APPENDIX K

Utilities

APPENDIX K1

Wastewater Infrastructure Plan

MACKAY & SOMPS
ENGINEERS PLANNERS SURVEYORS

TRANSMITTAL LETTER

TO: City of Folsom
50 Natoma St.
Folsom, Ca 95630

PROJECT NO.: 7919.000
DATE: December 19, 2008
SUBJECT: Folsom Specific Plan

ATTN: **KEN PAYNE / GAIL FURNESS DEPARDO**

SHIP VIA: Mail

DESCRIPTION OF ENCLOSED:

Folsom Specific Plan
Wastewater Infrastructure Addendum #1

MESSAGE:

Ken and Gail,

Enclosed is the Sewer Master Plan addendum addressing the revised land plan contained in the December 15, 2008 Specific Plan. Please let me know if you have any questions.

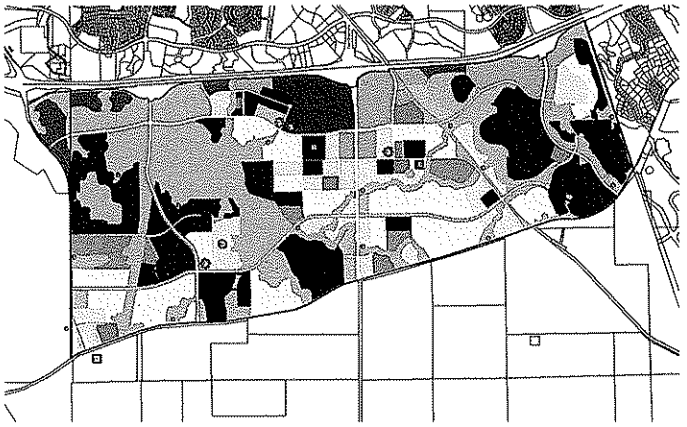
MACKAY & SOMPS

BY: James C. Ray Jr.

cc: Francine Dunn – EDAW w/enclosure
Ardie Zahedani – Hodgson Company w/enclosure

7919-00

ADDENDUM NO. 1
WASTEWATER
INFRASTRUCTURE PLAN



FOR THE

FOLSOM SPECIFIC PLAN AREA

CITY OF FOLSOM , CA

DECEMBER 16, 2008

PREPARED FOR:
CITY OF FOLSOM, UTILITIES DEPT.
CITY OF FOLSOM
50 NATOMA STREET
FOLSOM, CA 95630

PREPARED BY:
MACKAY & SOMPS CIVIL ENGINEERS, INC.
1771 TRIBUTE ROAD, SUITE E
SACRAMENTO, CA 95815-4487

Addendum No. 1
Summary Statement

For: Folsom Specific Plan Area Wastewater Infrastructure Plan

Summary:

A Wastewater Infrastructure Plan (WWIP) dated September 16, 2008 was prepared by MacKay & Somps Civil Engineers, Inc. for the Folsom Specific Plan Area (FSPA). Subsequent to that date, minor changes to the land use plan have been made.

The FSPA Land Use and Wastewater Infrastructure changes can be generally summarized as follows:

- Minor horizontal alignment shift of Easton Valley Parkway
- Minor land use changes (configuration and acres) at the mall and town center sites
- Minor change in total site acreage by plus 8 acres
- Minor horizontal alignment shift of the trunk sewer at the north edge of Parcel SF-148, and shift of the OS boundary at the property SF-138 (formerly SF-148). See revised Exhibit G.
- Minor change in total ESD count by plus 3 ESDs

The FSPA land use changes and increased ESDs did not affect:

- Location and size of infrastructure trunk sewers except a minor change at SF-138 (formerly SF-148)
- Location of the Plan Area wastewater pump stations

The FSPA land use changes and increased ESDs caused a negligible affect to:

- Size of the proposed Folsom South Pump Station
- Local sewer sub-basin acreages and flows

Addendum No. 1 includes the following:

- Red-line / strikeout cut sheets for affected text and tables from the Sept, 16 report
- Updated Land Use Plan to replace Exhibit ES-2, Exhibit B, and Exhibit G

Conclusion:

- Changes to the FSPA land use and density cause negligible impacts to the Wastewater Infrastructure Plan. The proposed Folsom South Pump Station PWWF increases from 12.64 to 12.65 mgd. Sewer trunk lines remain the same size and remain in the same location except for a minor horizontal shift of Easton Valley Parkway.

Future Update of the FSPA Wastewater Infrastructure Plan

- Because the changes summarized above produce negligible impacts, updates to WIP exhibits showing sub-basin detail, and flow calculations with ESDs by node are deferred until preparation of infrastructure construction documents.

(FROM OF EXECUTIVE SUMMARY)

Calculated Wastewater Flow Summary

SASD, 2008 Design Standards were used to calculate flows for 2601 sewered acres in the FSPA. A comparison of projected FSPA wastewater flows to previous SRCSD Master Plan studies is as follows.

Wastewater Projection Study	Basin	ESDs	PWWF (MGD)
SRCSD Interceptor Master Plan, 2000, Black & Veatch	FS11 to *FE 3B PS	22,035	14.48
Folsom Specific Plan Area (FSPA)	FS11 to *FE 3B PS	~~18,918~~ 18,921	~~12.64~~ 12.65

**FE 3B PS is an existing SRCSD Pump Station located north of Highway 50 at the south side of Iron Point Road approximately 1500 feet west of Oak Avenue.*

Pump Stations and the EID Service Area Summary

All wastewater within the FSPA boundary, including 189.4 gross / ~~134.4~~ 134.6 sewered acres within the EID service area, is directed by gravity sewers and pump stations/force mains to the proposed Folsom South Pump Station (FSPS). The FSPS is located at the north side of Easton Valley Parkway approximately 1500 feet west of Oak Avenue. The FSPS will pump wastewater to the north side of Highway 50 and tie into the existing SRCSD force main system at the downstream side of FE 3B PS. See Exhibit ES-3.

Upstream of the proposed FSPS, gravity systems will provide service to over 90% of ESDs in the FSPA. Lands within the EID service area, and a sub-shed east of Empire Ranch Road, will be served by three small pump stations described as PS 2, 3, and with peak pumping capacities as follows:

Description	Location	$Q_{PWWF\ (mgd)}$
FSPA PS 2	NW corner of White Rock and Empire Ranch Roads	1.39
FSPA PS 3	East FSPA boundary near existing Stonebriar Court	0.65
FSPA PS 4	East FSPA boundary near existing Winterfield Court	0.38

Reference Exhibit ES-3 for the proposed Pump Station 2, 3, and 4 locations.

EID has stated that it wants to provide service to lands within its service area boundary. Based on conceptual grading prepared by CTA Engineering for lands within the EID service area boundary, connection to EID gravity sewer lines may be possible at:

EID POC	Location	Benefit
1	Winterfield Court	Eliminates PS 4
2	Stonebriar Drive / Prima Way intersection	Eliminates PS 3
3	Ranch Bluff Way south of White Rock Road	Reduces PS 2 pumping

If EID is to be a service provider, detailed routing studies and downstream capacity at these three POCs (~~921~~ 923 ESDs) must be confirmed by EID or others. Reference Exhibit ES-4 for location of the three possible EID POCs.

Conclusion...SRCSD Capacity

This WWIP confirms that the projected FSPA PWWF, including flow from the EID service area (~~12.64~~ 12.65mgd), is less than the projected FSPA/SOI flow in the SRCSD Interceptor Plan, 2000 (14.48 mgd). Based on that Interceptor Plan, this report concludes that SRCSD Pump Station FE 3B and the downstream interceptor system have adequate capacity to serve the FSPA.

Recommendations... EID/City of Folsom Sewer Service Area

EID, the city of Folsom, and the FSPA owners group should meet to resolve the service provider for the EID service area.

