



Exhibit B. Infrastructure Analysis Report



**COUNTY OF
SAN DIEGO**

Planning and Development Services 5510 Overland Avenue
San Diego, CA 92123 sandiegocounty.gov

EXHIBIT B. Infrastructure Analysis Report

Department of Public Works Infrastructure Gap Analysis

Technical Memorandum

Subject: Roadway Gap Improvements for Development Feasibility Assessment (DFA) Parcels/VMT Efficient Areas/Infill Areas

Prepared by: Department of Public Works

Date: July 24, 2024

Introduction

A transportation assessment was conducted to identify roadways and improvements that would enhance connectivity between DFA parcels and points of interest that could be walkable and bikeable in the following four (4) communities within the County of San Diego.

- Buena Creek
- Valle De Oro / Casa De Oro
- Lakeside
- Spring Valley

Transportation Assessment

The transportation assessment was conducted in two phases:

- 1) Roadway Identification
- 2) Cross-Section Improvements. Below details the efforts conducted in both phases.

Phase 1: Roadway Identification

A GIS spatial analysis of the following elements for each community was conducted to assist with roadway selection:

- Existing/Planned Transit Stops
- Public Schools
- Parks
- Commercial Land Uses
- County Maintained Roadways
- Community Recreational Centers
- Health Centers
- Libraries
- Development Feasibility Assessment (DFA) Parcels

The final roadways identified and selected for Phase 2 were based on the roadways that provided connections between a majority of the DFA parcels and key points of interest. Based on this assessment

for Phase 1, a total of 20 roadways were identified. The total number of roadways for each community is indicated below in parentheses.

- Buena Creek (11)
- Valle de Oro / Casa De Oro (3)
- Lakeside (2)
- Spring Valley (4)

Phase 2: Cross-Section Improvements

For each study segment, a review of the following elements was conducted:

- Existing roadway geometrics (e.g., lane, surfacing width, etc.)
- Existing right of way (ROW) estimated used Parcel GIS data
- Mobility element classification and associated road design standards (e.g. number of lanes, surfacing width, parkway, design speed, etc.). It should be noted that although 20 segments were identified in Phase 1, some segments were further segmented based on their different mobility element classifications.
- 2035 average daily traffic (ADT) volumes

The existing conditions were utilized to understand the existing and missing roadway elements needed to enhance connectivity between the DFA parcels and key points of interest. The mobility element classification and associated road design standards were utilized to establish a maximum allowable for roadway improvements. The ADT volumes were utilized to gauge a segment's potential for road diet improvements.

The following goals were considered in the development of the cross-sections:

- Utilize the planned ROW to transform the road into a vibrant community space that integrates and enhances the community's character
- Provide pedestrian and bicycle connectivity
- Build the roadway to its mobility element/non-mobility element classification

Based on a review of the existing conditions, mobility element/non mobility element classification and goals for the roadway segment, improvements such as bike lanes, buffers, parking, sidewalks, landscaping, and medians were identified. It should be noted that these cross-sections represent a snapshot that is desired for the roadway and further assessment would be needed to understand its effect on transportation/roadway elements (e.g., constraints, stormwater/drainage, emergency access, ROW acquisition, environmental, level of service, etc.) that cannot be determined at a cross-section level. **Exhibit B1** contains the slide deck of the proposed cross-sections for each community.

Preliminary Planning Level Cost Estimates

The segment improvements can be grouped into one of the three categories: 1) Parkway Improvements 2) Bicycle Improvements, and 3) Widening. A preliminary planning level cost estimate was prepared for the design and construction of each segment.

The County of San Diego 5 Year Capital Improvement Plan (CIP) (Fiscal Years 2023/24 to 2027/28 Fall 2023) was used to identify projects throughout the County that also fall into the three categories mentioned above. The project costs were then used to calculate cost per mile and cost per square foot. Using the calculated costs per mile and cost per square feet based on CIP data and a contingency factor to account for unforeseen project costs, a preliminary planning level cost estimate was prepared for each study segment. **Exhibit B2** contains the CIP data used to calculate per mile and per square foot cost. **Exhibit B3** contains a summary of the estimated total cost for each segment.

Conclusion

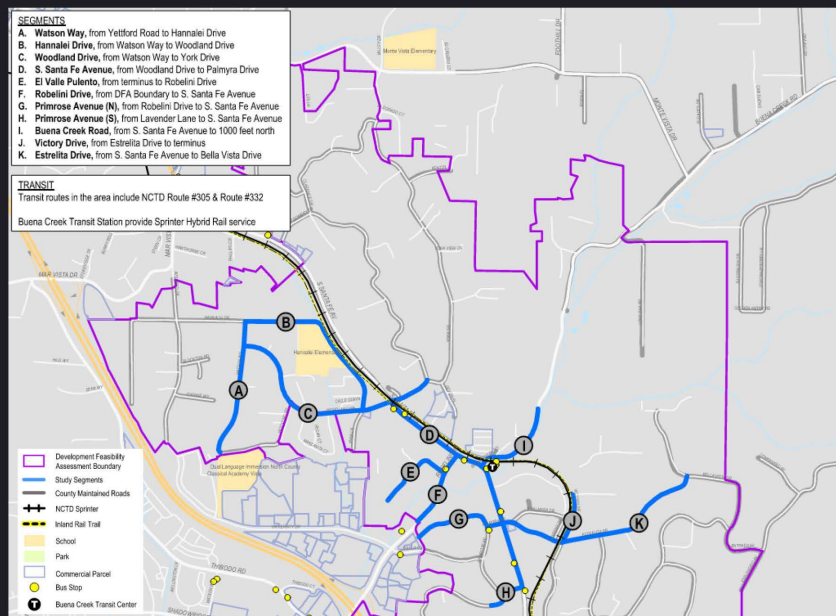
Based on the transportation assessment and goals for the Roadway Gap Improvement for DFA Parcels/VMT Efficient Areas/Infill Areas, the cross-sections illustrated in **Exhibit B1** are recommended.

EXHIBIT B1

Exhibit B1¹

Community: Buena Creek

Community: Buena Creek



¹ This is termed Attachment A in the Dept of Public Works draft IGA Report.

Community: Buena Creek

Segment A: Watson Way, from Yettford Rd to Hannelei Dr

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)	Median	Road Surfacing	ROW Width	Shoulder (#/Width)	Parkway	Min MPH	2035 ADTs (1000s)
Yettford Rd – Hannelei Dr	-	Residential Loop	2 12'	-	32'	52'	2 4'	10'	30	1.1
Existing			2	-	-	24'-30'	46'-58'			

Segment is not part of the LRSP Priority List
Segment has no intersections on the LRSP Priority List

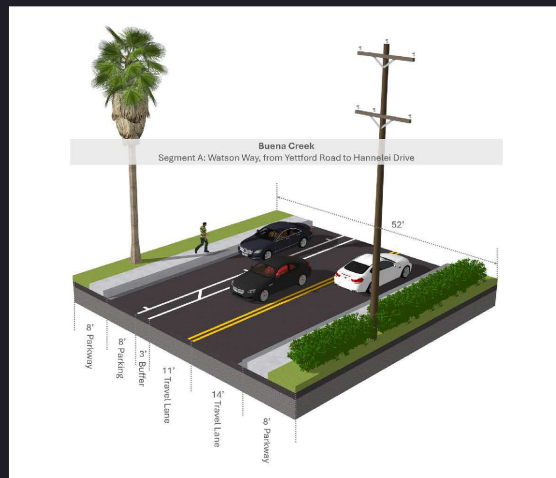


Community: Buena Creek

Segment A: Watson Way, from Yettford Rd to Hannelei Dr

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)	Median	Road Surfacing	ROW Width	Shoulder (#/Width)	Parkway	Min MPH	2035 ADTs (1000s)
Yettford Rd – Hannelei Dr	-	Residential Loop	2 12'	-	32'	52'	2 4'	10'	30	1.1
Existing			2	11-12'	-	24'-30'	46'-58'			

Segment is not part of the LRSP Priority List
Segment has no intersections on the LRSP Priority List



Investments to Segment A: Watson Way, from Yettford Road to Hannelei Drive enhance walkability by providing sidewalks. Additional investments include a parkway, a buffer between parking and the travel lane, and increasing the right-of-way width to 52-feet.

Community: Buena Creek

Segment B: Hannalei Drive, from Watson Way to Woodland Dr

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)
Watson Way - Woodland Dr	-	Residential Collector	2	12'	-	40'	60'	2	8'	10'	30	0.3-1.6
Existing			2	12'+	-	32'-38'	36'-70'					

Segment is not part of the LRSP Priority List
Segment has no intersections on the LRSP Priority List

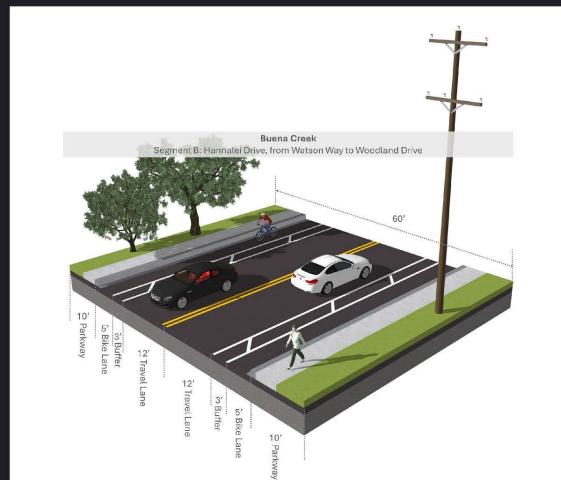


Community: Buena Creek

Segment B: Hannalei Drive, from Watson Way to Woodland Dr

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)
Watson Way - Woodland Dr	-	Residential Collector	2	12'	-	40'	60'	2	8'	10'	30	0.3-1.6
Existing			2	12'+	-	32'-38'	36'-70'					

Segment is not part of the LRSP Priority List
Segment has no intersections on the LRSP Priority List

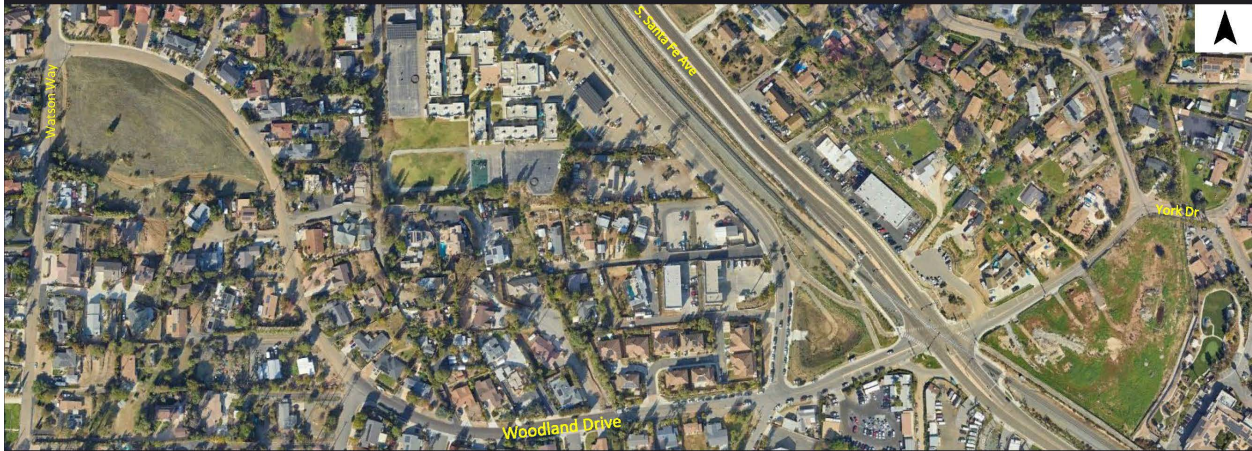


Investments to Segment B: Enhance bikeability by installing a Class II bike lane along Hannalei Drive from Watson Way, connecting to the existing Class I trail along South Santa Fe Avenue. Additional investments include a parkway, a buffer between parking and the travel lane, and increasing the right-of-way width to 60-feet.

Community: Buena Creek

Segment C: Woodland Drive, from Watson Way to York Dr

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)	Segment is not part of the LRSP Priority List Segment has no intersections on the LRSP Priority List
Watson Way - York Dr	-	Residential Road	2	12'	-	36'	56'	2	6'	10'	30	0.1-2	
Existing			2	-	-	35'-45'	56'-60'						



Community: Buena Creek

Segment C: Woodland Drive, from Watson Way to York Dr

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)	Segment is not part of the LRSP Priority List Segment has no intersections on the LRSP Priority List
Watson Way - York Dr	-	Residential Road	2	12'	-	36'	56'	2	6'	10'	30	0.1-2	
Existing			2	-	-	35'-45'	56'-60'						



Investments to Segment C: Woodland Drive, from Watson Way to York Drive enhance walkability by providing sidewalks. Additional investments include a parkway, and a buffer between parking and the travel lane.

Community: Buena Creek

Segment D: South Santa Fe Avenue, from Woodland Dr to Palmyra Dr

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)
Woodland Dr – Palmyra Dr	Major Road (4.1A)	-	4	12'	14	78'	98'	2	8'	10'	55	16.8-20.4
Existing			2-4	11'+	-	44'-72'	62'-80'					

Segment is a part of the LRSP Priority List (#11)
Segment has no intersections on the LRSP Priority List



Community: Buena Creek

Segment D: South Santa Fe Avenue, from Woodland Dr to Palmyra Dr

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)
Woodland Dr – Palmyra Dr	Major Road (4.1A)	-	4	12'	14	78'	98'	2	8'	10'	55	16.8-20.4
Existing			2-4	11'+	-	44'-72'	62'-80'					

Segment is a part of the LRSP Priority List (#11)
Segment has no intersections on the LRSP Priority List



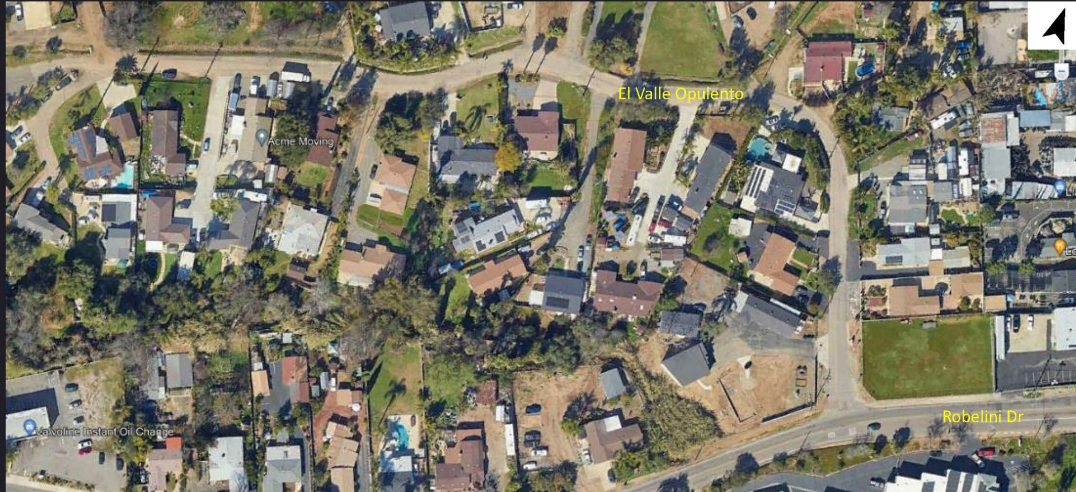
Investments to Segment D: South Santa Fe Avenue, from Woodland Drive to Palmyra Drive enhance bikeability and walkability by providing sidewalks and Class II bike lanes. Additional investments include 14-foot median and increasing the right-of-way width to 98-feet.

Community: Buena Creek

Segment E: El Valle Oplento, from Terminus to Robelini Dr

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)	Median	Road Surfacing	ROW Width	Shoulder (#/Width)	Parkway	Min MPH	2035 ADTs (1000s)
Terminus – Robelini Dr	-	Residential Cul-de-sac	2 12'	-	32'	52'	2 4'	10'	30	Not Available
Existing			2 -	-	24'	52'				

Segment is not part of the LRSP Priority List
Segment has no intersections on the LRSP Priority List



Community: Buena Creek

Segment E: El Valle Oplento, from Terminus to Robelini Dr

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)	Median	Road Surfacing	ROW Width	Shoulder (#/Width)	Parkway	Min MPH	2035 ADTs (1000s)
Terminus – Robelini Dr	-	Residential Cul-de-sac	2 12'	-	32'	52'	2 4'	10'	30	Not Available
Existing			2 -	-	24'	52'				

Segment is not part of the LRSP Priority List
Segment has no intersections on the LRSP Priority List



Investments to Segment E: El Valle Oplento, from Terminus to Robelini Drive enhance walkability by providing sidewalks. Additional investments include adding a parkway.

