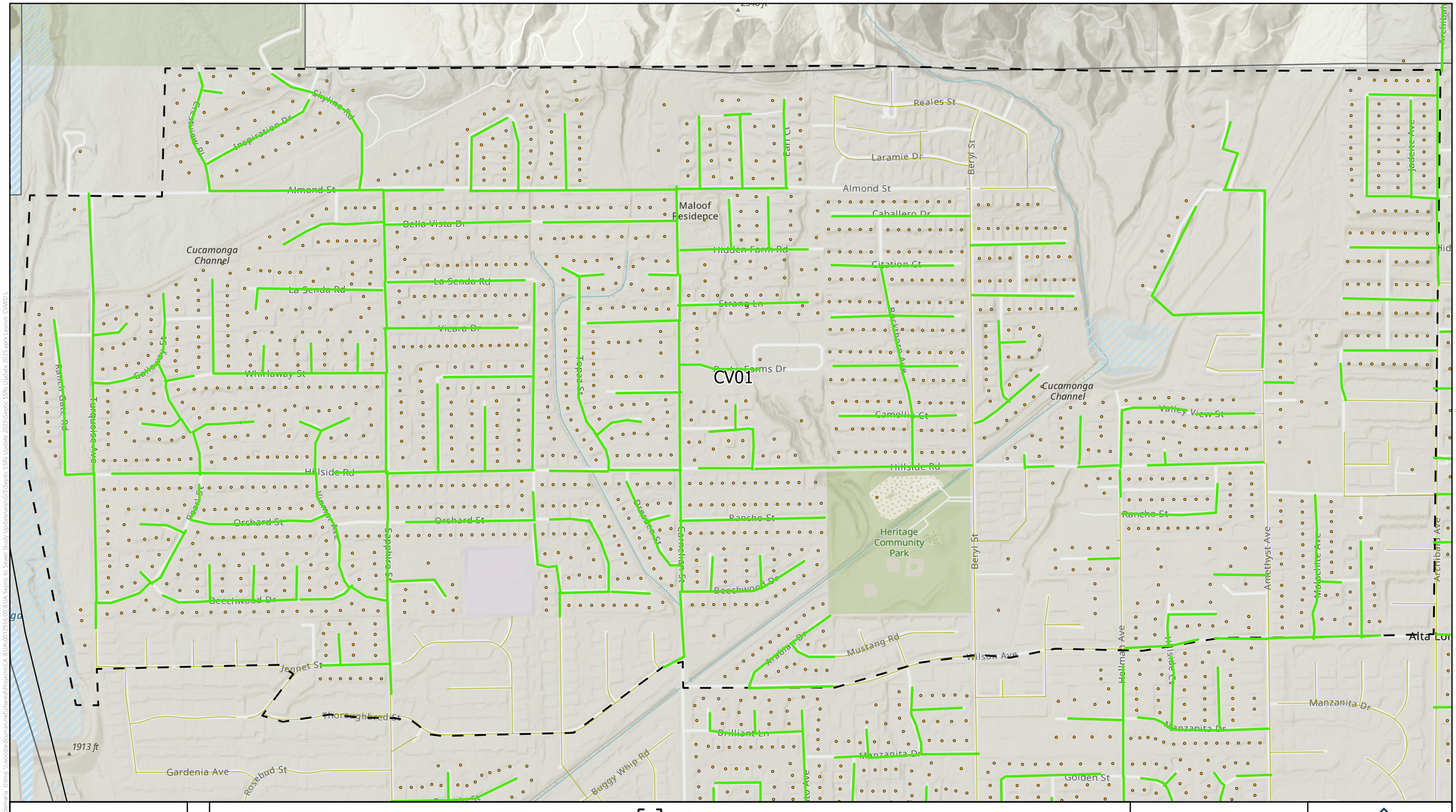
		Unit Cost		Unit	Desc.	Chino Hills CH1 QTY		Chino Hills CH1 Cost	Chino Hills CH2 QTY		Chino Hills CH2 Cost	Chino Hills CH3 QTY		Chino Hills CH3 Cost
New Gravity Sewer	$	214	$/LF	8"		16,800	$	3,602,000	36,430	$	7,811,000	2,400	$	515,000
	$	281	$/LF	10"		2,330	$	656,000	3,070	$	864,000		$	-
	$	354	$/LF	12"		-	$	-	3,500	$	1,238,000	-	$	-
	$	462	$/LF	15"		-	$	-	3,400	$	1,572,000	-	$	-
	$	579	$/LF	18"		-	$	-	-	$	-	-	$	-
	$	704	$/LF	21"		-	$	-	-	$	-	-	$	-
	$	823	$/LF	24"		-	$	-	-	$	-	-	$	-
	$	941	$/LF	27"		-	$	-	-	$	-	-	$	-
	$	1,061	$/LF	30"		-	$	-	-	$	-	-	$	-
	$	1,302	$/LF	36"		-	$	-	-	$	-	-	$	-
Upsizing Existing Sewers	$	281	$/LF	10"		-	$	-	-	$	-		$	-
	$	354	$/LF	12"			$	-		$	-		$	-
Force Main	$	161	$/LF			3,400	$	547,000	3,340	$	537,000		$	-
Trenchless Crossing	$	4,020	$/LF			-	$	-	-	$	-		$	-
Septic System Abandonment	$	1,340	$/EA			160	$	214,400	437	$	586,000	20	$	27,000
Lower Lateral	$	8,040	$/EA			160	$	1,286,400	437	$	3,513,000	20	$	161,000
Upper Lateral	$	8,040	$/EA			160	$	1,286,400	437	$	3,513,000	20	$	161,000
Pump Station	$	1,072,000	$/EA			2	$	2,144,000	6	$	6,432,000		$	-
Grinder Pump	$	20,100	$/EA			-	$	-	-	$	-	-	$	-
Easements	$	27	$/SF				$	-	-	$	-		$	-
Subtotal						-	**$**	**9,736,200**		**$**	**26,066,000**		**$**	**864,000**
Mobilization and Demobilization				5%		-	$	486,810		$	1,303,300		$	43,200
Construction Cost Subtotal						-	**$**	**10,223,010**		**$**	**27,369,300**		**$**	**907,200**
Contingency				30%		-	$	3,066,903		$	8,210,790		$	272,160
Construction Cost						-	**$**	**13,289,913**		**$**	**35,580,090**		**$**	**1,179,360**
Engineering, Administration, and Legal Costs				25%		-	$	3,322,478		$	8,895,023		$	294,840
Chino Hills Sewer Impact Fees	$	-	$/EA			160	$	-	437	$	-	20	$	-
IEUA Sewer Impact Fees	$	8,620	$/EA			139	$	1,198,180	345	$	2,973,900	7	$	60,340
Capital Improvement Cost							**$**	**17,811,000**		**$**	**47,449,000**		**$**	**1,535,000**

IEUA Septic to Sewer

Date: February 2026
Prepared by: MMC
Checked by:
Estimate Type: Planning

	Unit Cost	Unit	Desc.	Chino Hills CH4 QTY	Chino Hills CH4 Cost	Chino Hills CH5 QTY	Chino Hills CH5 Cost	Chino Hills CH6 QTY	Chino Hills CH6 Cost
New Gravity Sewer	$ 214	$/LF	8"		$ -		$ -	200	$ 43,000
	$ 281	$/LF	10"	-	$ -	-	$ -	-	$ -
	$ 354	$/LF	12"	-	$ -	-	$ -	-	$ -
	$ 462	$/LF	15"	-	$ -	-	$ -	-	$ -
	$ 579	$/LF	18"	-	$ -	-	$ -	-	$ -
	$ 704	$/LF	21"	-	$ -	-	$ -	-	$ -
	$ 823	$/LF	24"	-	$ -	-	$ -	-	$ -
	$ 941	$/LF	27"	-	$ -	-	$ -	-	$ -
	$ 1,061	$/LF	30"	-	$ -	-	$ -	-	$ -
	$ 1,302	$/LF	36"	-	$ -	-	$ -	-	$ -
Upsizing Existing Sewers	$ 281	$/LF	10"		$ -		$ -		$ -
	$ 354	$/LF	12"		$ -		$ -		$ -
Force Main	$ 161	$/LF			$ -		$ -		$ -
Trenchless Crossing	$ 4,020	$/LF			$ -		$ -		$ -
Septic System Abandonment	$ 1,340	$/EA		9	$ 12,000	15	$ 20,000	18	$ 24,000
Lower Lateral	$ 8,040	$/EA		9	$ 72,000	15	$ 121,000	18	$ 145,000
Upper Lateral	$ 8,040	$/EA		9	$ 72,000	15	$ 121,000	18	$ 145,000
Pump Station	$ 1,072,000	$/EA			$ -		$ -		$ -
Grinder Pump	$ 20,100	$/EA		-	$ -	-	$ -	-	$ -
Easements	$ 27	$/SF		-	$ -	-	$ -	-	$ -
Subtotal					**$ 156,000**		**$ 262,000**		**$ 357,000**
Mobilization and Demobilization			5%		$ 7,800		$ 13,100		$ 17,850
Construction Cost Subtotal					**$ 163,800**		**$ 275,100**		**$ 374,850**
Contingency			30%		$ 49,140		$ 82,530		$ 112,455
Construction Cost					**$ 212,940**		**$ 357,630**		**$ 487,305**
Engineering, Administration, and Legal Costs			25%		$ 53,235		$ 89,408		$ 121,826
Chino Hills Sewer Impact Fees	$ -	$/EA		9	$ -	15	$ -	18	$ -
IEUA Sewer Impact Fees	$ 8,620	$/EA		1	$ 8,620	15	$ 129,300	16	$ 137,920
Capital Improvement Cost					**$ 275,000**		**$ 576,000**		**$ 747,000**

APPENDIX D: PROPOSED SEWER INFRASTRUCTURE AND PLANNING LEVEL COST ESTIMATES – CVWD



IEUA Septic to Sewer Feasibility Study Update

Rancho Cucamonga/ CVWD Proposed Sewer Infrastructure

Legend

- Proposed CVWD Gravity Mains
- Proposed CVWD Force Mains
- Proposed CVWD Lift Station
- Existing CVWD Sewer Mains
- 2025 CVWD Septic
- CVWD SSRs
- CVWD Service Area
- IEUA Service Area
- City Boundaries

N

0 285 570 1,140 Feet

1 inch = 824 feet

Woodard & Curran

Project #: 0012936.00

Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

Rancho Cucamonga/ CVWD Proposed Sewer Infrastructure

CV02

Legend

- Proposed CVWD Gravity Mains
- Proposed CVWD Force Mains
- Proposed CVWD Lift Station
- Existing CVWD Sewer Mains
- 2025 CVWD Septic
- CVWD SSRs
- CVWD Service Area
- IEUA Service Area
- City Boundaries

N

0 385 770 1,540 Feet

1 inch = 1,122 feet

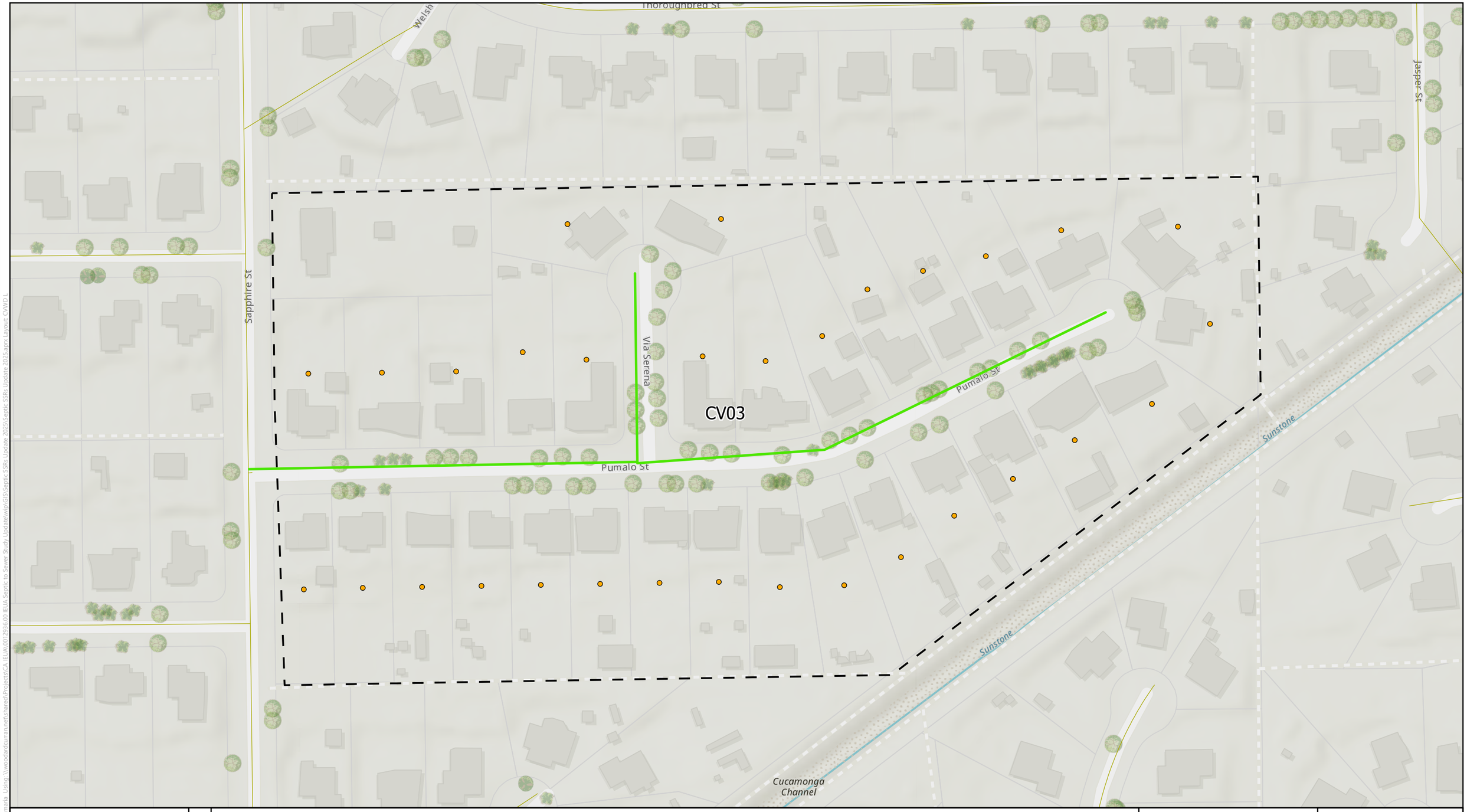
Woodard & Curran

Project #: 0012936.00

Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

Rancho Cucamonga/ CVWD Proposed Sewer Infrastructure

Legend

- Proposed CVWD Gravity Mains
- Proposed CVWD Force Mains
- Proposed CVWD Lift Station
- Existing CVWD Sewer Mains
- 2025 CVWD Septic
- CVWD SSRs
- CVWD Service Area
- IEUA Service Area
- City Boundaries

N

0 40 80 160 Feet

1 inch = 121 feet

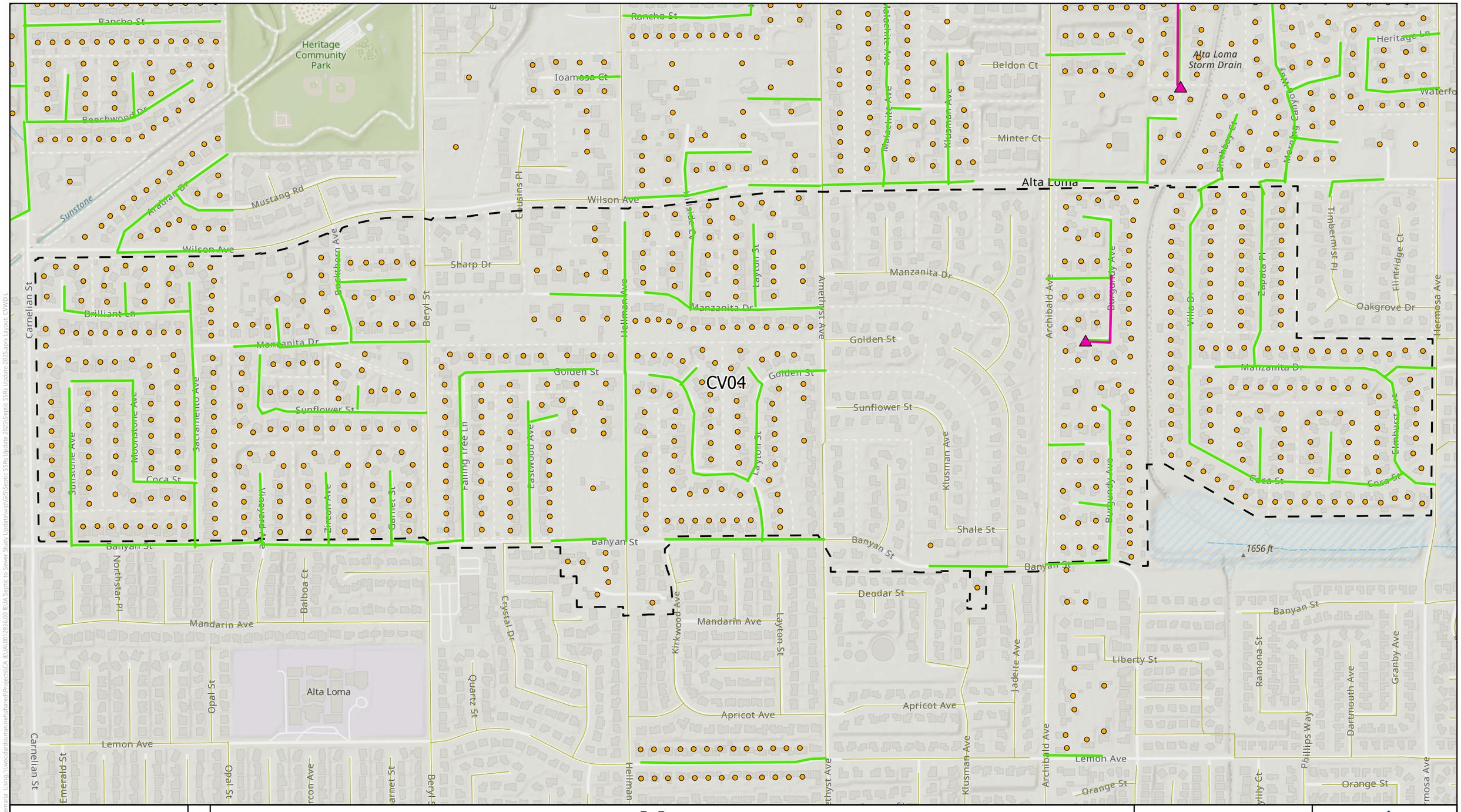
Woodard & Curran

Project #: 0012936.00

Map Created: February 2026

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Figure Exported: 3/9/2026 By: mdemaria Using: \\woodardcurran.net\shared\Projects\CA IEUA\0012936.00 IEUA Septic to Sewer Study Update\wip\GIS\Septic SSRs Update 2025\Septic SSRs Update 2025.aprx Layout: CVWD 1



IEUA Septic to Sewer Feasibility Study Update

Rancho Cucamonga/ CVWD Proposed Sewer Infrastructure

Legend

- Proposed CVWD Gravity Mains
- Proposed CVWD Force Mains
- Proposed CVWD Lift Station
- Existing CVWD Sewer Mains
- 2025 CVWD Septic
- CVWD SSRs
- CVWD Service Area
- IEUA Service Area
- City Boundaries

N

0 210 420 840 Feet

1 inch = 610 feet

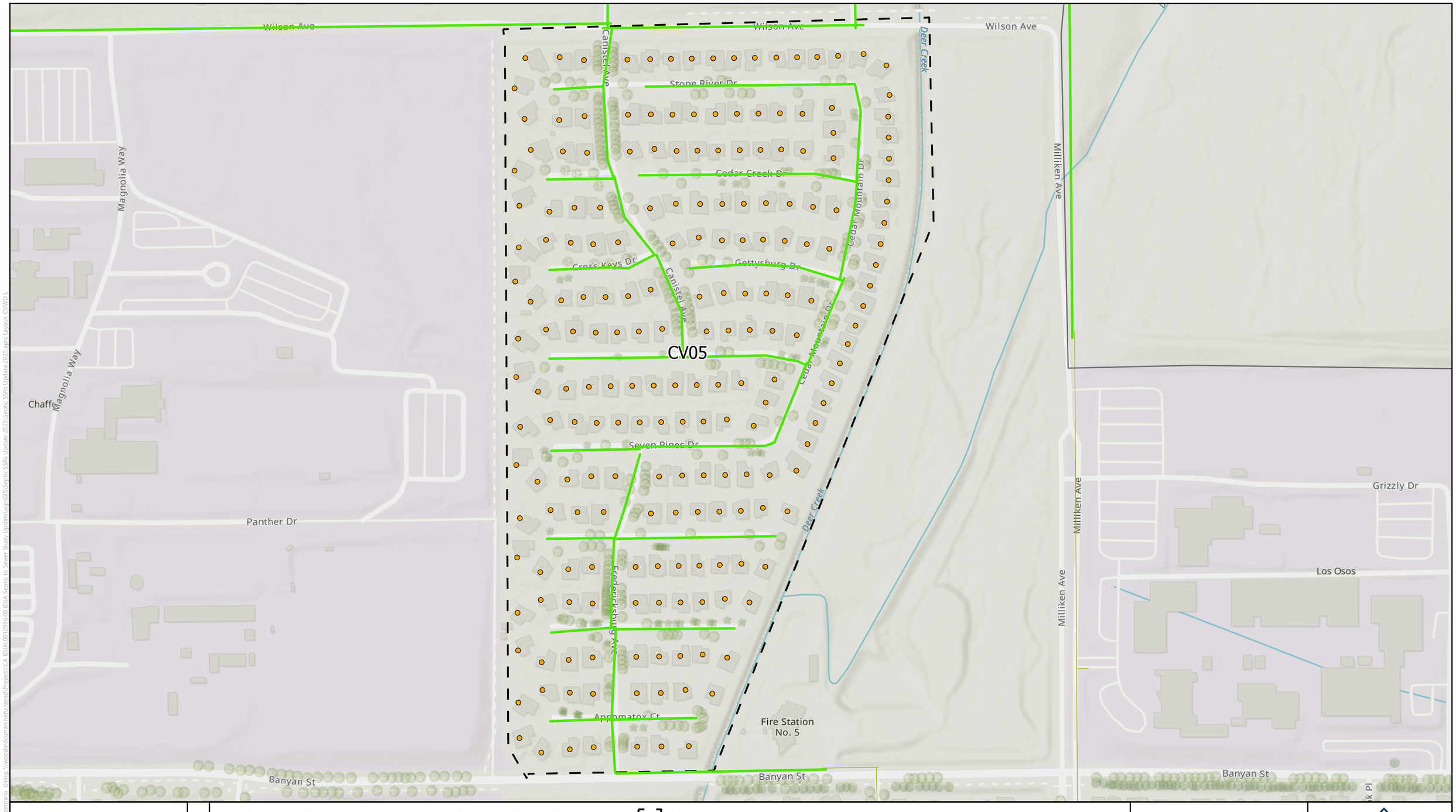
Woodard & Curran

Project #: 0012936.00

Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

Rancho Cucamonga/ CVWD Proposed Sewer Infrastructure

Legend

- Proposed CVWD Gravity Mains
- Proposed CVWD Force Mains
- Proposed CVWD Lift Station
- Existing CVWD Sewer Mains
- 2025 CVWD Septic
- CVWD SSRs
- CVWD Service Area
- IEUA Service Area
- City Boundaries