Next Steps

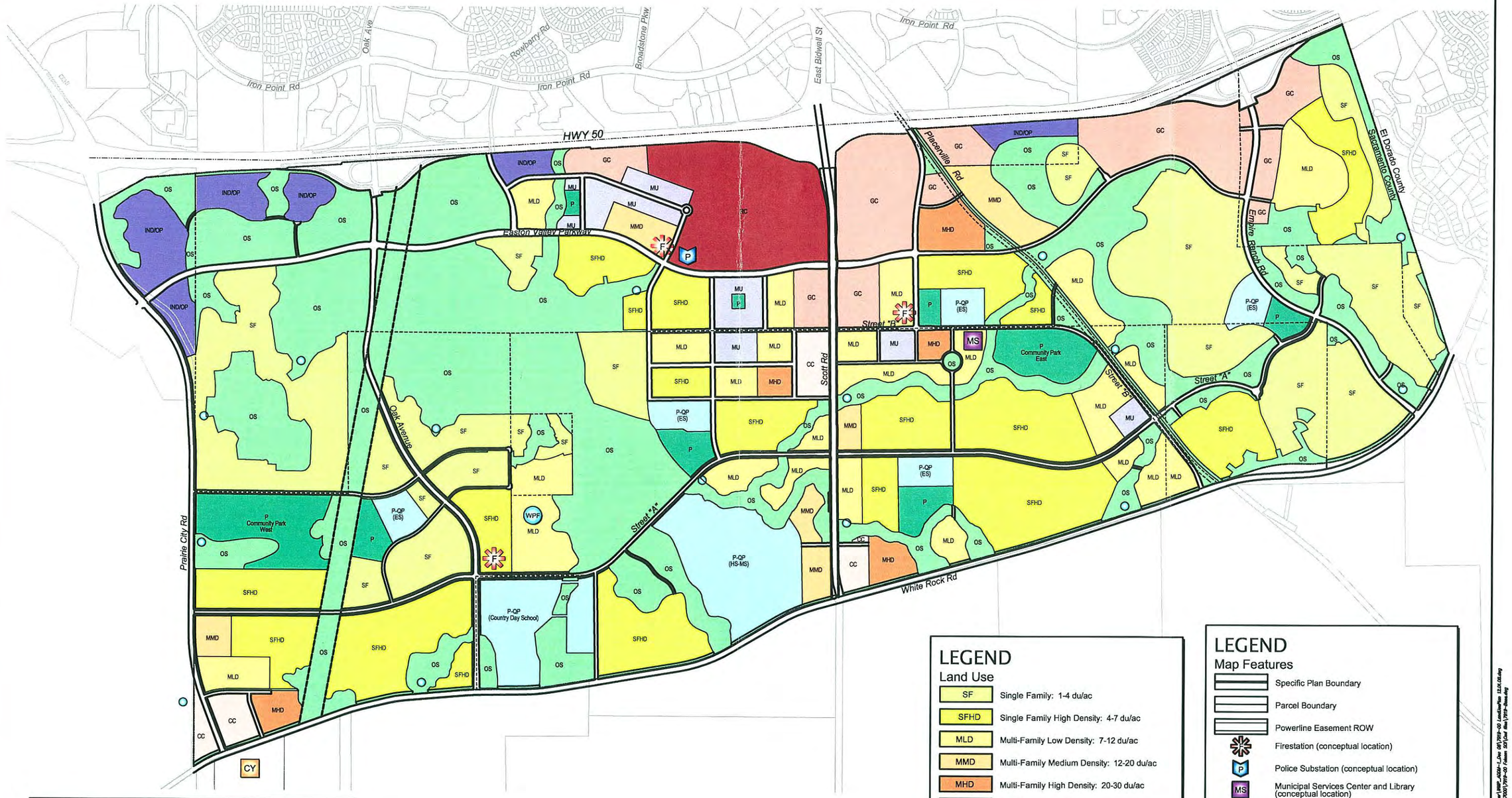
As the FSPA environmental and entitlement process moves forward, the following tasks are anticipated, and may require updates to this WWIP:

- Coordination with EID, the city of Folsom and owners group to resolve the EID sewer service area issue. If EID is confirmed as the service provider, perform routing studies, evaluate EID capacity, and quantify required upgrades to the EID system to provide an acceptable level of service.

- Confirmation by SRCSD that downstream interceptor and treatment facilities are adequate and/or upgrades are sequenced accordingly.

- Develop a complete OPCC for the WWIP for build out and phasing options, to serve as basis for a FSPA finance plan.

- Finalize the FPSA phasing and Land Use Plans.



LEGEND

Land Use

SF	Single Family: 1-4 du/ac
SFHD	Single Family High Density: 4-7 du/ac
MLD	Multi-Family Low Density: 7-12 du/ac
MMD	Multi-Family Medium Density: 12-20 du/ac
MHD	Multi-Family High Density: 20-30 du/ac
MU	Mixed Use: 9-30 du/ac
IND/OP	Industrial/Office Park
CC	Community Commercial
GC	General Commercial
RC	Regional Commercial
P	Parks (Community/Neighborhood Parks)
OS	Open Space
PQP	Public/Quasi-Public

LEGEND

Map Features

- Specific Plan Boundary
- Parcel Boundary
- Powerline Easement ROW
- Firestation (conceptual location)
- P — Police Substation (conceptual location)
- MS — Municipal Services Center and Library (conceptual location)
- CY — City Corporate Yard (conceptual off-site location - 25 ac)
- WPF — Water Public Facility (conceptual location)
- Detention Basins

Notes:

1) Public facilities and civic uses will be located and sized per Facilities Analysis.
2) Corporate Yard to be located outside project area subject to agreement by owners and City.
3) Corporate Yard and Water Public Facility are placeholders subject to negotiations with landowners and subject to finalizing the technical studies needed to support the appropriate locations of these facilities.
4) Local parks are not currently shown on the Land Use map, but are accounted for in the Land Use statistics.

GRAPHIC SCALE
600 0 300 600

City of Folsom

SACRAMENTO COUNTY, CA

Folsom Plan Area Specific Plan

Proposed Land Use Plan-12.01.08

MACKAY & SOMPS
ENGINEERS PLANNERS SURVEYORS
1771 Tribute Road, Suite E, Sacramento, CA 95815 (916) 929-6092

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210 East F Street | Oakdale, California 95361
P: (209) 847-1794 | F: (209) 847-2311 | www.rrmdesign.com

EXHIBIT ES-2

SECTION 2 - LAND USE

2.1 Proposed Land Use

This WWIP is based on the Land Use Plan dated ~~June 6, 2008~~ December 1, 2008 (RRM Design Group).This section shows the latest proposed land uses for the FSPA. The FSPA land use plan continues to be evaluated and updated to address constraints and environmental concerns identified throughout the planning process.

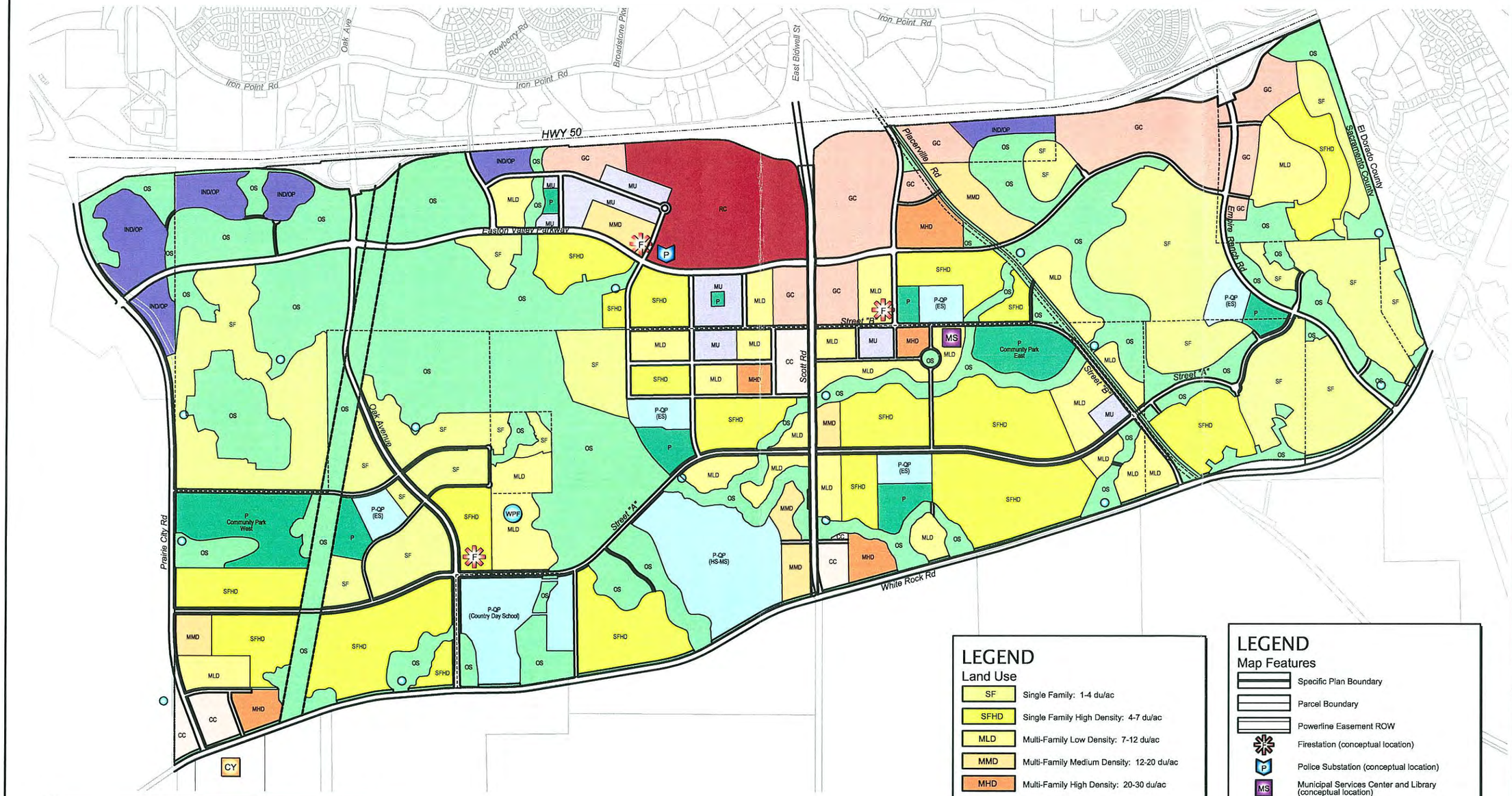
The proposed land uses, designations, as well as anticipated density ranges, are shown on Exhibit B and also summarized in Table 1 below. Currently, the FSPA proposes an allocated dwelling unit (DU) count of ~~10,045~~10,210 units.