Community: Buena Creek

Segment F: Robelini Dr, from DFA Boundary to South Santa Fe Ave

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)	Median	Road Surfacing	ROW Width	Shoulder (#/Width)	Parkway	Min MPH	2035 ADTs (1000s)
DFA Boundary – South Santa Fe Ave	6.2 Prime Arterial	-	6 12'	14	102'	122'	2 8'	10'	65	25.9
Existing			2 12'+	-	32'-42'	52'				

Segment is not part of the LRSP Priority List
Segment has no intersections on the LRSP Priority List

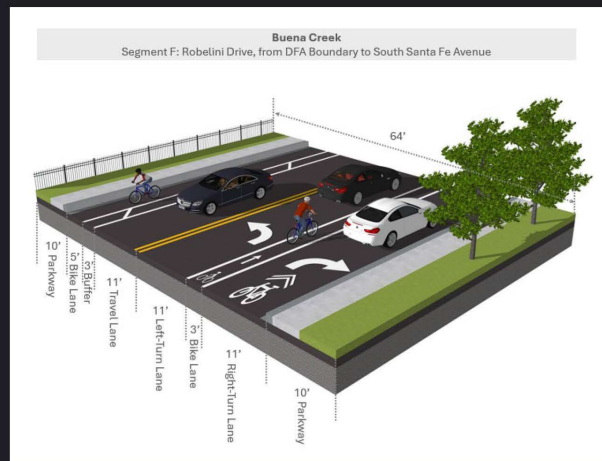


Community: Buena Creek

Segment F: Robelini Dr, from El Valle Opulento to South Santa Fe Ave

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)	Median	Road Surfacing	ROW Width	Shoulder (#/Width)	Parkway	Min MPH	2035 ADTs (1000s)
DFA Boundary – South Santa Fe Ave	6.2 Prime Arterial	-	6 12'	14	102'	122'	2 8'	10'	65	25.9
Existing			2 12'+	-	32'-42'	52'				

Segment is not part of the LRSP Priority List
Segment has no intersections on the LRSP Priority List



Assumes no realignment of Robelini Drive opposite to Buena Creek. Specific design of entire road would be determined in final engineering.

Investments to Segment F: Robelini Drive from El Valle Opulento to South Santa Fe Drive enhance bikeability and walkability by providing sidewalks and Class II and Class III bike lanes. Additional investments include increasing the right-of-way width to 122-feet.

Community: Buena Creek

Segment G: Primrose Avenue (N), from Robelini Dr to South Santa Fe Ave

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)	Median	Road Surfacing	ROW Width	Shoulder (#/Width)	Parkway	Curve Radius	Min MPH	2035 ADTs (1000s)
Robelini Dr – South Santa Fe Ave	-	Residential Loop	2 12'	-	32'	52'	2 4'	10'	200'	30	Not Available
Existing			2 -	-	20'-24'	50'					

Segment is not part of the LRSP Priority List
Segment has no intersections on the LRSP Priority List

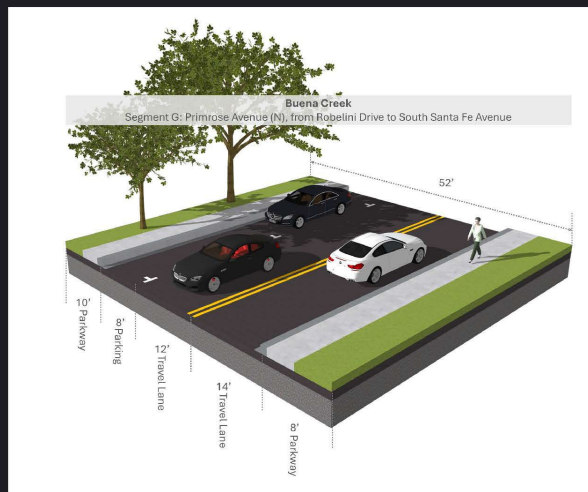


Community: Buena Creek

Segment G: Primrose Avenue (N), from Robelini Dr to South Santa Fe Ave

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)	Median	Road Surfacing	ROW Width	Shoulder (#/Width)	Parkway	Curve Radius	Min MPH	2035 ADTs (1000s)
Robelini Dr – South Santa Fe Ave	-	Residential Loop	2 12'	-	32'	52'	2 4'	10'	200'	30	Not Available
Existing			2 -	-	20'-24'	50'					

Segment is not part of the LRSP Priority List
Segment has no intersections on the LRSP Priority List



Investments to Segment G: Primrose Avenue (N), from Robelini Drive to South Sante Fe Avenue enhance walkability by providing sidewalks. Additional investments include a parkway and increasing the right-of-way width to 52-feet.

Community: Buena Creek

Segment H: Primrose Avenue (S), from Lavender Lane to South Santa Fe Ave

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)	Median	Road Surfacing	ROW Width	Shoulder (#/Width)	Parkway	Curve Radius	Min MPH	2035 ADTs (1000s)
Lavender Lane – South Santa Fe Ave	-	Residential Loop	2 12'	-	32'	52'	2 4'	10'	200'	30	Not Available
Existing			2 12'	-	24'	50'					

Segment is not part of the LRSP Priority List
Segment has no intersections on the LRSP Priority List

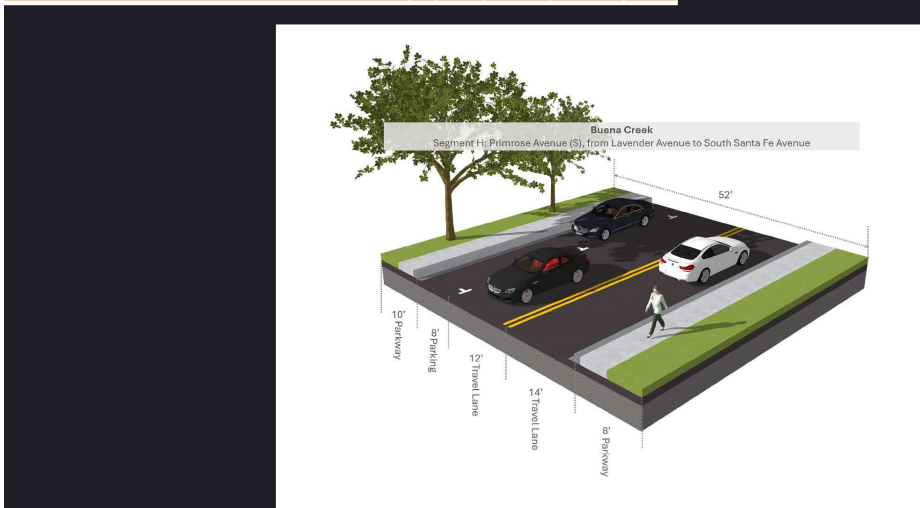


Community: Buena Creek

Segment H: Primrose Avenue (S), from Lavender Lane to South Santa Fe Ave

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)	Median	Road Surfacing	ROW Width	Shoulder (#/Width)	Parkway	Curve Radius	Min MPH	2035 ADTs (1000s)
Lavender Lane – South Santa Fe Ave	-	Residential Loop	2 12'	-	32'	52'	2 4'	10'	200'	30	Not Available
Existing			2 12'	-	24'	50'					

Segment is not part of the LRSP Priority List
Segment has no intersections on the LRSP Priority List



Investments to Segment H: Primrose Avenue (S), from Lavendar Lane to South Sante Fe Avenue enhance walkability by providing sidewalks. Additional investments include a parkway and increasing the right-of-way width to 52-feet.

Community: Buena Creek

Segment J: Victory Drive, from Estrelita Dr to Terminus

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)
Estrelita Dr - Terminus	-	Rural Residential Road	2	12'	-	28'	48'	2	2'	10'	30	Not Available
Existing			2	-	-	16'-22'	46'					

Segment is not part of the LRSP Priority List
Segment has no intersections on the LRSP Priority List



Community: Buena Creek

Segment J: Victory Drive, from Estrelita Dr to Terminus

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)
Estrelita Dr - Terminus	-	Rural Residential Road	2	12'	-	28'	48'	2	2'	10'	30	Not Available
Existing			2	-	-	16'-22'	46'					

Segment is not part of the LRSP Priority List
Segment has no intersections on the LRSP Priority List



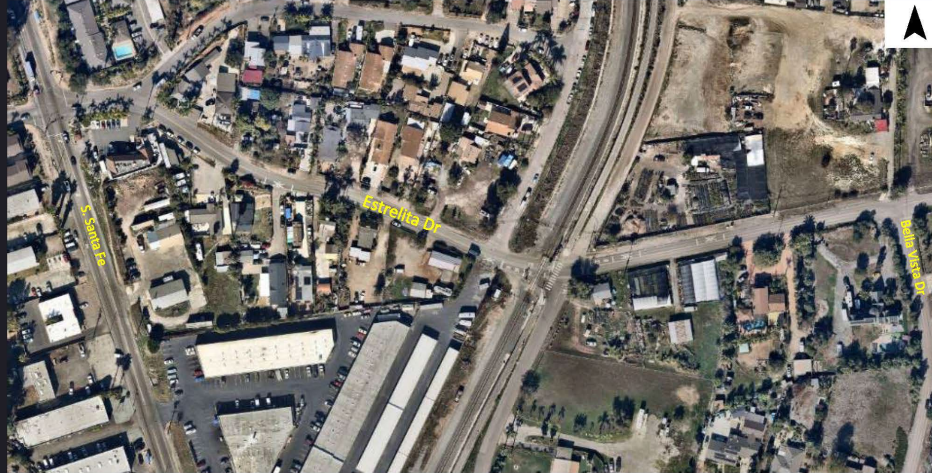
Investments to Segment J: Victory Drive, from Estrelita Dr to Terminus enhance walkability by providing sidewalks. Additional investments include increasing the right-of-way width to 48-feet.

Community: Buena Creek

Segment K: Estrelita Drive, from South Santa Fe Ave to Bella Vista Dr

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)	Median	Road Surfacing	ROW Width	Shoulder (#/Width)	Parkway	Min MPH	2035 ADTs (1000s)
South Santa Fe Ave – Bella Vista Dr	-	Residential Collector	2 12'	-	40'	60'	2 8'	10'	30	1.8
Existing			2 12'	-	24'-28'	46'-50'				

Segment is not part of the LRSP Priority List
Segment has intersection on the LRSP Priority List (#23)

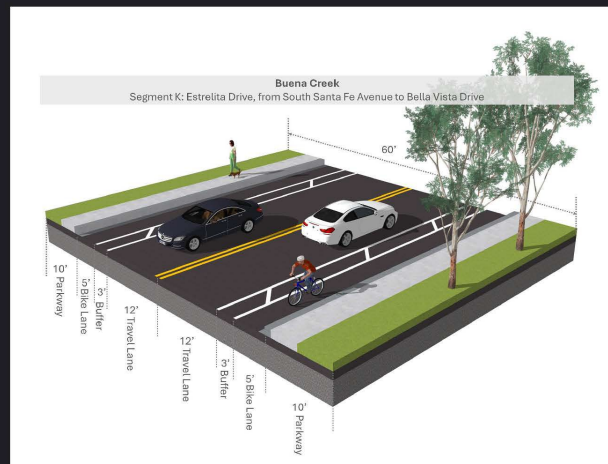


Community: Buena Creek

Segment K: Estrelita Drive, from South Santa Fe Ave to Bella Vista Dr

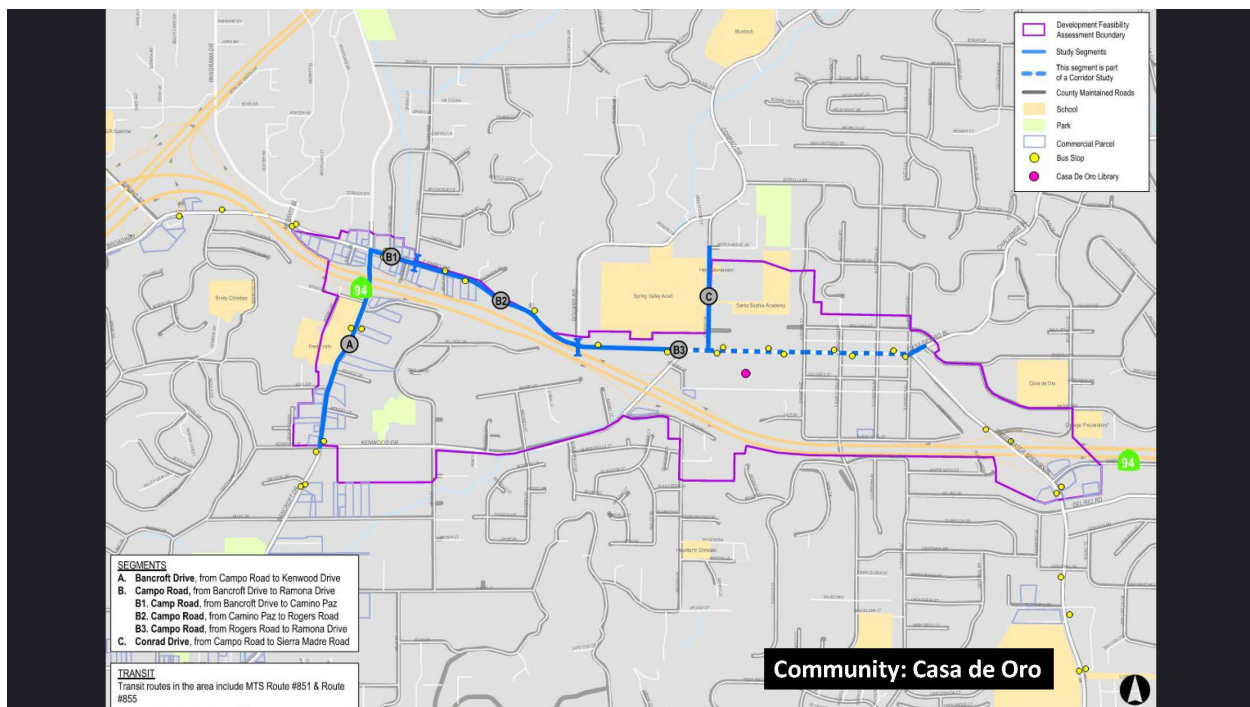
Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)	Median	Road Surfacing	ROW Width	Shoulder (#/Width)	Parkway	Min MPH	2035 ADTs (1000s)
South Santa Fe Ave – Bella Vista Dr	-	Residential Collector	2 12'	-	40'	60'	2 8'	10'	30	1.8
Existing			2 12'	-	24'-28'	46'-50'				

Segment is not part of the LRSP Priority List
Segment has intersection on the LRSP Priority List (#23)



Investments to Segment K: Estrelita Drive, from South Santa Fe Ave to Bella Vista Dr Drive enhance bikeability and walkability by adding a Class II bike lane and sidewalks. Additional investments include increasing the right-of-way width to 60-feet.

Community: Casa de Oro



[Note: This area is termed “Valle de Oro / Casa de Oro” in the DFA Report. The title “Casa de Oro” is kept, per the original IGA Report.]

Community: Casa de Oro

Segment A: Bancroft Drive, from Campo Road to Kenwood Drive

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)
Campo Rd – Kenwood Dr	Community Collector (2.1C)	-	2	12'	-	40'-54'	60'-74'	2	8'	10'	45	11.5-17.2
Existing			2	11'	-	44'-52'	60'-68'					

Segment is not part of the LRSP Priority List
Segment has intersection on the LRSP Priority List (#56)



Community: Casa de Oro

Segment A: Bancroft Drive, from Campo Road to Kenwood Drive

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)
Campo Rd – Kenwood Dr	Community Collector (2.1C)	-	2	12'	-	40'-54'	60'-74'	2	8'	10'	45	11.5-17.2
Existing			2	11'	-	44'-52'	60'-68'					

Segment is not part of the LRSP Priority List
Segment has intersection on the LRSP Priority List (#56)



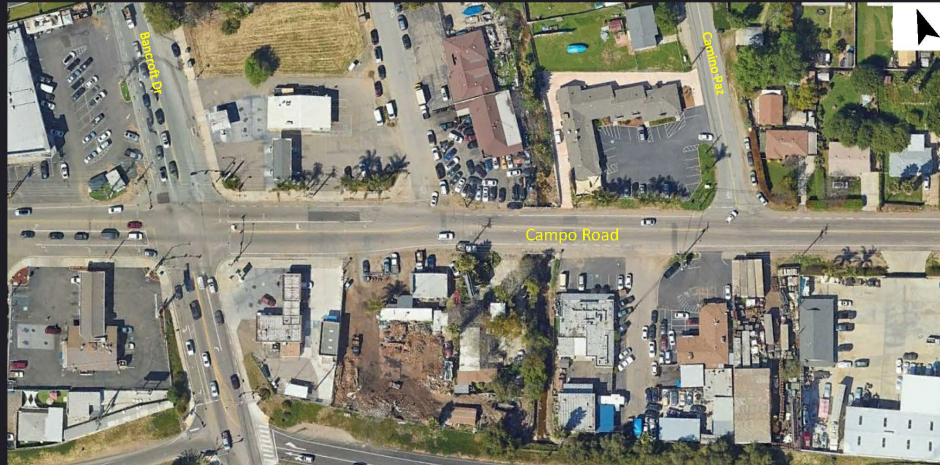
Investments to Segment A: Bancroft Drive, from Campo Road to Kenwood Drive enhance bikeability by adding a Class II bike lane to the side of the street where there is no existing bike lane and buffers between the bike lanes and the travel lane. Additional investments include adding a median, a parkway, and increasing the right-of-way width to 60'-74'.