N

0 105 210 420 Feet

1 inch = 309 feet

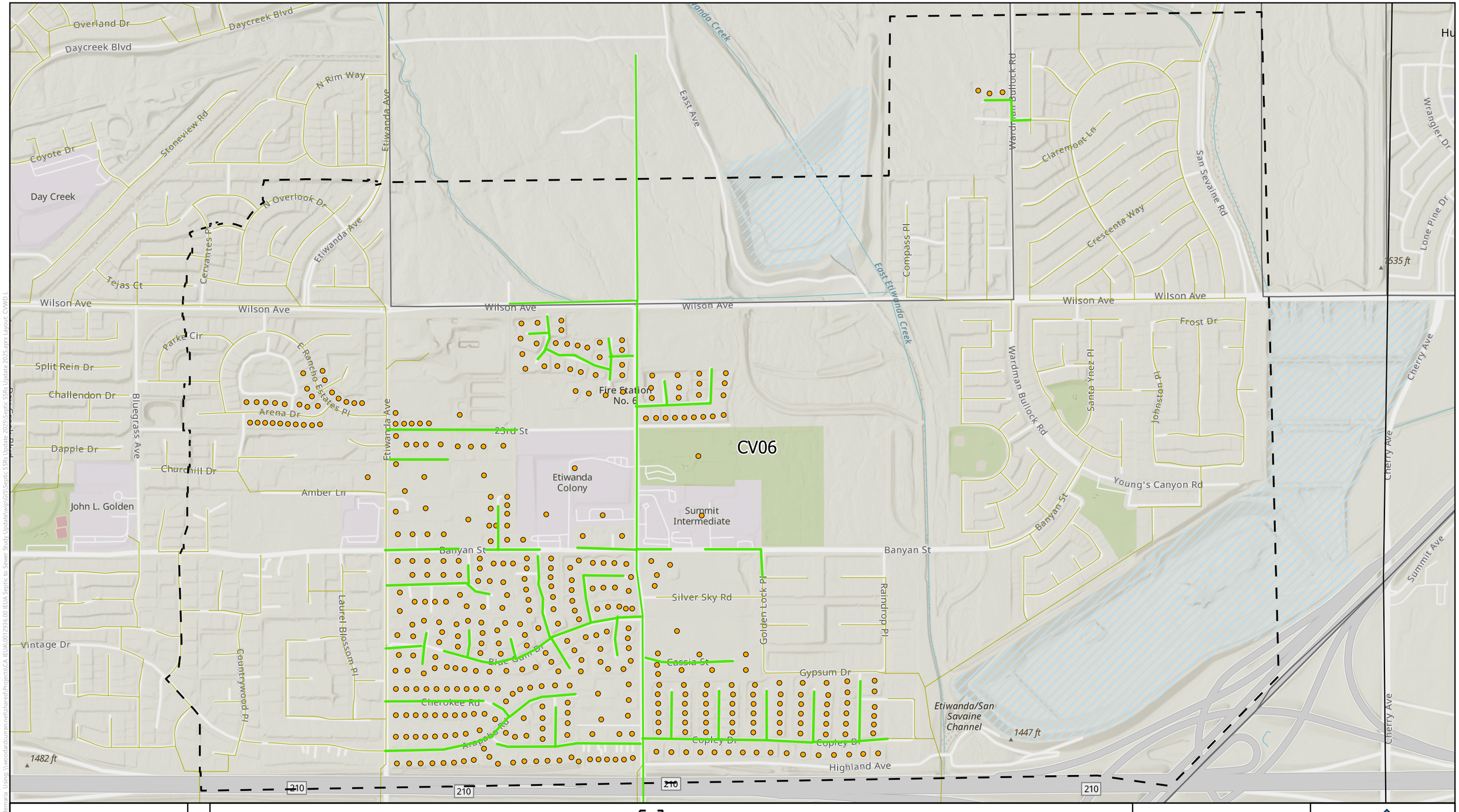
Woodard & Curran

Project #: 0012936.00

Map Created: February 2026

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Figure Exported: 2/9/2026 By: mdemaria Using: \\woodardcurran.net\shared\Projects\CA IEUA\0012936.00 IEUA Septic to Sewer Study Update\wip\GIS\Septic SSRs Update 2025.aprx Layout: CVWD 1



IEUA Septic to Sewer Feasibility Study Update

Rancho Cucamonga/ CVWD Proposed Sewer Infrastructure

Legend

- Proposed CVWD Gravity Mains
- Proposed CVWD Force Mains
- Proposed CVWD Lift Station
- Existing CVWD Sewer Mains
- 2025 CVWD Septic
- CVWD SSRs
- CVWD Service Area
- IEUA Service Area
- City Boundaries

N

0 325 650 1,300 Feet

1 inch = 943 feet

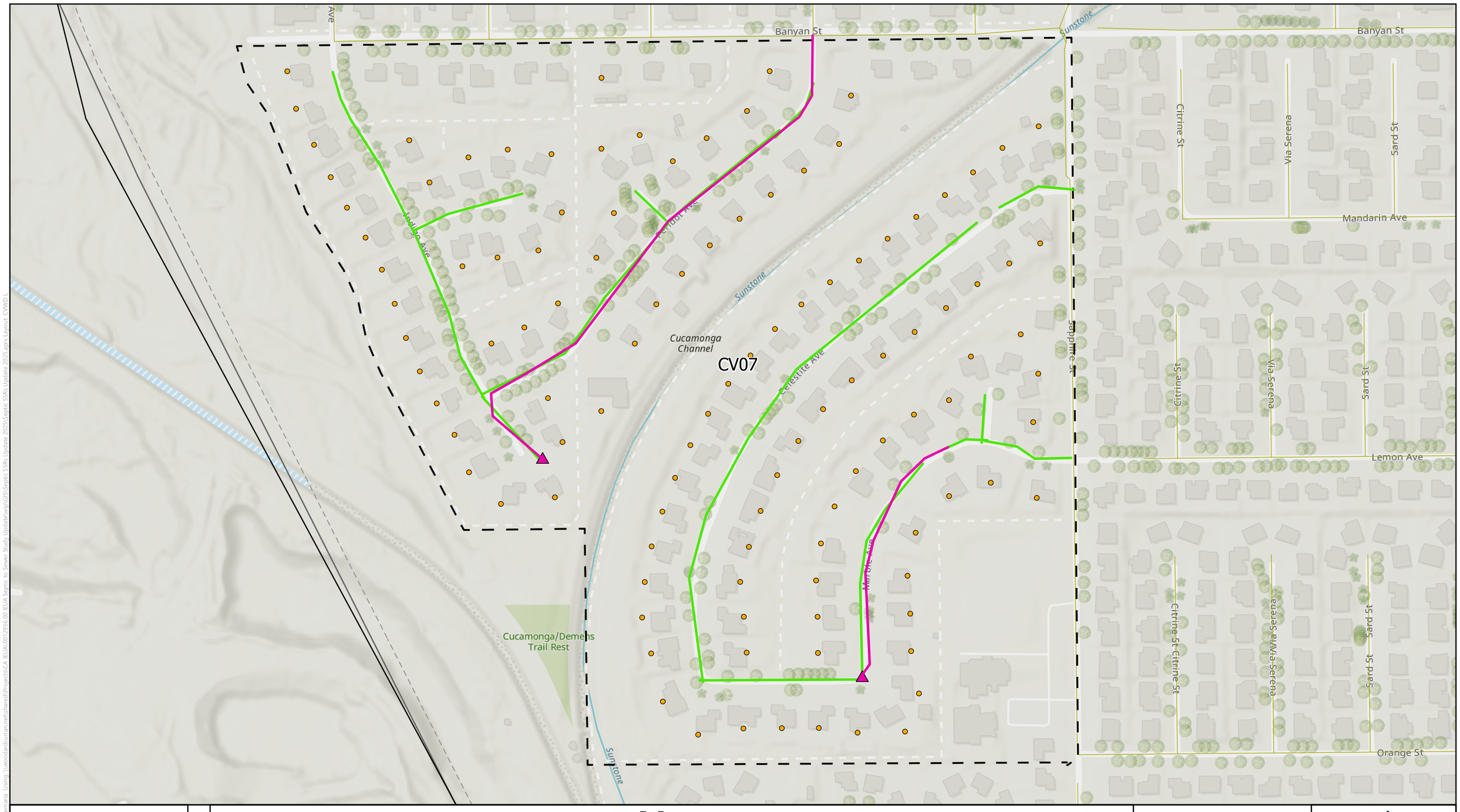
Woodard & Curran

Project #: 0012936.00

Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

Rancho Cucamonga/ CVWD Proposed Sewer Infrastructure

Legend

- Proposed CVWD Gravity Mains
- Proposed CVWD Force Mains
- Proposed CVWD Lift Station
- Existing CVWD Sewer Mains
- 2025 CVWD Septic
- CVWD SSRs
- CVWD Service Area
- IEUA Service Area
- City Boundaries

N

0 85 170 340 Feet

1 inch = 247 feet

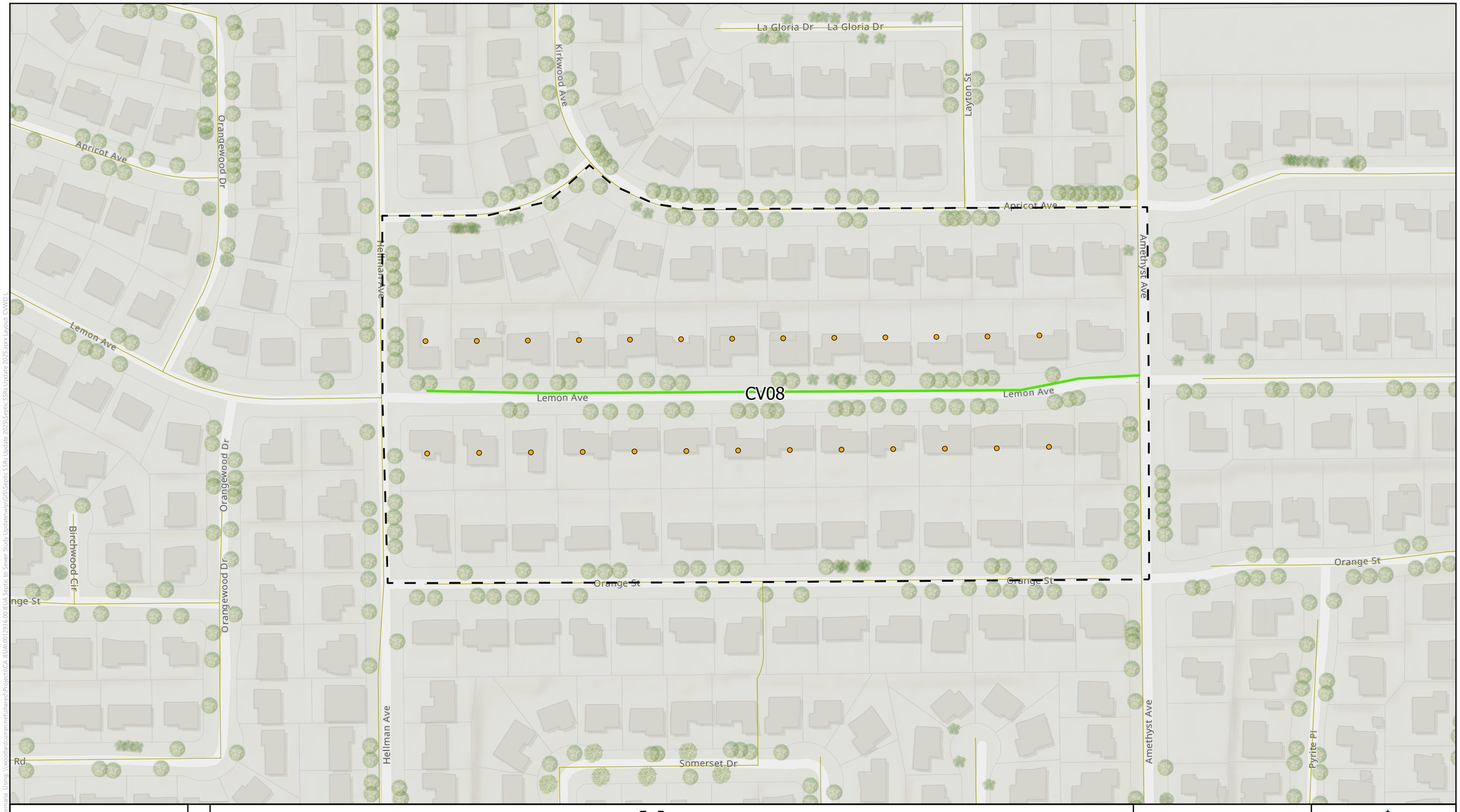
Woodard & Curran

Project #: 0012936.00

Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

Rancho Cucamonga/ CVWD Proposed Sewer Infrastructure

Legend

- Proposed CVWD Gravity Mains
- Proposed CVWD Force Mains
- Proposed CVWD Lift Station
- Existing CVWD Sewer Mains
- 2025 CVWD Septic
- CVWD SSRs
- CVWD Service Area
- IEUA Service Area
- City Boundaries

N

0 50 100 200 Feet

1 inch = 158 feet

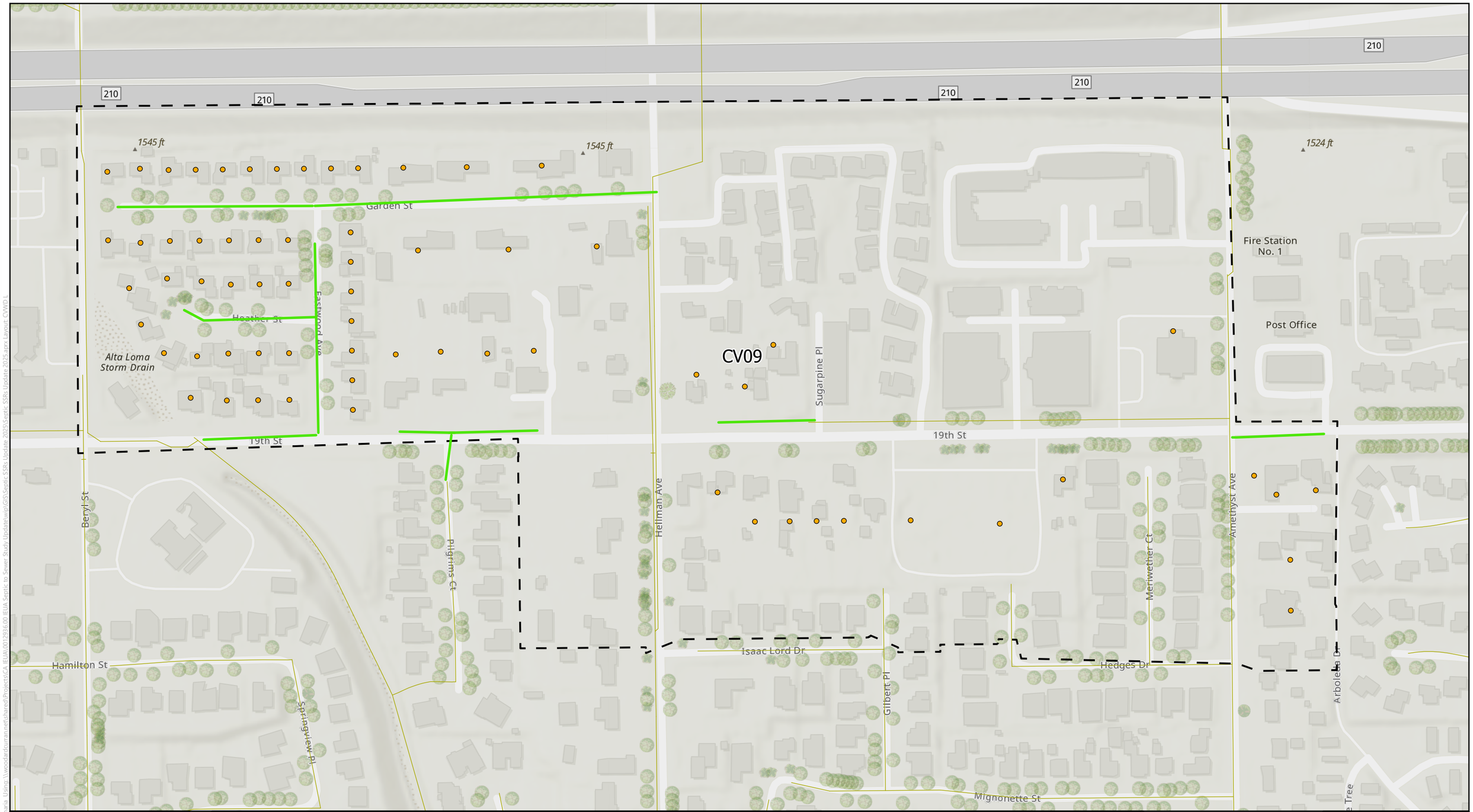
Woodard & Curran

Project #: 0012936.00

Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

Rancho Cucamonga/ CVWD Proposed Sewer Infrastructure

Legend

- Proposed CVWD Gravity Mains
- Proposed CVWD Force Mains
- Proposed CVWD Lift Station
- Existing CVWD Sewer Mains
- 2025 CVWD Septic
- CVWD SSRs
- CVWD Service Area
- IEUA Service Area
- City Boundaries

N

0 70 140 280 Feet

1 inch = 212 feet

Woodard & Curran

Project #: 0012936.00

Map Created: February 2026

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Figure Exported: 3/9/2026 By: mdemaria Using: \\woodardcurran.net\shared\Projects\CA IEUA\0012936.00 IEUA Septic to Sewer Study Update\wip\GIS\Septic SSRs Update 2025\Septic SSRs Update 2025.aprx Layout: CVWD L

IEUA Septic to Sewer Feasibility Study Update

Rancho Cucamonga/ CVWD Proposed Sewer Infrastructure

Legend

- Proposed CVWD Gravity Mains
- Proposed CVWD Force Mains
- Proposed CVWD Lift Station
- Existing CVWD Sewer Mains
- 2025 CVWD Septic
- CVWD SSRs
- CVWD Service Area
- IEUA Service Area
- City Boundaries

N

0 360 720 1,440 Feet

1 inch = 1,047 feet

Woodard & Curran

Project #: 0012936.00

Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

Rancho Cucamonga/ CVWD Proposed Sewer Infrastructure

Legend

- Proposed CVWD Gravity Mains
- Proposed CVWD Force Mains
- Proposed CVWD Lift Station
- Existing CVWD Sewer Mains
- 2025 CVWD Septic
- CVWD SSRs
- CVWD Service Area
- IEUA Service Area
- City Boundaries

N

0 460 920 1,840 Feet

1 inch = 1,326 feet

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Project #: 0012936.00

Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

Rancho Cucamonga/ CVWD
Proposed Sewer Infrastructure

Legend

- Proposed CVWD Gravity Mains
- Proposed CVWD Force Mains
- Proposed CVWD Lift Station
- Existing CVWD Sewer Mains
- 2025 CVWD Septic
- CVWD SSRs
- CVWD Service Area
- IEUA Service Area
- City Boundaries

N

0 120 240 480 Feet

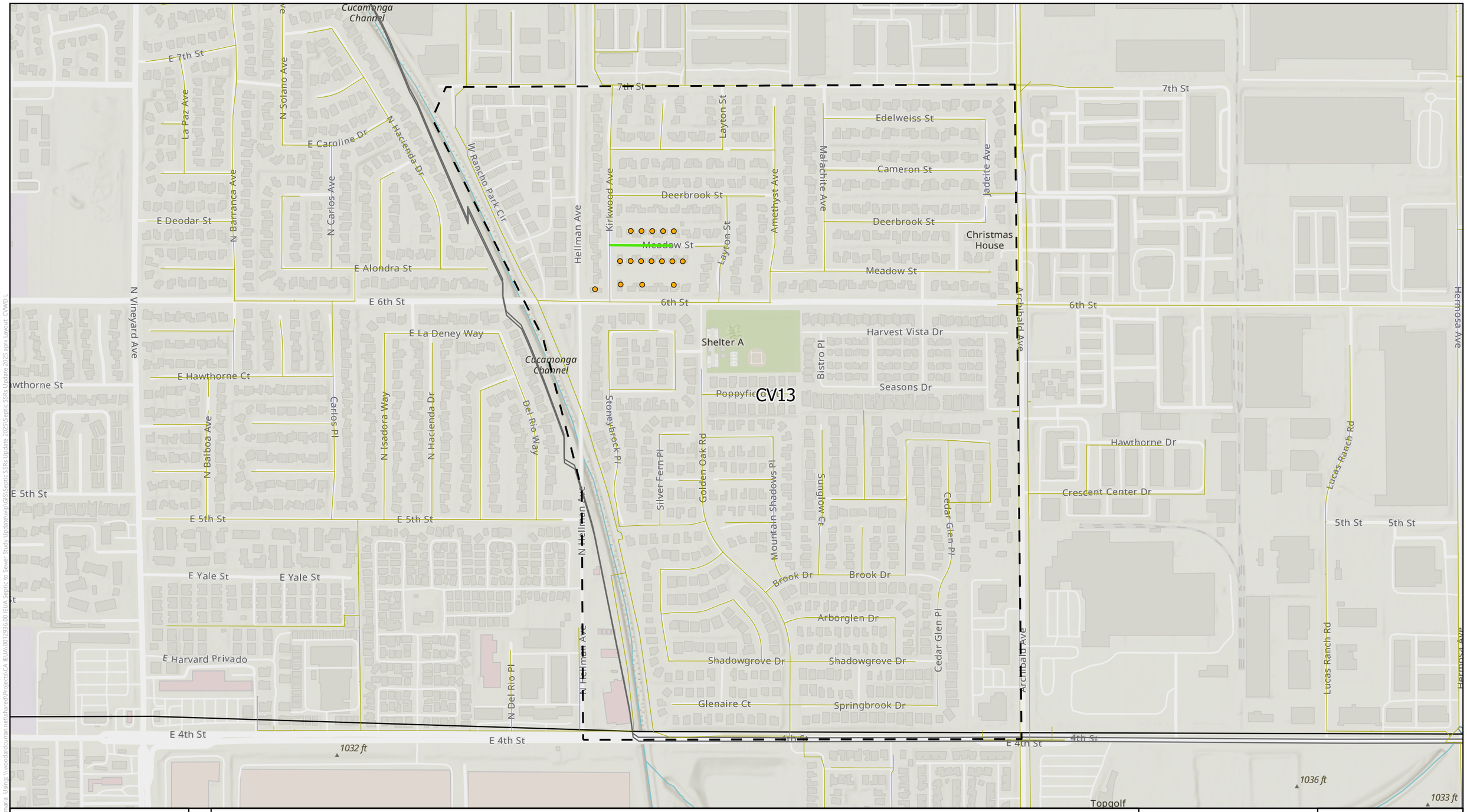
1 inch = 348 feet

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Project #: 0012936.00
Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

Rancho Cucamonga/ CVWD Proposed Sewer Infrastructure

Legend

- Proposed CVWD Gravity Mains
- Proposed CVWD Force Mains
- Proposed CVWD Lift Station
- Existing CVWD Sewer Mains
- 2025 CVWD Septic
- CVWD SSRs
- CVWD Service Area
- IEUA Service Area
- City Boundaries

N

0 187.5 375 750 Feet

1 inch = 543 feet

Woodard & Curran

Project #: 0012936.00

Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

Rancho Cucamonga/ CVWD Proposed Sewer Infrastructure

Legend

- Proposed CVWD Gravity Mains
- Proposed CVWD Force Mains
- Proposed CVWD Lift Station
- Existing CVWD Sewer Mains
- 2025 CVWD Septic
- CVWD SSRs
- CVWD Service Area
- IEUA Service Area
- City Boundaries

N

0 412.5 825 1,650 Feet

1 inch = 1,199 feet

Woodard & Curran

Project #: 0012936.00

Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

Rancho Cucamonga/ CVWD Proposed Sewer Infrastructure

Legend

- Proposed CVWD Gravity Mains
- Proposed CVWD Force Mains
- Proposed CVWD Lift Station
- Existing CVWD Sewer Mains
- 2025 CVWD Septic
- CVWD SSRs
- CVWD Service Area
- IEUA Service Area
- City Boundaries