TABLE 1: PROPOSED LAND USE

Land Use	Acreage	Percent of Total	Density Range (DU/ac)	~~Maximum~~ Target DU
SF - Single Family	~~562.7~~ 560.7	16%	1.0 - 3.9	~~1,695~~ 1,687
SFHD - Single Family High Density	~~475.7~~ 531.2	~~14%~~15%	4.0 - 6.9	~~2,629~~ 2,933
MLD - Multi Family Low Density	~~301.1~~ 268.5	~~9%~~ 8%	7.0 -11.9	~~2,727~~ 2,434
MMD - Multi Family Med. Density	~~75.8~~ 66.9	2%	12.0 - 20.0	~~1,386~~ 1,224
MHD - Multi Family High Density	~~48.9~~ 49.9	1%	18.0 - 30.0	~~1,226~~ 1,251
MU - Mixed Use District	~~33.1~~ 59.1	~~1%~~ 2%	9.0 - 30.0	~~382~~ 681
OP - Office Park	~~113.3~~ 89.2	3%		
CC - Community Commercial	~~39.9~~ 38.9	1%		
GC - General Commercial	~~206.3~~ 213.1	6%		
RC - Regional Commercial	~~130.3~~ 110.8	~~4%~~ 3%		
P - Park (Community)	~~64.5~~ 70.6	~~2%~~ 3%		
P - Park (Neighborhood)	~~44.7~~ 47.8	1%		
LP - Local Park	Inc.			
PQP HS/MS	~~79.3~~ 79.6	2%		
PQP - Elementary School	~~50~~ 51.6	1%		
PQP - Country Day School	~~49.7~~ 49.4	1%		
OS - Open Space	~~1053~~ 1053.4	30%		
MAJ CIRC - Major Circulation	~~173.6~~ 169.7	5%		
Total	**~~3,502~~ 3,510.4**	**100%**		**~~10,045~~ 10,210**

2.2 Project Phasing

To initiate development, this WWIP studies infrastructure to serve the final build-out of the FSPA. The FSPA landowners have developed a conceptual project phasing plan, where multiple disconnected properties will require service in Phase 1. In-depth sewer phasing to serve Phase 1 and subsequent phases, is not addressed in this WWIP. More specific information on phasing will be addressed in other FSPA entitlement documents.



GRAPHIC SCALE
600 0 300 600

City of Folsom
SACRAMENTO COUNTY, CA

Folsom Plan Area Specific Plan
Proposed Land Use Plan-12.01.08

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LEGEND
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Notes:
1) Public facilities and civic uses will be located and sized per Facilities Analysis.
2) Corporate Yard to be located outside project area subject to agreement by owners and City.
3) Corporate Yard and Water Public Facility are placeholders subject to negotiations with landowners and subject to finalizing the technical studies needed to support the appropriate locations of these facilities.
4) Local parks are not currently shown on the Land Use map, but are accounted for in the Land Use statistics.

EXHIBIT B

3.3 Projected Flows

These calculations assume all wastewater within the FSPS boundary is directed to the Folsom South Pump Station (FSPS).

The summary of FSPA sewered area (~~2,601~~ 2,612 acres) matches the Land Use Summary (~~3,502~~ 3,510.4) acres minus large block OS areas (~~901~~ 898.4 acres). Only landscaped OS parcels adjacent to roadways are included as contributing to the ESD count. Acreages for Schools (P-QP) are broken out into High School (HS), Middle School (MS) and Elementary School (ES) per SASD requirements.

Table 5 summarizes the following:

- Average Dry Weather Flow (ADWF) and Inflow and Infiltration per land use
- ADWF for the FSPA
- Peaking Factor (PF) for the FSPA
- Peak Dry Weather Flow (PDWF) for the FSPA
- Peak Wet Weather Flow (PWWF) for the FSPA

TABLE 5: WASTEWATER FLOW PROJECTIONS

Land Use	LUP Area, acres	Sewered Area, acres	Max Density, DU	ESD factor (ESD/acre)	Total ESD	Q_{ADWF} (mgd)	$Q_{I/I}$ (mgd)
SF - Single Family	~~562.7~~ 560.7	~~562.7~~ 560.7	3.9	6.0	~~3,382~~ 3,364	~~1.05~~ 1.04	~~0.79~~ 0.78
SFHD - Single Family High Density	~~475.7~~ 531.2	~~475.7~~ 531.2	6.9	6.9	~~3,300~~ 3,665	~~1.02~~ 1.14	~~0.67~~ 0.74
MLD - Multi Family Low Density	~~301.1~~ 268.5	~~301.1~~ 268.5	11.9	8.9	~~2,691~~ 2,390	~~0.83~~ 0.74	~~0.42~~ 0.38
MMD - Multi Family Medium Density	~~75.8~~ 66.9	~~75.8~~ 66.9	20	15.0	~~1,140~~ 1,004	~~0.35~~ 0.31	~~0.11~~ 0.09
MHD - Multi Family High Density	~~48.9~~ 49.9	~~48.9~~ 49.9	30	22.5	~~1,102~~ 1,123	~~0.34~~ 0.35	0.07
MU - Mixed Use District	~~33.1~~ 59.1	~~33.1~~ 59.1	30	11.0	~~365~~ 650	~~0.11~~ 0.20	~~0.05~~ 0.08
OP - Office Park	~~113.3~~ 89.2	~~113.3~~ 89.2		6.0	~~685~~ 535	~~0.21~~ 0.17	~~0.16~~ 0.12
CC - Community Commercial	~~39.9~~ 38.9	~~39.9~~ 38.9		6.0	~~241~~ 233	0.07	~~0.06~~ 0.05
GC - General Commercial	~~206.3~~ 213.1	~~206.3~~ 213.1		6.0	~~1,248~~1,279	~~0.39~~0.40	~~0.29~~ 0.30
RC - Regional Commercial	~~130.3~~ 110.8	~~130.3~~ 110.8		6.0	~~788~~ 665	~~0.24~~ 0.21	~~0.18~~ 0.16
P - Park (Community)	~~64.5~~ 70.6	~~64.5~~ 70.6		6.0	~~390~~ 424	~~0.12~~ 0.13	~~0.09~~ 0.10
P - Park (Neighborhood)	~~44.7~~ 47.8	~~44.7~~ 47.8		6.0	~~270~~ 287	~~0.08~~ 0.09	~~0.06~~ 0.07
LP - Local Park	Included			6.0		0.00	0.00
PQP - High School/Middle School	~~79.3~~ 79.6	~~39.7~~ 40.0	HS portion only	6 or 0.080 mgd	259	0.08	0.06
PQP -Middle School (only)	Included	39.6	MS portion only	6 or 0.060 mgd	239	0.07	0.06
PQP - Elementary School	~~50.0~~ 51.6	~~50.0~~ 51.6		6 or 0.025 mgd	404	0.13	0.07
PQP - Country Day School	~~49.7~~ 49.4	~~32.1~~ 31.8	HS portion only	6 or 0.080 mgd	258	0.08	0.04
PQP - Country Day School (MS)	Included	17.6	MS portion only	6 or 0.060 mgd	194	0.06	0.02
OS - Open Space	~~1053.0~~ 1053.4	~~152.1~~ 155	Sideline strips at roadways	6.0	~~916~~ 930	~~0.28~~ 0.29	~~0.21~~ 0.22
Roadway	~~173.6~~ 169.7	~~173.6~~ 169.7		6.0	~~1,045~~ 1,018	0.32	0.24
Plan Area Total	~~**3,501.90**~~ **3,510.4**	~~**2,601.0**~~ **2,612.0**			~~**18,918**~~ **18,921**	~~**5.86**~~ **5.88**	~~**3.64**~~ **3.65**
				Peaking Factor:		**1.53**	
				Peak Dry Weather Flow:		~~**8.98**~~ **9.00**	
				Peak Wet Weather Flow:		~~**12.64**~~ **12.65**	

Section 5 - EID Service Area Discussion

The WWIP provides service to 189.4 gross / ~~134.4~~ 134.6sewered acres at the east edge of the FSPA that are currently within the El Dorado Irrigation District (EID) service boundary. Land use, acres, ESDs and PWWFs for the entire EID area within the FSPA, are summarized in Table 8.