Community: Casa de Oro

Segment B: Campo Road, from Bancroft Drive to Ramona Drive (1 of 3)

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)
Bancroft Dr – Camino Paz	Major Road (4.1B)	-	4	12'	-	64'-78'	84'-98'	2	8'	10'	55	10.1
Existing			2	14'-18'	-	44'-62'	60'-78'					

Segment is a part of the LRSP Priority List (#6)
Segment has intersections on the LRSP Priority List (#56)



Community: Casa de Oro

Segment B: Campo Road, from Bancroft Drive to Ramona Drive (1 of 3)

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)
Bancroft Dr – Camino Paz	Major Road (4.1B)	-	4	12'	-	64'-78'	84'-98'	2	8'	10'	55	10.1
Existing			2	14'-18'	-	44'-62'	60'-78'					

Segment is a part of the LRSP Priority List (#6)
Segment has intersections on the LRSP Priority List (#56)



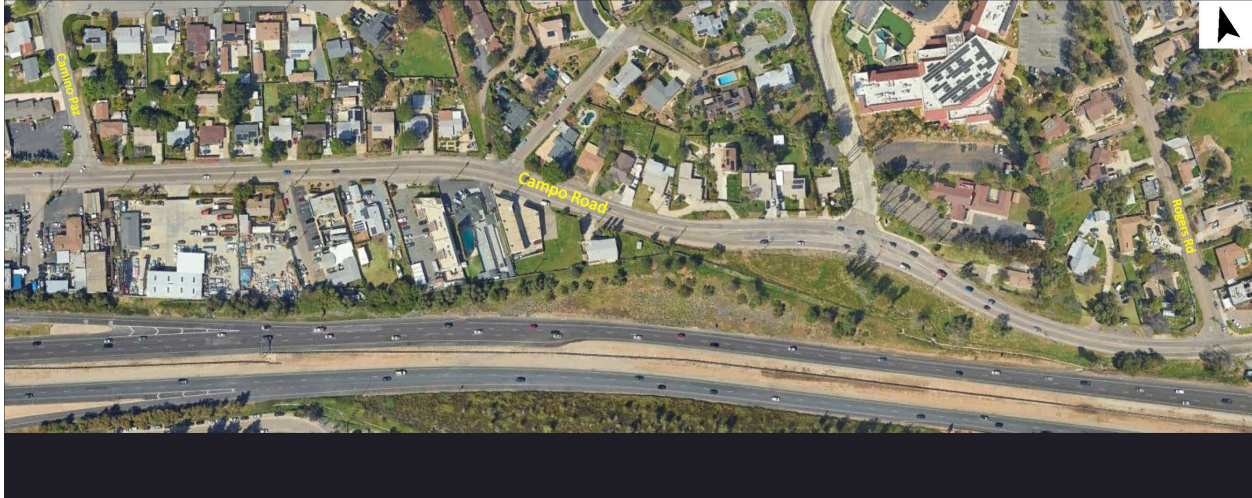
Investments to Segment B-1: Campo Road, from Bancroft Drive to Camino Paz enhance walkability and bikeability by adding Class II bike lanes to both sides of the street, buffers between the bike lanes and the travel lane, and adding parkways and sidewalks. Additional investment includes increasing the right-of-way width to 84'-98'.

Community: Casa de Oro

Segment B: Campo Road, from Bancroft Drive to Ramona Drive (2 of 3)

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)
Camino Paz – Rogers Rd	Community Collector (2.1C)	-	2	12'	-	40'-54'	60'-74'	2	8'	10'	45	11.5-17.2
Existing			2	12'-14'	-	44'	60'-86'					

Segment is not part of the LRSP Priority List
Segment has no intersections on the LRSP Priority List

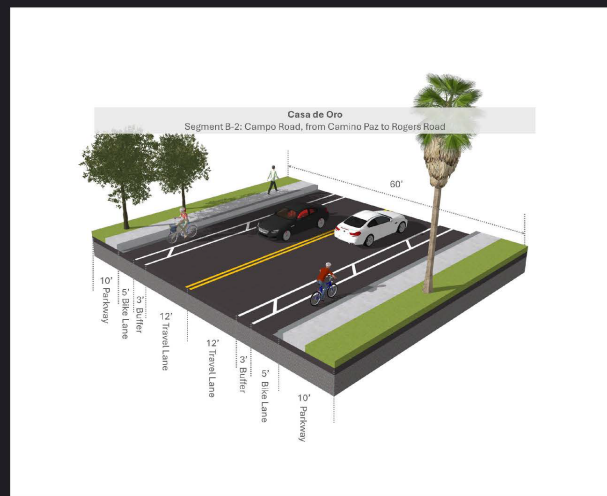


Community: Casa de Oro

Segment B: Campo Road, from Bancroft Drive to Ramona Drive (2 of 3)

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)
Camino Paz – Rogers Rd	Community Collector (2.1C)	-	2	12'	-	40'-54'	60'-74'	2	8'	10'	45	11.5-17.2
Existing			2	12'-14'	-	44'	60'-86'					

Segment is not part of the LRSP Priority List
Segment has no intersections on the LRSP Priority List



Investments to Segment B-2: Campo Road, from Camino Paz to Rogers Road enhance walkability and bikeability by adding Class II bike lanes to both sides of the street, buffers between the bike lanes and the travel lane, and adding parkways and sidewalks.

Community: Casa de Oro

Segment B: Campo Road, from Bancroft Drive to Ramona Drive (3 of 3)

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)
Rogers Rd – Ramona Dr	Boulevard (4.2B)	-	4	12'	-	64'-78'	92'-106'	2	8'	14'	40	7.5-13.5
Existing			2-4	12'	-	36'-76'	60'-88'					

Segment is a part of the LRSP Priority List (#6)

Segment has intersections on the LRSP Priority List (#13 & #28)

← Rogers Rd approx. 0.5 miles



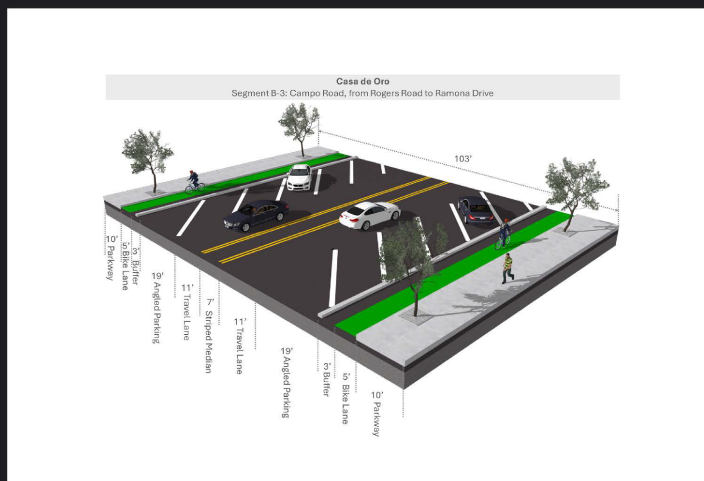
Community: Casa de Oro

Segment B: Campo Road, from Bancroft Drive to Ramona Drive (3 of 3)

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)
Rogers Rd – Ramona Dr	Boulevard (4.2B)	-	4	12'	-	64'-78'	92'-106'	2	8'	14'	40	7.5-13.5
Existing			2-4	12'	-	36'-76'	60'-88'					

Segment is a part of the LRSP Priority List (#6)

Segment has intersections on the LRSP Priority List (#13 & #28)



Cross section is based on the Campo Revitalization Plan, except striped median.

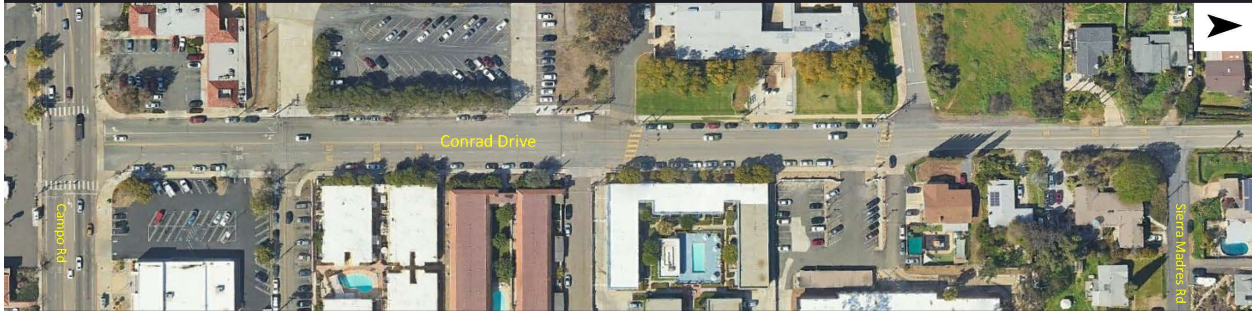
Investments to Segment B-3: Campo Road, from Rogers Road to Ramona Drive enhance walkability and bikeability by adding Class III bike lanes to both sides of the street, buffers between the bike lanes and the parking, and adding parkways. Additional investment includes increasing the right-of-way width to 92'-106', adding a median, and angled parking.

Community: Casa de Oro

Segment C: Conrad Drive, from Campo Road to Sierra Madre Road

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)
Campo Rd – Sierra Madre Rd	Community Collector (2.2E)	-	2	12'	-	40'	64'	2	8'	12'	40	6.3-7.5
Existing			2-3	12'	-	34'-62'	72'-82'					

Segment is not part of the LRSP Priority List
Segment has intersection on the LRSP Priority List (#13)

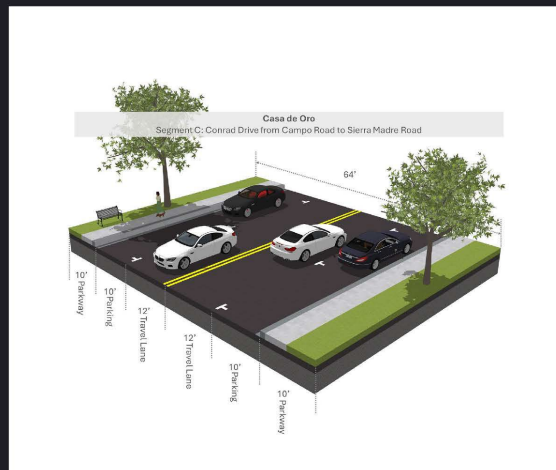


Community: Casa de Oro

Segment C: Conrad Drive, from Campo Road to Sierra Madre Road

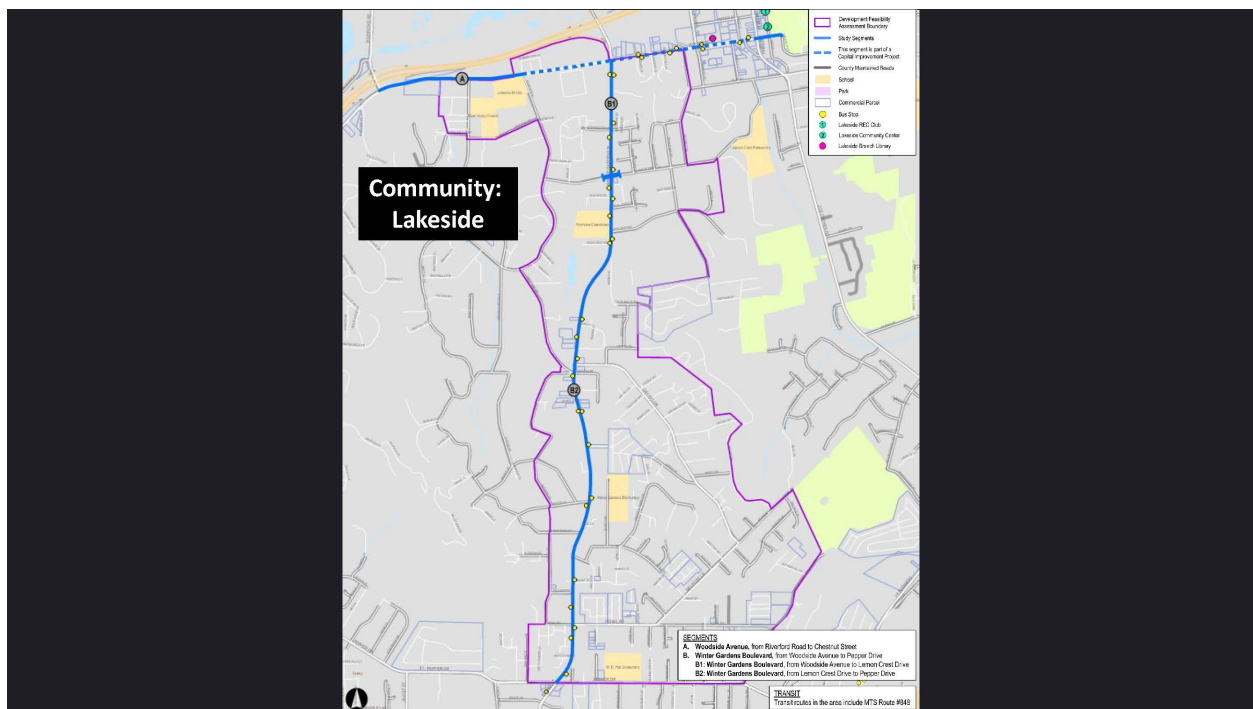
Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)
Campo Rd – Sierra Madre Rd	Community Collector (2.2E)	-	2	12'	-	40'	64'	2	8'	12'	40	6.3-7.5
Existing			2-3	12'	-	34'-62'	72'-82'					

Segment is not part of the LRSP Priority List
Segment has intersection on the LRSP Priority List (#13)



Investments to Segment C: Conrad Drive, from Campo Road to Sierra Madre Road enhances walkability by adding sidewalks and parkways throughout this whole segment.

Community: Lakeside



Community: Lakeside

Segment B: Winters Gardens Boulevard, from Woodside Avenue to Pepper Dr (1 of 2)

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)
Woodside Ave – Lemon Crest Dr	Boulevard (4.2A)	-	4	12'	14'	78'	106'	2	8'	14'	40	14.8-17.0
Existing			4	11-15'	12-20'	64'-80'	78'-82'					

Segment is a part of the LRSP Priority List (#14)

Segment has intersections on the LRSP Priority List (#19, #20, #40)



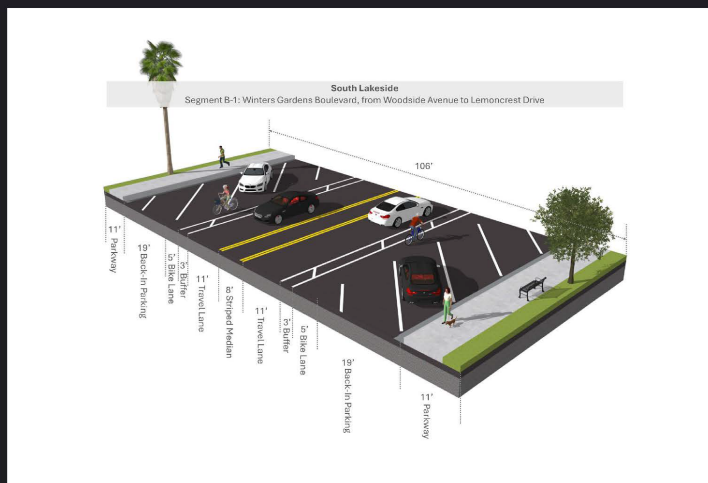
Community: Lakeside

Segment B: Winters Gardens Boulevard, from Woodside Avenue to Pepper Dr (1 of 2)

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)
Woodside Ave – Lemon Crest Dr	Boulevard (4.2A)	-	4	12'	14'	78'	106'	2	8'	14'	40	14.8-17.0
Existing			4	11-15'	12-20'	64'-80'	78'-82'					

Segment is a part of the LRSP Priority List (#14)

Segment has intersections on the LRSP Priority List (#19, #20, #40)



Investments to Segment B-1: Winters Gardens Boulevard, from Woodside Avenue to Pepper Dr, (Woodside Ave to Lemon Crest Dr) - Expands right-of-way width to 106', including reducing to 1 vehicular lane on both sides, width change to 12', with investments made towards providing back-in on-street parking. Class II bike lane exists, but is included in new plans.