N

0 650 1,300 2,600 Feet

1 inch = 1,930 feet

Woodard & Curran

Project #: 0012936.00

Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

Rancho Cucamonga/ CVWD Proposed Sewer Infrastructure

CV16

Rancho Cucamonga

Etiwanda

Victoria

Foothill Marketplace

Victoria Gardens

Rancho Cucamonga Central Park

Rancho Cucamonga Adult Sports Complex

McDermott Park

Auto Club Speedway

1350 ft

1314 ft

1318 ft

1127 ft

1133 ft

Legend

- Proposed CVWD Gravity Mains
- Proposed CVWD Force Mains
- Proposed CVWD Lift Station
- Existing CVWD Sewer Mains
- 2025 CVWD Septic
- CVWD SSRs
- CVWD Service Area
- IEUA Service Area
- City Boundaries

N

0 850 1,700 3,400 Feet

1 inch = 2,463 feet

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Project #: 0012936.00

Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

Rancho Cucamonga/ CVWD Proposed Sewer Infrastructure

Legend

- Proposed CVWD Gravity Mains
- Proposed CVWD Force Mains
- Proposed CVWD Lift Station
- Existing CVWD Sewer Mains
- 2025 CVWD Septic
- CVWD SSRs
- CVWD Service Area
- IEUA Service Area
- City Boundaries

N

0 1,125 2,250 4,500 Feet

1 inch = 3,263 feet

Woodard & Curran

Project #: 0012936.00

Map Created: February 2026

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IEUA Septic to Sewer Study Update

Date: February 2026
Prepared by: MMC
Checked by:
Estimate Type: Planning

	Unit Cost	Unit	Desc.	Cucamonga Valley CV01 QTY	Cucamonga Valley CV01 Cost	Cucamonga Valley CV02 QTY	Cucamonga Valley CV02 Cost	Cucamonga Valley CV03 QTY	Cucamonga Valley CV03 Cost
New Gravity Sewer	$ 214	$/LF	8"	120,340	$ 25,801,000	119,965	$ 25,720,000	1,460	$ 313,000
	$ 281	$/LF	10"		$ -		$ -		$ -
	$ 354	$/LF	12"		$ -		$ -	-	$ -
	$ 462	$/LF	15"	-	$ -		$ -	-	$ -
	$ 579	$/LF	18"	-	$ -	-	$ -	-	$ -
	$ 704	$/LF	21"	-	$ -	-	$ -	-	$ -
	$ 823	$/LF	24"	-	$ -	-	$ -	-	$ -
	$ 941	$/LF	27"	-	$ -	-	$ -	-	$ -
	$ 1,061	$/LF	30"	-	$ -	-	$ -	-	$ -
	$ 1,302	$/LF	36"	-	$ -	-	$ -	-	$ -
Upsizing Existing Sewers	$ 281	$/LF	10"		$ -	-	$ -		$ -
	$ 354	$/LF	12"		$ -		$ -		$ -
Force Main	$ 161	$/LF		-	$ -	6,200	$ 997,000		$ -
Trenchless Crossing	$ 4,020	$/LF		560	$ 2,251,000	245	$ 985,000		$ -
Septic System Abandonment	$ 1,340	$/EA		1,537	$ 2,059,580	1,280	$ 1,715,000	31	$ 42,000
Lower Lateral	$ 8,040	$/EA		1,537	$ 12,357,480	1,280	$ 10,291,000	31	$ 249,000
Upper Lateral	$ 8,040	$/EA		1,537	$ 12,357,480	1,280	$ 10,291,000	31	$ 249,000
Pump Station	$ 1,072,000	$/EA		-	$ -	12	$ 12,864,000		$ -
Grinder Pump	$ 20,100	$/EA		-	$ -	-	$ -	-	$ -
Easements	$ 27	$/SF		2,475	$ 66,000	7,575	$ 203,000		$ -
Subtotal					**$ 54,892,540**		**$ 63,066,000**		**$ 853,000**
Mobilization and Demobilization			5%		$ 2,744,627		$ 3,153,300		$ 42,650
Construction Cost Subtotal					**$ 57,637,167**		**$ 66,219,300**		**$ 895,650**
Contingency			30%		$ 17,291,150		$ 19,865,790		$ 268,695
Construction Cost					**$ 74,928,317**		**$ 86,085,090**		**$ 1,164,345**
Engineering, Administration, and Legal Costs			25%		$ 18,732,079		$ 21,521,273		$ 291,086
CVWD Sewer Impact Fees	$ 208	$/EA		1,537	$ 319,696	1,280	$ 266,240	31	$ 6,448
IEUA Sewer Impact Fees	$ 8,620	$/EA		1,338	$ 11,533,560	1,217	$ 10,490,540	23	$ 198,260
Capital Improvement Cost					**$ 105,514,000**		**$ 118,363,000**		**$ 1,660,000**

IEUA Septic to Sewer

Date: February 2026
Prepared by: MMC
Checked by:
Estimate Type: Planning

	Unit Cost	Unit	Desc.	Cucamonga Valley CV04 QTY	Cucamonga Valley CV04 Cost	Cucamonga Valley CV05 QTY	Cucamonga Valley CV05 Cost	Cucamonga Valley CV06 QTY	Cucamonga Valley CV06 Cost
New Gravity Sewer	$ 214	$/LF	8"	38,440	$ 8,242,000	10,455	$ 2,242,000	2,800	$ 600,000
	$ 281	$/LF	10"	-	$ -	-	$ -	480	$ 135,000
	$ 354	$/LF	12"	265	$ 94,000	-	$ -	530	$ 187,000
	$ 462	$/LF	15"	-	$ -	-	$ -	-	$ -
	$ 579	$/LF	18"	-	$ -	-	$ -	-	$ -
	$ 704	$/LF	21"	-	$ -	-	$ -	-	$ -
	$ 823	$/LF	24"	-	$ -	-	$ -	-	$ -
	$ 941	$/LF	27"	-	$ -	-	$ -	-	$ -
	$ 1,061	$/LF	30"	-	$ -	-	$ -	-	$ -
	$ 1,302	$/LF	36"	-	$ -	-	$ -	-	$ -
Upsizing Existing Sewers	$ 281	$/LF	10"		$ -		$ -		$ -
	$ 354	$/LF	12"		$ -		$ -		$ -
Force Main	$ 161	$/LF		650	$ 105,000		$ -		$ -
Trenchless Crossing	$ 4,020	$/LF			$ -	65	$ 261,000		$ -
Septic System Abandonment	$ 1,340	$/EA		585	$ 784,000	206	$ 276,000	414	$ 555,000
Lower Lateral	$ 8,040	$/EA		585	$ 4,703,000	206	$ 1,656,000	414	$ 3,329,000
Upper Lateral	$ 8,040	$/EA		585	$ 4,703,000	206	$ 1,656,000	414	$ 3,329,000
Pump Station	$ 1,072,000	$/EA		1	$ 1,072,000		$ -		$ -
Grinder Pump	$ 20,100	$/EA		-	$ -	-	$ -	-	$ -
Easements	$ 27	$/SF		-	$ -	-	$ -	-	$ -
Subtotal					**$ 19,703,000**		**$ 6,091,000**		**$ 8,135,000**
Mobilization and Demobilization			5%		$ 985,150		$ 304,550		$ 406,750
Construction Cost Subtotal					**$ 20,688,150**		**$ 6,395,550**		**$ 8,541,750**
Contingency			30%		$ 6,206,445		$ 1,918,665		$ 2,562,525
Construction Cost					**$ 26,894,595**		**$ 8,314,215**		**$ 11,104,275**
Engineering, Administration, and Legal Costs			25%		$ 6,723,649		$ 2,078,554		$ 2,776,069
CVWD Sewer Impact Fees	$ 208	$/EA		585	$ 121,680	206	$ 42,848	414	$ 86,112
IEUA Sewer Impact Fees	$ 8,620	$/EA		532	$ 4,585,840	190	$ 1,637,800	383	$ 3,301,460
Capital Improvement Cost					**$ 38,326,000**		**$ 12,073,000**		**$ 17,268,000**

IEUA Septic to Sewer

Date: February 2026
Prepared by: MMC
Checked by:
Estimate Type: Planning

	Unit Cost	Unit	Desc.	Cucamonga Valley CV07 QTY	Cucamonga Valley CV07 Cost	Cucamonga Valley CV08 QTY	Cucamonga Valley CV08 Cost	Cucamonga Valley CV09 QTY	Cucamonga Valley CV09 Cost
New Gravity Sewer	$ 214	$/LF	8"	6,435	$ 1,380,000	1,270	$ 272,000	3,090	$ 662,000
	$ 281	$/LF	10"	-	$ -	-	$ -	-	$ -
	$ 354	$/LF	12"	-	$ -	-	$ -	-	$ -
	$ 462	$/LF	15"	-	$ -	-	$ -	-	$ -
	$ 579	$/LF	18"	-	$ -	-	$ -	-	$ -
	$ 704	$/LF	21"	-	$ -	-	$ -	-	$ -
	$ 823	$/LF	24"	-	$ -	-	$ -	-	$ -
	$ 941	$/LF	27"	-	$ -	-	$ -	-	$ -
	$ 1,061	$/LF	30"	-	$ -	-	$ -	-	$ -
	$ 1,302	$/LF	36"	-	$ -	-	$ -	-	$ -
Upsizing Existing Sewers	$ 281	$/LF	10"		$ -		$ -		$ -
	$ 354	$/LF	12"		$ -		$ -		$ -
Force Main	$ 161	$/LF		2,400	$ 386,000		$ -		$ -
Trenchless Crossing	$ 4,020	$/LF			$ -		$ -		$ -
Septic System Abandonment	$ 1,340	$/EA		111	$ 149,000	26	$ 35,000	67	$ 90,000
Lower Lateral	$ 8,040	$/EA		111	$ 892,000	26	$ 209,000	67	$ 539,000
Upper Lateral	$ 8,040	$/EA		111	$ 892,000	26	$ 209,000	67	$ 539,000
Pump Station	$ 1,072,000	$/EA		2	$ 2,144,000		$ -		$ -
Grinder Pump	$ 20,100	$/EA		-	$ -	-	$ -	-	$ -
Easements	$ 27	$/SF		-	$ -	-	$ -	-	$ -
Subtotal					**$ 5,843,000**		**$ 725,000**		**$ 1,830,000**
Mobilization and Demobilization			5%		$ 292,150		$ 36,250		$ 91,500
Construction Cost Subtotal					**$ 6,135,150**		**$ 761,250**		**$ 1,921,500**
Contingency			30%		$ 1,840,545		$ 228,375		$ 576,450
Construction Cost					**$ 7,975,695**		**$ 989,625**		**$ 2,497,950**
Engineering, Administration, and Legal Costs			25%		$ 1,993,924		$ 247,406		$ 624,488
CVWD Sewer Impact Fees	$ 208	$/EA		111	$ 23,088	26	$ 5,408	67	$ 13,936
IEUA Sewer Impact Fees	$ 8,620	$/EA		94	$ 810,280	21	$ 181,020	61	$ 525,820
Capital Improvement Cost					**$ 10,803,000**		**$ 1,423,000**		**$ 3,662,000**

IEUA Septic to Sewer

Date: February 2026
Prepared by: MMC
Checked by:
Estimate Type: Planning

	Unit Cost	Unit	Desc.	Cucamonga Valley CV10 QTY	Cucamonga Valley CV10 Cost	Cucamonga Valley CV11 QTY	Cucamonga Valley CV11 Cost	Cucamonga Valley CV12 QTY	Cucamonga Valley CV12 Cost
New Gravity Sewer	$ 214	$/LF	8"	12,000	$ 2,573,000	9,810	$ 2,103,000	150	$ 32,000
	$ 281	$/LF	10"	1,320	$ 371,000	-	$ -	-	$ -
	$ 354	$/LF	12"	-	$ -	-	$ -	-	$ -
	$ 462	$/LF	15"	-	$ -	-	$ -	-	$ -
	$ 579	$/LF	18"	-	$ -	-	$ -	-	$ -
	$ 704	$/LF	21"	-	$ -	-	$ -	-	$ -
	$ 823	$/LF	24"	-	$ -	-	$ -	-	$ -
	$ 941	$/LF	27"	-	$ -	-	$ -	-	$ -
	$ 1,061	$/LF	30"	-	$ -	-	$ -	-	$ -
	$ 1,302	$/LF	36"	-	$ -	-	$ -	-	$ -
Upsizing Existing Sewers	$ 281	$/LF	10"		$ -		$ -		$ -
	$ 354	$/LF	12"		$ -		$ -		$ -
Force Main	$ 161	$/LF			$ -	1,215	$ 195,000		$ -
Trenchless Crossing	$ 4,020	$/LF			$ -		$ -		$ -
Septic System Abandonment	$ 1,340	$/EA		271	$ 363,000	197	$ 264,000	13	$ 17,000
Lower Lateral	$ 8,040	$/EA		271	$ 2,179,000	197	$ 1,584,000	13	$ 105,000
Upper Lateral	$ 8,040	$/EA		271	$ 2,179,000	197	$ 1,584,000	13	$ 105,000
Pump Station	$ 1,072,000	$/EA			$ -	2	$ 2,144,000		$ -
Grinder Pump	$ 20,100	$/EA		-	$ -	-	$ -	-	$ -
Easements	$ 27	$/SF		-	$ -	-	$ -	-	$ -
Subtotal					**$ 7,665,000**		**$ 7,874,000**		**$ 259,000**
Mobilization and Demobilization			5%		$ 383,250		$ 393,700		$ 12,950
Construction Cost Subtotal					**$ 8,048,250**		**$ 8,267,700**		**$ 271,950**
Contingency			30%		$ 2,414,475		$ 2,480,310		$ 81,585
Construction Cost					**$ 10,462,725**		**$ 10,748,010**		**$ 353,535**
Engineering, Administration, and Legal Costs			25%		$ 2,615,681		$ 2,687,003		$ 88,384
CVWD Sewer Impact Fees	$ 208	$/EA		271	$ 56,368	197	$ 40,976	13	$ 2,704
IEUA Sewer Impact Fees	$ 8,620	$/EA		232	$ 1,999,840	174	$ 1,499,880	10	$ 86,200
Capital Improvement Cost					**$ 15,135,000**		**$ 14,976,000**		**$ 531,000**

IEUA Septic to Sewer

Date: February 2026
Prepared by: MMC
Checked by:
Estimate Type: Planning

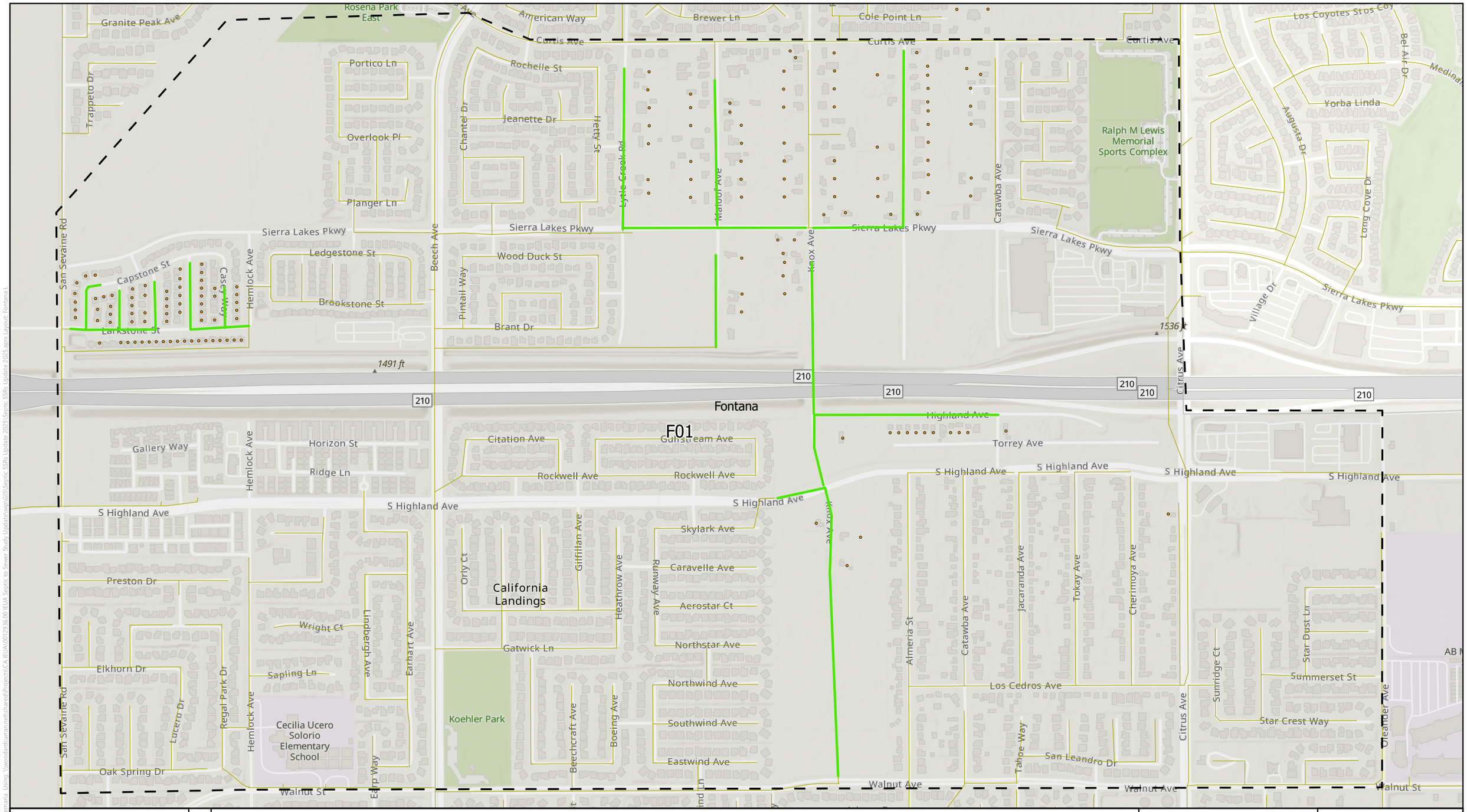
	Unit Cost	Unit	Desc.	Cucamonga Valley CV13 QTY	Cucamonga Valley CV13 Cost	Cucamonga Valley CV14 QTY	Cucamonga Valley CV14 Cost	Cucamonga Valley CV15 QTY	Cucamonga Valley CV15 Cost
New Gravity Sewer	$ 214	$/LF	8"	375	$ 80,000	3,030	$ 650,000	3,230	$ 693,000
	$ 281	$/LF	10"	-	$ -	-	$ -	-	$ -
	$ 354	$/LF	12"	-	$ -	-	$ -	-	$ -
	$ 462	$/LF	15"	-	$ -	-	$ -	-	$ -
	$ 579	$/LF	18"	-	$ -	-	$ -	-	$ -
	$ 704	$/LF	21"	-	$ -	-	$ -	-	$ -
	$ 823	$/LF	24"	-	$ -	-	$ -	-	$ -
	$ 941	$/LF	27"	-	$ -	-	$ -	-	$ -
	$ 1,061	$/LF	30"	-	$ -	-	$ -	-	$ -
	$ 1,302	$/LF	36"	-	$ -	-	$ -	-	$ -
Upsizing Existing Sewers	$ 281	$/LF	10"		$ -		$ -		$ -
	$ 354	$/LF	12"		$ -		$ -		$ -
Force Main	$ 161	$/LF			$ -		$ -		$ -
Trenchless Crossing	$ 4,020	$/LF			$ -		$ -		$ -
Septic System Abandonment	$ 1,340	$/EA		16	$ 21,000	22	$ 29,000	59	$ 79,000
Lower Lateral	$ 8,040	$/EA		16	$ 129,000	22	$ 177,000	59	$ 474,000
Upper Lateral	$ 8,040	$/EA		16	$ 129,000	22	$ 177,000	59	$ 474,000
Pump Station	$ 1,072,000	$/EA			$ -		$ -		$ -
Grinder Pump	$ 20,100	$/EA		-	$ -	-	$ -	-	$ -
Easements	$ 27	$/SF		-	$ -	-	$ -	-	$ -
Subtotal					**$ 359,000**		**$ 1,033,000**		**$ 1,720,000**
Mobilization and Demobilization			5%		$ 17,950		$ 51,650		$ 86,000
Construction Cost Subtotal					**$ 376,950**		**$ 1,084,650**		**$ 1,806,000**
Contingency			30%		$ 113,085		$ 325,395		$ 541,800
Construction Cost					**$ 490,035**		**$ 1,410,045**		**$ 2,347,800**
Engineering, Administration, and Legal Costs			25%		$ 122,509		$ 352,511		$ 586,950
CVWD Sewer Impact Fees	$ 208	$/EA		16	$ 3,328	22	$ 4,576	59	$ 12,272
IEUA Sewer Impact Fees	$ 8,620	$/EA		15	$ 129,300	46	$ 396,520	45	$ 387,900
Capital Improvement Cost					**$ 745,000**		**$ 2,164,000**		**$ 3,335,000**

IEUA Septic to Sewer

Date: February 2026
Prepared by: MMC
Checked by:
Estimate Type: Planning

	Unit Cost		Unit	Desc.	Cucamonga Valley CV16 QTY		Cucamonga Valley CV16 Cost	Cucamonga Valley CV17 QTY		Cucamonga Valley CV17 Cost
New Gravity Sewer	$	214	$/LF	8"	5,145	$	1,103,000	1,830	$	392,000
	$	281	$/LF	10"	-	$	-	-	$	-
	$	354	$/LF	12"	-	$	-	-	$	-
	$	462	$/LF	15"	-	$	-	-	$	-
	$	579	$/LF	18"	-	$	-	-	$	-
	$	704	$/LF	21"	-	$	-	-	$	-
	$	823	$/LF	24"	-	$	-	-	$	-
	$	941	$/LF	27"	-	$	-	-	$	-
	$	1,061	$/LF	30"	-	$	-	-	$	-
	$	1,302	$/LF	36"	-	$	-	-	$	-
Upsizing Existing Sewers	$	281	$/LF	10"		$	-		$	-
	$	354	$/LF	12"		$	-		$	-
Force Main	$	161	$/LF			$	-		$	-
Trenchless Crossing	$	4,020	$/LF			$	-		$	-
Septic System Abandonment	$	1,340	$/EA		63	$	84,000	15	$	20,000
Lower Lateral	$	8,040	$/EA		63	$	507,000	15	$	121,000
Upper Lateral	$	8,040	$/EA		63	$	507,000	15	$	121,000
Pump Station	$	1,072,000	$/EA			$	-		$	-
Grinder Pump	$	20,100	$/EA		-	$	-	-	$	-
Easements	$	27	$/SF		-	$	-	4,650	$	125,000
Subtotal						**$**	**2,201,000**		**$**	**779,000**
Mobilization and Demobilization				5%		$	110,050		$	38,950
Construction Cost Subtotal						**$**	**2,311,050**		**$**	**817,950**
Contingency				30%		$	693,315		$	245,385
Construction Cost						**$**	**3,004,365**		**$**	**1,063,335**
Engineering, Administration, and Legal Costs				25%		$	751,091		$	265,834
CVWD Sewer Impact Fees	$	208	$/EA		63	$	13,104	15	$	3,120
IEUA Sewer Impact Fees	$	8,620	$/EA		46	$	396,520	13	$	112,060
Capital Improvement Cost						**$**	**4,165,000**		**$**	**1,444,000**

APPENDIX E: PROPOSED SEWER INFRASTRUCTURE AND PLANNING LEVEL COST ESTIMATES – CITY OF FONTANA



IEUA Septic to Sewer Feasibility Study Update

City of Fontana
Proposed Sewer Infrastructure

Legend

- Proposed Fontana Lift Station
- Proposed Fontana Force Mains
- Proposed Fontana Gravity Main
- Existing City of Fontana Septic Properties
- Existing City of Fontana Sewer Mains
- Fontana SSRs
- Fontana SOI
- City Boundaries
- IEUA Service Area