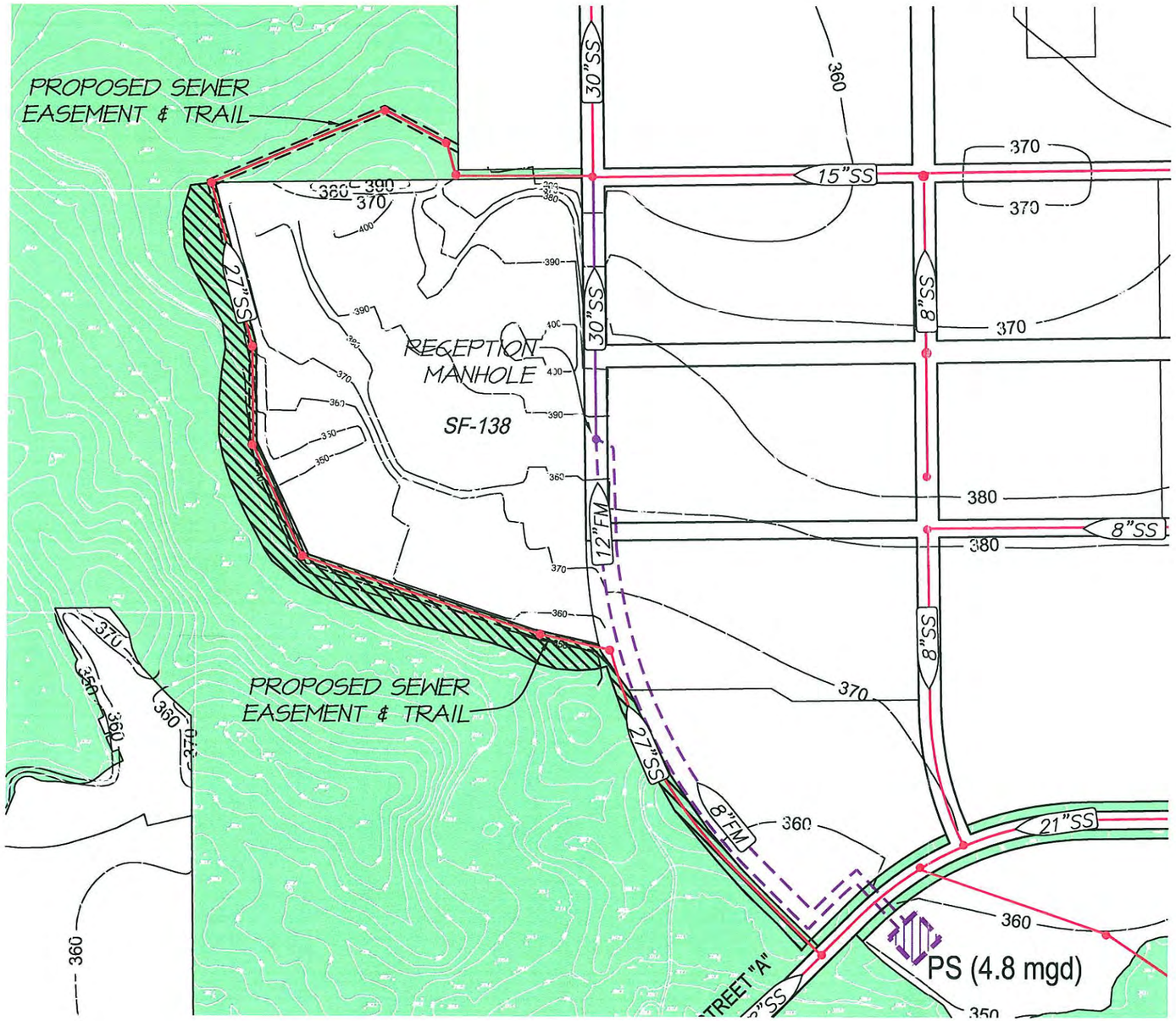
TABLE 8: EID SERVICE AREA – FLOW CALCULATIONS

LAND USE	LOT NO	AREA (ac)	ESD/AC	ESD's	ADWF	PF	PDWF	I/I	Q_{PWWF} (mgd)
SF	~~192~~ 185	20.1	6.0	121	0.04	1.97	0.07	0.03	0.10
SF	~~193~~ 186	13.7	6.0	82	0.03	2.00	0.05	0.02	0.07
SF	179	1.2	6.0	7	0.002	2.17	0.005	0.005	0.01
SFHD	~~191~~ 184	31	6.9	214	0.07	1.93	0.13	0.04	0.17
GC	~~189~~ 182	3	7.9	24	0.01	2.09	0.02	0.00	0.02
GC	~~187~~ 180	17	6.0	102	0.03	1.99	0.06	0.02	0.09
GC	~~188~~ 181	~~9.4~~ 9.5	6.0	~~56~~ 57	0.02	2.03	0.04	0.01	0.05
GC	~~184~~ 177	1.3	6.0	8	0.00	2.17	0.01	0.00	0.01
GC	~~185~~ 178	3.8	6.0	23	0.01	2.09	0.01	0.01	0.02
MLD	~~190~~ 183	27.9	8.9	248	0.08	1.92	0.15	0.04	0.19
OS	~~196~~ 190	13.5	0	-					0
OS	~~197~~ 189	1.3	0	-					0
OS	~~195~~ 188	26.6	0	-					0
OS	~~194~~ 187	3	0	-					0
ROADWAY		~~7.2~~ 6.1	6	~~43~~ 37	0.01	2.06 ~~2.05~~	~~0.03~~ 0.02	0.01	~~0.04~~ 0.03
MAJ CIRC.		10.6							0
TOTAL		**189.4**		**~~921~~ 923**					**0.76**
Net Sewered Acres		**~~134.4~~ 134.6**							

Notes: [1] *Open Space and Major Circulation (future interchange ROW) are non-flow contributing.*

To provide service to EID lands, the FSPA requires two sewer pump stations, PS 3 and PS 4, at local low points along the east edge of the FSPA. A combination of force mains and gravity sewers along the east boundary would transport wastewater to Pump Station 2 at the NW corner of Empire Ranch and White Rock Roads.

Reference Exhibit C for the proposed pump station locations.