Community: Lakeside

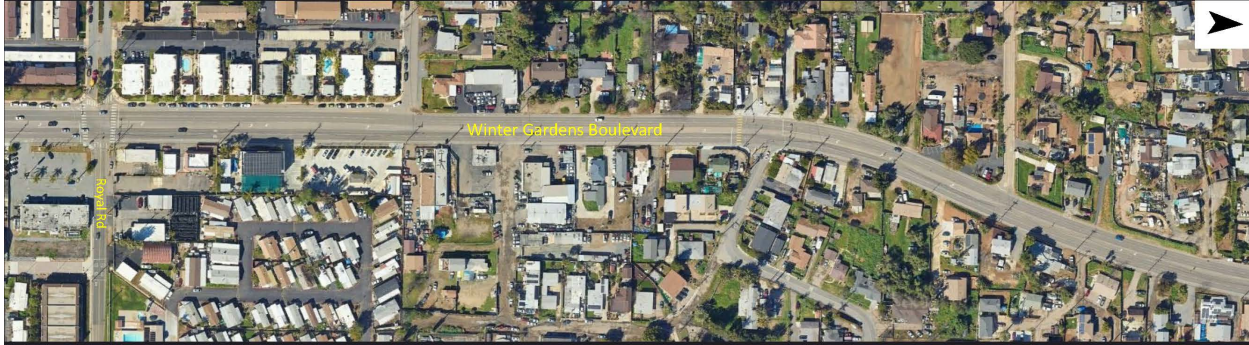
Segment B: Winters Gardens Boulevard, from Woodside Avenue to Pepper Dr (2 of 2)

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)	Median	Road Surfacing	ROW Width	Shoulder (#/Width)	Parkway	Min MPH	2035 ADTs (1000s)
Lemon Crest Dr – Pepper Dr	Major Road (4.1A)	-	4 12'	14'	78'	98'	2 8'	10'	55	17.8-31.0
Existing			4 10-11'	12'	64'-82'	82'-105'				

Segment is a part of the LRSP Priority List (#14)

Segment has intersections on the LRSP Priority List (#19, #20, #40)

← Pepper Dr approx. 0.20 miles



Lemon Crest Dr approx. 1.35 miles →

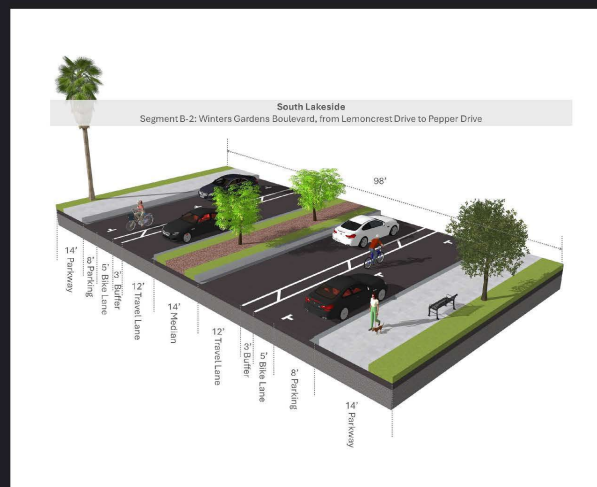
Community: Lakeside

Segment B: Winters Gardens Boulevard, from Woodside Avenue to Pepper Dr (2 of 2)

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)	Median	Road Surfacing	ROW Width	Shoulder (#/Width)	Parkway	Min MPH	2035 ADTs (1000s)
Lemon Crest Dr – Pepper Dr	Major Road (4.1A)	-	4 12'	14'	78'	98'	2 8'	10'	55	17.8-31.0
Existing			4 10-11'	12'	64'-82'	82'-105'				

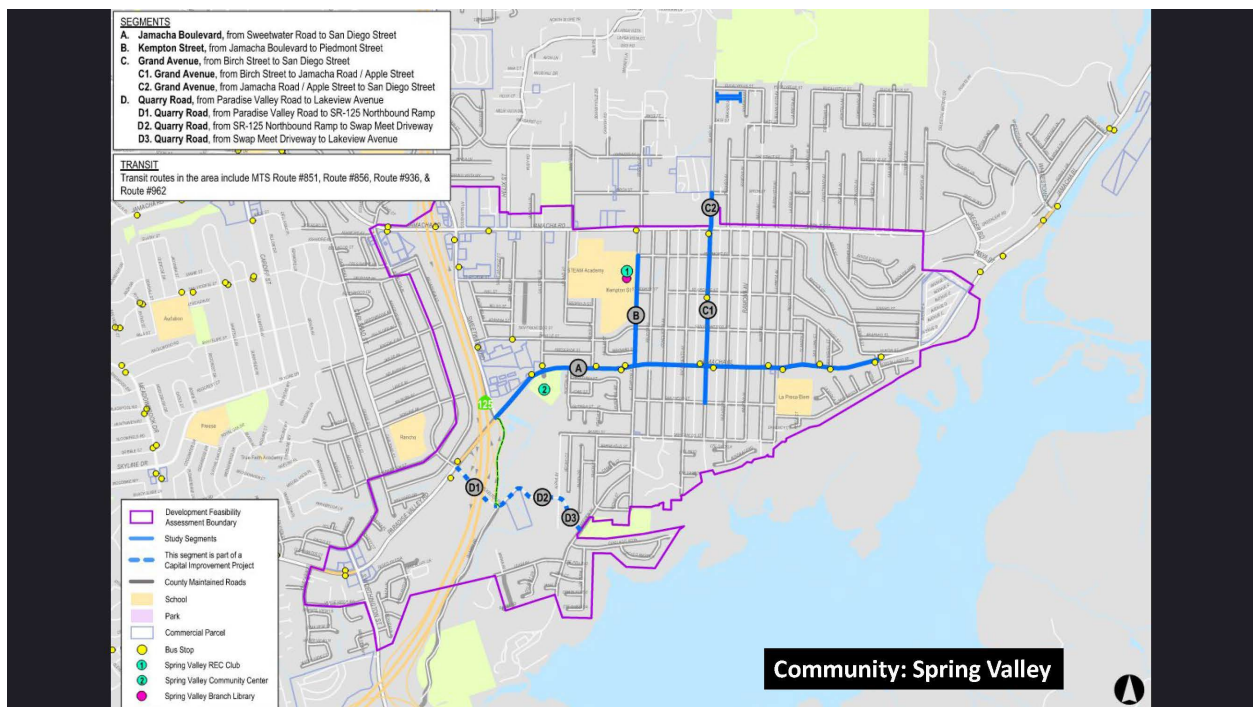
Segment is a part of the LRSP Priority List (#14)

Segment has intersections on the LRSP Priority List (#19, #20, #40)



Investments to Segment B-2: Winters Gardens Boulevard, from Woodside Avenue to Pepper Dr, (Lemon Crest Dr to Pepper Dr) - Investments made toward extending median to 14', right-of-way set to 98'. Class II bike lane exists, but addition of median restricts left/right hand turns off Winter Gardens Boulevard to enhance bikeability.

Community: Spring Valley



Community: Spring Valley

Segment A: Jamacha Boulevard, from Sweetwater Road to San Diego Street

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)
Sweetwater Rd – San Diego St	Major Road with Raised Median (4.1A)	-	4	12'	14'	78'	98'	2	8'	10'	55	19.9-31.2
Existing			4	11-12'	11'	62-72'	80-86'					

Segment is a part of the LRSP Priority List (#5)

Segment has intersections on the LRSP Priority List (#2 & #14)

← Sweetwater Rd approx. 0.72 miles



Community: Spring Valley

Segment A: Jamacha Boulevard, from Sweetwater Road to San Diego Street

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)
Sweetwater Rd – San Diego St	Major Road with Raised Median (4.1A)	-	4	12'	14'	78'	98'	2	8'	10'	55	19.9-31.2
Existing			4	11-12'	11'	62-72'	80-86'					

Segment is a part of the LRSP Priority List (#5)

Segment has intersections on the LRSP Priority List (#2 & #14)



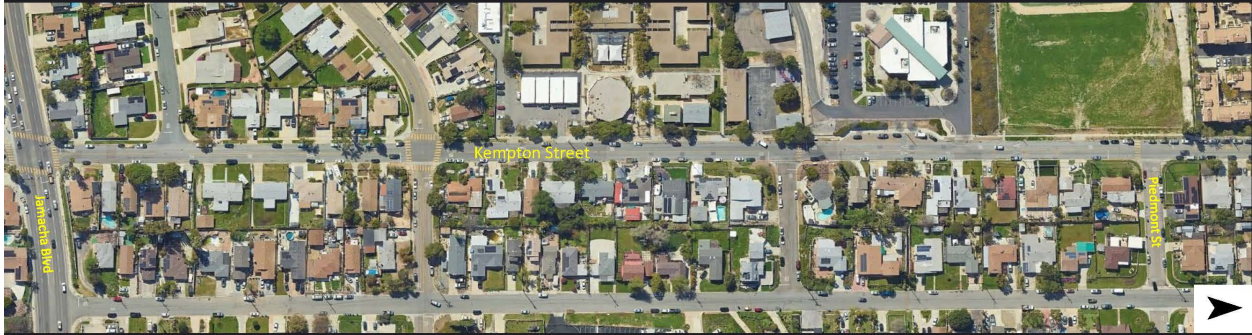
Investments to Segment A: Jamacha Boulevard, from Sweetwater Road to San Diego Street enhances safety by adding a buffer between the bike lane and travel lane. Additional investments made includes adding a median, parkways, and increasing the right-of-way width to 98'.

Community: Spring Valley

Segment B: Kempton Street, from Jamacha Boulevard to Piedmont Street

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)
Jamacha Blvd – Piedmont St	-	Residential Collector	2	12'	-	40'	60'	2	8'	10'	30	0.9-2.4
Existing			2	18'	-	36'	60'					

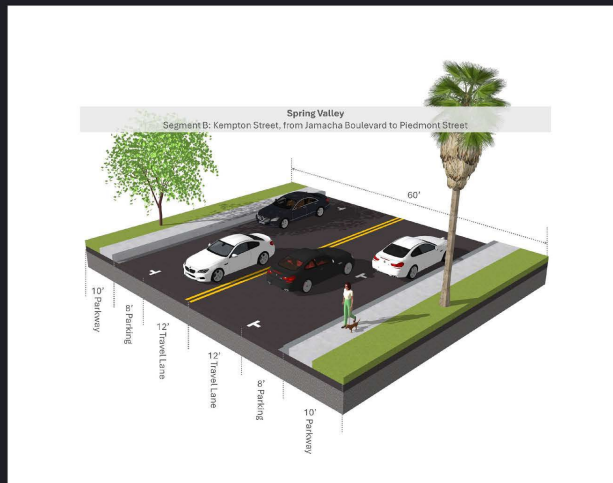
Segment is not part of the LRSP Priority List
Segment has no intersections on the LRSP Priority List



Community: Spring Valley

Segment B: Kempton Street, from Jamacha Boulevard to Piedmont Street

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)
Jamacha Blvd – Piedmont St	-	Residential Collector	2	12'	-	40'	60'	2	8'	10'	30	0.9-2.4
Existing			2	18'	-	36'	60'					



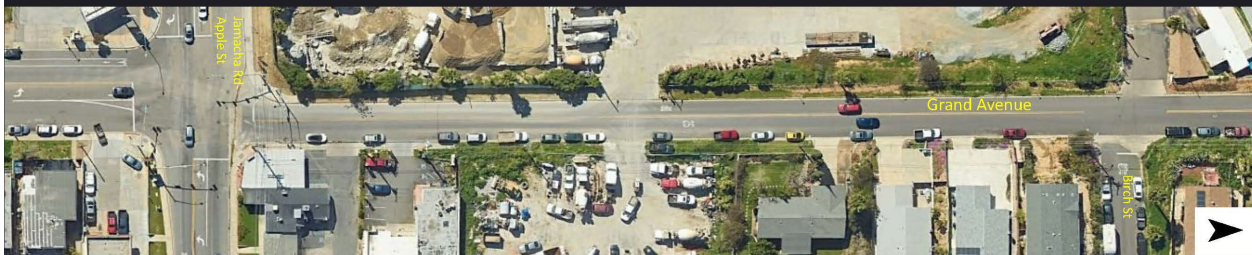
Investments to Segment B: Kempton Street, from Jamacha Boulevard to Piedmont Street enhances walkability by providing sidewalks and parkways.

Community: Spring Valley

Segment C: Grand Avenue, from San Diego Street to Birch Street (2 of 2)

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)
Jamacha Rd-Apple St to Birch St	-	Residential Collector	2	12'	-	40'	60'	2	8'	10'	30	4.1
Existing			2	12-17'	12	29'	50'-100'					

Segment is not part of the LRSP Priority List
Segment has intersection on the LRSP Priority List (#2)



Community: Spring Valley

Segment C: Grand Avenue, from San Diego Street to Birch Street (2 of 2)

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)
Jamacha Rd-Apple St to Birch St	-	Residential Collector	2	12'	-	40'	60'	2	8'	10'	30	4.1
Existing			2	12-17'	12	29'	50'-100'					



Investments to Segment C-2: Grand Avenue, from Apple Street to Birch Street enhances walkability by adding sidewalks and parkways.

Community: Spring Valley

Segment D: Quarry Road, from Paradise Valley Road to Lakeview Avenue (2 of 3)

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)
SR125 NB Ramp – Swapmeet Main Drwy	-	Commercial Collector	4	12'	-	68'	88'	2	10'	10	30	8.6
Existing			4	11'	-	46-50'	74'-40'					

Segment is not part of the LRSP Priority List
Segment has no intersections on the LRSP Priority List

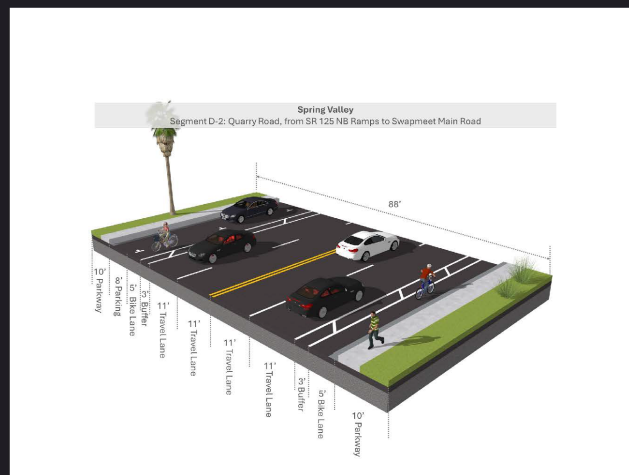


Community: Spring Valley

Segment D: Quarry Road, from Paradise Valley Road to Lakeview Avenue (2 of 3)

Extents	ME Classification	Non-ME Functional Classification	Lanes (#/Width)		Median	Road Surfacing	ROW Width	Shoulder (#/Width)		Parkway	Min MPH	2035 ADTs (1000s)
SR125 NB Ramp – Swapmeet Main Drwy	-	Commercial Collector	4	12'	-	68'	88'	2	10'	10	30	8.6
Existing			4	11'	-	46-50'	74'-40'					

Segment is not part of the LRSP Priority List
Segment has no intersections on the LRSP Priority List



Investments to Segment D-2: Quarry Road, from SR 125 NB Ramps to Swapmeet Main Road enhances bikeability by adding Class II bike lanes and buffers between the bike lanes and travel lanes. Additional investments include adding parkways and increasing the right-of-way width to 88'.