N

0 212.5 425 850 Feet

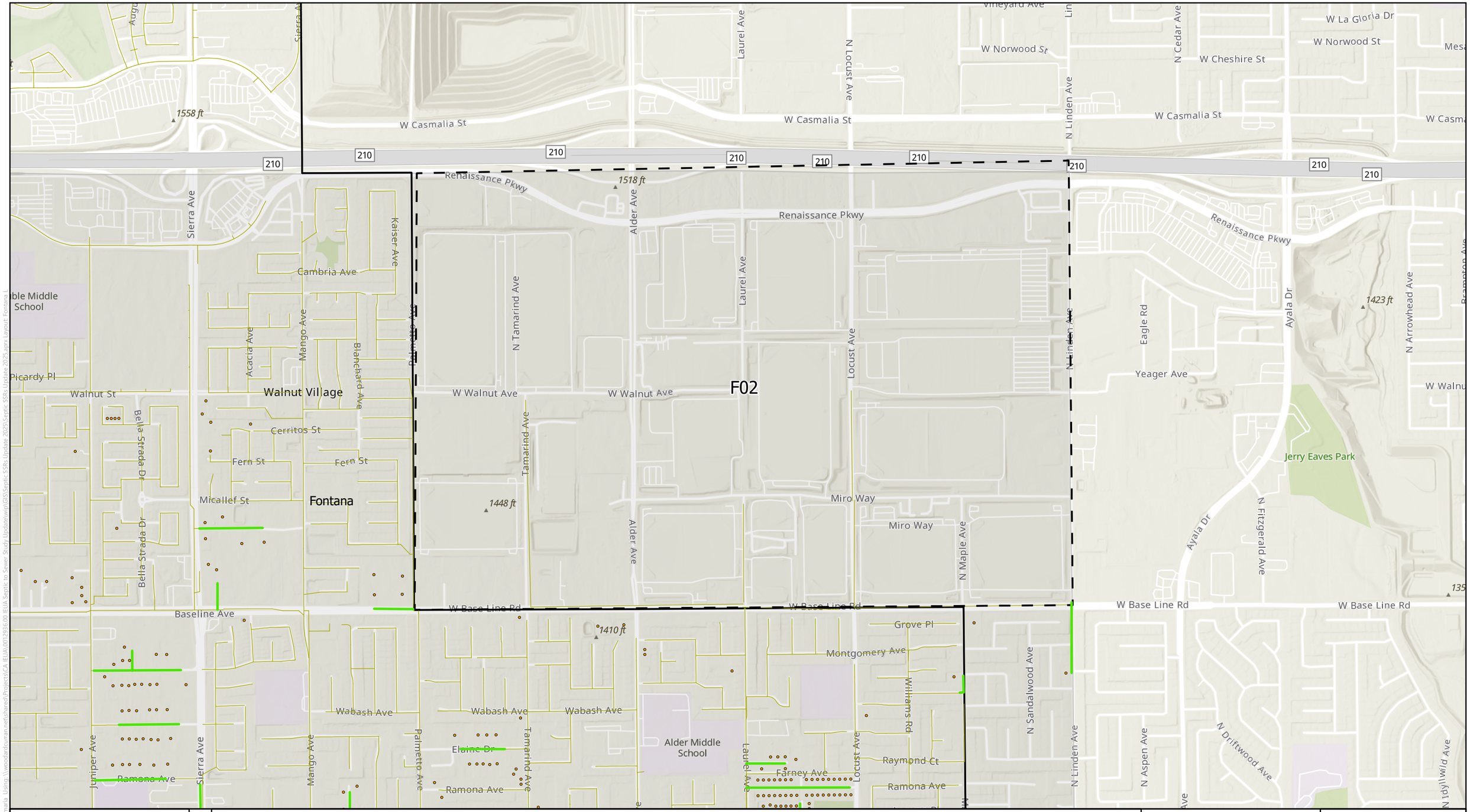
1 inch = 631 feet

Woodard & Curran

Project #: 0012936.00
Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Fontana
Proposed Sewer Infrastructure

Legend

- Proposed Fontana Lift Station
- Proposed Fontana Force Mains
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N

0 365 730 1,460 Feet

1 inch = 1,084 feet

Woodard & Curran

Project #: 0012936.00
Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Fontana
Proposed Sewer Infrastructure

Legend

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N

0 160 320 640 Feet

1 inch = 476 feet

Woodard & Curran

Project #: 0012936.00
Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Fontana
Proposed Sewer Infrastructure

Legend

- Proposed Fontana Lift Station
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- Existing City of Fontana Septic Properties
- Existing City of Fontana Sewer Mains
- Fontana SSRs
- City Boundaries
- IEUA Service Area

N

0 210 420 840 Feet

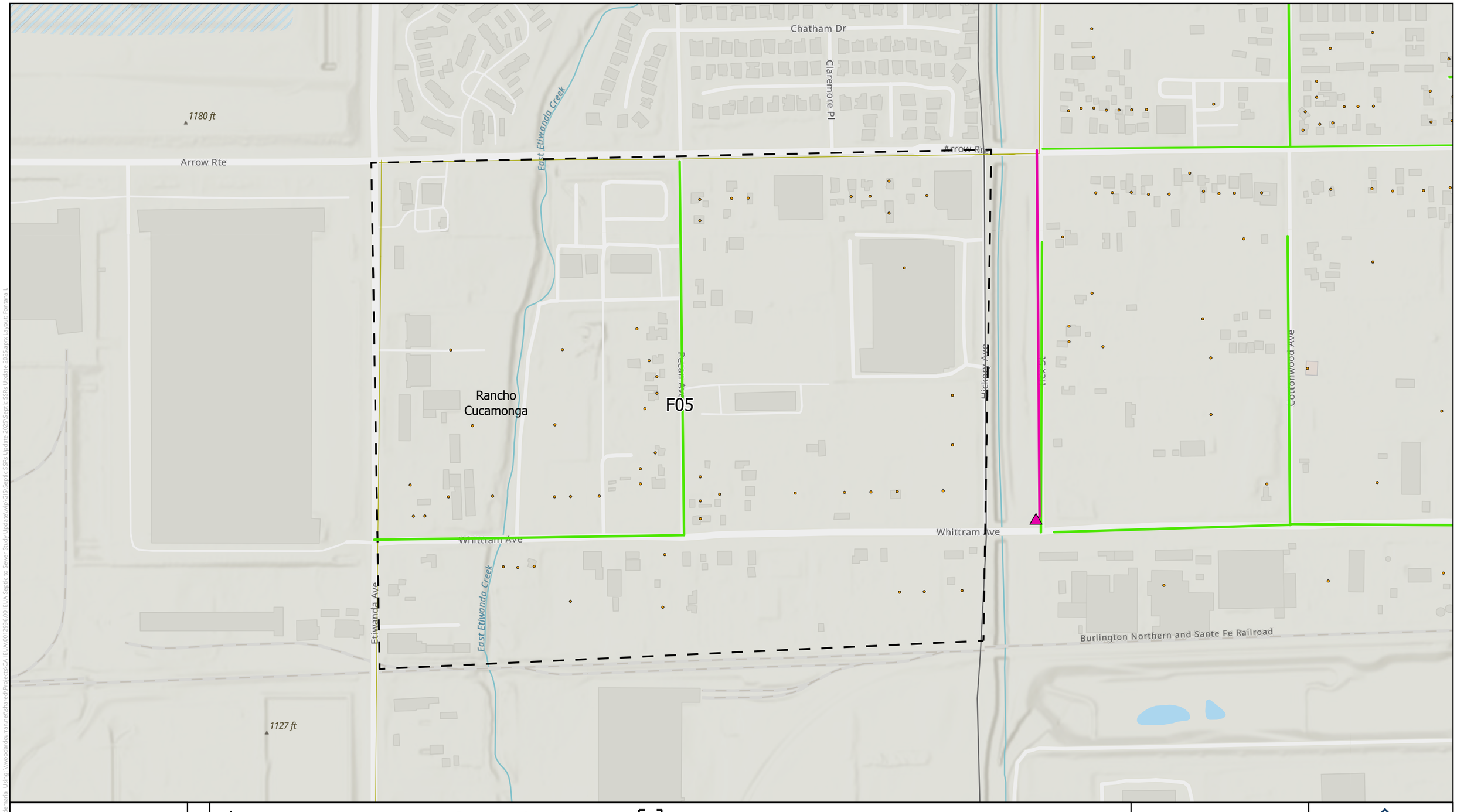
1 inch = 624 feet

Woodard & Curran

Project #: 0012936.00
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IEUA Septic to Sewer Feasibility Study Update

City of Fontana
Proposed Sewer Infrastructure

Legend

- Proposed Fontana Lift Station
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N

0 130 260 520 Feet

1 inch = 387 feet

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Project #: 0012936.00
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IEUA Septic to Sewer Feasibility Study Update

City of Fontana
Proposed Sewer Infrastructure

Legend

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- Existing City of Fontana Sewer Mains
- Fontana SSRs
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- IEUA Service Area

N

0 190 380 760 Feet

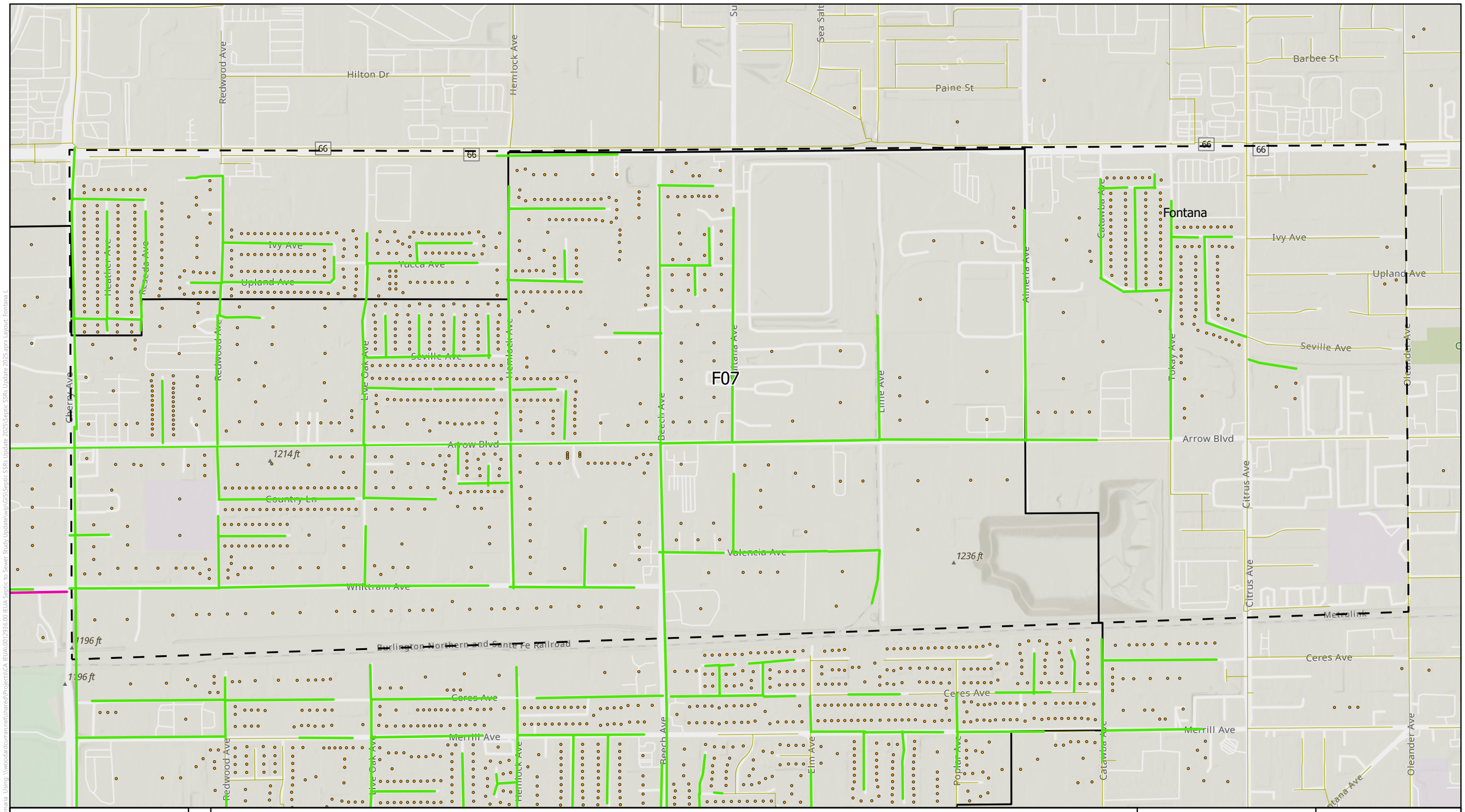
1 inch = 564 feet

Woodard & Curran

Project #: 0012936.00
Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Fontana
Proposed Sewer Infrastructure

Legend

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N

0 275 550 1,100 Feet

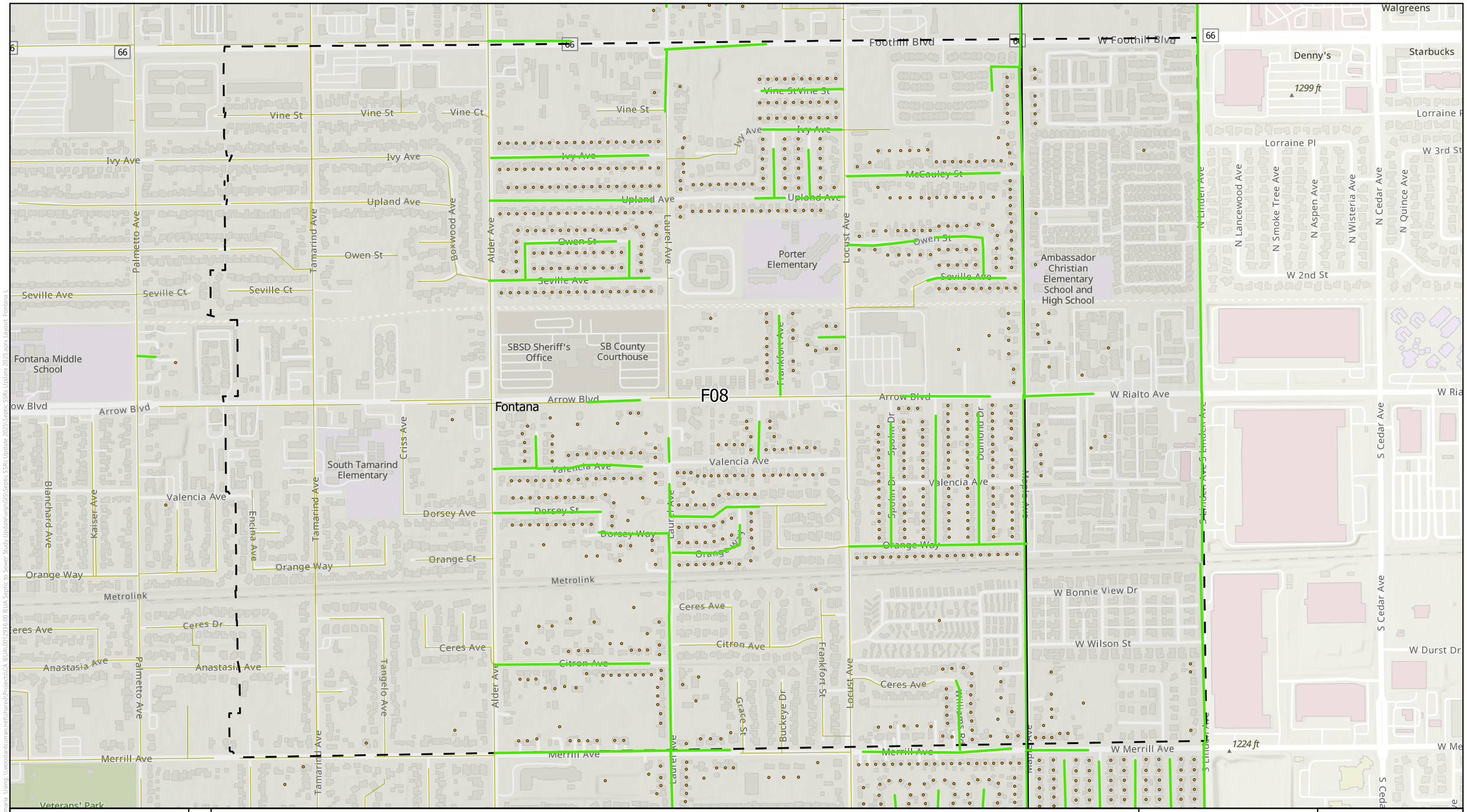
1 inch = 808 feet

Woodard & Curran

Project #: 0012936.00
Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Fontana
Proposed Sewer Infrastructure

Legend

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N

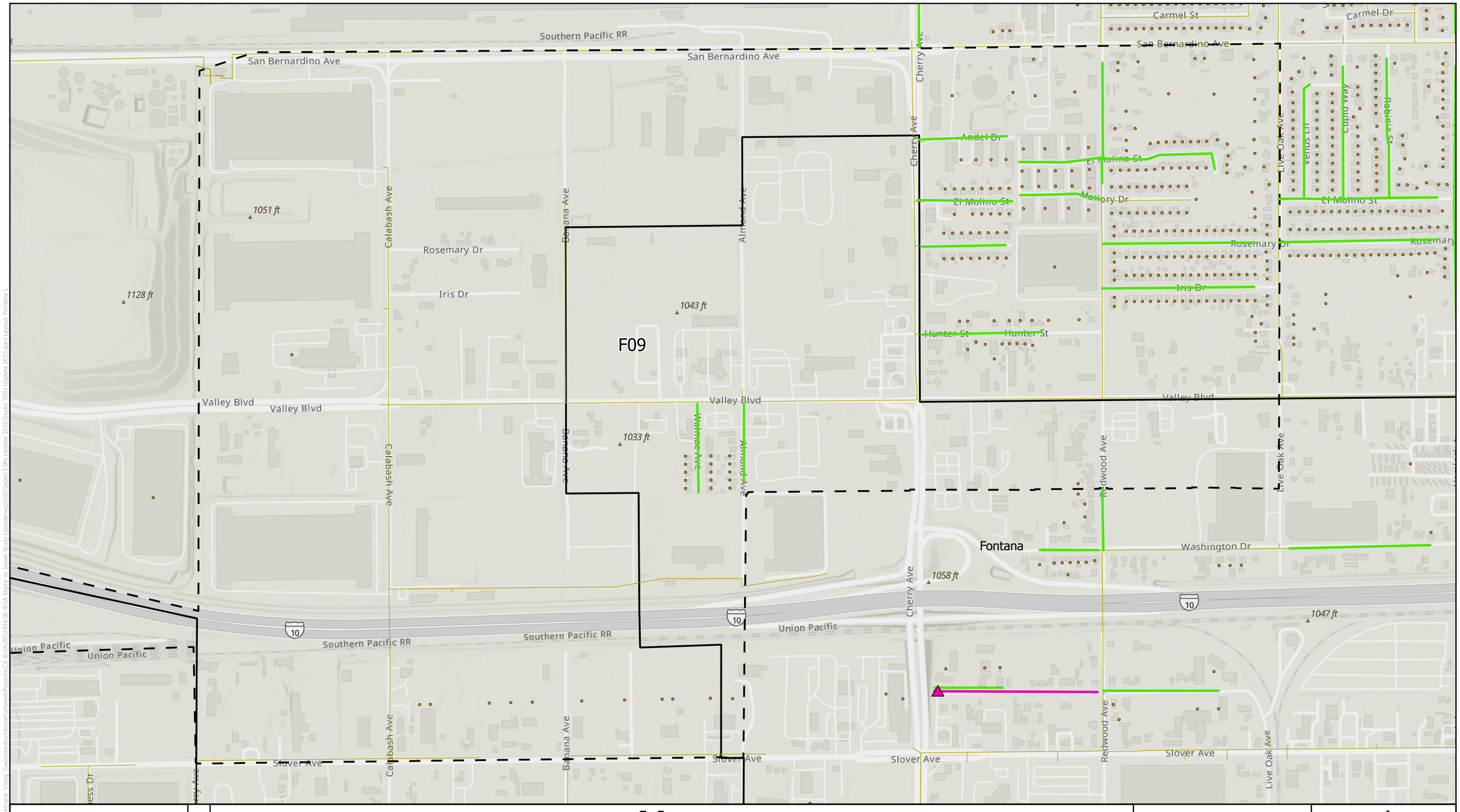
0 225 450 900 Feet

1 inch = 665 feet

Woodard & Curran

Project #: 0012936.00
Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Fontana
Proposed Sewer Infrastructure

Legend

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- Proposed Fontana Force Mains
- Proposed Fontana Gravity Main
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- Existing City of Fontana Sewer Mains
- Fontana SSRs
- City Boundaries
- IEUA Service Area

N

0 225 450 900 Feet

1 inch = 664 feet

Woodard & Curran

Project #: 0012936.00
Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Fontana
Proposed Sewer Infrastructure

Legend

- Proposed Fontana Lift Station
- Proposed Fontana Force Mains
- Proposed Fontana Gravity Main
- Existing City of Fontana Septic Properties
- Existing City of Fontana Sewer Mains
- Fontana SSRs
- City Boundaries
- IEUA Service Area

N

0 395 790 1,580 Feet

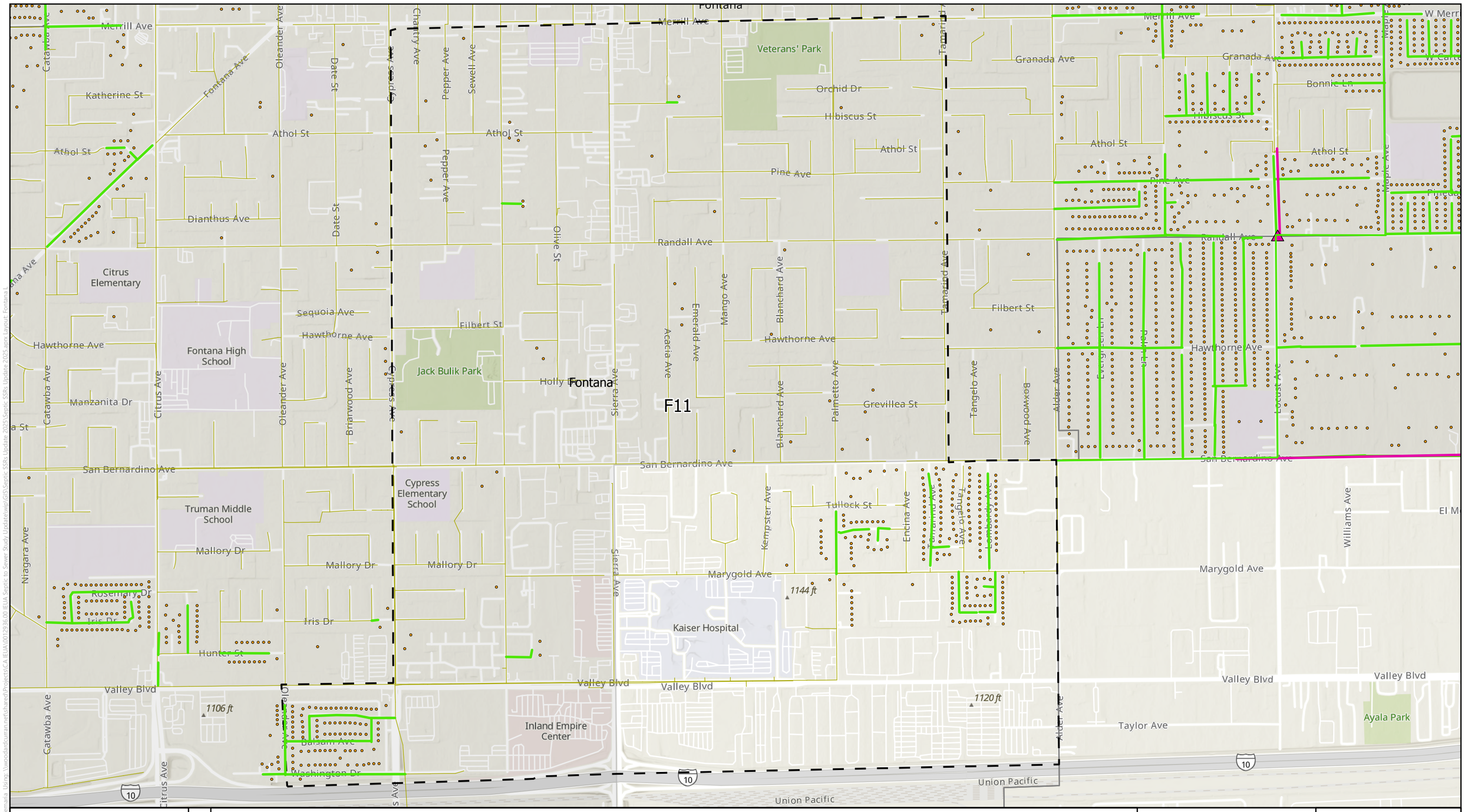
1 inch = 1,170 feet

Woodard & Curran

Project #: 0012936.00
Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Fontana
Proposed Sewer Infrastructure