LEGEND

- 27"SS — PROPOSED SEWER
- 30"SS — ALTERNATE GRAVITY SEWER
- 8"FM — ALTERNATE FORCE MAIN
- PS — PUMP STATION
- OPEN SPACE
- ADDED OPEN SPACE (On Land Use Plan 12.01.08)

0 400 feet

DRAFT

EXHIBIT G

Alternative 2
Pump Station and Force Main

FOLSOM SPECIFIC PLAN

County of Sacramento, California

~~August 28, 2008~~
Revised 12-16-08

MACKAY & SOMPS
ENGINEERS PLANNERS SURVEYORS
1771 Tribute Road, Suite E, Sacramento, CA 95815 (916) 929-6092

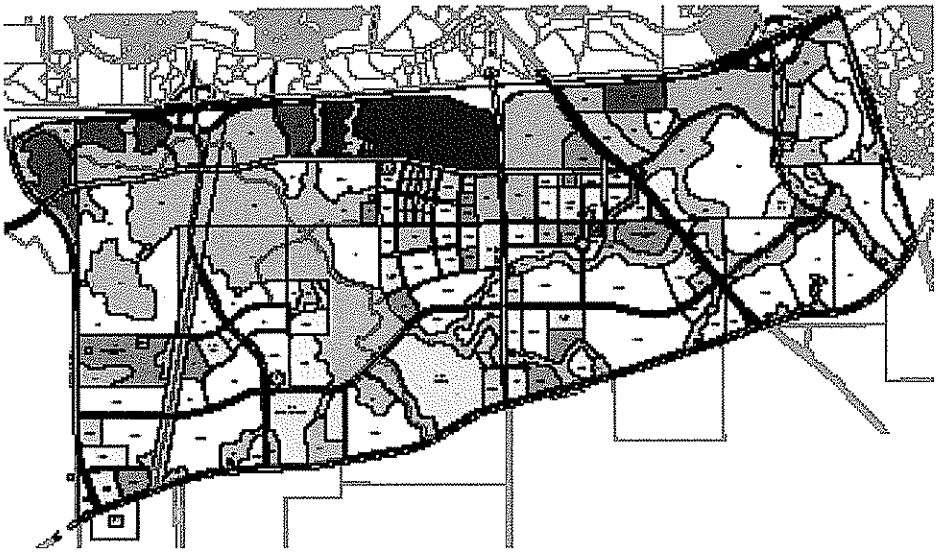
7919-00

APPENDIX K2

Addendum No. 1 Wastewater Infrastructure Plan

7919-00

WASTEWATER INFRASTRUCTURE PLAN



FOR THE

FOLSOM SPECIFIC PLAN AREA

CITY OF FOLSOM , CA

SEPTEMBER 16, 2008

PREPARED FOR:
CITY OF FOLSOM, UTILITIES DEPT.
CITY OF FOLSOM
50 NATOMA STREET
FOLSOM, CA 95630

PREPARED BY:
MACKAY & SOMPS CIVIL ENGINEERS, INC.
1771 TRIBUTE ROAD, SUITE E
SACRAMENTO, CA 95815-4487

Table of Contents

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ABBREVIATIONS

ac	Acre
ADWF	Average dry weather flow
cfs	cubic feet per second
CSD-1	County Sanitation District 1
DU	Dwelling Unit
d/D	Ratio of flow depth to pipe diameter
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ESD	Equivalent single-family dwelling unit
FSPA	Folsom Specific Plan Area
FSPS	Folsom South Pump Station
fps	Feet per second
gpd	Gallons per day
I/I	Inflow/Infiltration
ISS	Interceptor Sequencing Study
GWI	Groundwater infiltration
LAFCo	Local Area Formation Commission
mgd	Million gallons per day
MSL	Mean sea level
OPCC	Opinion of probable construction cost
OS	Open Space
PF	Peaking Factor
PUE	Public Utility Easement
PDWF	Peak dry weather flow
PWWF	Peak wet weather flow
POC	Point of Connection
PUD	Planned Unit Development
RDI/I	Rainfall dependent inflow and infiltration
SASD	Sacramento Area Sanitation District
SFEMP	Sewerage Facilities Expansion Master Plan
SOI	Sphere of Influence
SRCSD	Sacramento Regional County Sanitation District
TOD	Traffic Oriented Development
USB	Urban Service Boundary
WWIF	Wastewater Infrastructure Plan

EXECUTIVE SUMMARY

This Wastewater Infrastructure Plan (WWIP) is prepared for the Folsom Specific Plan Area (FSPA), also known as the Sphere of Influence (SOI). The FSPA is a 3,502 acre proposed master planned community of mixed land use including: low, medium and high-density residential parcels, schools, parks, open space, commercial sites and employment centers. Reference the following exhibits for an FSPA overview:

- Exhibit ES-1: Vicinity Map
- Exhibit ES-2: FSPA Land Use Plan with acreage summary
- Exhibit ES-3: Wastewater Infrastructure Plan
- Exhibit ES-4: EID Shed Analysis

Purpose of Wastewater Infrastructure Plan

The purpose of the WWIP includes but is not limited to the following:

- Provide support for EIR documentation
- Identify possible FSPA points of connections (POCs)
- Identify sewer sheds, wastewater flows, size backbone and internal trunk sewers
- Pre-design trunk sewers to identify relative pipe depths
- Demonstrate ability to gravity serve the FSPA, or in areas where depth of sewer is a concern, provide pumping and force main alternatives
- Calculate estimated wastewater flow within the El Dorado Irrigation District (EID) sewer shed in the FSPA
- Prepare an Opinion of Probable Construction Cost (OPCC) for alternatives
- Provide a basis for developing Level 2 and 3, FSPA Wastewater Master Plans

Design Standards and Other Criteria

The following sources were used to prepare the FSPA WWIP:

- Sacramento Area Sanitation District Design Standards (SASD), February 2008
- Sphere of Influence (SOI) Specific Plan Area Wastewater Infrastructure Plan Draft, October 2007, Prepared by J. Crowley Group
- Land Use Plan, dated June 6, 2008 with acreages and densities used for the FSPA, prepared by RRM Design Group
- City of Folsom, Wastewater Collection System Capacity Analysis Update, January 2006, prepared by ECO:LOGIC
- Sacramento Regional County Sanitation District (SRCSD) Interceptor Master Plan 2000, Black and Veatch
- 2006 Draft CSD-1 Sewerage Facilities Expansion Master Plan (SFEMP)
- Additional documents are listed in Section 3 – Wastewater Flow Projections

Calculated Wastewater Flow Summary

SASD, 2008 Design Standards were used to calculate flows for 2601 sewered acres in the FSPA. A comparison of projected FSPA wastewater flows to previous SRCSD Master Plan studies is as follows.

Wastewater Projection Study	Basin	ESDs	PWWF (MGD)
SRCSD Interceptor Master Plan, 2000, Black & Veatch	FS11 to *FE 3B PS	22,035	14.48
Folsom Specific Plan Area (FSPA)	FS11 to *FE 3B PS	18,918	12.64

**FE 3B PS is an existing SRCSD Pump Station located north of Highway 50 at the south side of Iron Point Road approximately 1500 feet west of Oak Avenue.*

Pump Stations and the EID Service Area Summary

All wastewater within the FSPA boundary, including 189.4 gross / 134.4 sewered acres within the EID service area, is directed by gravity sewers and pump stations/force mains to the proposed Folsom South Pump Station (FSPS). The FSPS is located at the north side of Easton Valley Parkway approximately 1500 feet west of Oak Avenue. The FSPS will pump wastewater to the north side of Highway 50 and tie into the existing SRCSD force main system at the downstream side of FE 3B PS. See Exhibit ES-3.

Upstream of the proposed FSPS, gravity systems will provide service to over 90% of ESDs in the FSPA. Lands within the EID service area, and a sub-shed east of Empire Ranch Road, will be served by three small pump stations described as PS 2, 3, and with peak pumping capacities as follows:

Description	Location	$Q_{PWWF\ (mgd)}$
FSPA PS 2	NW corner of White Rock and Empire Ranch Roads	1.39
FSPA PS 3	East FSPA boundary near existing Stonebriar Court	0.65
FSPA PS 4	East FSPA boundary near existing Winterfield Court	0.38

Reference Exhibit ES-3 for the proposed Pump Station 2, 3, and 4 locations.

EID has stated that it wants to provide service to lands within its service area boundary. Based on conceptual grading prepared by CTA Engineering for lands within the EID service area boundary, connection to EID gravity sewer lines may be possible at:

EID POC	Location	Benefit
1	Winterfield Court	Eliminates PS 4
2	Stonebriar Drive / Prima Way intersection	Eliminates PS 3
3	Ranch Bluff Way south of White Rock Road	Reduces PS 2 pumping

If EID is to be a service provider, detailed routing studies and downstream capacity at these three POCs (921 ESDs) must be confirmed by EID or others. Reference Exhibit ES-4 for location of the three possible EID POCs.

Conclusion...SRCSD Capacity

This WWIP confirms that the projected FSPA PWWF, including flow from the EID service area (12.64 mgd), is less than the projected FSPA/SOI flow in the SRCSD Interceptor Plan, 2000 (14.48 mgd). Based on that Interceptor Plan, this report concludes that SRCSD Pump Station FE 3B and the downstream interceptor system have adequate capacity to serve the FSPA.

Recommendations... EID/City of Folsom Sewer Service Area

EID, the city of Folsom, and the FSPA owners group should meet to resolve the service provider for the EID service area.

Next Steps

As the FSPA environmental and entitlement process moves forward, the following tasks are anticipated, and may require updates to this WWIP:

- Coordination with EID, the city of Folsom and owners group to resolve the EID sewer service area issue. If EID is confirmed as the service provider, perform routing studies, evaluate EID capacity, and quantify required upgrades to the EID system to provide an acceptable level of service.