EXHIBIT B2

Exhibit B2²

DRAFT

Parkways						
CIP Project	Phase	Length (Feet)	Length (Miles)	Spent	Cost / Mile	Outlier
Allen School Road Sidewalk	Construction	441	0.08	\$ 313,522.00	\$ 3,919,025.00	
Apple Street Sidewalk	Construction	550	0.1	\$ 320,000.00	\$ 3,200,000.00	
D Street Sidewalk	Design & Construction	420	0.08	\$ 420,000.00	\$ 5,250,000.00	
East 32nd Street	Design & Construction	580	0.11	\$ 400,000.00	\$ 3,636,363.64	
East Alvarado Street Sidewalks	Design & Construction	500	0.09	\$ 400,000.00	\$ 4,444,444.44	
Lyons Valley Road	Design & Construction	2250	0.43	\$ 1,573,000.00	\$ 3,658,139.53	
Presioca Street Sidewalk	Design & Construction	370	0.07	\$ 450,000.00	\$ 6,428,571.43	Y
San Marino Drive Sidewalk	Construction	400	0.08	\$ 76,000.00	\$ 950,000.00	
South Main Ave	Construction	190	0.04	\$ 216,500.00	\$ 5,412,500.00	
Sunset Road Sidewalk	Construction	1250	0.24	\$ 1,600,000.00	\$ 6,666,666.67	Y
SUM		-	1.32	\$ 5,769,022.00	\$ 4,370,471.21	
AVERAGE		-	0.132	\$ 576,902.20	\$ 4,356,571.07	
				ACTUAL USED	\$ 5,000,000.00	

Bike Lanes						
CIP Project	Phase	Length (Feet)	Length (Miles)	Spent	Cost / Mile	Outlier
Old Castle Road Bike Lanes	Design & Construction	1172	0.22	\$ 1,000,000.00	\$ 4,545,454.55	
				ACTUAL USED	\$ 5,000,000.00	

Widening						
CIP Project	Phase	Length (Feet)	Widening (Feet)	Spent	Cost / Sq. Ft.	Outlier
Stage Coach Lane Pathway	Design & Construction	10560	16	\$ 5,303,000.00	\$ 31.39	Y
2nd St Road Gap Improvements	Design & Construction	1168	12	\$ 1,489,000.00	\$ 106.24	
Ashwood St Corridor	Design & Construction	5280	44	\$ 27,038,000.00	\$ 116.38	
Cole Grade Road	Construction	14784	22	\$ 35,963,000.00	\$ 110.57	
Etcheverry Road Improvements	Design & Construction	3490	4	\$ 1,370,000.00	\$ 98.14	
Valley Center Road Improvements	Design & Construction	1640	6	\$ 7,600,000.00	\$ 772.36	Y
SUM		36922	104	\$ 78,763,000.00	\$ 20.51	
AVERAGE		-	-	\$ 13,127,166.67	\$ 205.85	
				ACTUAL USED	\$ 120.00	

Source

5 Year Capital Improvement Plan Fiscal Years 2023/24 to 2027/28 Fall 2023

General Notes

Regarding Widening: No widening data available so assumed widening to county mobility element goal roadway standards classification

² This is termed Attachment B in the Dept of Public Works draft IGA Report.

EXHIBIT B3

Exhibit B3³

DRAFT

Community	#	Roadway	Study Extents	Typ. Existing Roadway Width	Proposed Roadway Width	Length (Feet)	Length (Miles)	Parkway		Bike Lane		Widening			Contingency	Estimated Total Cost
								Assumed Cost / Mile ^A	Subtotal	Assumed Cost / Mile ^A	Subtotal	Typ. Widening Needed (Feet) ^B	Assumed Cost / Sq. Ft.	Subtotal		
Brea Creek	A	Watson Way	Yettford Rd - Hannalei Dr	24	32	2140	0.41	\$ 5,000,000	\$ 2,050,000	\$ -	\$ -	8	\$ 120.00	\$ 2,054,400	30%	\$5 Mil
	B	Hannalei Drive	Watson Way - Woodland Dr	32	40	2766	0.52	\$ 5,000,000	\$ 2,600,000	\$ 5,000,000	\$ 2,600,000	8	\$ 120.00	\$ 2,655,360	30%	\$10 Mil
	C	Woodland Drive	Watson Way - York Dr	35	36	2928	0.55	\$ 5,000,000	\$ 2,750,000	\$ 5,000,000	\$ 2,750,000	1	\$ 120.00	\$ 351,360	30%	\$6 Mil
	D	South Santa Fe Avenue	Woodland Dr - Palmyra Dr	44	78	2723	0.52	\$ 5,000,000	\$ 2,600,000	\$ 5,000,000	\$ 2,600,000	24	\$ 120.00	\$ 11,130,640	30%	\$23 Mil
	E	El Valle Opulento	Terminus - Robelini Dr	24	32	1477	0.28	\$ 5,000,000	\$ 1,400,000	\$ -	\$ -	8	\$ 120.00	\$ 1,417,920	30%	\$4 Mil
	F	Robelini Drive	El Valle Opulento - South Santa Fe Ave	26	44	352	0.07	\$ 5,000,000	\$ 350,000	\$ 5,000,000	\$ 350,000	18	\$ 120.00	\$ 760,320	30%	\$2 Mil
	G	Primrose Avenue (N)	Robelini Dr - South Santa Fe Ave	20	32	1550	0.29	\$ 5,000,000	\$ 1,450,000	\$ -	\$ -	12	\$ 120.00	\$ 2,232,000	30%	\$5 Mil
	H	Primrose Avenue (S)	Lavender Lane - South Santa Fe Ave	22	32	623	0.12	\$ 5,000,000	\$ 600,000	\$ -	\$ -	10	\$ 120.00	\$ 747,600	30%	\$2 Mil
	I	Brea Creek Road	South Santa Fe Avenue - 1000 ft. north	22	40	1000	0.19	\$ 5,000,000	\$ 950,000	\$ 5,000,000	\$ 950,000	18	\$ 120.00	\$ 2,140,000	30%	\$5 Mil
	J	Victory Drive	Estrelita Dr - Terminus	16	28	2463	0.47	\$ 5,000,000	\$ 2,350,000	\$ -	\$ -	12	\$ 120.00	\$ 3,546,720	30%	\$8 Mil
	K	Estrelita Drive	South Santa Fe Avenue - Bella Vista Dr	24	40	1606	0.3	\$ 5,000,000	\$ 1,500,000	\$ 5,000,000	\$ 1,500,000	16	\$ 120.00	\$ 3,083,520	30%	\$8 Mil
Casa De Oro	A	Bancroft Drive	Campo Rd - Kenwood Dr	44	52	2648	0.5	\$ 5,000,000	\$ 2,500,000	\$ 5,000,000	\$ 2,500,000	8	\$ 120.00	\$ 2,542,080	30%	\$10 Mil
	B	Campo Road	Bancroft Dr - Camino Paz	44	40	604	0.11	\$ 5,000,000	\$ 550,000	\$ 5,000,000	\$ 550,000	0	\$ 120.00	\$ -	30%	\$1 Mil
			Camino Paz - Rogers Road	44	40	2360	0.45	\$ 5,000,000	\$ 2,250,000	\$ 5,000,000	\$ 2,250,000	0	\$ 120.00	\$ -	30%	\$6 Mil
			Rogers Rd - Ramona Dr	64	63	4480	0.85	\$ 5,000,000	\$ 4,250,000	\$ 5,000,000	\$ 4,250,000	19	\$ 120.00	\$ 10,214,400	30%	\$24 Mil
South Lakeside	C	Conrad Drive	Campo Rd - Sierra Madre Rd	34	44	1325	0.25	\$ 5,000,000	\$ 1,250,000	\$ -	\$ -	10	\$ 120.00	\$ 1,580,000	30%	\$4 Mil
	A	Woodside Avenue	Riverford Rd - Chestnut St	64	84	8400	1.59	\$ 5,000,000	\$ 7,950,000	\$ 5,000,000	\$ 7,950,000	20	\$ 120.00	\$ 20,180,000	30%	\$47 Mil
	B	Winter Gardens Boulevard	Woodside Ave - Pepper Dr	64	84	2400	0.45	\$ 5,000,000	\$ 2,250,000	\$ 5,000,000	\$ 2,250,000	20	\$ 120.00	\$ 5,760,000	30%	\$13 Mil
				64	70	11100	2.1	\$ 5,000,000	\$ 10,900,000	\$ 5,000,000	\$ 10,900,000	6	\$ 120.00	\$ 7,892,000	30%	\$38 Mil
Spring Valley	A	Jamacha Boulevard	Sweetward Rd - San Diego St	64	78	7400	1.4	\$ 5,000,000	\$ 7,000,000	\$ 5,000,000	\$ 7,000,000	14	\$ 120.00	\$ 12,432,000	30%	\$34 Mil
	B	Kempton Street	Jamacha Blvd - Piedmont St	34	40	2054	0.39	\$ 5,000,000	\$ 1,950,000	\$ -	\$ -	6	\$ 120.00	\$ 1,478,880	30%	\$4 Mil
	C	Grand Avenue	San Diego St - Birch St	64	64	3915	0.74	\$ 5,000,000	\$ 3,700,000	\$ 5,000,000	\$ 3,700,000	0	\$ 120.00	\$ -	30%	\$10 Mil
	D	Quarry Road	Lakeview Ave - Elkton Pl	40	40	3140	0.59	\$ 5,000,000	\$ 2,950,000	\$ -	\$ -	0	\$ 120.00	\$ -	30%	\$4 Mil

General Notes:
A. See CIP Cost Data Table in Exhibit B2.
B. Widening width assumed as ultimate cross sectional roadway width minus the existing typical roadway width.

³ This is termed Attachment C in the Dept of Public Works draft IGA Report.

EXHIBIT B4

Bowman

County of San Diego DFA Water & Sewer Infrastructure Analysis

Submitted by:

Bowman
701 B Street
Suite 800
San Diego, CA 92101
619.235.6471

Submitted to:

MIG
401 West A Street
Suite 200
San Diego, CA 92101
626.744.9872

August 15, 2024

bowman.com

Contents

1.0 Project Overview..... 3

1.1 Study Areas..... 3

1.2 Previous Work & Scope Refinement..... 4

2.0 Existing Conditions 4

2.1 Study Area Infrastructure Services 5

2.2 Limitations & Assumptions..... 6

3.0 Outcomes and Recommendations 7

4.0 Appendix A – Water Service Maps..... 10

5.0 Appendix B – Sewer Service Maps..... 15

Figures

Figure 1 – DFA Study Areas Map..... 4

Figure 2 – Spring Valley DFA Water Service Map..... 11

Figure 3 – Valle de Oro/Casa de Oro DFA Water Service Map 12

Figure 4 – Lakeside DFA Water Service Map..... 13

Figure 5 – Buena Creek DFA Water Service Map..... 14

Figure 6 – Spring Valley DFA Sewer Service Map..... 16

Figure 7 – Valle de Oro/Casa de Oro DFA Sewer Service Map 17

Figure 8 – Lakeside DFA Sewer Service Map..... 18

Figure 9 – Buena Creek DFA Sewer Service Map..... 19

1.0 Project Overview

This report follows the County of San Diego Board of Supervisors direction to staff, on February 8, 2022, for a Development Feasibility Analysis (DFA) to identify considerations and actions by which the County may facilitate development of housing in VMT Efficient and Infill areas. As part of a comprehensive approach, the underlying aim of the report is to identify infrastructure, water and sewer service, barriers and constraints to housing development in key sites and areas identified by the County of San Diego. Information generated as part of the report will be incorporated into multi-disciplined strategies, actions, and costs to remove and/or reduce the identified water and sewer service barriers and constraints to increasing housing development.

1.1 Study Areas

This report focuses on four study areas which were selected by The County of San Diego based on location, availability of vacant parcels, funding opportunities, leveraging other County efforts underway, and environmental justice considerations. The four focus communities' geographic areas are summarized below and shown in the following DFA Study Area Map (Figure 1).

- Spring Valley

The study area is 1,626 acres in size and lies along State Highway 125 and north of the Sweetwater reservoir.

- Valle de Oro/Casa de Oro

The study area is approximately 520 acres in size and lies along State Highway 94 and just east of State Highway 125.

- Lakeside

The study area is approximately 1,560 acres in size is bounded by State Highway 67 to the north, just west of Los Coches Road to the east, and just north of the City of El Cajon.

- Buena Creek

The study area is approximately 1,613 acres in size and lies along the North County Transit District (NCTD) Sprinter rail line and State Highway 78.

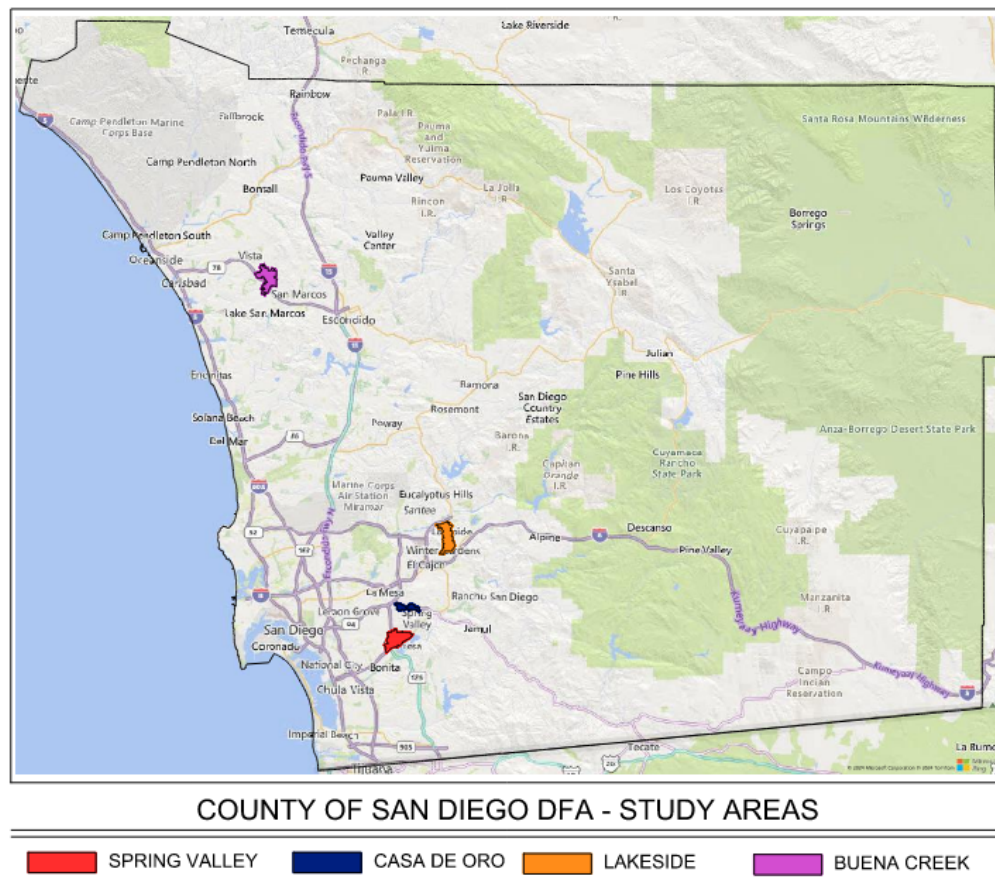


Figure 1 – DFA Study Areas Map

1.2 Previous Work & Scope Refinement

This report builds upon County of San Diego staff DFA Phase 1 efforts. In combination with County of San Diego Infrastructure Gap Analysis and DFA Phase 1 identification of areas of highest development opportunity within the four study areas, the scope of this report is further refined to provide infrastructure enhancements in alignment with and support of sparking interest in and reducing cost of housing development in the short, mid, and long term, with emphasis given to the most expeditious development opportunities.

2.0 Existing Conditions

The four study areas of this report span multiple water and sanitation districts. These independent agencies keep and distribute a variety of facilities, records available for use in the analysis of this report. In effort to provide consistency and clarity of existing facilities data provided from water and sewer agencies the various forms of data were consolidated into Service Maps, included in Appendix B4 and B5, and simplified to provide location, pipe size, and material within the boundaries of the four study areas.

2.1 Study Area Infrastructure Services

- Spring Valley
 - Water Services within the boundary of the study area are provided by the Otay Water District and Helix Water District. While the Sweetwater Water District jurisdictional boundaries lie within the study area for seven parcels, three previously developed and four undeveloped, no facilities are available (see Figure 2 – Spring Valley DFA Water Service Map). Water service consists of backbone transmission mains with distribution mains serving areas of potential development.
 - Sewer Services within the study area boundary provided by the County of San Diego Sanitation District. Areas of development potential are either served by existing sewer mains or adjacent to trunk mains. Note some potential development areas are bisected by existing sewer facilities and thus assumed encumbered by district easements (outside scope of project). The “Spring Valley Sewer Service Area – Sewer Master Plan”, dated January 2018, prepared by Atkins was reviewed as part of this study.
- Valle de Oro/Casa de Oro
 - Water Services within the boundary of the study area are provided by the Helix Water District. Water service consists of backbone transmission mains with distribution mains serving areas of potential development. Potential development areas bisected by existing water mains are minimal and while assumed encumbered by district easements (outside scope of project) may not pose a substantial impediment to development.
 - Sewer Services within the study area boundary are provided by the County of San Diego Sanitation District. Areas of development potential are either served by existing sewer mains or adjacent to trunk mains. Potential development areas bisected by existing sewer facilities are minimal and while assumed encumbered by district easements (outside scope of project) may not pose a substantial impediment to development. An “Existing Conditions Analysis for Campo Road Revitalization” report, dated February 2020, prepared by Michael Baker International was reviewed as part of this study and notes a portion of sewer main along Campo Road as potentially at capacity and due to age in need of replacement and upsizing.
- Lakeside
 - Water Services within the boundary of the study area are provided by the Lakeside Water District and Helix Water District. Water service consists of backbone transmission mains with distribution mains serving most areas of potential development. Some identified areas of potential development or land use change may require water service improvements outside of current public right-of-way.
 - Sewer Services within the study area boundary provided by the County of San Diego Sanitation District. Areas of development potential are either served by existing sewer mains or adjacent to trunk mains. Note some potential development areas are bisected by existing sewer facilities and thus assumed encumbered by district easements (outside scope of project). Some identified areas of potential development or land use change may require sewer service improvements outside of current public right-of-way. Sewer capacity of the Winter Gardens area (southern portion of the study area) was noted as limited (89%) in the San Diego LAFCO Municipal Service Review on the San Diego County Sanitation District Final Report dated August 2019. The “Winter Gardens Sewer Service Area – Sewer Master Plan”, dated January 2013, prepared by Atkins was reviewed as part of this study and notes a portion of sewer main along Winter Gardens Blvd (southern portion of DFA study area) in need of replacement due to age, material, and capacity.