Legend

- Proposed Fontana Lift Station
- Proposed Fontana Force Mains
- Proposed Fontana Gravity Main
- Existing City of Fontana Septic Properties
- Existing City of Fontana Sewer Mains
- Fontana SSRs
- City Boundaries
- IEUA Service Area

N

0 360 720 1,440 Feet

1 inch = 1,066 feet

Woodard & Curran

Project #: 0012936.00
Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Fontana
Proposed Sewer Infrastructure

Legend

- Proposed Fontana Lift Station
- Proposed Fontana Force Mains
- Proposed Fontana Gravity Main
- Existing City of Fontana Septic Properties
- Existing City of Fontana Sewer Mains
- Fontana SSRs
- Fontana SOI
- City Boundaries
- IEUA Service Area

N

0 212.5 425 850 Feet

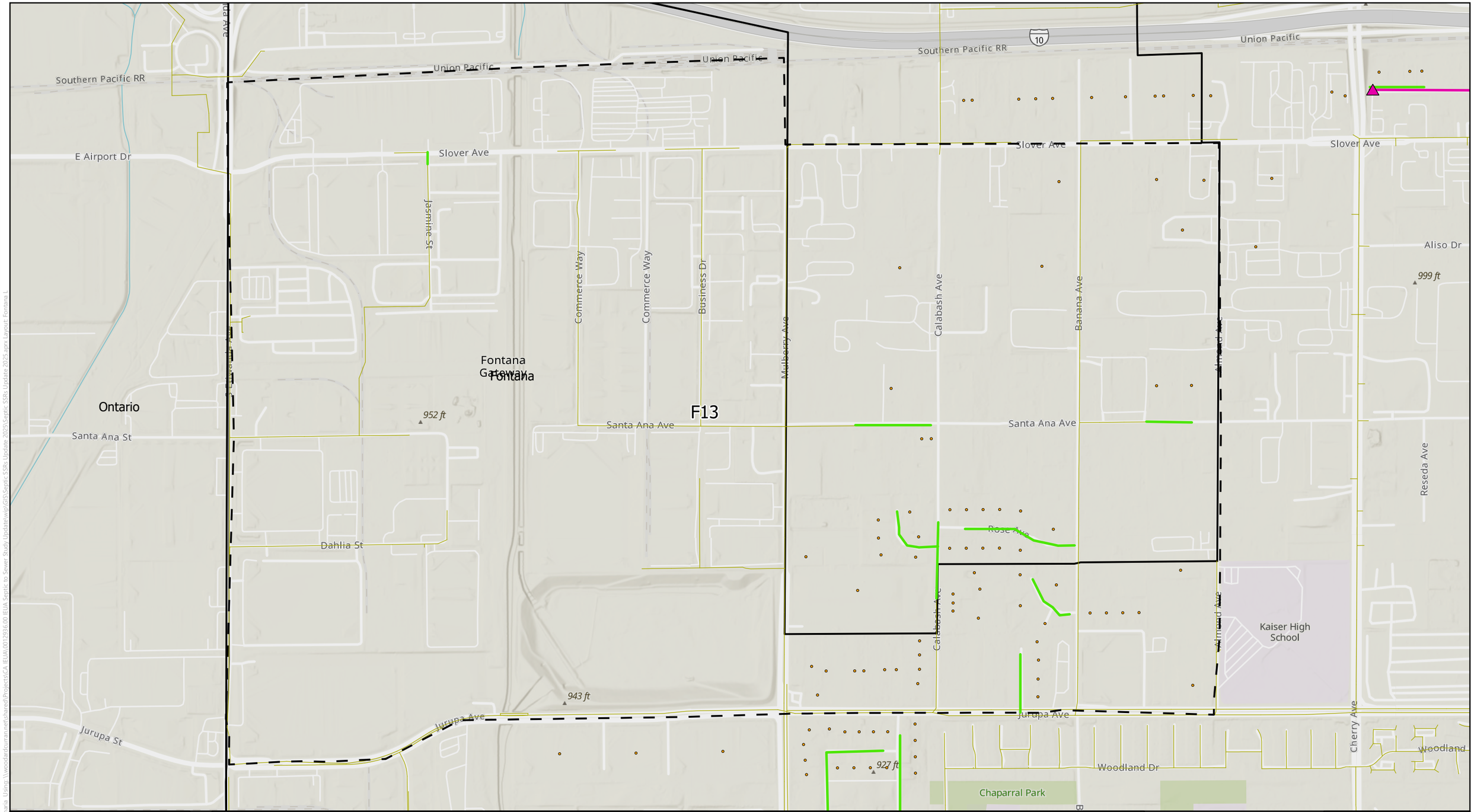
1 inch = 631 feet

Woodard & Curran

Project #: 0012936.00
Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Fontana
Proposed Sewer Infrastructure

Legend

- Proposed Fontana Lift Station
- Proposed Fontana Force Mains
- Proposed Fontana Gravity Main
- Existing City of Fontana Septic Properties
- Existing City of Fontana Sewer Mains
- Fontana SSRs
- City Boundaries
- IEUA Service Area

N

0 287.5 575 1,150 Feet

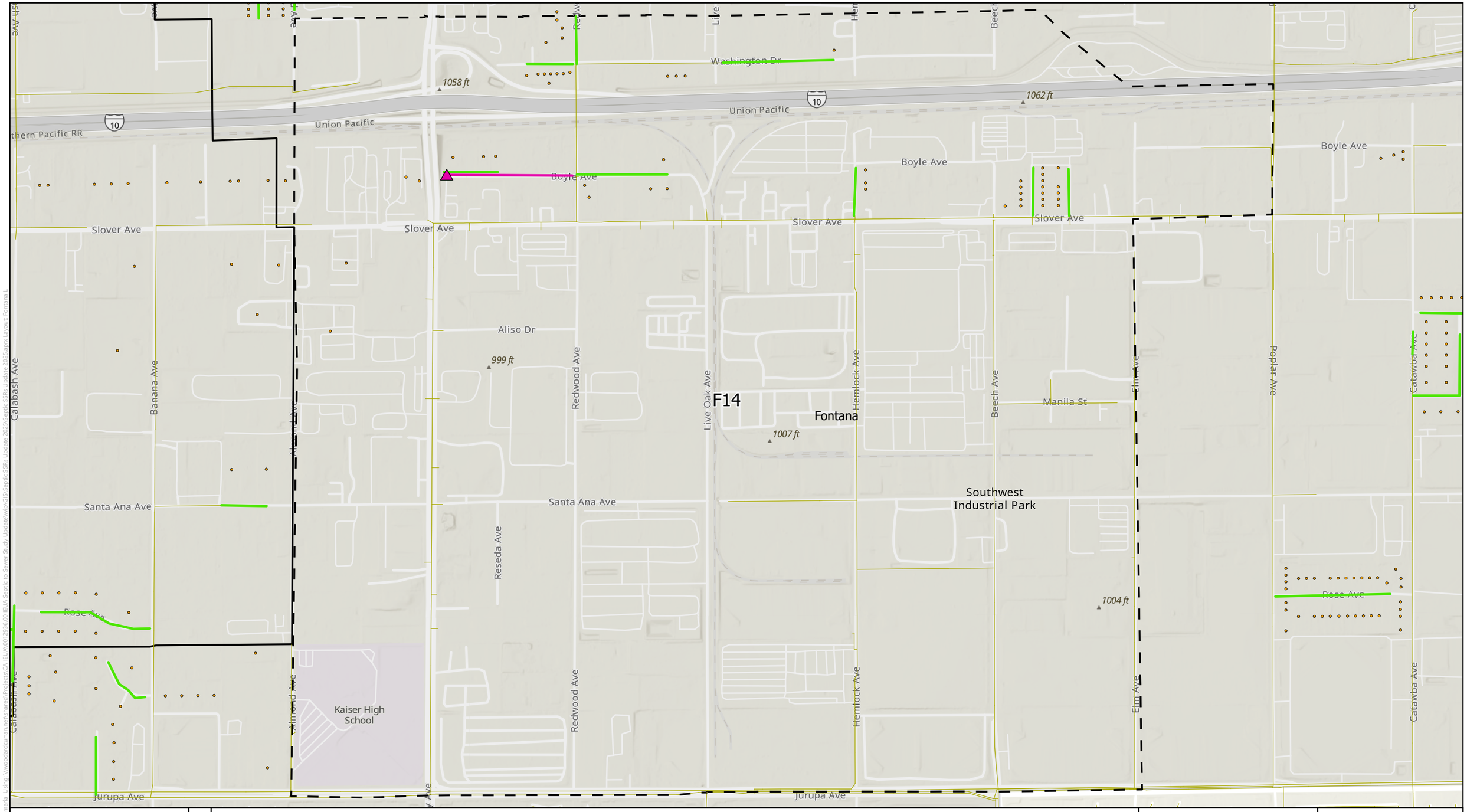
1 inch = 849 feet

Woodard & Curran

Project #: 0012936.00
Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Fontana
Proposed Sewer Infrastructure

Legend

- Proposed Fontana Lift Station
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- Existing City of Fontana Septic Properties
- Existing City of Fontana Sewer Mains
- Fontana SSRs
- City Boundaries
- IEUA Service Area

N

0 287.5 575 1,150 Feet

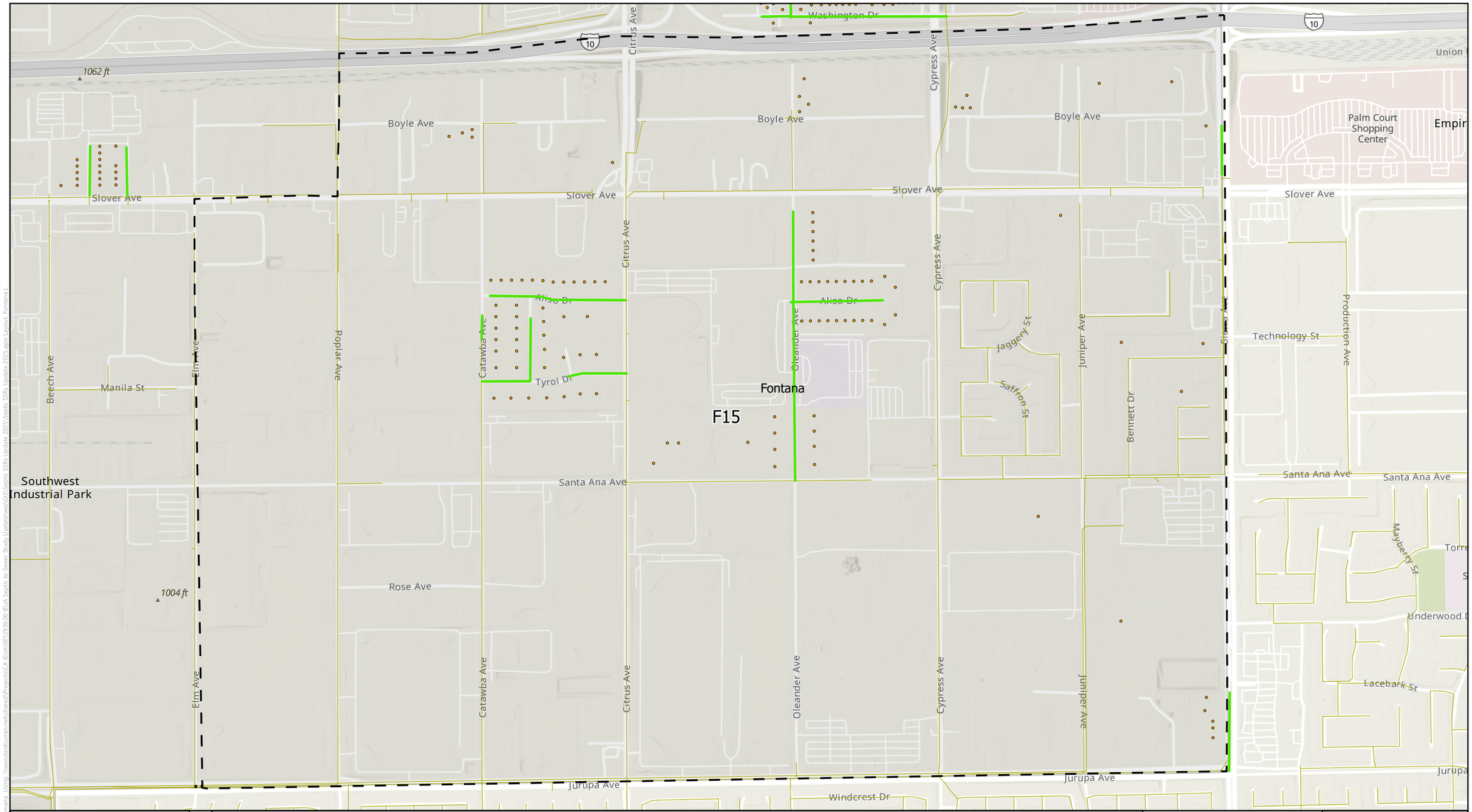
1 inch = 849 feet

Woodard & Curran

Project #: 0012936.00
Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Fontana
Proposed Sewer Infrastructure

Legend

- Proposed Fontana Lift Station
- Proposed Fontana Force Mains
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- Existing City of Fontana Sewer Mains
- Fontana SSRs
- Fontana SOI
- City Boundaries
- IEUA Service Area

N

0 280 560 1,120 Feet

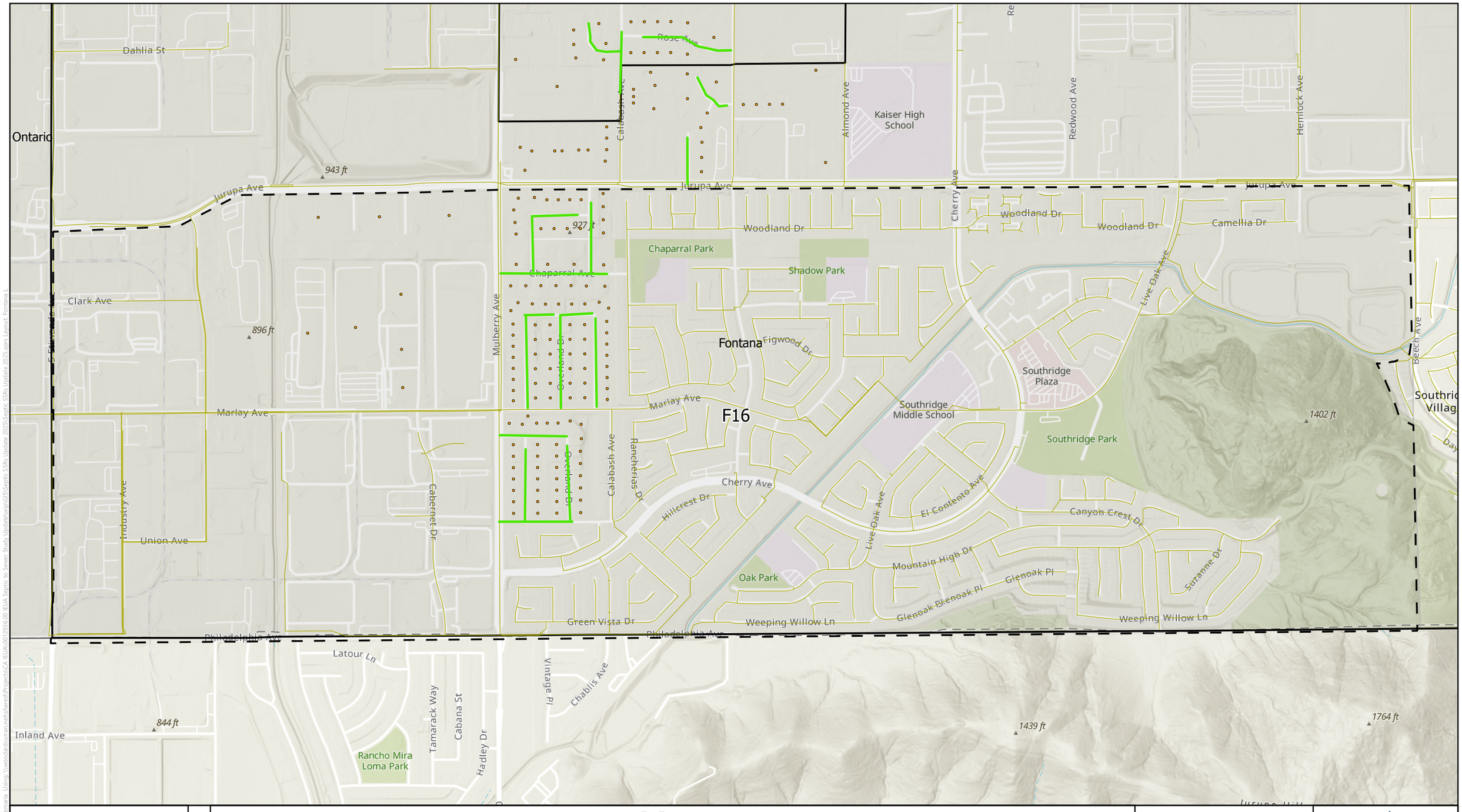
1 inch = 825 feet

Woodard & Curran

Project #: 0012936.00
Map Created: February 2026

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Figure Exported: 4/24/2026 By: mdemaria Using: \\woodardcurran.net\shared\Projects\CA IEUA\0012936.00 IEUA Septic to Sewer Study Update\wip\GIS\Septic S\GIS\Septic SSRs Update 2025\Septic SSRs Update 2025.aprx Layout: Fontana L



IEUA Septic to Sewer Feasibility Study Update

City of Fontana
Proposed Sewer Infrastructure

Legend

- Proposed Fontana Lift Station
- Proposed Fontana Force Mains
- Proposed Fontana Gravity Main
- Existing City of Fontana Septic Properties
- Existing City of Fontana Sewer Mains
- Fontana SSRs
- City Boundaries
- IEUA Service Area

N

0 355 710 1,420 Feet

1 inch = 1,051 feet

Woodard & Curran

Project #: 0012936.00
Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Fontana
Proposed Sewer Infrastructure

Legend

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N

0 700 1,400 2,800 Feet

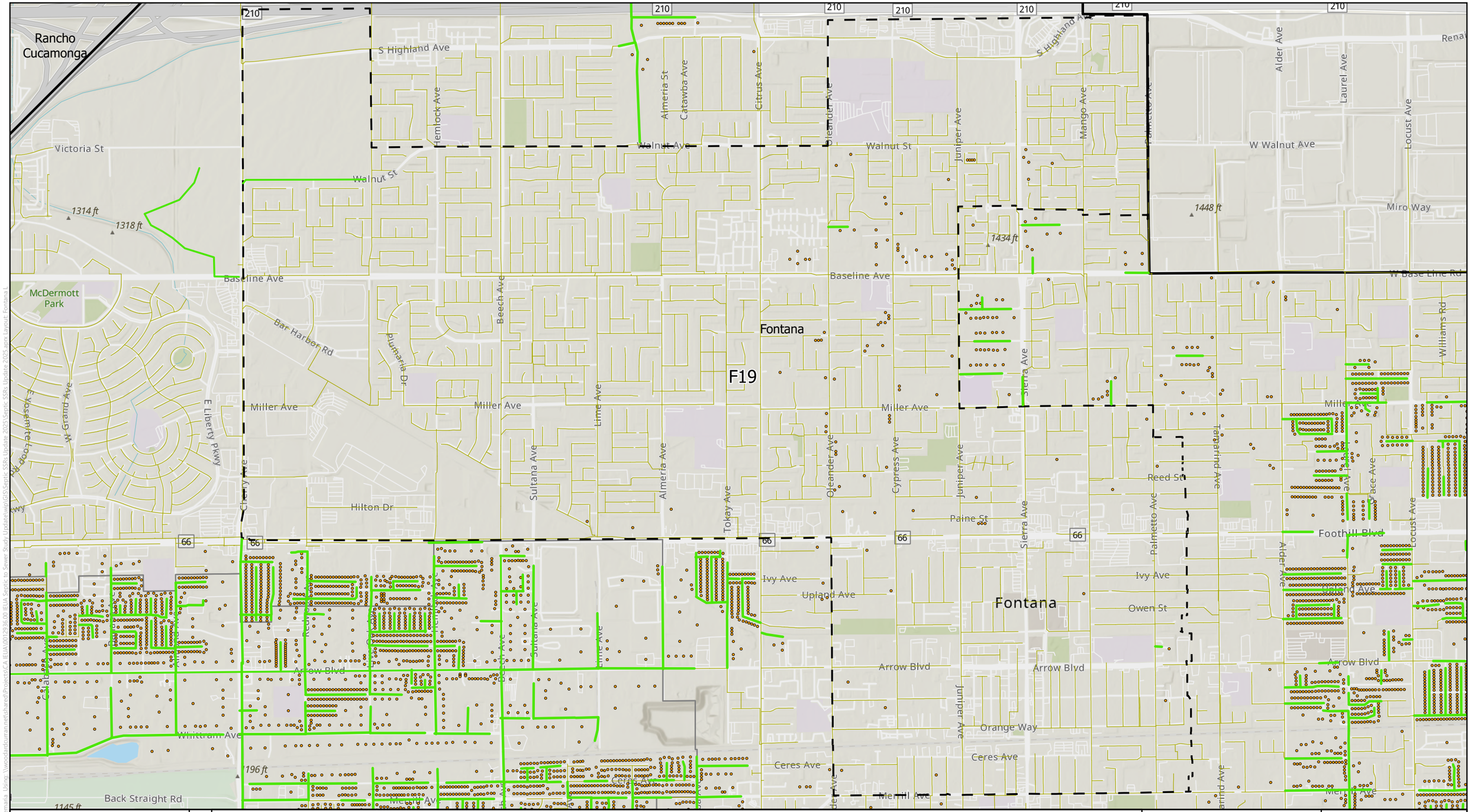
1 inch = 2,142 feet

Woodard & Curran

Project #: 0012936.00
Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Fontana
Proposed Sewer Infrastructure

Legend

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- Proposed Fontana Gravity Main
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- Existing City of Fontana Sewer Mains
- Fontana SSRs
- Fontana SOI
- City Boundaries
- IEUA Service Area

N

0 600 1,200 2,400 Feet

1 inch = 1,833 feet

Woodard & Curran

Project #: 0012936.00
Map Created: February 2026

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IEUA Septic to Sewer Study Update