- Confirmation by SRCSD that downstream interceptor and treatment facilities are adequate and/or upgrades are sequenced accordingly.

- Develop a complete OPCC for the WWIP for build out and phasing options, to serve as basis for a FSPA finance plan.

- Finalize the FPSA phasing and Land Use Plans.

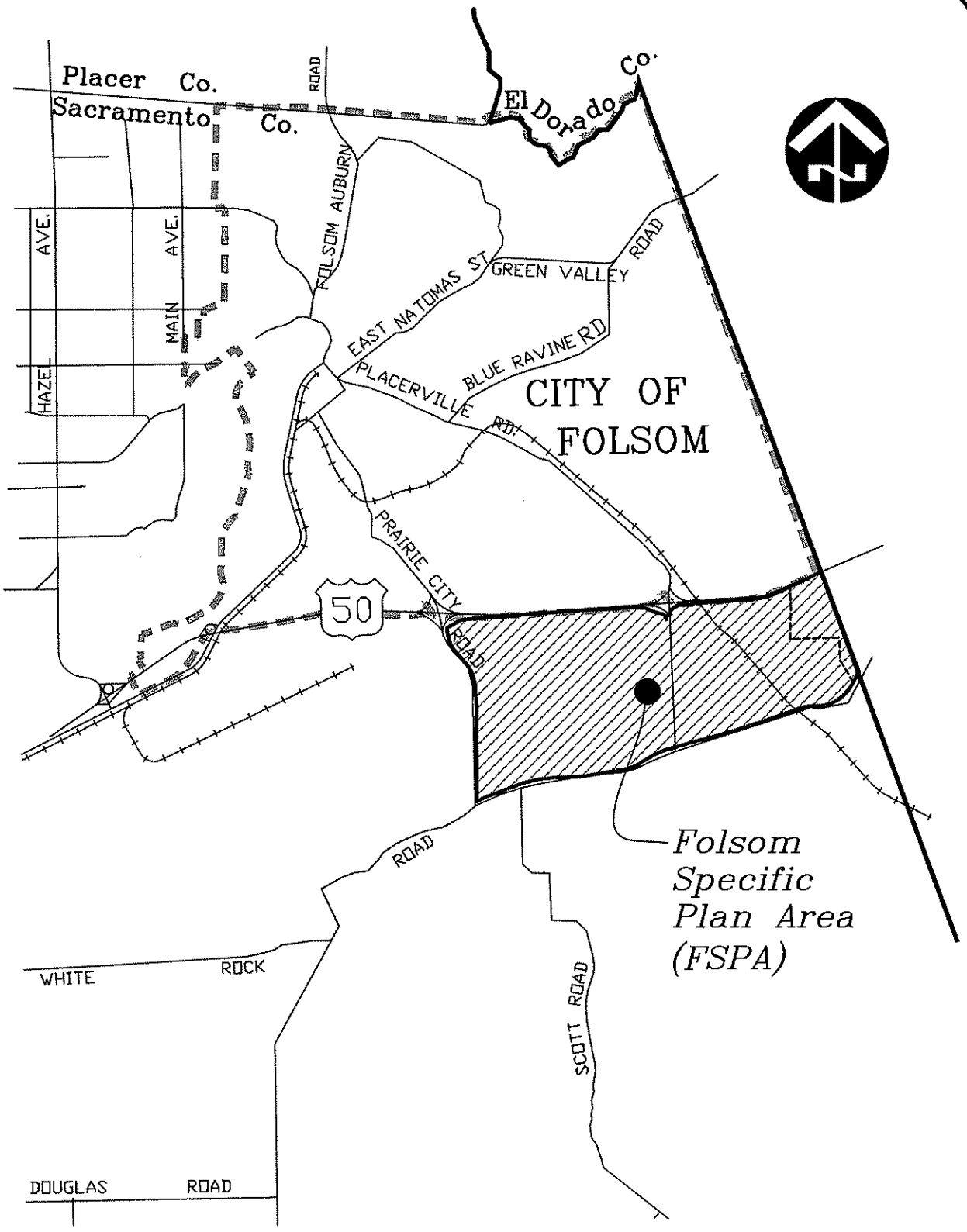
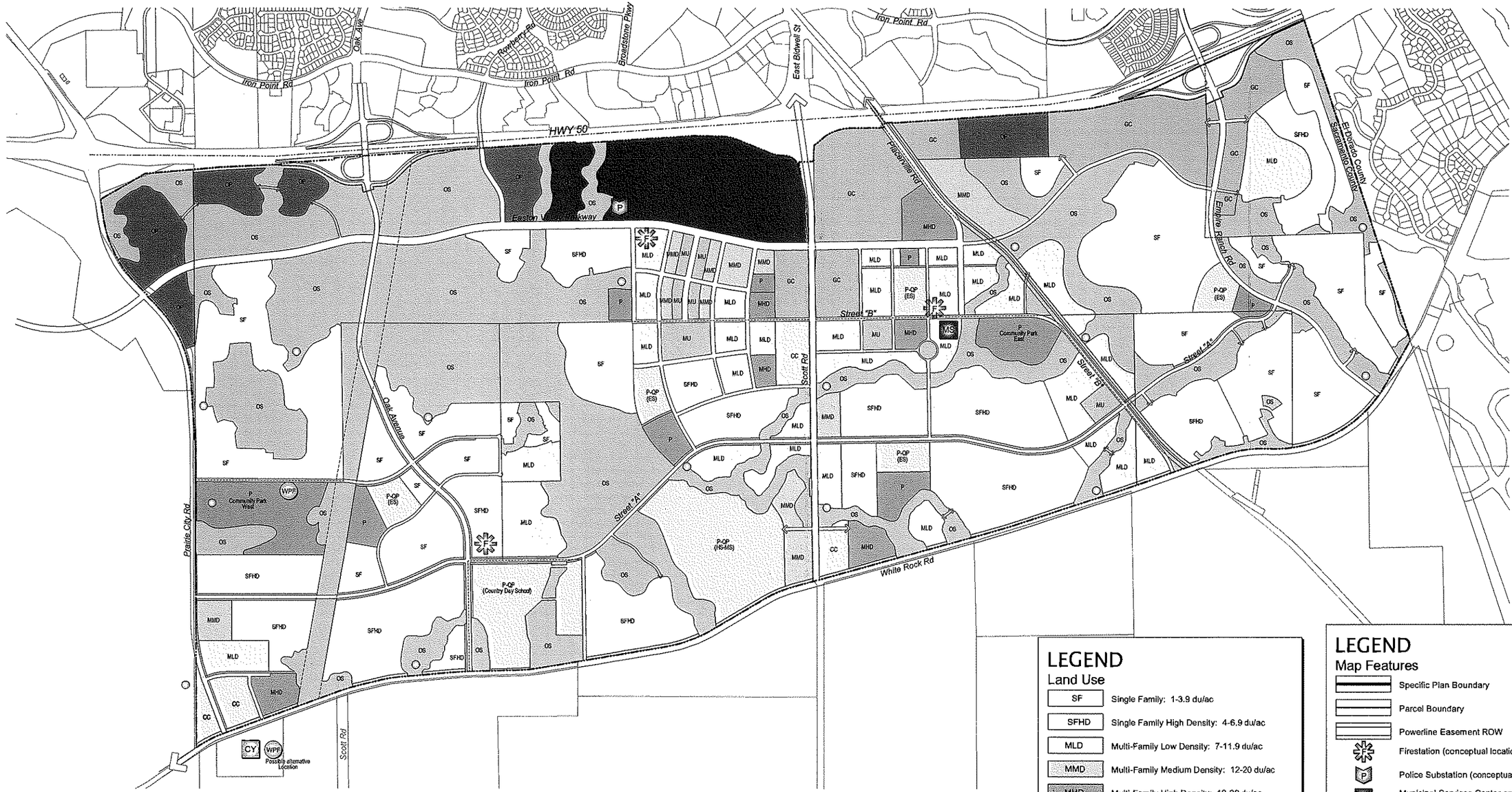


EXHIBIT ES-1

VICINITY MAP

N.T.S.