- Buena Creek
 - Water Services within the boundary of the study area are provided by the Vista Irrigation District. While the Vallecitos County Water District jurisdictional boundaries lie within the study area for two parcels, previously developed, no facilities are available (see Figure 5 – Buena Creek DFA Water Service Map). Water service consists of backbone transmission mains with distribution mains serving areas of potential development. Potential development areas bisected by existing water mains are minimal and while assumed encumbered by district easements (outside scope of project) may not pose a substantial impediment upon development. A “Potable Water Master Plan” report, dated April 9, 2018, prepared by HDR was reviewed as part of this study.
 - Sewer Services within the study area boundary provided by the Buena Sanitation District. Areas of development potential are either served by existing sewer mains or adjacent to trunk mains. Note some potential development areas are bisected by existing sewer facilities and thus assumed encumbered by district easements (outside scope of project). Some identified areas of potential development or land use change will require sewer service improvements outside of current public right-of-way.

Based on input from the Buena Sanitation district the existing sewer system has capacity that supports the existing general plan designations (prior to 2017). Capacity deficit projects included in the 2017 Sewer Master Plan have been mostly built.

The Buena Sanitation District is in the process of updating their Sewer Master Plan in conjunction with Vista’s 2050 General Plan. This will include Buena Sanitation District analysis to incorporate General Plan Amendments adopted by the County since the 2017 Sewer Master Plan, along with the impact of accessory dwelling units and density bonuses for long-term capital planning. The Sewer master plan update is anticipated to be complete by January 2025.

2.2 Limitations & Assumptions

Existing condition in-depth review and analysis of sewer and water facilities capacities in this report were limited by time and scope. Use of past breadth and depth analysis for County of San Diego sanitation district capacity was drawn upon from the San Diego LAFCO Municipal Service Review of the San Diego County Sanitation District Final Report dated August 2019. For the three out of four study areas serviced by the County of San Diego Sanitation District, Spring Valley, Valle de Oro/Casa de Oro, and Lakeside, the LAFCO study noted adequate and excess capacities apart from the Winter Gardens area (south Lakeside study area) being more limited at an average demand of 89% capacity. Additional past breadth and depth sewer capacity analysis reports reviewed were noted by DFA study area.

Water service capacity modeling is held by the independent public water districts serving the study areas, and modifications to these systems would be considered during specific project or parcel development. Thus, recommendations for water service made by this study are generalized and to be further analyzed for site specific projects by the applicable authority having jurisdiction. Private water and sewer services were not included in assessment of available infrastructure.

3.0 Outcomes and Recommendations

The data gathered in this report allowed for iterative review by the DFA multi-disciplinary team to identify areas of potential land use change and assessment of infrastructure needs in areas of housing developmental potential previously identified as short, mid, and long term. The Water and Sewer Service Maps generated note the existing infrastructure adjacent to these areas identified by the DFA team and County Staff Phase 1 efforts. The following outcomes and recommendations are provided as general and specific to each DFA study area. Several facilities within the DFA Study areas, due to age and materials, would benefit from replacement, and servicers' master plans indicate such for specific facilities. At the time such replacements occur, each service provider might consider upsizing the replacement lines to anticipate very long-term needs. The potential development areas presented in the DFA will provide water and sewer agencies additional clarity of projected growth. Detailed system analysis and modeling that accounts for existing conditions of the water and sewer infrastructure and projected uses present in the DFA are recommended to inform future infrastructure planning.

General (All DFA Study Areas)

- **No. 1 | Areas of Development Potential Supported by Existing Infrastructure**
No major water or sewer infrastructure barriers to development were found to sub areas identified within each DFA study area, and most of the areas identified as potential areas of land use change. DFA study areas are generally "well" supported by existing adjacent water and sewer infrastructure within public right-of-way.
- **No. 2 | Water Service Inter-Agency Collaboration for Aging Infrastructure**
Large areas of water service within all DFA study areas are provided by asbestos cement (AC) pipe. The independent "revenue neutral" public water districts serving the DFA areas replace these aging facilities by prioritizing work by age of the main, leak history, and pipe material, as well as other factors related to site conditions. Intra-agency coordination of planned projects may allow for replacement pipe projects to consider development potential as part of project prioritization.
- **No. 3 | Areas of Development Potential in Need of Water and/or Sewer Infrastructure**
A small number of potential development parcels identified within the DFA study areas may benefit from increased water or sewer service, but due to lack of public right-of-way adjacent, would be encumbered by public agency improvements to provided expanded services not specific to a development project, thus hindering development potential of these parcels. These areas/parcels would require additional study based upon project/site specific development.

Spring Valley:

- **SVW-1 | Grand Avenue Water Main Replacement**
The Grand Avenue corridor potential areas of land use change may benefit from upsizing approximately 3,300 linear feet of water main from existing 6" AC pipe to 16" PVC pipe. The primary consideration for replacement is the replacement of aging facility (AC pipe) and secondary consideration in pipe upsizing

to meet long-term investment in future growth. Timing would match the adjacent potential development area (short to mid-term), and project may be phased into north and south at Jamacha Boulevard. This recommendation would require additional detailed project specific study by the Otay Water District. Approximate construction cost of \$5,300,000.

- **SVW-2 | Jamacha Boulevard Water Main Replacement**

The Jamacha Boulevard corridor potential areas of land use change may benefit from upsizing approximately 2,100 linear feet of sewer main from existing 10" AC pipe to 12" PVC pipe. The primary consideration for replacement is the replacement of aging facility (AC pipe) and secondary consideration in pipe upsizing to meet long-term investment in future growth. Timing would match the adjacent potential development area (short to mid-term), and project may be phased into east and west at Grand Avenue subsequent to the SVW-1 project. This recommendation would require additional detailed project specific study by the Otay Water District. Approximate construction cost of \$2,700,000.

- **SVS-1 | Grand Avenue Sewer Main Replacement**

The Grand Avenue corridor potential areas of land use change may benefit from upsizing approximately 3,300 linear feet of sewer main from existing 8" VCP pipe to 12" PVC pipe. The primary consideration for replacement is the replacement of aging facility (VCP pipe) and secondary consideration in pipe upsizing to meet long-term investment in future growth. Timing would match the adjacent potential development area (short to mid-term), and project may be phased into north and south of the 15" VCP sewer between Saint George Street and San Francisco Street. This recommendation would require additional detailed project specific study by the County of San Diego Sanitation District. Approximate construction cost of \$4,800,000.

Valle de Oro/Casa de Oro:

- **CDOS-1 | Campo Drive Sewer Main Replacement**

An "Existing Conditions Analysis for Campo Road Revitalization" report, dated February 2020, prepared by Michael Baker International was reviewed as part of this study and notes a portion of sewer main along Campo Road as potentially at capacity and due to age, in need of replacement and upsizing. This improvement project has not been completed, to date, and would be recommended to improve the Campo Drive sewer main. Timing would match the adjacent potential development area (short to mid-term). Estimated construction cost \$3,360,000 per Michael Baker report.

Lakeside:

- **LS-1 | Winter Gardens Boulevard (North) Sewer Main Replacement**

The potential development area along Winter Gardens Boulevard, between Lemon Crest Drive and Woodside Avenue, may benefit from upsizing approximately 3,900 linear feet of existing 8" VCP sewer with 12" PVC pipe. The primary consideration for replacement is the replacement of aging facility (VCP pipe) and secondary consideration in pipe upsizing to meet long-term investment in future growth. Timing would match the adjacent potential development area (short to mid-term). This recommendation would require additional detailed project specific study by the County of San Diego Sanitation District. Approximate construction cost of \$3,300,000.

- **LS-2 | Winter Gardens Boulevard (South) Sewer Main Replacement**

"Winter Gardens Sewer Service Area – Sewer Master Plan", dated January 2013, prepared by Atkins recommended the WG-1 CIP project; it is recommended that approximately 3,900 linear feet of existing 8" to 12" VCP sewer main be replaced with 15" PVC pipe. The sewer main along Winter Gardens Boulevard roughly between Dawnridge Road to Short Street. Timing would match the adjacent potential development area (short to mid-term). This recommendation would require additional detailed project specific study by the County of San Diego Sanitation District. Approximate construction cost of \$5,500,000.

Buena Creek:

- **BCW-1 | Woodland Drive Water Main Replacement**

The potential development area along Woodland Drive may benefit from upsizing approximately 780 linear feet of water main from existing 6" pipe to 8" PVC pipe. Timing would match the adjacent potential development area (mid-term). This recommendation would require additional detailed project specific study by the Vista Irrigation District. Approximate construction cost of \$950,000.

- **BCW-2 | South Santa Fe Avenue & Robelini Drive Water Main Replacement**

The South Santa Fe Avenue corridor and Robelini Drive potential areas of land use change may benefit from upsizing approximately 2,600 linear feet of water main from existing 6" and 8" pipes to 10" PVC pipe. Timing would match the adjacent potential development area (mid-term). This recommendation would require additional detailed project specific study by the Vista Irrigation District. Approximate construction cost of \$3,000,000.

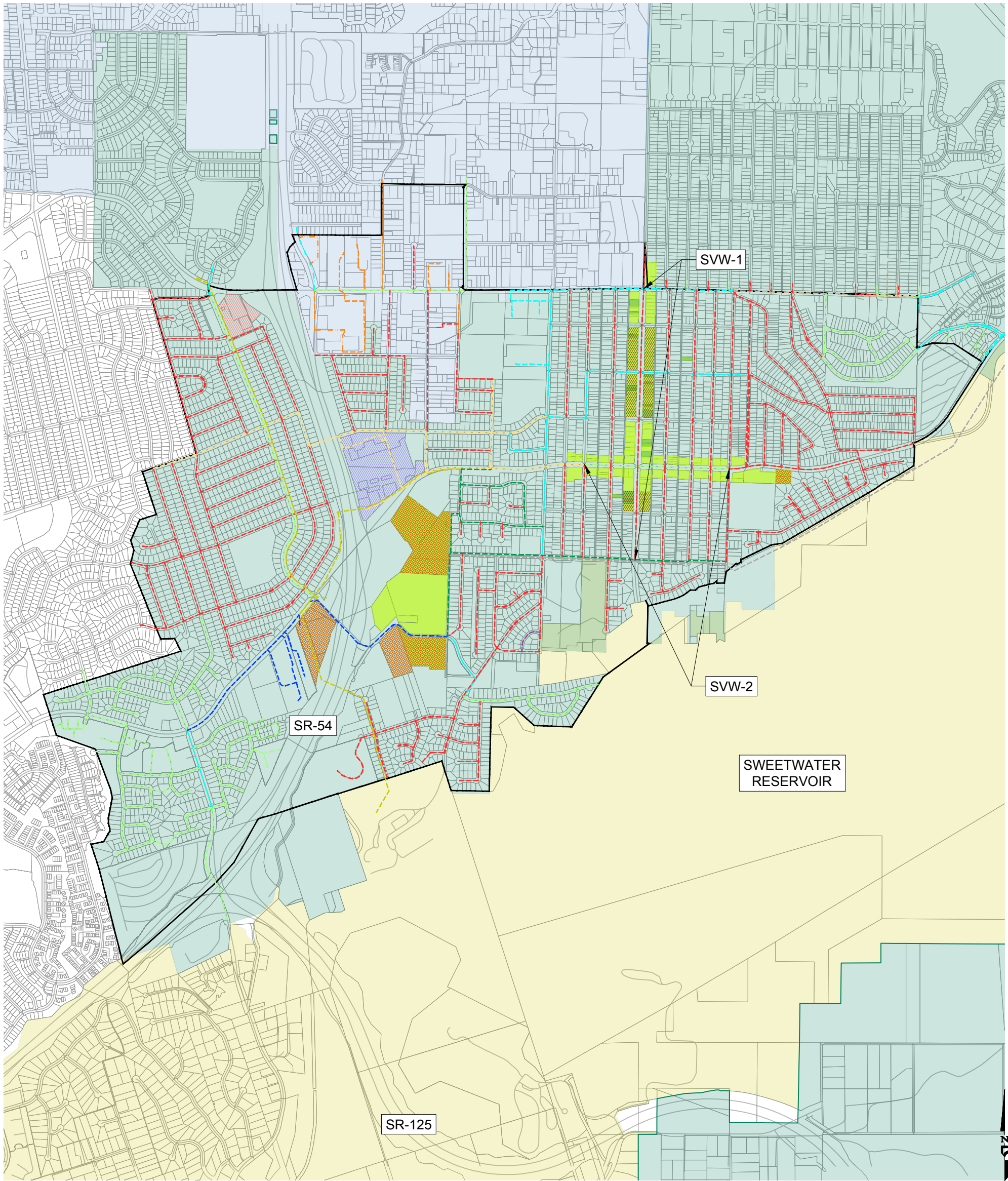
- **BCS-1 | Lobelia Drive-Primrose Avenue-Estrelita Drive Sewer Main Replacement**

The potential areas of land use change north of Estrelita Drive may require sewer main upsizing of approximately 4,700 linear feet of sewer main from existing 8" pipe to 12" PVC pipe. Timing would ideally match the adjacent potential development area (short-term), yet would require additional time to plan, process (crossing of existing NCTD rail), fund, and construct, thus would be classified as mid to long term. This recommendation would require additional detailed project specific study by the Buena Sanitation District. Approximate construction cost of \$6,800,000.

- **BCS-2 | Sycamore Avenue to Beyond DFA Study Area Sewer Main Capacity Study**

As communicated by Buena Sanitation District staff the existing downstream capacity supports existing County General Plan designations (prior to 2017). Thus, additional study of sewer facilities along Sycamore Avenue to Shadowridge Drive (at and outside of the DFA study area) to support the increase demand proposed by potential land use changes with density exceeding current County of San Diego General Plan zoning will be needed. This recommendation would require additional detailed project specific study by the Buena Sanitation District.