Date: April 2026
Prepared by: MMC
Checked by:
Estimate Type: Planning

	Unit Cost	Unit	Desc.	Fontana F01 QTY	Fontana F01 Cost	Fontana F02 QTY	Fontana F02 Cost	Fontana F03 QTY	Fontana F03 Cost
New Gravity Sewer	$ 214	$/LF	8"	12,710	$ 2,725,000		$ -	5,500	$ 1,179,000
	$ 281	$/LF	10"	1,290	$ 363,000		$ -		$ -
	$ 354	$/LF	12"		$ -		$ -	-	$ -
	$ 462	$/LF	15"	-	$ -		$ -	-	$ -
	$ 579	$/LF	18"	-	$ -	-	$ -	-	$ -
	$ 704	$/LF	21"	-	$ -	-	$ -	-	$ -
	$ 823	$/LF	24"	-	$ -	-	$ -	-	$ -
	$ 941	$/LF	27"	-	$ -	-	$ -	-	$ -
	$ 1,061	$/LF	30"	-	$ -	-	$ -	-	$ -
	$ 1,302	$/LF	36"	-	$ -	-	$ -	-	$ -
Upsizing Existing Sewers	$ 281	$/LF	10"		$ -	-	$ -		$ -
	$ 354	$/LF	12"		$ -		$ -		$ -
Force Main	$ 161	$/LF		-	$ -		$ -		$ -
Trenchless Crossing	$ 4,020	$/LF		350	$ 1,407,000		$ -		$ -
Septic System Abandonment	$ 1,340	$/EA		156	$ 209,040	-	$ -	55	$ 74,000
Lower Lateral	$ 8,040	$/EA		156	$ 1,254,240	-	$ -	55	$ 442,000
Upper Lateral	$ 8,040	$/EA		156	$ 1,254,240	-	$ -	55	$ 442,000
Pump Station	$ 1,072,000	$/EA		-	$ -		$ -		$ -
Grinder Pump	$ 20,100	$/EA		-	$ -	-	$ -	-	$ -
Easements	$ 27	$/SF		-	$ -		$ -	3,525	$ 94,000
Subtotal					**$ 7,212,520**		**$ -**		**$ 2,231,000**
Mobilization and Demobilization			5%		$ 360,626		$ -		$ 111,550
Construction Cost Subtotal					**$ 7,573,146**		**$ -**		**$ 2,342,550**
Contingency			30%		$ 2,271,944		$ -		$ 702,765
Construction Cost					**$ 9,845,090**		**$ -**		**$ 3,045,315**
Engineering, Administration, and Legal Costs			25%		$ 2,461,272		$ -		$ 761,329
Fontana Sewer Impact Fees	$ 770	$/EA		156	$ 120,120	0	$ -	55	$ 42,350
IEUA Sewer Impact Fees	$ 8,620	$/EA		149	$ 1,284,380	0	$ -	48	$ 413,760
Capital Improvement Cost					**$ 13,711,000**		**$ -**		**$ 4,263,000**

IEUA Septic to Sewer

Date: April 2026
Prepared by: MMC
Checked by:
Estimate Type: Planning

		Unit Cost		Unit	Desc.	Fontana F04 QTY		Fontana F04 Cost	Fontana F05 QTY		Fontana F05 Cost	Fontana F06 QTY		Fontana F06 Cost
New Gravity Sewer	$	214	$/LF	8"		23,200	$	4,974,000	3,000	$	643,000	33,450	$	7,172,000
	$	281	$/LF	10"		-	$	-	-	$	-	5,300	$	1,491,000
	$	354	$/LF	12"			$	-	-	$	-	6,435	$	2,276,000
	$	462	$/LF	15"		-	$	-	-	$	-		$	-
	$	579	$/LF	18"		-	$	-	-	$	-	-	$	-
	$	704	$/LF	21"		-	$	-	-	$	-	-	$	-
	$	823	$/LF	24"		-	$	-	-	$	-	-	$	-
	$	941	$/LF	27"		-	$	-	-	$	-	-	$	-
	$	1,061	$/LF	30"		-	$	-	-	$	-	-	$	-
	$	1,302	$/LF	36"		-	$	-	-	$	-	-	$	-
Upsizing Existing Sewers	$	281	$/LF	10"			$	-		$	-		$	-
	$	354	$/LF	12"			$	-		$	-		$	-
Force Main	$	161	$/LF				$	-		$	-	1,600	$	257,000
Trenchless Crossing	$	4,020	$/LF				$	-		$	-		$	-
Septic System Abandonment	$	1,340	$/EA			473	$	634,000	50	$	67,000	857	$	1,148,000
Lower Lateral	$	8,040	$/EA			473	$	3,803,000	50	$	402,000	857	$	6,890,000
Upper Lateral	$	8,040	$/EA			473	$	3,803,000	50	$	402,000	857	$	6,890,000
Pump Station	$	1,072,000	$/EA				$	-		$	-	1	$	1,072,000
Grinder Pump	$	20,100	$/EA			-	$	-	-	$	-	-	$	-
Easements	$	27	$/SF			-	$	-	-	$	-	4,650	$	125,000
Subtotal							**$**	**13,214,000**		**$**	**1,514,000**		**$**	**27,321,000**
Mobilization and Demobilization				5%			$	660,700		$	75,700		$	1,366,050
Construction Cost Subtotal							**$**	**13,874,700**		**$**	**1,589,700**		**$**	**28,687,050**
Contingency				30%			$	4,162,410		$	476,910		$	8,606,115
Construction Cost							**$**	**18,037,110**		**$**	**2,066,610**		**$**	**37,293,165**
Engineering, Administration, and Legal Costs				25%			$	4,509,278		$	516,653		$	9,323,291
Fontana Sewer Impact Fees	$	770	$/EA			473	$	364,210	50	$	38,500	857	$	659,890
IEUA Sewer Impact Fees	$	8,620	$/EA			401	$	3,456,620	47	$	405,140	805	$	6,939,100
Capital Improvement Cost							**$**	**26,367,000**		**$**	**3,027,000**		**$**	**54,215,000**

IEUA Septic to Sewer

Date: April 2026
Prepared by: MMC
Checked by:
Estimate Type: Planning

		Unit Cost		Unit	Desc.	Fontana F07 QTY		Fontana F07 Cost	Fontana F08 QTY		Fontana F08 Cost	Fontana F09 QTY		Fontana F09 Cost
New Gravity Sewer	$	214	$/LF	8"		51,380	$	11,016,000	33,800	$	7,247,000	9,450	$	2,026,000
	$	281	$/LF	10"		3,800	$	1,069,000		$	-	-	$	-
	$	354	$/LF	12"		1,980	$	700,000	1,320	$	467,000	-	$	-
	$	462	$/LF	15"		2,060	$	952,000	-	$	-	-	$	-
	$	579	$/LF	18"		-	$	-	-	$	-	-	$	-
	$	704	$/LF	21"		4,360	$	3,067,000	-	$	-	-	$	-
	$	823	$/LF	24"		-	$	-	-	$	-	-	$	-
	$	941	$/LF	27"		2,550	$	2,399,000	-	$	-	-	$	-
	$	1,061	$/LF	30"		-	$	-	-	$	-	-	$	-
	$	1,302	$/LF	36"		-	$	-	-	$	-	-	$	-
Upsizing Existing Sewers	$	281	$/LF	10"			$	-		$	-		$	-
	$	354	$/LF	12"			$	-		$	-		$	-
Force Main	$	161	$/LF				$	-		$	-		$	-
Trenchless Crossing	$	4,020	$/LF				$	-	105	$	422,000		$	-
Septic System Abandonment	$	1,340	$/EA			1,059	$	1,419,000	782	$	1,048,000	261	$	350,000
Lower Lateral	$	8,040	$/EA			1,059	$	8,514,000	782	$	6,287,000	261	$	2,098,000
Upper Lateral	$	8,040	$/EA			1,059	$	8,514,000	782	$	6,287,000	261	$	2,098,000
Pump Station	$	1,072,000	$/EA				$	-		$	-		$	-
Grinder Pump	$	20,100	$/EA			-	$	-	-	$	-	-	$	-
Easements	$	27	$/SF			-	$	-	-	$	-	-	$	-
Subtotal							**$**	**37,650,000**		**$**	**21,758,000**		**$**	**6,572,000**
Mobilization and Demobilization				5%			$	1,882,500		$	1,087,900		$	328,600
Construction Cost Subtotal							**$**	**39,532,500**		**$**	**22,845,900**		**$**	**6,900,600**
Contingency				30%			$	11,859,750		$	6,853,770		$	2,070,180
Construction Cost							**$**	**51,392,250**		**$**	**29,699,670**		**$**	**8,970,780**
Engineering, Administration, and Legal Costs				25%			$	12,848,063		$	7,424,918		$	2,242,695
Fontana Sewer Impact Fees	$	770	$/EA			1,059	$	815,430	782	$	602,140	261	$	200,970
IEUA Sewer Impact Fees	$	8,620	$/EA			937	$	8,076,940	676	$	5,827,120	209	$	1,801,580
Capital Improvement Cost							**$**	**73,133,000**		**$**	**43,554,000**		**$**	**13,216,000**

IEUA Septic to Sewer

Date: April 2026
Prepared by: MMC
Checked by:
Estimate Type: Planning

		Unit Cost		Unit	Desc.	Fontana F10 QTY		Fontana F10 Cost	Fontana F11 QTY		Fontana F11 Cost	Fontana F12 QTY		Fontana F12 Cost
New Gravity Sewer	$	214	$/LF	8"		108,550	$	23,273,000	10,100	$	2,165,000	47,600	$	10,205,000
	$	281	$/LF	10"		5,000	$	1,407,000	-	$	-	1,250	$	352,000
	$	354	$/LF	12"		5,350	$	1,893,000	-	$	-	-	$	-
	$	462	$/LF	15"		3,725	$	1,722,000	-	$	-	-	$	-
	$	579	$/LF	18"		-	$	-	-	$	-	-	$	-
	$	704	$/LF	21"		9,000	$	6,332,000	-	$	-	-	$	-
	$	823	$/LF	24"		-	$	-	-	$	-	-	$	-
	$	941	$/LF	27"		-	$	-	-	$	-	-	$	-
	$	1,061	$/LF	30"		-	$	-	-	$	-	-	$	-
	$	1,302	$/LF	36"		-	$	-	-	$	-	-	$	-
Upsizing Existing Sewers	$	281	$/LF	10"			$	-		$	-		$	-
	$	354	$/LF	12"			$	-		$	-		$	-
Force Main	$	161	$/LF			2,275	$	366,000		$	-	2,770	$	445,000
Trenchless Crossing	$	4,020	$/LF				$	-		$	-		$	-
Septic System Abandonment	$	1,340	$/EA			3,372	$	4,518,000	312	$	418,000	1,060	$	1,420,000
Lower Lateral	$	8,040	$/EA			3,372	$	27,111,000	312	$	2,508,000	1,060	$	8,522,000
Upper Lateral	$	8,040	$/EA			3,372	$	27,111,000	312	$	2,508,000	1,060	$	8,522,000
Pump Station	$	1,072,000	$/EA			1	$	1,072,000		$	-	1	$	1,072,000
Grinder Pump	$	20,100	$/EA			-	$	-	-	$	-	-	$	-
Easements	$	27	$/SF			-	$	-	-	$	-	-	$	-
Subtotal							**$**	**94,805,000**		**$**	**7,599,000**		**$**	**30,538,000**
Mobilization and Demobilization				5%			$	4,740,250		$	379,950		$	1,526,900
Construction Cost Subtotal							**$**	**99,545,250**		**$**	**7,978,950**		**$**	**32,064,900**
Contingency				30%			$	29,863,575		$	2,393,685		$	9,619,470
Construction Cost							**$**	**129,408,825**		**$**	**10,372,635**		**$**	**41,684,370**
Engineering, Administration, and Legal Costs				25%			$	32,352,206		$	2,593,159		$	10,421,093
Fontana Sewer Impact Fees	$	770	$/EA			3,372	$	2,596,440	312	$	240,240	1,060	$	816,200
IEUA Sewer Impact Fees	$	8,620	$/EA			3,002	$	25,877,240	111	$	956,820	902	$	7,775,240
Capital Improvement Cost							**$**	**190,235,000**		**$**	**14,163,000**		**$**	**60,697,000**

IEUA Septic to Sewer

Date: April 2026
Prepared by: MMC
Checked by:
Estimate Type: Planning

		Unit Cost		Unit	Desc.	Fontana F13 QTY		Fontana F13 Cost	Fontana F14 QTY		Fontana F14 Cost	Fontana F15 QTY		Fontana F15 Cost
New Gravity Sewer	$	214	$/LF	8"		4,770	$	1,023,000	4,670	$	1,001,000	7,510	$	1,610,000
	$	281	$/LF	10"		-	$	-	-	$	-	-	$	-
	$	354	$/LF	12"		-	$	-	-	$	-	-	$	-
	$	462	$/LF	15"		-	$	-	-	$	-	-	$	-
	$	579	$/LF	18"		-	$	-	-	$	-	-	$	-
	$	704	$/LF	21"		-	$	-	-	$	-	-	$	-
	$	823	$/LF	24"		-	$	-	-	$	-	-	$	-
	$	941	$/LF	27"		-	$	-	-	$	-	-	$	-
	$	1,061	$/LF	30"		-	$	-	-	$	-	-	$	-
	$	1,302	$/LF	36"		-	$	-	-	$	-	-	$	-
Upsizing Existing Sewers	$	281	$/LF	10"			$	-		$	-		$	-
	$	354	$/LF	12"			$	-		$	-		$	-
Force Main	$	161	$/LF				$	-	1,220	$	196,000		$	-
Trenchless Crossing	$	4,020	$/LF				$	-		$	-		$	-
Septic System Abandonment	$	1,340	$/EA			61	$	82,000	49	$	66,000	108	$	145,000
Lower Lateral	$	8,040	$/EA			61	$	490,000	49	$	394,000	108	$	868,000
Upper Lateral	$	8,040	$/EA			61	$	490,000	49	$	394,000	108	$	868,000
Pump Station	$	1,072,000	$/EA				$	-	1	$	1,072,000		$	-
Grinder Pump	$	20,100	$/EA			-	$	-	-	$	-	-	$	-
Easements	$	27	$/SF			-	$	-	-	$	-	-	$	-
Subtotal							**$**	**2,085,000**		**$**	**3,123,000**		**$**	**3,491,000**
Mobilization and Demobilization				5%			$	104,250		$	156,150		$	174,550
Construction Cost Subtotal							**$**	**2,189,250**		**$**	**3,279,150**		**$**	**3,665,550**
Contingency				30%			$	656,775		$	983,745		$	1,099,665
Construction Cost							**$**	**2,846,025**		**$**	**4,262,895**		**$**	**4,765,215**
Engineering, Administration, and Legal Costs				25%			$	711,506		$	1,065,724		$	1,191,304
Fontana Sewer Impact Fees	$	770	$/EA			61	$	46,970	49	$	37,730	108	$	83,160
IEUA Sewer Impact Fees	$	8,620	$/EA			48	$	413,760	39	$	336,180	108	$	930,960
Capital Improvement Cost							**$**	**4,018,000**		**$**	**5,703,000**		**$**	**6,971,000**

IEUA Septic to Sewer

Date: April 2026
Prepared by: MMC
Checked by:
Estimate Type: Planning

	Unit Cost	Unit	Desc.	Fontana F16 QTY	Fontana F16 Cost	Fontana F18 QTY	Fontana F18 Cost	Fontana F19 QTY	Fontana F19 Cost
New Gravity Sewer	$ 214	$/LF	8"	10,600	$ 2,273,000	2,235	$ 479,000	535	$ 115,000
	$ 281	$/LF	10"	-	$ -	-	$ -	-	$ -
	$ 354	$/LF	12"	-	$ -	-	$ -	-	$ -
	$ 462	$/LF	15"	-	$ -	-	$ -	-	$ -
	$ 579	$/LF	18"	-	$ -	-	$ -	-	$ -
	$ 704	$/LF	21"	-	$ -	-	$ -	-	$ -
	$ 823	$/LF	24"	-	$ -	-	$ -	-	$ -
	$ 941	$/LF	27"	-	$ -	-	$ -	-	$ -
	$ 1,061	$/LF	30"	-	$ -	-	$ -	-	$ -
	$ 1,302	$/LF	36"	-	$ -	-	$ -	-	$ -
Upsizing Existing Sewers	$ 281	$/LF	10"		$ -		$ -		$ -
	$ 354	$/LF	12"		$ -		$ -		$ -
Force Main	$ 161	$/LF			$ -		$ -		$ -
Trenchless Crossing	$ 4,020	$/LF			$ -		$ -		$ -
Septic System Abandonment	$ 1,340	$/EA		121	$ 162,000	11	$ 15,000	96	$ 129,000
Lower Lateral	$ 8,040	$/EA		121	$ 973,000	11	$ 88,000	96	$ 772,000
Upper Lateral	$ 8,040	$/EA		121	$ 973,000	11	$ 88,000	96	$ 772,000
Pump Station	$ 1,072,000	$/EA			$ -		$ -		$ -
Grinder Pump	$ 20,100	$/EA		-	$ -	-	$ -	-	$ -
Easements	$ 27	$/SF		-	$ -		$ -	6,000	$ 161,000
Subtotal					**$ 4,381,000**		**$ 670,000**		**$ 1,949,000**
Mobilization and Demobilization			5%		$ 219,050		$ 33,500		$ 97,450
Construction Cost Subtotal					**$ 4,600,050**		**$ 703,500**		**$ 2,046,450**
Contingency			30%		$ 1,380,015		$ 211,050		$ 613,935
Construction Cost					**$ 5,980,065**		**$ 914,550**		**$ 2,660,385**
Engineering, Administration, and Legal Costs			25%		$ 1,495,016		$ 228,638		$ 665,096
Fontana Sewer Impact Fees	$ 770	$/EA		121	$ 93,170	11	$ 8,470	96	$ 73,920
IEUA Sewer Impact Fees	$ 8,620	$/EA		109	$ 939,580	0	$ -	83	$ 715,460
Capital Improvement Cost					**$ 8,508,000**		**$ 1,152,000**		**$ 4,115,000**

APPENDIX F: PROPOSED SEWER INFRASTRUCTURE AND PLANNING LEVEL COST ESTIMATES – CITY OF MONTCLAIR

IEUA Septic to Sewer Feasibility Study Update

City of Montclair
Proposed Sewer Infrastructure

Legend

- Proposed Montclair Sewer Gravity Main
- Existing City of Montclair Septic Properties
- Existing City of Montclair Sewer Mains
- Montclair SSRs
- City Boundaries
- IEUA Service Area

N

0 360 720 1,440 Feet

1 inch = 826 feet

Woodard & Curran

Project #: 0012936.00
Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Montclair
Proposed Sewer Infrastructure

Legend

- Proposed Montclair Sewer Gravity Main
- Existing City of Montclair Septic Properties
- Existing City of Montclair Sewer Mains
- Montclair SSRs
- City Boundaries
- IEUA Service Area

N

0 650 1,300 2,600 Feet

1 inch = 1,531 feet

Woodard & Curran

Project #: 0012936.00
Map Created: February 2026

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IEUA Septic to Sewer Study Update

Date: February 2026
Prepared by: MMC
Checked by:
Estimate Type: Planning

	Unit Cost	Unit	Desc.	Montclair MO1 QTY	Montclair MO1 Cost	Montclair MO2 QTY	Montclair MO2 Cost
New Gravity Sewer	$ 214	$/LF	8"	21,800	$ 4,674,000	1,500	$ 322,000
	$ 281	$/LF	10"	1,300	$ 366,000	-	$ -
	$ 354	$/LF	12"	-	$ -	-	$ -
	$ 462	$/LF	15"	-	$ -	-	$ -
	$ 579	$/LF	18"	-	$ -	-	$ -
	$ 704	$/LF	21"	-	$ -	-	$ -
	$ 823	$/LF	24"	-	$ -	-	$ -
	$ 941	$/LF	27"	-	$ -	-	$ -
	$ 1,061	$/LF	30"	-	$ -	-	$ -
	$ 1,302	$/LF	36"	-	$ -	-	$ -
Upsizing Existing Sewers	$ 281	$/LF	10"	-	$ -	-	$ -
	$ 354	$/LF	12"		$ -		$ -
Force Main	$ 161	$/LF		-	$ -	-	$ -
Trenchless Crossing	$ 4,020	$/LF		-	$ -	-	$ -
Septic System Abandonment	$ 1,340	$/EA		433	$ 580,220	34	$ 46,000
Lower Lateral	$ 8,040	$/EA		433	$ 3,481,320	34	$ 273,000
Upper Lateral	$ 8,040	$/EA		433	$ 3,481,320	34	$ 273,000
Pump Station	$ 1,072,000	$/EA		-	$ -	-	$ -
Grinder Pump	$ 20,100	$/EA		-	$ -	-	$ -
Easements	$ 27	$/SF		-	$ -	-	$ -
Subtotal				-	**$ 12,582,860**		**$ 914,000**
Mobilization and Demobilization			5%	-	$ 629,143		$ 45,700
Construction Cost Subtotal				-	**$ 13,212,003**		**$ 959,700**
Contingency			30%	-	$ 3,963,601		$ 287,910
Construction Cost				-	**$ 17,175,604**		**$ 1,247,610**
Engineering, Administration, and Legal Costs			25%	-	$ 4,293,901		$ 311,903
Montclair Sewer Impact Fees	$ 760	$/EA		433	$ 329,080	34	$ 25,840
IEUA Sewer Impact Fees	$ 8,620	$/EA		371	$ 3,198,020	26	$ 224,120
Capital Improvement Cost					**$ 24,997,000**		**$ 1,809,000**

APPENDIX G: PROPOSED SEWER INFRASTRUCTURE AND PLANNING LEVEL COST ESTIMATES – CITY OF ONTARIO

IEUA Septic to Sewer Feasibility Study Update

City of Ontario Proposed Sewer Infrastructure

Legend

- Proposed City of Ontario Gravity Mains
- Ontario Sewer Mains
- Ontario Septics 2025
- Ontario SSRs
- City Boundaries
- IEUA Service Area

N

0 500 1,000 2,000 Feet

1 inch = 1,253 feet

Woodard & Curran

Project #: 0012936.00

Map Created: June 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Ontario Proposed Sewer Infrastructure

ON2

Legend

- Proposed City of Ontario Gravity Mains
- Ontario Sewer Mains
- Ontario Septics 2025
- Ontario SSRs
- City Boundaries
- IEUA Service Area

N

0 500 1,000 2,000 Feet

1 inch = 1,253 feet

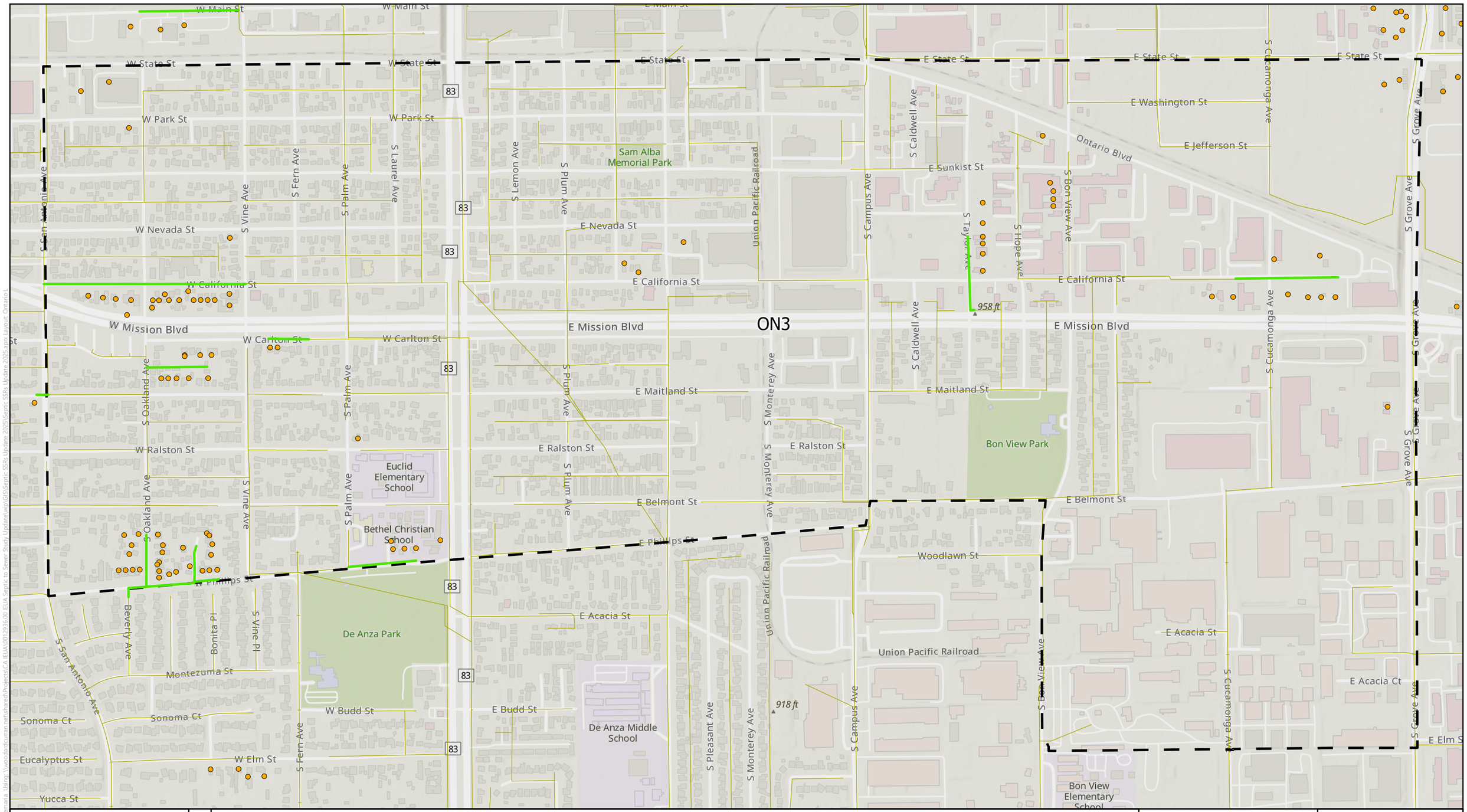
Woodard & Curran

Project #: 0012936.00

Map Created: June 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Ontario Proposed Sewer Infrastructure