GRAPHIC SCALE
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City of Folsom
SACRAMENTO COUNTY, CA

Folsom Plan Area Specific Plan
Proposed Land Use Plan-05.28.08

rrmdesigngroup
creating environments people enjoy
210 East F Street | Oakdale, California 95361
P: (209) 847-1794 | F: (209) 847-2511 | www.rrmdesign.com

LEGEND
Land Use

SF	Single Family: 1-3.9 du/ac
SFHD	Single Family High Density: 4-6.9 du/ac
MLD	Multi-Family Low Density: 7-11.9 du/ac
MMD	Multi-Family Medium Density: 12-20 du/ac
MHD	Multi-Family High Density: 18-30 du/ac
MU	Mixed Use: 9-30 du/ac
OP	Office Park
CC	Community Commercial
GC	General Commercial
RC	Regional Commercial
P	Parks (Community/Neighborhood Parks)
OS	Open Space
PQP	Public/Quasi-Public

LEGEND
Map Features

- Specific Plan Boundary
- Parcel Boundary
- Powerline Easement ROW
- Firestation (conceptual location)
- Police Substation (conceptual location)
- Municipal Services Center and Library (conceptual location)
- City Corporate Yard (conceptual off-site location - 25 ac)
- Water Public Facility (conceptual location)
- Detention Basins

Notes:
1) Public facilities and civic uses will be located and sized per Facilities Analysis.
2) Corporate Yard to be located outside project area subject to agreement by owners and City.
3) Corporate Yard and Water Public Facility are placeholders subject to negotiations with landowners and subject to finalizing the technical studies needed to support the appropriate locations of these facilities.
4) Local parks are not currently shown on the Land Use map, but are accounted for in the Land Use statistics.

EXHIBIT ES-2

LEGEND

- MANHOLE/ NODE NUMBER
- CONTRIBUTING AREA (ACRES)
- CONTRIBUTING EQUIVALENT SINGLE FAMILY DWELLINGS
- CUMULATIVE AREA (ACRES)
- CUMULATIVE EQUIVALENT SINGLE FAMILY DWELLINGS
- PEAK WET WEATHER FLOW (MILLION GALLONS PER DAY)
- TRUNK SEWER
- FORCE MAIN
- PUMP STATION
- OPEN SPACE

NOTE:

1) Slopes shown in this exhibit indicate the average slopes between flow nodes used to calculate trunk pipe sizes only. Actual final design level slopes between future manhole placements may differ from average slopes indicated.
2) Average flow calculations are based on the Land Uses and areas as shown in the Draft Folsom Plan Area Specific Plan, dated June 6, 2008.
3) Node rim elevations, west of Placerville Road, have been determined from preliminary grading and profiles generated by MacKay and Somps. Grading is subject to change with future land use updates.
4) Roadway areas for sewer calculations include certain areas outside the project boundary, specifically White Rock Road and Prairie City Road. Roadway areas account for 6 ESD/Ac for contributing shed areas to the back of walk, at a minimum, and also for ridge areas where anticipated.
5) Open Space (OS) designated along Alder Creek, has been excluded from sewer flow projections.
6) Design calculations are based on SASD, 2008 standards.

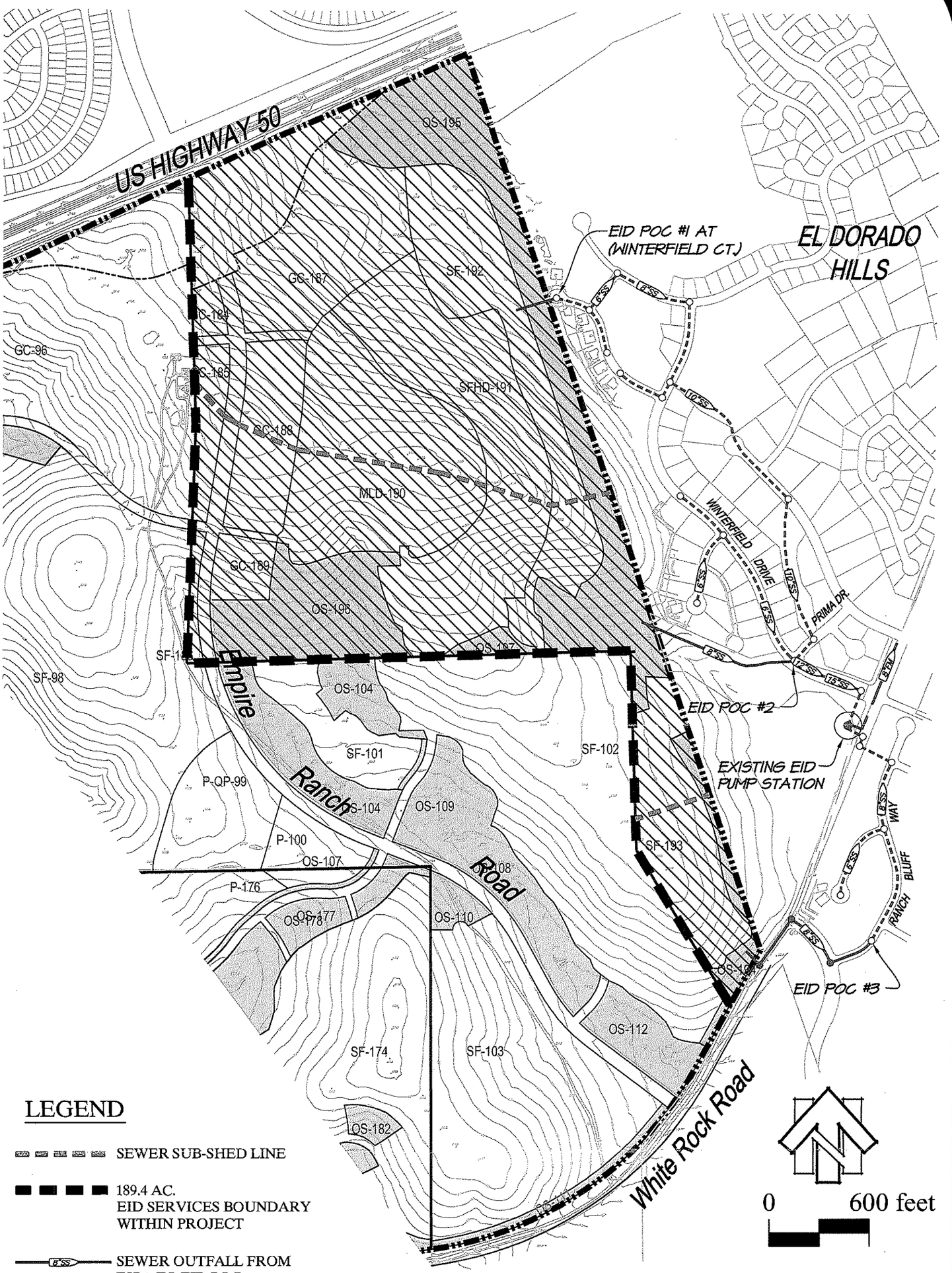
DRAFT

0 250 500 1000
SCALE: 1" = 500'

EXHIBIT ES-3
Wastewater Infrastructure Plan

City of Folsom Plan Area
County of Sacramento, California
Scale: 1" = 500'
August 2008

MACKAY & SOMPS
ENGINEERS PLANNERS SURVEYORS
1771 Tribute Road, Suite E, Sacramento, CA 95815 (916) 929-9002



LEGEND

- SEWER SUB-SHED LINE
- 189.4 AC. EID SERVICES BOUNDARY WITHIN PROJECT
- SEWER OUTFALL FROM FSPA TO EID POC
- EID SERVICE AREA
- OPEN SPACE

EXHIBIT ES-4
EID Shed Analysis

FOLSOM SPECIFIC PLAN
County of Sacramento, California

August 28, 2008

MACKAY & SOMPS
ENGINEERS PLANNERS SURVEYORS
1771 Tributa Road, Suite E, Sacramento, CA 95815 (916) 929-6092

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SECTION 1 - INTRODUCTION AND BACKGROUND

1.1 Purpose of the Infrastructure Plan

This Wastewater Infrastructure Plan (WWIP) is prepared for the Folsom Specific Plan Area (FSPA), a 3,502 acre proposed mixed land use community. As a general guideline, a Sacramento Area Sewer District (SASD) Level One sewer study requirement served as the framework for design and analysis.