4.0 Appendix B4 – Water Service Maps



WATER PIPE SIZE

4" PIPE

6" PIPE

8" PIPE

10" PIPE

12" PIPE

15" PIPE

16" PIPE

18" PIPE

20" PIPE

24" PIPE

36" PIPE

42" PIPE

WATER PIPE TYPE

AC

CC

DIP

PVC

RC

RSP

WATER SERVICE DISTRICT

CWA HELIX WATER DISTRICT

CWA OTAY WATER DISTRICT

CWA SWEETWATER WATER DISTRICT

DFA POTENTIAL PARCELS

SHORT

MID

LONG

VCMU

VR-15

VR-24

VR-30

LEGEND

DFA BOUNDARY

ROADS

PARCELS

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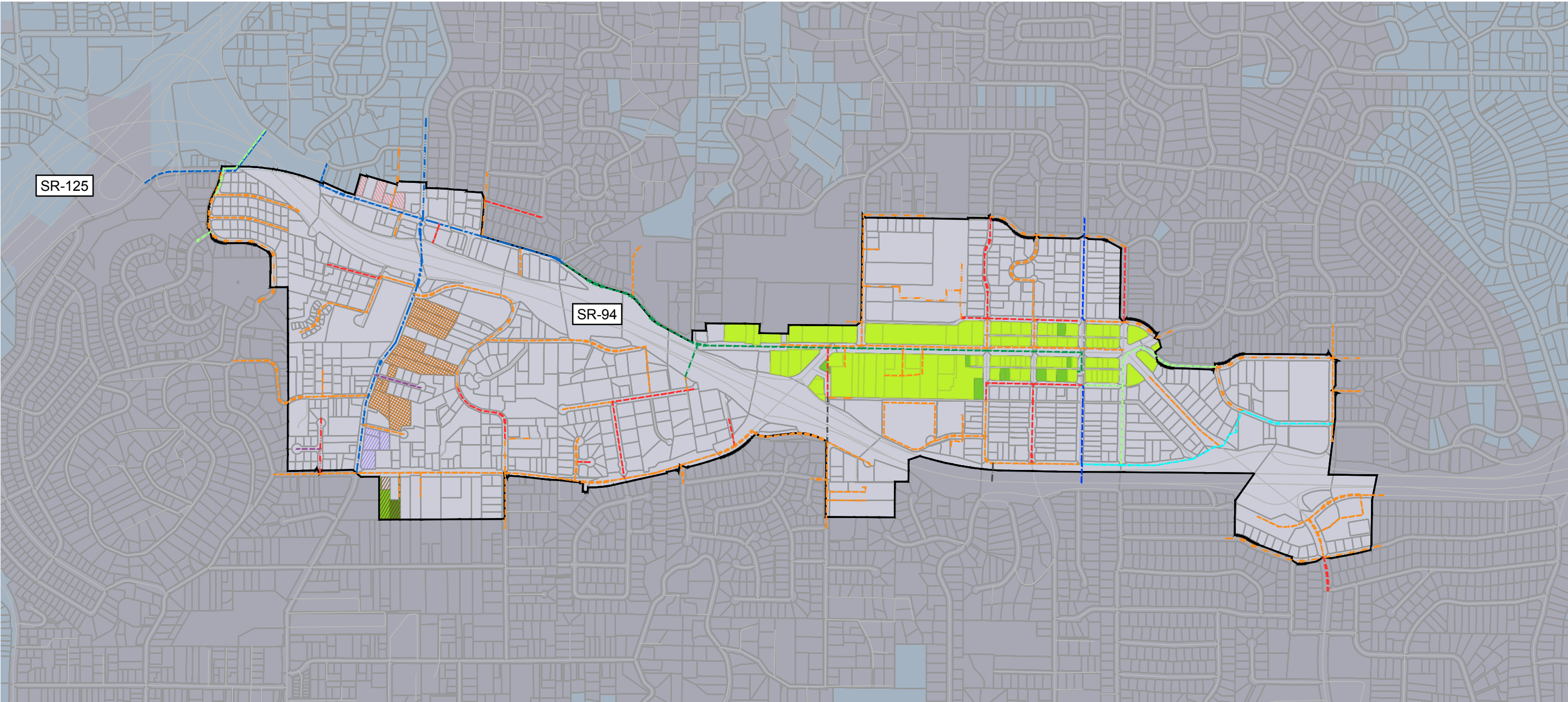
Bowman

SPRING VALLEY DEVELOPMENT FEASIBILITY AREA










WATER SERVICE SPRING VALLEY COMMUNITY PLAN AREA

8/6/2024







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WATER PIPE SIZE

	4" PIPE		16" PIPE
	6" PIPE		18" PIPE
	8" PIPE		20" PIPE
	10" PIPE		
	12" PIPE		
	15" PIPE		



WATER PIPE TYPE

	AC
	CC
	DIP
	PVC
	RC
	RSP




DFA POTENTIAL PARCELS

	SHORT		VCMU
	MID		VR-15
	LONG		VR-24
			VR-30

WATER SERVICE DISTRICT

	CWA HELIX WATER DISTRICT
	CWA HELIX WATER DISTRICT OUTSIDE OF STUDY AREA

LEGEND

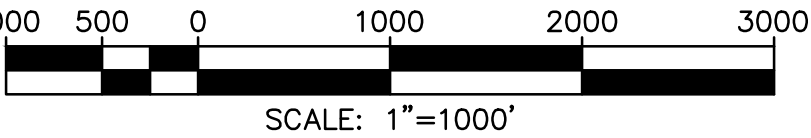
	DFA BOUNDARY
	ROADS
	PARCELS

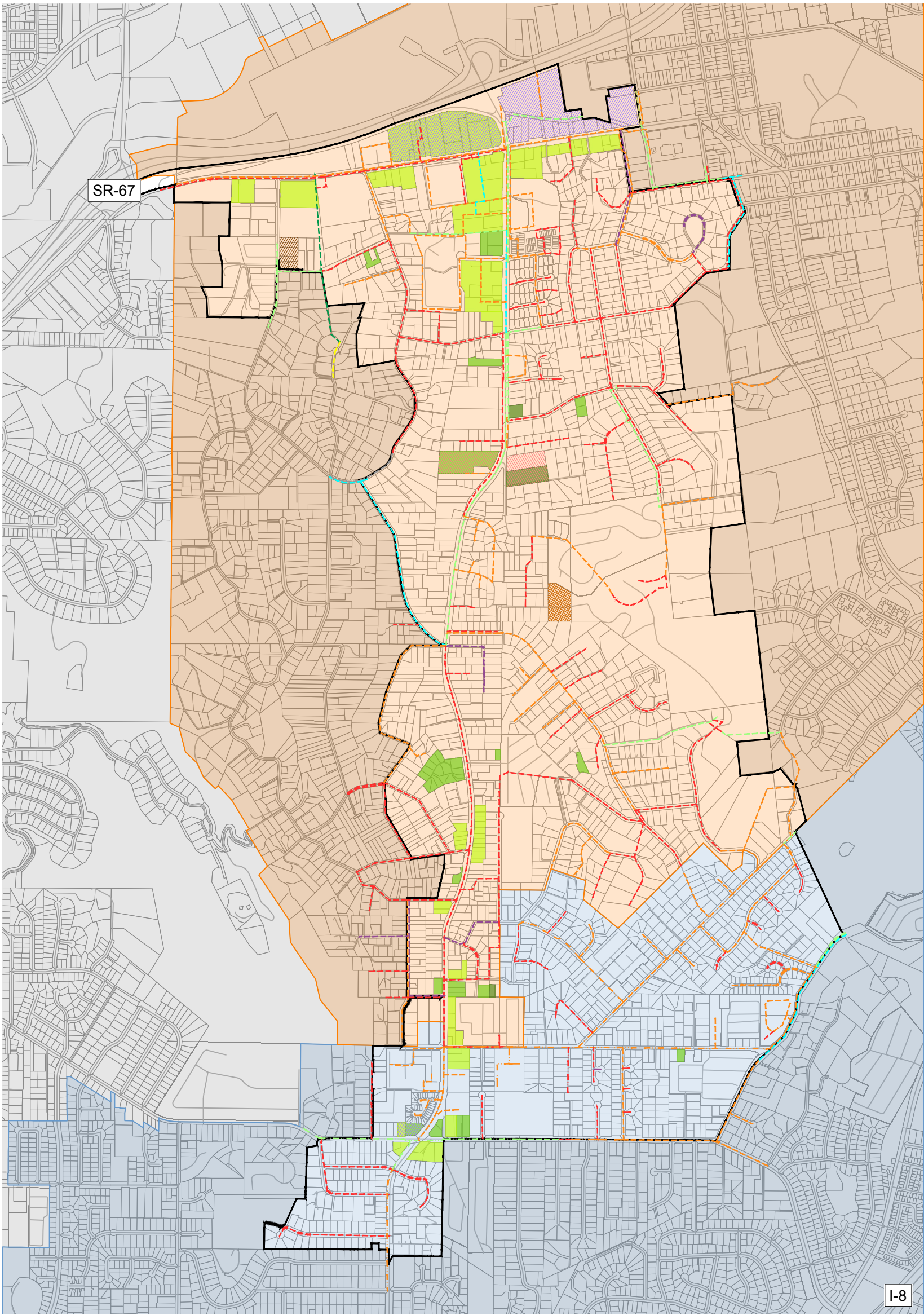
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VALLE DE ORO/CASA DE ORO DEVELOPMENT FEASIBILITY AREA
WATER SERVICE VALLE DE ORO COMMUNITY PLAN AREA

8/15/2024





WATER PIPE SIZE

<div></div>	4" PIPE	<div></div>	16" PIPE
<div></div>	6" PIPE	<div></div>	18" PIPE
<div></div>	8" PIPE	<div></div>	20" PIPE
<div></div>	10" PIPE	<div></div>	24" PIPE
<div></div>	12" PIPE		
<div></div>	15" PIPE		

WATER PIPE TYPE

<div></div>	AC
<div></div>	CC
<div></div>	DIP
<div></div>	PVC
<div></div>	RC
<div></div>	RSP

DFA POTENTIAL PARCELS

<div></div>	SHORT	<div></div>	VCMU
<div></div>	MID	<div></div>	VR-15
<div></div>	LONG	<div></div>	VR-24
		<div></div>	VR-30

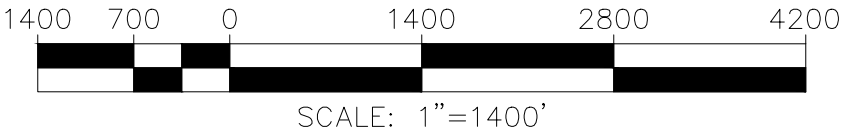
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<div></div>	DFA BOUNDARY
<div></div>	ROADS
<div></div>	PARCELS

WATER SERVICE DISTRICT

<div></div>	CWA HELIX WATER DISTRICT
<div></div>	CWA LAKESIDE WATER DISTRICT
<div></div>	WATER SERVICE OUTSIDE OF STUDY AREA

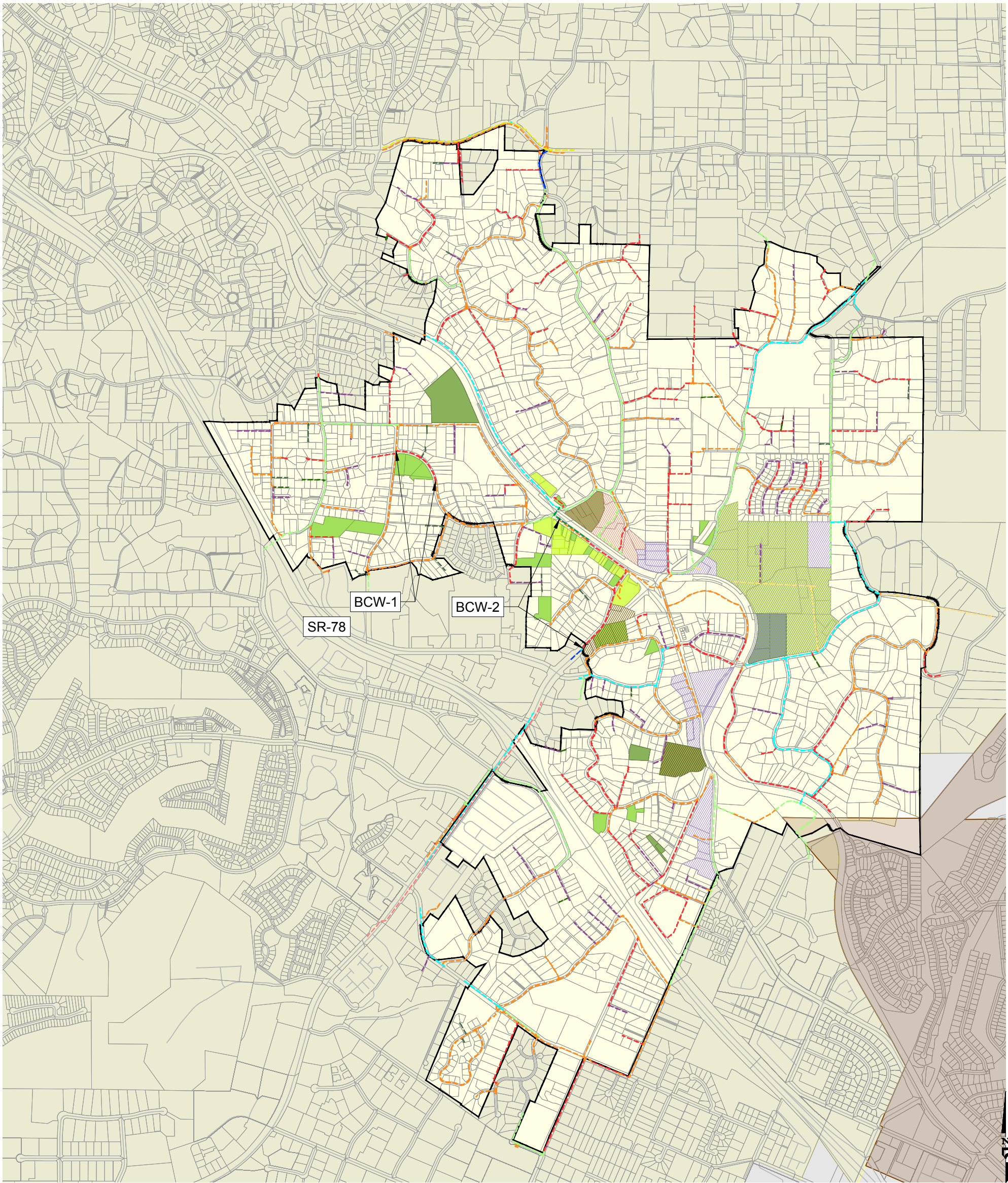
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LAKESIDE DEVELOPMENT FEASIBILITY AREA

Bowman WATER SERVICE LAKESIDE COMMUNITY PLAN AREA

8/6/2024



WATER PIPE SIZE

1.5" PIPE	8" PIPE	18" PIPE
2" PIPE	10" PIPE	20" PIPE
2.5" PIPE	12" PIPE	24" PIPE
4" PIPE	14" PIPE	30" PIPE
6" PIPE	16" PIPE	

WATER PIPE TYPE

----- AC*
*PIPE MATERIAL DATA NOT MADE AVAILABLE (SHOWN AS AC PIPE)

WATER SERVICE DISTRICT

CWA VISTA IRRIGATION DISTRICT
CWA VALLECITOS COUNTY DISTRICT
WATER SERVICE OUTSIDE OF STUDY AREA

DFA POTENTIAL PARCELS

SHORT	VCMU
MID	VR-15
LONG	VR-24
	VR-30

LEGEND

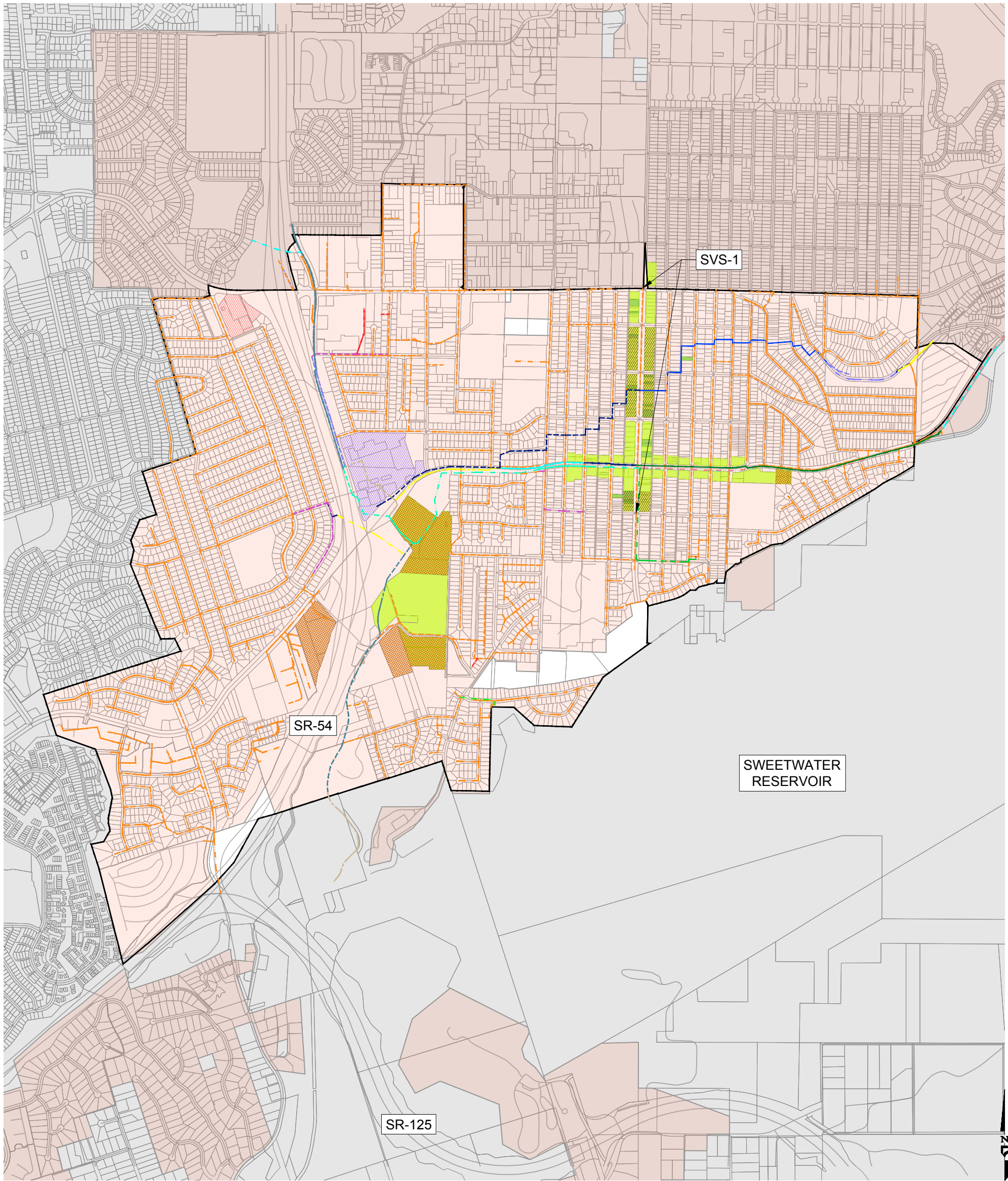
DFA BOUNDARY
ROADS
PARCELS

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SCALE: 1"=1400'