Legend

- Proposed City of Ontario Gravity Mains
- Ontario Sewer Mains
- Ontario Septics 2025
- Ontario SSRs
- City Boundaries
- IEUA Service Area

N

0 275 550 1,100 Feet

1 inch = 634 feet

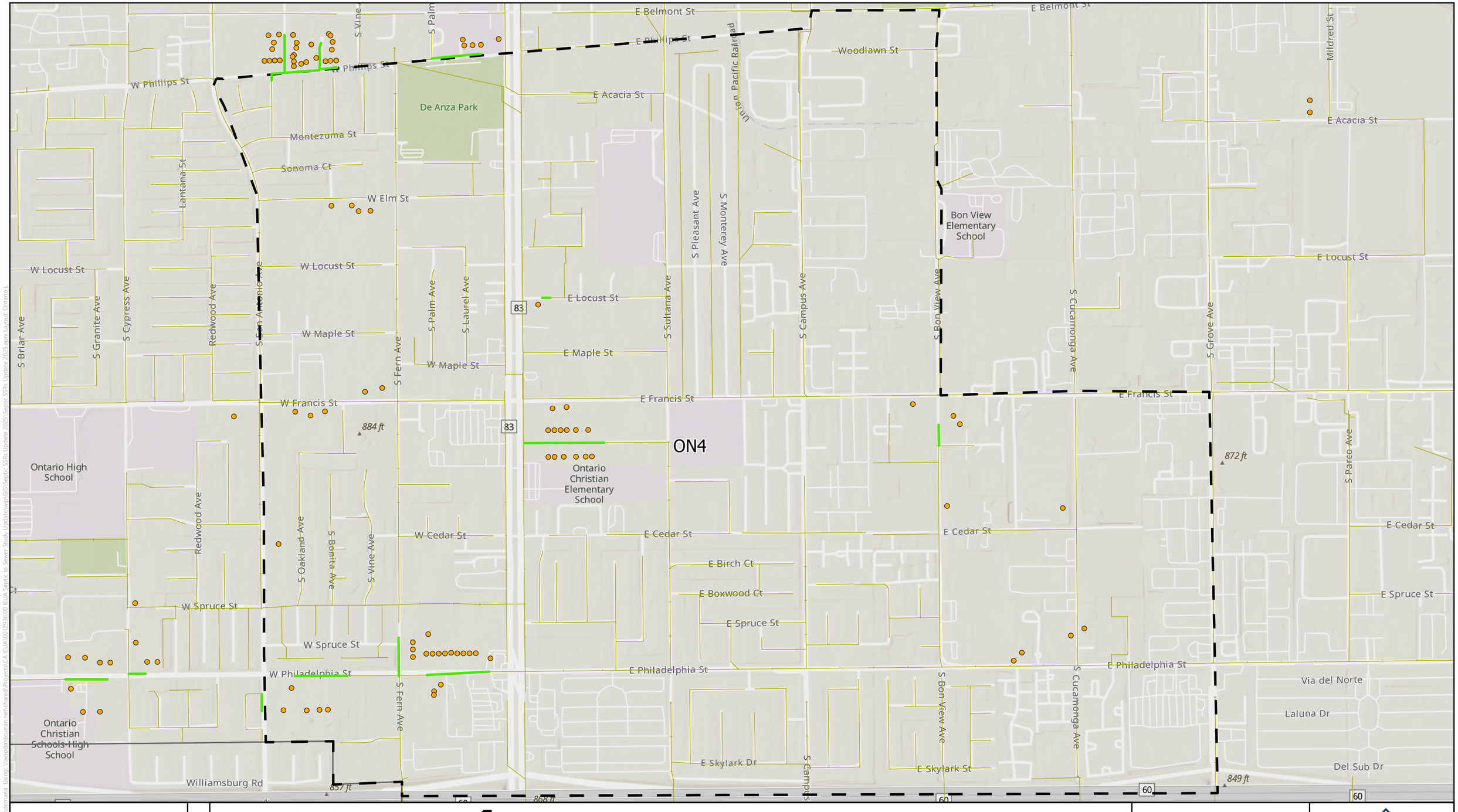
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Project #: 0012936.00

Map Created: June 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Ontario Proposed Sewer Infrastructure

Legend

- Proposed City of Ontario Gravity Mains
- Ontario Sewer Mains
- Ontario Septics 2025
- Ontario SSRs
- City Boundaries
- IEUA Service Area

N

0 375 750 1,500 Feet

1 inch = 865 feet

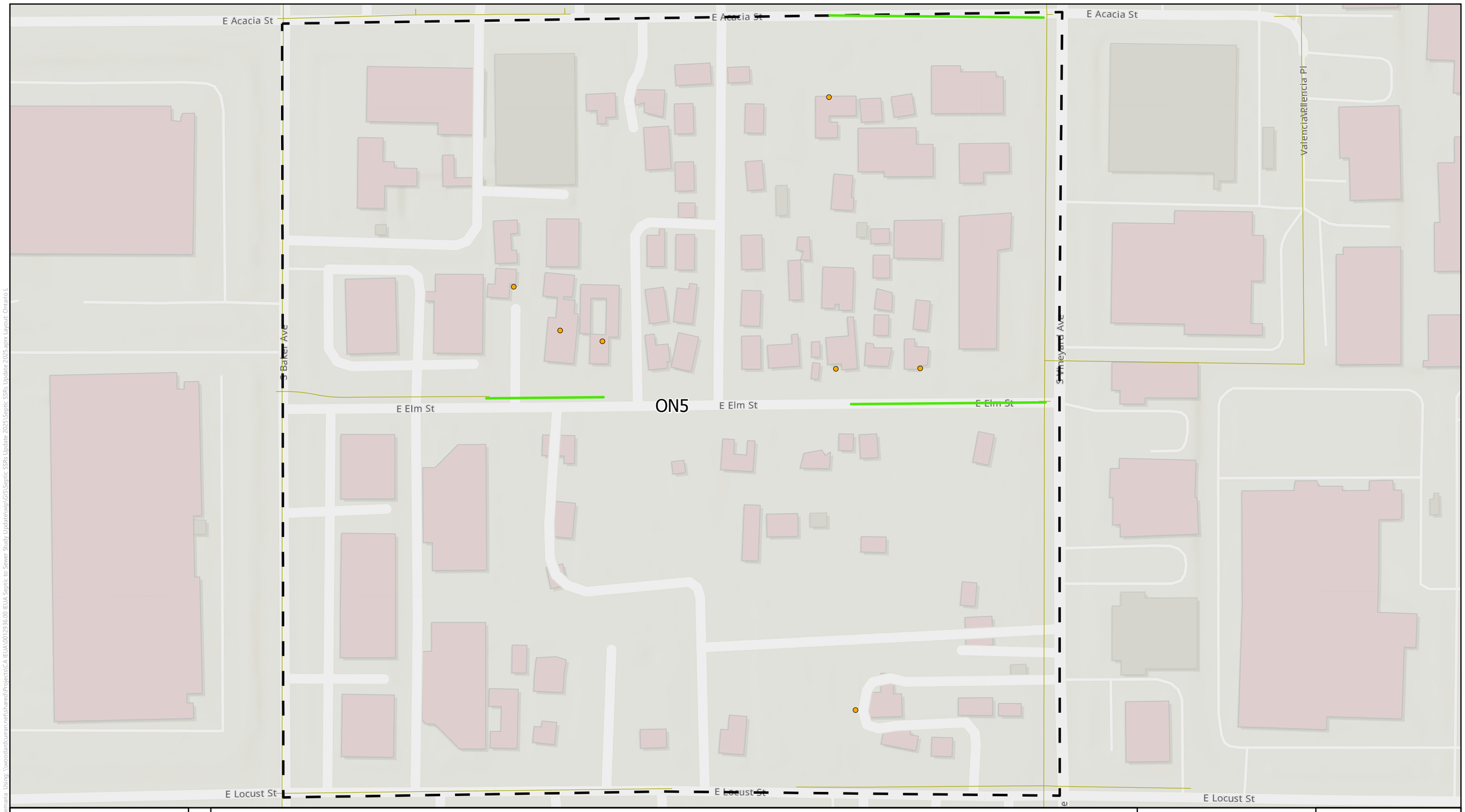
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Project #: 0012936.00

Map Created: June 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Ontario Proposed Sewer Infrastructure

Legend

- Proposed City of Ontario Gravity Mains
- Ontario Sewer Mains
- Ontario Septics 2025
- Ontario SSRs
- City Boundaries
- IEUA Service Area

N

0 65 130 260 Feet

1 inch = 152 feet

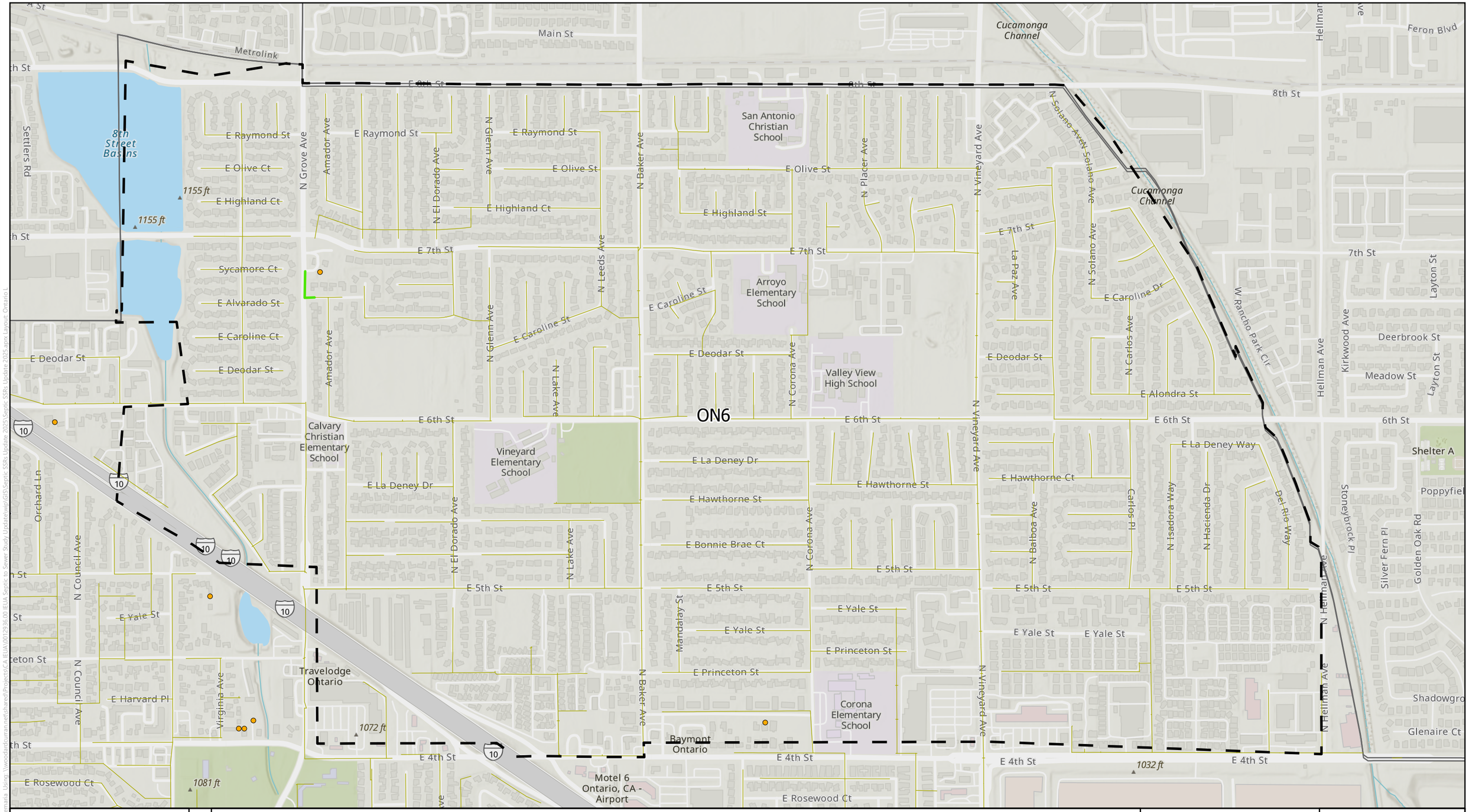
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Project #: 0012936.00

Map Created: June 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Ontario Proposed Sewer Infrastructure

Legend

- Proposed City of Ontario Gravity Mains
- Ontario Sewer Mains
- Ontario Septics 2025
- Ontario SSRs
- City Boundaries
- IEUA Service Area

N

0 305 610 1,220 Feet

1 inch = 701 feet

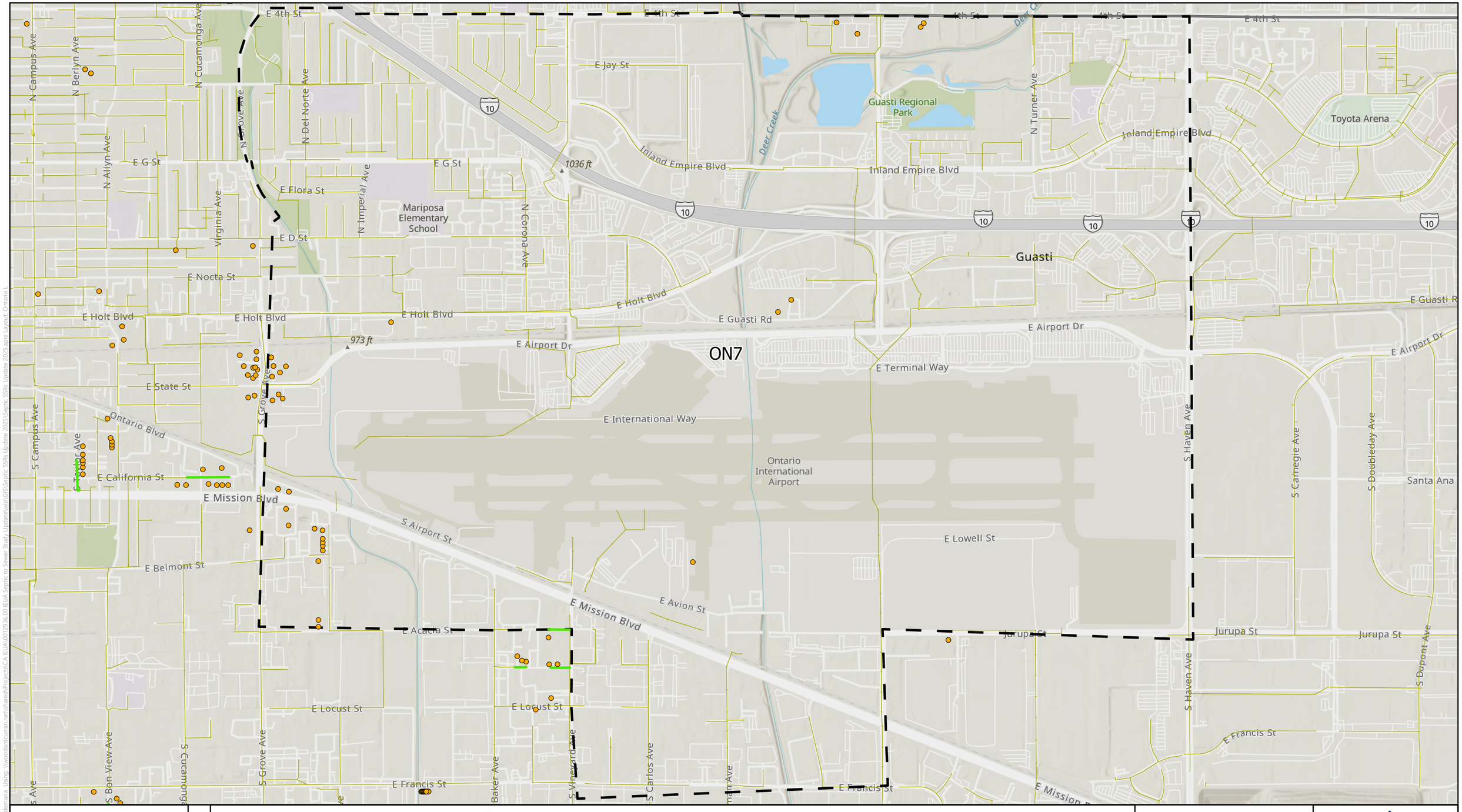
Woodard & Curran

Project #: 0012936.00

Map Created: June 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Ontario Proposed Sewer Infrastructure

Legend

- Proposed City of Ontario Gravity Mains
- Ontario Sewer Mains
- Ontario Septics 2025
- Ontario SSRs
- City Boundaries
- IEUA Service Area

N

0 650 1,300 2,600 Feet

1 inch = 1,532 feet

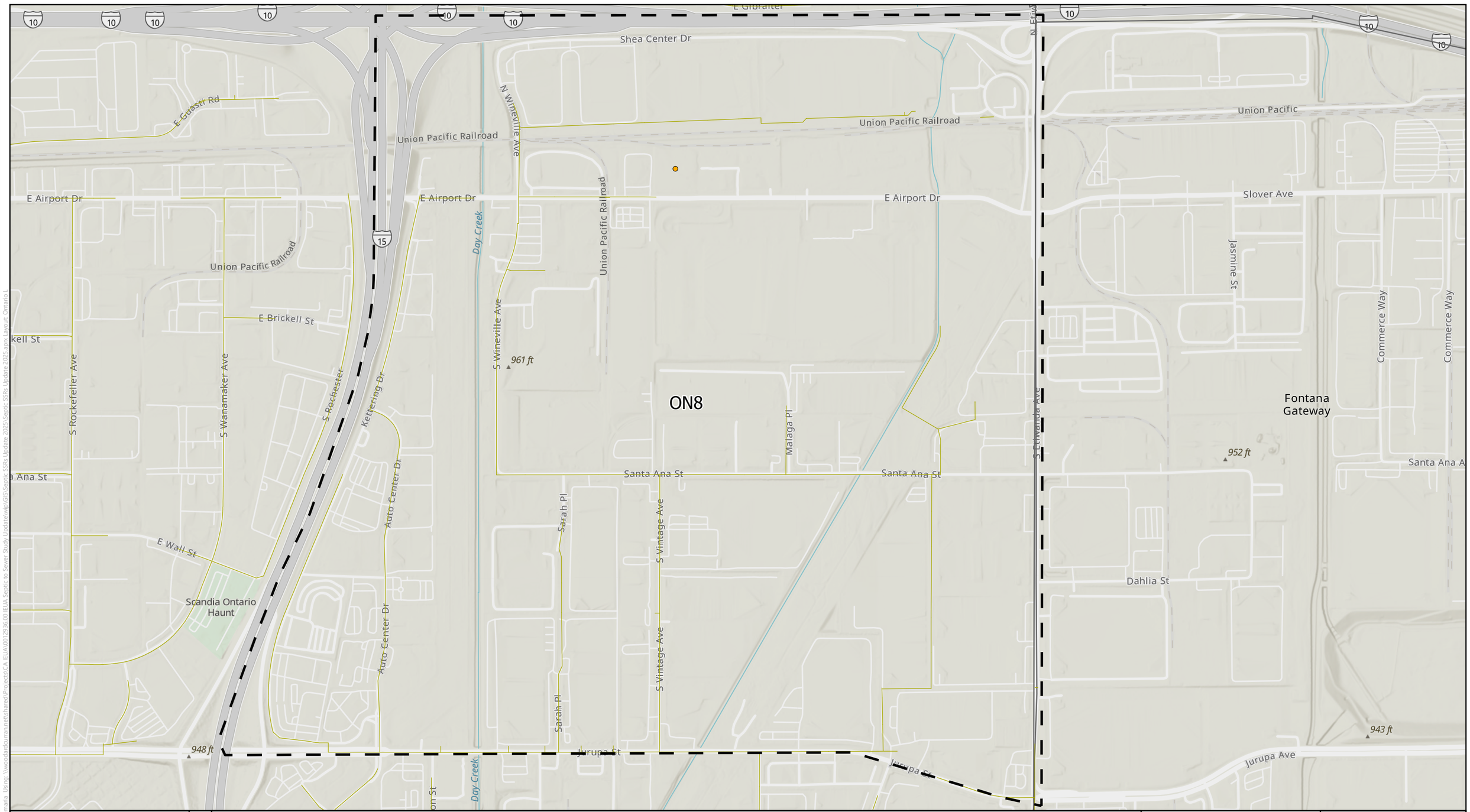
Woodard & Curran

Project #: 0012936.00

Map Created: June 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Ontario Proposed Sewer Infrastructure

Legend

- Proposed City of Ontario Gravity Mains
- Ontario Sewer Mains
- Ontario Septics 2025
- Ontario SSRs
- City Boundaries
- IEUA Service Area

N

0 370 740 1,480 Feet

1 inch = 859 feet

Woodard & Curran

Project #: 0012936.00

Map Created: June 2026

Figure Exported: 6/12/2026 By: mdemaria Using: \\woodardcurran.net\shared\Projects\CA IEUA\0012936.00 IEUA Septic to Sewer Study Update\wip\GIS\Septic SSRs Update 2025\Septic SSRs Update 2025.aprx Layout: Ontario L

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IEUA Septic to Sewer Feasibility Study Update

City of Ontario Proposed Sewer Infrastructure

Legend

- Proposed City of Ontario Gravity Mains
- Ontario Sewer Mains
- Ontario Septics 2025
- Ontario SSRs
- City Boundaries
- IEUA Service Area

N

0 1,000 2,000 4,000 Feet

1 inch = 2,300 feet

Woodard & Curran

Project #: 0012936.00

Map Created: June 2026

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IEUA Septic to Sewer Study Update