5.0 Appendix B5 – Sewer Service Maps



SEWER PIPE SIZE

4" PM PIPE

6" PIPE

6" PM PIPE

8" PIPE

10" PIPE

12" PIPE

12" PM PIPE

15" PIPE

16" PIPE

18" PIPE

20" PIPE

21" PIPE

24" PIPE

27" PIPE

30" PIPE

SEWER PIPE TYPE

VCP

PVC

CAS

AC

UNK

RPM

PE

RCP

DIP

DFA POTENTIAL PARCELS

SHORT

MID

LONG

VCMU

VR-15

VR-24

VR-30

LEGEND

DFA BOUNDARY

ROADS

PARCELS

ABBREVIATION:

PM = PRESSURE MAIN

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COUNTY OF SAN DIEGO SEWER SERVICE DISTRICT

COUNTY OF SAN DIEGO SANITATION DISTRICT

SEWER SERVICE OUTSIDE OF STUDY AREA

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SCALE: 1"=1400'

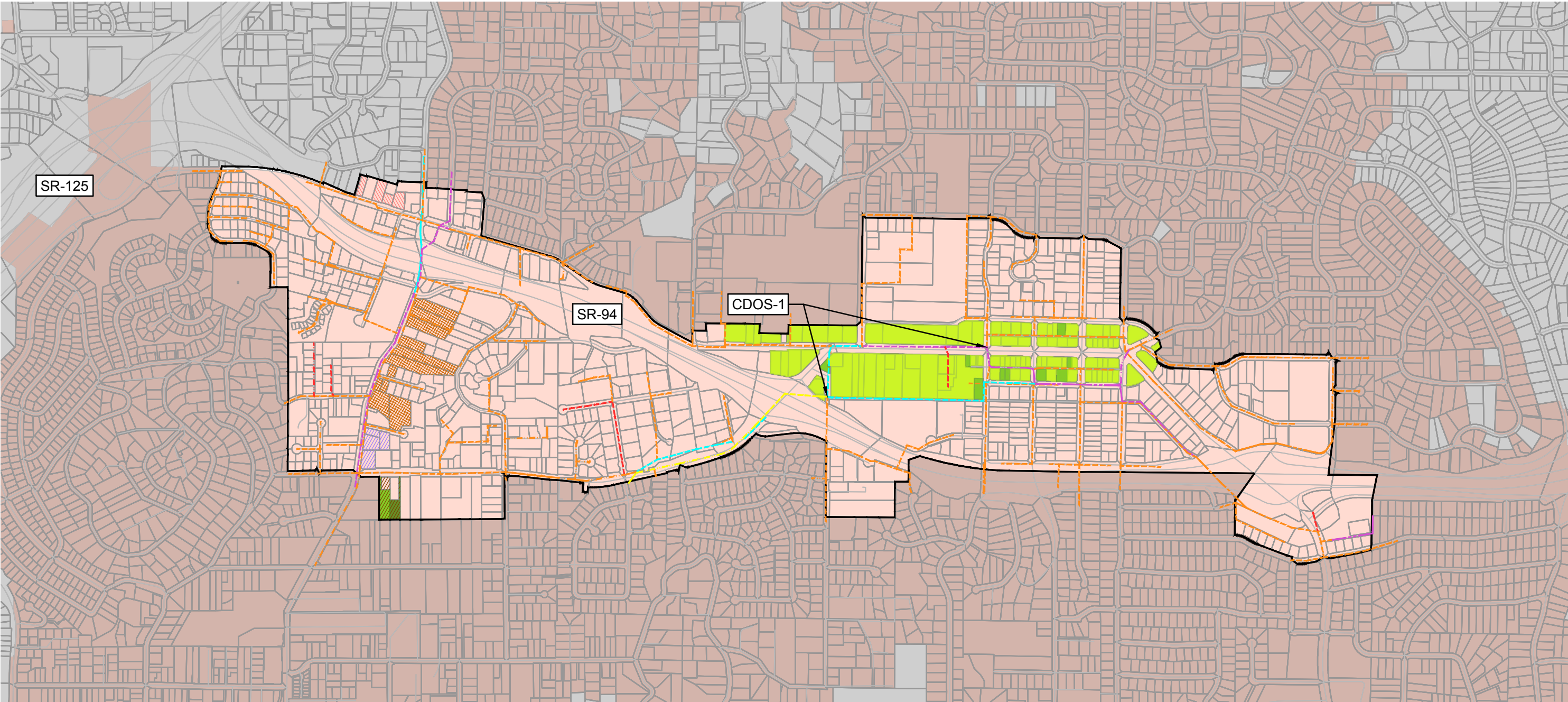
Bowman

SPRING VALLEY DEVELOPMENT FEASIBILITY AREA

SEWER SERVICE SPRING VALLEY COMMUNITY PLAN AREA

8/6/2024

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SEWER PIPE SIZE

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	6" PIPE		15" PIPE		30" PIPE
	6" PM PIPE		16" PIPE		
	8" PIPE		18" PIPE		
	10" PIPE		20" PIPE		
	12" PIPE		21" PIPE		

SEWER PIPE TYPE

	VCP		PE
	PVC		RCP
	CAS		DIP
	AC		ABANDONED
	UNK		
	RPM		

DFA POTENTIAL PARCELS

	SHORT		VCMU
	MID		VR-15
	LONG		VR-24
			VR-30

LEGEND

	DFA BOUNDARY
	ROADS
	PARCELS

COUNTY OF SAN DIEGO SEWER SERVICE DISTRICT

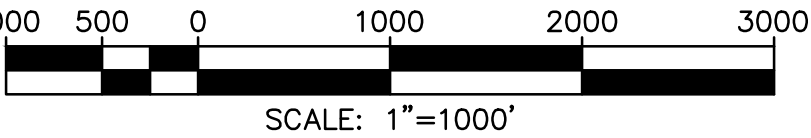
	COUNTY OF SAN DIEGO SANITATION DISTRICT
	SEWER SERVICE OUTSIDE OF STUDY AREA

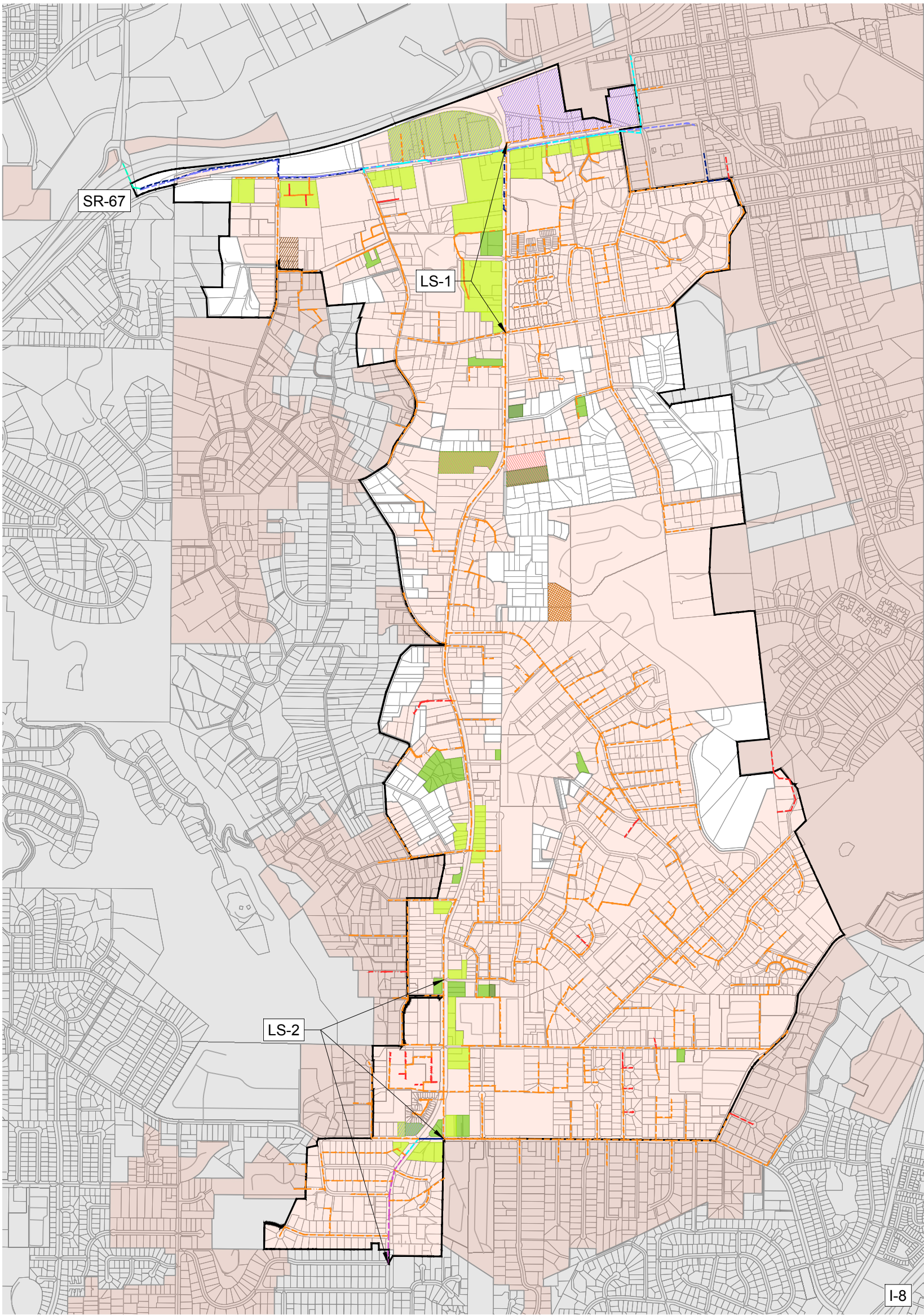
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VALLE DE ORO/CASA DE ORO DEVELOPMENT FEASIBILITY AREA
SEWER SERVICE VALLE DE ORO COMMUNITY PLAN AREA

8/15/2024





SEWER PIPE SIZE

	4" PM PIPE		16" PIPE
	6" PIPE		18" PIPE
	6" PM PIPE		20" PIPE
	8" PIPE		21" PIPE
	10" PIPE		24" PIPE
	12" PIPE		30" PIPE
	12" PM PIPE		
	15" PIPE		

SEWER PIPE TYPE

	VCP
	PVC
	CAS
	AC
	UNK
	RPM
	PE
	RCP
	DIP

DFA POTENTIAL PARCELS

	SHORT		VCMU
	MID		VR-15
	LONG		VR-24
			VR-30

LEGEND

	DFA BOUNDARY
	ROADS
	PARCELS

COUNTY OF SAN DIEGO SEWER SERVICE DISTRICT

	COUNTY OF SAN DIEGO SANITATION DISTRICT
	SEWER SERVICE OUTSIDE OF STUDY AREA

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SCALE: 1"=1400'

ABBREVIATION:

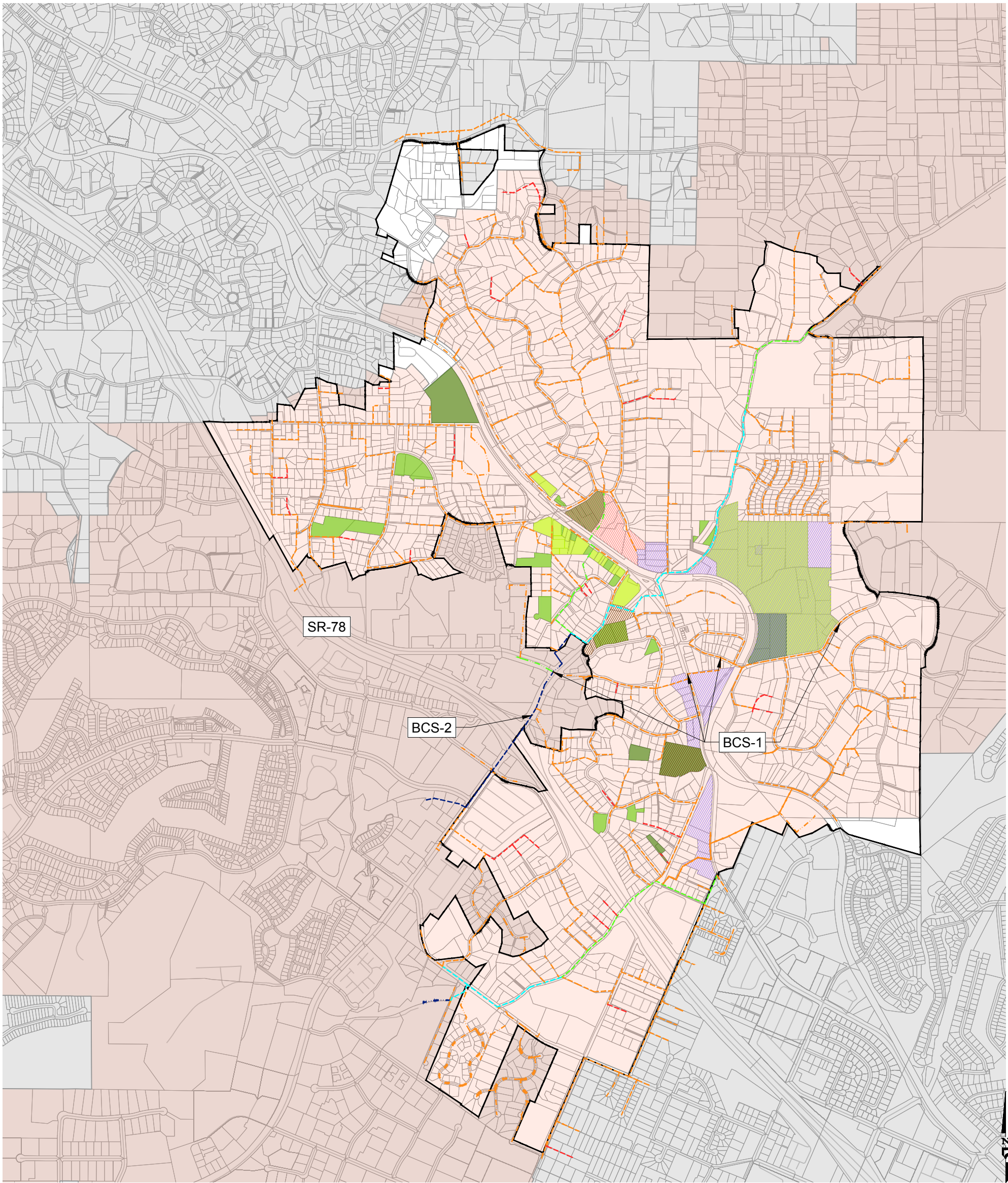
PM = PRESSURE MAIN

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LAKESIDE DEVELOPMENT FEASIBILITY AREA

SEWER SERVICE LAKESIDE COMMUNITY PLAN AREA

8/6/2024



SEWER PIPE SIZE

6" PIPE

8" PIPE

10" PIPE

12" PIPE

15" PIPE

SEWER PIPE TYPE

VCP

PVC

ACP

ABS

DIP

DFA POTENTIAL PARCELS

SHORT

MID

LONG

VCMU

VR-15

VR-24

VR-30

LEGEND

DFA BOUNDARY

ROADS

PARCELS

BUENA SANITATION DISTRICT SEWER SERVICE

OUTSIDE OF STUDY AREA

1400 700 0 1400 2800 4200

SCALE: 1"=1400'

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Bowman

BUENA CREEK DEVELOPMENT FEASIBILITY AREA

SEWER SERVICE NORTH COUNTY COMMUNITY PLAN AREA

8/15/2024

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