Date: June 2026
Prepared by: MMC
Checked by: TV
Estimate Type: Planning

		Unit Cost		Unit	Desc.	Ontario ON1 QTY		Ontario ON1 Cost	Ontario ON2 QTY		Ontario ON2 Cost	Ontario ON3 QTY		Ontario ON3 Cost
New Gravity Sewer	$	214	$/LF	8"		1,850	$	397,000	4,000	$	858,000	5,250	$	1,126,000
	$	281	$/LF	10"			$	-		$	-		$	-
	$	354	$/LF	12"			$	-		$	-	-	$	-
	$	462	$/LF	15"			$	-		$	-	-	$	-
	$	579	$/LF	18"		-	$	-	-	$	-	-	$	-
	$	704	$/LF	21"		-	$	-	-	$	-	-	$	-
	$	823	$/LF	24"		-	$	-	-	$	-	-	$	-
	$	941	$/LF	27"		-	$	-	-	$	-	-	$	-
	$	1,061	$/LF	30"		-	$	-	-	$	-	-	$	-
	$	1,302	$/LF	36"		-	$	-	-	$	-	-	$	-
Upsizing Existing Sewers	$	281	$/LF	10"		-	$	-	-	$	-		$	-
	$	354	$/LF	12"			$	-		$	-		$	-
Force Main	$	161	$/LF			-	$	-	-	$	-		$	-
Trenchless Crossing	$	4,020	$/LF			-	$	-	-	$	-		$	-
Septic System Abandonment	$	1,340	$/EA			47	$	62,980	68	$	91,000	90	$	121,000
Lower Lateral	$	8,040	$/EA			47	$	377,880	68	$	547,000	90	$	724,000
Upper Lateral	$	8,040	$/EA			47	$	377,880	68	$	547,000	90	$	724,000
Pump Station	$	1,072,000	$/EA			-	$	-	-	$	-		$	-
Grinder Pump	$	20,100	$/EA			-	$	-	-	$	-	-	$	-
Easements	$	27	$/SF			4,275	$	115,000	-	$	-		$	-
Subtotal							**$**	**1,330,740**		**$**	**2,043,000**		**$**	**2,695,000**
Mobilization and Demobilization				5%			$	66,537		$	102,150		$	134,750
Construction Cost Subtotal							**$**	**1,397,277**		**$**	**2,145,150**		**$**	**2,829,750**
Contingency				30%			$	419,183		$	643,545		$	848,925
Construction Cost							**$**	**1,816,460**		**$**	**2,788,695**		**$**	**3,678,675**
Engineering, Administration, and Legal Costs				25%			$	454,115		$	697,174		$	919,669
Ontario Sewer Impact Fees	$	570	$/EA			47	$	26,790	68	$	38,760	90	$	51,300
IEUA Sewer Impact Fees	$	8,620	$/EA			7	$	60,340	57	$	491,340	64	$	551,680
Capital Improvement Cost							**$**	**2,358,000**		**$**	**4,016,000**		**$**	**5,201,000**

IEUA Septic to Sewer

Date: June 2026
Prepared by: MMC
Checked by: TV
Estimate Type: Planning

	Unit Cost	Unit	Desc.	Ontario ON4 QTY	Ontario ON4 Cost	Ontario ON5 QTY	Ontario ON5 Cost	Ontario ON6 QTY	Ontario ON6 Cost
New Gravity Sewer	$ 214	$/LF	8"	2,720	$ 583,000	900	$ 193,000	290	$ 62,000
	$ 281	$/LF	10"	-	$ -	-	$ -	-	$ -
	$ 354	$/LF	12"	-	$ -	-	$ -	-	$ -
	$ 462	$/LF	15"	-	$ -	-	$ -	-	$ -
	$ 579	$/LF	18"	-	$ -	-	$ -	-	$ -
	$ 704	$/LF	21"	-	$ -	-	$ -	-	$ -
	$ 823	$/LF	24"	-	$ -	-	$ -	-	$ -
	$ 941	$/LF	27"	-	$ -	-	$ -	-	$ -
	$ 1,061	$/LF	30"	-	$ -	-	$ -	-	$ -
	$ 1,302	$/LF	36"	-	$ -	-	$ -	-	$ -
Upsizing Existing Sewers	$ 281	$/LF	10"		$ -		$ -		$ -
	$ 354	$/LF	12"		$ -		$ -		$ -
Force Main	$ 161	$/LF			$ -		$ -		$ -
Trenchless Crossing	$ 4,020	$/LF			$ -		$ -		$ -
Septic System Abandonment	$ 1,340	$/EA		56	$ 75,000	7	$ 9,000	2	$ 3,000
Lower Lateral	$ 8,040	$/EA		56	$ 450,000	7	$ 56,000	2	$ 16,000
Upper Lateral	$ 8,040	$/EA		56	$ 450,000	7	$ 56,000	2	$ 16,000
Pump Station	$ 1,072,000	$/EA			$ -		$ -		$ -
Grinder Pump	$ 20,100	$/EA		-	$ -	-	$ -	-	$ -
Easements	$ 27	$/SF		-	$ -	-	$ -	-	$ -
Subtotal					**$ 1,558,000**		**$ 314,000**		**$ 97,000**
Mobilization and Demobilization			5%		$ 77,900		$ 15,700		$ 4,850
Construction Cost Subtotal					**$ 1,635,900**		**$ 329,700**		**$ 101,850**
Contingency			30%		$ 490,770		$ 98,910		$ 30,555
Construction Cost					**$ 2,126,670**		**$ 428,610**		**$ 132,405**
Engineering, Administration, and Legal Costs			25%		$ 531,668		$ 107,153		$ 33,101
Ontario Sewer Impact Fees	$ 570	$/EA		56	$ 31,920	7	$ 3,990	2	$ 1,140
IEUA Sewer Impact Fees	$ 8,620	$/EA		42	$ 362,040	40	$ 344,800	2	$ 17,240
Capital Improvement Cost					**$ 3,052,000**		**$ 885,000**		**$ 184,000**

IEUA Septic to Sewer

Date: June 2026
Prepared by: MMC
Checked by: TV
Estimate Type: Planning

	Unit Cost	Unit	Desc.	Ontario ON7 QTY	Ontario ON7 Cost	Ontario ON8 QTY	Ontario ON8 Cost	Ontario ON9 QTY	Ontario ON9 Cost
New Gravity Sewer	$ 214	$/LF	8"	-	$ -	-	$ -	-	$ -
	$ 281	$/LF	10"	-	$ -	-	$ -	-	$ -
	$ 354	$/LF	12"	-	$ -	-	$ -	-	$ -
	$ 462	$/LF	15"	-	$ -	-	$ -	-	$ -
	$ 579	$/LF	18"	-	$ -	-	$ -	-	$ -
	$ 704	$/LF	21"	-	$ -	-	$ -	-	$ -
	$ 823	$/LF	24"	-	$ -	-	$ -	-	$ -
	$ 941	$/LF	27"	-	$ -	-	$ -	-	$ -
	$ 1,061	$/LF	30"	-	$ -	-	$ -	-	$ -
	$ 1,302	$/LF	36"	-	$ -	-	$ -	-	$ -
Upsizing Existing Sewers	$ 281	$/LF	10"		$ -		$ -		$ -
	$ 354	$/LF	12"		$ -		$ -		$ -
Force Main	$ 161	$/LF			$ -		$ -		$ -
Trenchless Crossing	$ 4,020	$/LF			$ -		$ -		$ -
Septic System Abandonment	$ 1,340	$/EA		29	$ 39,000	1	$ 1,000	4	$ 5,000
Lower Lateral	$ 8,040	$/EA		29	$ 233,000	1	$ 8,000	4	$ 32,000
Upper Lateral	$ 8,040	$/EA		29	$ 233,000	1	$ 8,000	4	$ 32,000
Pump Station	$ 1,072,000	$/EA			$ -		$ -		$ -
Grinder Pump	$ 20,100	$/EA		-	$ -	-	$ -	-	$ -
Easements	$ 27	$/SF		-	$ -	-	$ -	-	$ -
Subtotal					**$ 505,000**		**$ 17,000**		**$ 69,000**
Mobilization and Demobilization			5%		$ 25,250		$ 850		$ 3,450
Construction Cost Subtotal					**$ 530,250**		**$ 17,850**		**$ 72,450**
Contingency			30%		$ 159,075		$ 5,355		$ 21,735
Construction Cost					**$ 689,325**		**$ 23,205**		**$ 94,185**
Engineering, Administration, and Legal Costs			25%		$ 172,331		$ 5,801		$ 23,546
Ontario Sewer Impact Fees	$ 570	$/EA		29	$ 16,530	1	$ 570	4	$ 2,280
IEUA Sewer Impact Fees	$ 8,620	$/EA		4	$ 34,480	-	$ -	1	$ 8,620
Capital Improvement Cost					**$ 913,000**		**$ 30,000**		**$ 129,000**

APPENDIX H: PROPOSED SEWER INFRASTRUCTURE AND PLANNING LEVEL COST ESTIMATES – CITY OF UPLAND

IEUA Septic to Sewer Feasibility Study Update

City of Upland and San Antonio Heights Proposed Sewer Infrastructure

UP1

1897 ft
1834 ft
1721 ft

San Antonio Wash

Forest S
Marigold S
Poppy Ave
Wisteria Ave
Tulip Ave
Caris
Somerset Way
Morningside Ave
W 21st St
Oriole Pl
Elmhurst Way
Windemere Ave
Birkdale Ave
Muirfield Ave
N Benson
N Benson Ave
Evergreen Dr
Central Ave
Central Ave
Central Ave
Resort St
Sugarloaf Ave
Holiday Ave
W Ponderosa Way
Sun River St
Vail Way
W 18th St
W Clark St
Orangewood Ave
Brentwood Ave
210
210
210
210
210

Legend

- Proposed City of Upland Lift Station
- Proposed City of Upland Force Mains
- Proposed City of Upland Gravity Mains
- Existing City of Upland Septic Properties
- Existing City of Upland Sewer Mains
- Upland SSRs
- City Boundaries
- IEUA Service Area

N

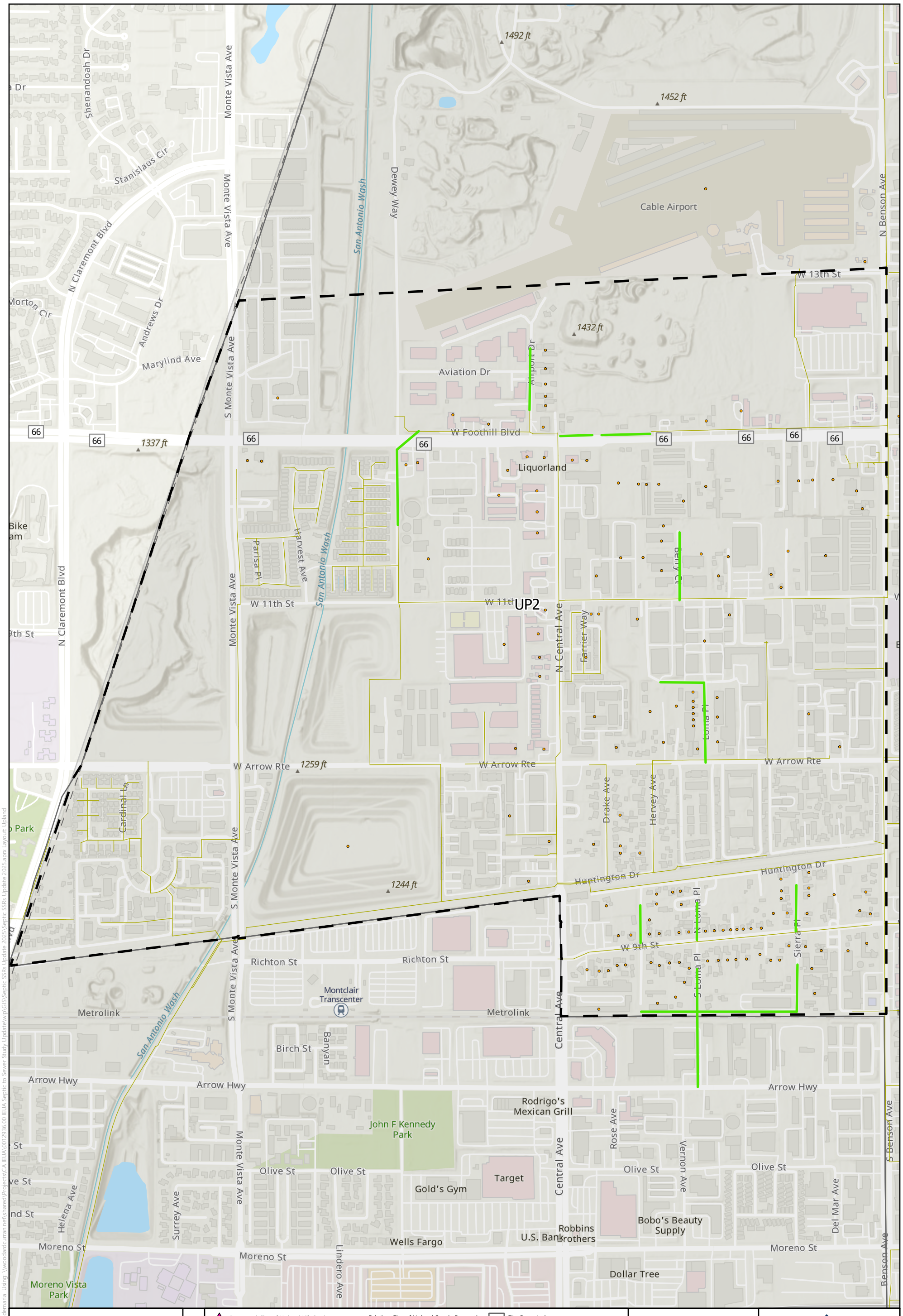
0 0.03 0.06 0.11 Miles

Woodard & Curran

Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Upland and San Antonio Heights Proposed Sewer Infrastructure

Legend

- Proposed City of Upland Lift Station
- Proposed City of Upland Force Mains
- Proposed City of Upland Gravity Mains
- Existing City of Upland Septic Properties
- Existing City of Upland Sewer Mains
- Upland SSRs
- City Boundaries
- IEUA Service Area

N

0 0.04 0.07 0.14 Miles

Woodard & Curran

Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Upland and San Antonio Heights Proposed Sewer Infrastructure

Legend

- Proposed City of Upland Lift Station
- Proposed City of Upland Force Mains
- Proposed City of Upland Gravity Mains
- Existing City of Upland Septic Properties
- Existing City of Upland Sewer Mains
- Upland SSRs
- City Boundaries
- IEUA Service Area

N

0 0.05 0.1 0.2 Miles

Woodard & Curran

Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Upland and San Antonio Heights Proposed Sewer Infrastructure

Legend

- Proposed City of Upland Gravity Mains
- Existing City of Upland Sewer Mains
- Upland SSRs
- Existing City of Upland Septic Properties
- City Boundaries
- IEUA Service Area

N

0 0.07 0.15 0.3 Miles

Woodard & Curran

Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Upland and San Antonio Heights Proposed Sewer Infrastructure

Legend

- Proposed City of Upland Lift Station
- Proposed City of Upland Force Mains
- Proposed City of Upland Gravity Mains
- Existing City of Upland Septic Properties
- Existing City of Upland Sewer Mains
- Upland SSRs
- City Boundaries
- IEUA Service Area

N

0 0.07 0.15 0.3 Miles

Woodard & Curran

Map Created: February 2026

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IEUA Septic to Sewer Feasibility Study Update

City of Upland and San Antonio Heights Proposed Sewer Infrastructure

Legend

- Proposed City of Upland Lift Station
- Proposed City of Upland Force Mains
- Proposed City of Upland Gravity Mains
- Existing City of Upland Septic Properties
- Existing City of Upland Sewer Mains
- Upland SSRs
- City Boundaries
- IEUA Service Area

N

0 0.04 0.07 0.15 Miles

Woodard & Curran

Map Created: February 2026

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IEUA Septic to Sewer Study Update

Date: February 2026
Prepared by: MMC
Checked by:
Estimate Type: Planning

	Unit Cost	Unit	Desc.	Upland UP1 QTY	Upland UP1 Cost	Upland UP2 QTY	Upland UP2 Cost	Upland UP3 QTY	Upland UP3 Cost
New Gravity Sewer	$ 214	$/LF	8"	-	$ -	7,100	$ 1,522,000	3,900	$ 836,000
	$ 281	$/LF	10"	-	$ -	-	$ -	-	$ -
	$ 354	$/LF	12"	-	$ -	-	$ -	-	$ -
	$ 462	$/LF	15"	-	$ -	-	$ -	-	$ -
	$ 579	$/LF	18"	-	$ -	-	$ -	-	$ -
	$ 704	$/LF	21"	-	$ -	-	$ -	-	$ -
	$ 823	$/LF	24"	-	$ -	-	$ -	-	$ -
	$ 941	$/LF	27"	-	$ -	-	$ -	-	$ -
	$ 1,061	$/LF	30"	-	$ -	-	$ -	-	$ -
	$ 1,302	$/LF	36"	-	$ -	-	$ -	-	$ -
Upsizing Existing Sewers	$ 281	$/LF	10"	-	$ -	-	$ -		$ -
	$ 354	$/LF	12"		$ -		$ -		$ -
Force Main	$ 161	$/LF		-	$ -	-	$ -		$ -
Trenchless Crossing	$ 4,020	$/LF		-	$ -	-	$ -		$ -
Septic System Abandonment	$ 1,340	$/EA		-	$ -	152	$ 204,000	137	$ 184,000
Lower Lateral	$ 8,040	$/EA		-	$ -	152	$ 1,222,000	137	$ 1,101,000
Upper Lateral	$ 8,040	$/EA		-	$ -	152	$ 1,222,000	137	$ 1,101,000
Pump Station	$ 1,072,000	$/EA		-	$ -	-	$ -		$ -
Grinder Pump	$ 20,100	$/EA		-	$ -	-	$ -	-	$ -
Easements	$ 27	$/SF		-	$ -	-	$ -	-	$ -
Subtotal				-	**$ -**		**$ 4,170,000**		**$ 3,222,000**
Mobilization and Demobilization			5%	-	$ -		$ 208,500		$ 161,100
Construction Cost Subtotal				-	**$ -**		**$ 4,378,500**		**$ 3,383,100**
Contingency			30%	-	$ -		$ 1,313,550		$ 1,014,930
Construction Cost				-	**$ -**		**$ 5,692,050**		**$ 4,398,030**
Engineering, Administration, and Legal Costs			25%	-	$ -		$ 1,423,013		$ 1,099,508
Upland Sewer Impact Fees	$ 500	$/EA		-	$ -	152	$ 76,000	137	$ 68,500
IEUA Sewer Impact Fees	$ 8,620	$/EA		-	$ -	138	$ 1,189,560	110	$ 948,200
Capital Improvement Cost					**$ -**		**$ 8,381,000**		**$ 6,514,000**

IEUA Septic to Sewer

Date: February 2026
Prepared by: MMC
Checked by:
Estimate Type: Planning

		Unit Cost		Unit	Desc.	Upland UP4 QTY		Upland UP4 Cost	Upland UP5 QTY		Upland UP5 Cost	Upland UP6 QTY		Upland UP6 Cost
New Gravity Sewer	$	214	$/LF	8"		900	$	193,000	700	$	150,000	370	$	79,000
	$	281	$/LF	10"		-	$	-	-	$	-	-	$	-
	$	354	$/LF	12"		-	$	-	-	$	-	-	$	-
	$	462	$/LF	15"		-	$	-	-	$	-	-	$	-
	$	579	$/LF	18"		-	$	-	-	$	-	-	$	-
	$	704	$/LF	21"		-	$	-	-	$	-	-	$	-
	$	823	$/LF	24"		-	$	-	-	$	-	-	$	-
	$	941	$/LF	27"		-	$	-	-	$	-	-	$	-
	$	1,061	$/LF	30"		-	$	-	-	$	-	-	$	-
	$	1,302	$/LF	36"		-	$	-	-	$	-	-	$	-
Upsizing Existing Sewers	$	281	$/LF	10"			$	-		$	-		$	-
	$	354	$/LF	12"			$	-		$	-		$	-
Force Main	$	161	$/LF				$	-		$	-		$	-
Trenchless Crossing	$	4,020	$/LF				$	-		$	-		$	-
Septic System Abandonment	$	1,340	$/EA			45	$	60,000	41	$	55,000	11	$	15,000
Lower Lateral	$	8,040	$/EA			45	$	362,000	41	$	330,000	11	$	88,000
Upper Lateral	$	8,040	$/EA			45	$	362,000	41	$	330,000	11	$	88,000
Pump Station	$	1,072,000	$/EA				$	-		$	-		$	-
Grinder Pump	$	20,100	$/EA			-	$	-	-	$	-	-	$	-
Easements	$	27	$/SF			-	$	-	-	$	-	-	$	-
Subtotal							**$**	**977,000**		**$**	**865,000**		**$**	**270,000**
Mobilization and Demobilization				5%			$	48,850		$	43,250		$	13,500
Construction Cost Subtotal							**$**	**1,025,850**		**$**	**908,250**		**$**	**283,500**
Contingency				30%			$	307,755		$	272,475		$	85,050
Construction Cost							**$**	**1,333,605**		**$**	**1,180,725**		**$**	**368,550**
Engineering, Administration, and Legal Costs				25%			$	333,401		$	295,181		$	92,138
Upland Sewer Impact Fees	$	500	$/EA			45	$	22,500	41	$	20,500	11	$	5,500
IEUA Sewer Impact Fees	$	8,620	$/EA			39	$	336,180	34	$	293,080	11	$	94,820
Capital Improvement Cost							**$**	**2,026,000**		**$**	**1,789,000**		**$**	**561,000**

APPENDIX I: PROPOSED SEWER INFRASTRUCTURE AND PLANNING LEVEL COST ESTIMATES – SAN ANTONIO HEIGHTS

IEUA Septic to Sewer Feasibility Study Update

City of Upland and San Antonio Heights Proposed Sewer Infrastructure

SA1

San Antonio Heights

Legend

- Proposed City of Upland Lift Station
- Proposed City of Upland Force Mains
- Proposed City of Upland Gravity Mains
- Existing City of Upland Septic Properties
- Existing City of Upland Sewer Mains
- City Boundaries
- IEUA Service Area
- San Antonio Heights SSRs

N

0 0.05 0.1 0.2 Miles

Woodard & Curran

Map Created: February 2026

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IEUA Septic to Sewer Study Update

Date: February 2026
Prepared by: MMC
Checked by:
Estimate Type: Planning

	Unit Cost		Unit	Desc.	San Antonio Heights SAH1 QTY		Cost
New Gravity Sewer	$	214	$/LF	8"	79,100	$	16,959,000
	$	281	$/LF	10"	-	$	-
	$	354	$/LF	12"	-	$	-
	$	462	$/LF	15"	-	$	-
	$	579	$/LF	18"	-	$	-
	$	704	$/LF	21"	-	$	-
	$	823	$/LF	24"	-	$	-
	$	941	$/LF	27"	-	$	-
	$	1,061	$/LF	30"	-	$	-
	$	1,302	$/LF	36"	-	$	-
Upsizing Existing Sewers	$	281	$/LF	10"		$	-
	$	354	$/LF	12"		$	-
Force Main	$	161	$/LF		3,200	$	515,000
Trenchless Crossing	$	4,020	$/LF		-	$	-
Septic System Abandonment	$	1,340	$/EA		1,223	$	1,639,000
Lower Lateral	$	8,040	$/EA		1,223	$	9,833,000
Upper Lateral	$	8,040	$/EA		1,223	$	9,833,000
Pump Station	$	1,072,000	$/EA			$	-
Grinder Pump	$	20,100	$/EA		-	$	-
Easements	$	27	$/SF		-	$	-
Subtotal						**$**	**38,779,000**
Mobilization and Demobilization			5%			$	1,938,950
Construction Cost Subtotal						**$**	**40,717,950**
Contingency			30%			$	12,215,385
Construction Cost						**$**	**52,933,335**
Engineering, Administration, and Legal Costs			25%			$	13,233,334
Upland Sewer Impact Fees	$	500	$/EA		1,223	$	611,500
IEUA Sewer Impact Fees	$	8,620	$/EA		314	$	2,706,680
Capital Improvement Cost						**$**	**69,485,000**

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