Reference the following exhibits for a FSPA overview:

- Exhibit A: Vicinity Map
- Exhibit B: FSPA Land Use Plan with acreage summary

In Summary, this WWIP includes, but is not limited to the following:

- Provide support for EIR documentation
- Identify possible FSPA points of connections (POCs)
- Identify sewer sheds, wastewater flows and size backbone and internal trunk sewers
- Pre-design trunk sewers to identify relative pipe depths
- Demonstrate ability to gravity serve the FSPA, or in areas where depth of sewer is a concern, provide pumping and force main alternatives
- Calculate estimated wastewater flow within the El Dorado Irrigation District (EID) sewer shed in the FSPA
- Prepare an Opinion of Probable Construction Cost (OPCC) for alternatives
- Provide a basis for developing Level 2 and 3, FSPA Wastewater Master Plans

1.2 Specific Plan Area Background

Consistent with provisions in Measure "W" approved by Folsom voters in November, 2004, the city of Folsom has begun the process to: 1.) annex the area known as the Folsom Sphere of Influence (SOI), through the Local Area Formation Commission (LAFCo), 2.) adopt a Specific Plan of the area, 3.) update the city's General Plan, and 4.) conduct the Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) process for the annexation. Currently, seven property owners own the majority of the land in the FSPA. The property owners have formed a group to coordinate and work with the city of Folsom and other entities to obtain approvals to develop the FSPA.

1.3 Study Area Description

The FSPA consists of approximately 3,502 acres south of the existing Folsom southern boundary. The FSPA is bounded by the El Dorado County Line on the east, White Rock Road on the south, Prairie city Road on the west, and Highway (HWY) 50/Folsom City limit on the north, as shown on Exhibit A.

1.4 On-Site Topography and Site Design Considerations

The general onsite topography and site design considerations include the following:

Existing

- Existing MSL elevations range from 794 feet in the northeast corner, to 300 in the southwest corner, and 240 in the northwest corner.
- Topography generally falls from east to west, with Alder Creek flowing from south to north between Prairie City and Scott Roads.
- A ridge exists on the eastern side of the FSPA, draining155 acres to local swales along the FSPA east boundary.
- Lands east of Scott Road consists of dry rangeland with a few stock ponds.
- Lands west of Scott Road include an oak woodland area, and a few stock ponds.

Proposed

- After development, proposed grading of the FSPA will generally follow the existing rolling topography. Grades vary for each major roadway, generally ranging from 1 percent to 3 percent west of Placerville Road, and up to 10 percent east of Placerville Road.
- Conceptual grading, has been pre-designed such that each major parcel will balance earthwork (cuts and fills) individually.
- Bridges are proposed at several Alder Creek crossings, including Easton Valley and Street A. Where the bridge height is adequate, a gravity sewer will be attached to the bridge structure to minimize sewer depth both up and downstream of the creek crossing.

SECTION 2 - LAND USE

2.1 Proposed Land Use

This WWIP is based on the Land Use Plan dated June 6, 2008 (RRM Design Group).This section shows the latest proposed land uses for the FSPA. The FSPA land use plan continues to be evaluated and updated to address constraints and environmental concerns identified throughout the planning process.

The proposed land uses, designations, as well as anticipated density ranges, are shown on Exhibit B and also summarized in Table 1 below. Currently, the FSPA proposes an allocated dwelling unit (DU) count of 10,045 units.

TABLE 1: PROPOSED LAND USE

Land Use	Acreage	Percent of Total	Density Range (DU/ac)	Maximum DU
SF - Single Family	562.7	16%	1.0 - 3.9	1,695
SFHD - Single Family High Density	475.7	14%	4.0 - 6.9	2,629
MLD - Multi Family Low Density	301.1	9%	7.0 -11.9	2,727
MMD - Multi Family Med. Density	75.8	2%	12.0 - 20.0	1,386
MHD - Multi Family High Density	48.9	1%	18.0 - 30.0	1,226
MU - Mixed Use District	33.1	1%	9.0 - 30.0	382
OP - Office Park	113.3	3%		
CC - Community Commercial	39.9	1%		
GC - General Commercial	206.3	6%		
RC - Regional Commercial	130.3	4%		
P - Park (Community)	64.5	2%		
P - Park (Neighborhood)	44.7	1%		
LP - Local Park	Inc.			
PQP HS/MS	79.3	2%		
PQP - Elementary School	50	1%		
PQP - Country Day School	49.7	1%		
OS - Open Space	1053	30%		
MAJ CIRC - Major Circulation	173.6	5%		
Total	**3,502**	**100%**		**10,045**

2.2 Project Phasing

To initiate development, this WWIP studies infrastructure to serve the final build-out of the FSPA. The FSPA landowners have developed a conceptual project phasing plan, where multiple disconnected properties will require service in Phase 1. In-depth sewer phasing to serve Phase 1 and subsequent phases, is not addressed in this WWIP. More specific information on phasing will be addressed in other FSPA entitlement documents.

SECTION 3 - WASTEWATER FLOW PROJECTIONS

3.1 Design Methodology and Approach

General design assumptions include the following:

- FSPA wastewater flow will be directed to an onsite pump station at the north side of Easton Valley Parkway described as the Folsom South Pump Station (FSPS).

- Wastewater from the FSPS will be transported in a force main system to the north side of Highway 50 and injected (tied-into) an existing force main downstream of an existing SRCSD pump station known as Folsom East 3B Pump Station (FE 3B PS).

- The Sacramento County Sanitation District (SRCSD) has previously projected an ESD and Q_{PWWF} quantity of 22,035 ESD's and 14.48 mgd respectively from the FSPA. This FSPA is classified as Interceptor Basin FS11. (Reference: Interceptor Master Plan, 2000, Black and Veatch) It is assumed that all facilities downstream of the FE 3B PS are adequately sized to handle FSPA flows.

  - *It is noted, that in the Interceptor Master Plan (2000), expected timing of build out for FSPA is listed at "beyond 2020". This Interceptor Master Plan has recently been removed from the SRCSD website as it is considered to be outdated. SRCSD is currently preparing a study called the Interceptor Sequencing Study (ISS) to determine when the next Master Plan level document may be needed. The ISS is expected to be complete Summer 2009. SRCSD has expressed interest in the FSPA planning efforts, and coordinating with the city of Folsom to ensure their future needs are met.*

- The FSPA may require construction of an onsite emergency wastewater storage tank facility to be sited at the regional FSPS location. The pump station and appurtenant facilities, will require design approval by SRCSD.

- A portion of the FSPS in the northeast corner lies within the EID service area.

  - *More research/analysis is required to determine the available capacity and/or required upgrades of the existing sewer mains adjacent to the FSPA in El Dorado Hills, should the FSPA direct a portion of its sewer flows to EID. A preliminary shed analysis has been prepared for this report, identifying the options within this region of the FSPA. (See Section 5 - EID Service Area Discussion) For this study, FSPA wastewater flows within the EID service area are included in this WWIP.*

- Future upstream development is not anticipated and is negligible for this project. The FSPA trunk system has been analyzed for FSPA area generated flows only.

Design Methodology

The basic design and analysis methodology for this WWIP is as follows:

Compile Record Data:

A compilation of known data and resources was acquired, from previously prepared studies and reports including:

- 2006 Draft CSD-1 Sewerage Facilities Expansion Master Plan (SFEMP)
- Sacramento Area Sanitation District Design Standards, February 2008
- Sphere of Influence Specific Plan Area Wastewater Infrastructure Plan Draft, October 2007, Prepared by J. Crowley Group
- As-built improvement plan drawings, Folsom East Interceptor – Section 3B, prepared by Sacramento Regional County Sanitation District (SRCSD) dated January 2002
- The best available topography information (2 foot contour map)
- Land Use Plan, dated June 6, 2008 with acreages and densities use for the FSPA, prepared by RRM Design Group
- Folsom Heights, Overall Sewer Exhibit, November 2006, prepared by CTA Engineering
- Preliminary grading and composite development plans, prepared by MacKay & Somps
- City of Folsom, Wastewater Collection System Capacity Analysis Update, January 2006, prepared by ECO:LOGIC
- SRCSD Interceptor Master Plan 2000, Black and Veatch

Identify Points of Connection and Capacity:

One point of connection (POC) to the SRCSD interceptor system is identified in this WWIP at SRCSD force main facilities downstream of the existing FE 3B PS north of Highway 50.

In addition, three possible POCs to the EID system are identified if EID provides service to lands within its service area boundary. POCs are summarized as follows:

1. EID POC #1 - Existing 6-inch sewer: located in Winterfield Court, approximately 100 ft. east of the FSPA boundary
2. EID POC #2 - Existing 6-inch sewer: located at the Stonebriar Drive / Prima Way intersection, approximately 1000 ft east of the FSPA boundary
3. EID POC #3 - Existing 6-inch sewer: located at Ranch Bluff Way approximately 1200 feet from the FSPA boundary south of White Rock Road

Obtain Criteria to Calculate ESD's and Design Flows:

This WWIP utilizes sewer design criteria from the following sources:

- Sacramento Area Sanitation District Design Standards (SASD), dated February 2008

Lay out and design pipe network system:

- Calculate ESD's and Peak Flows at nodes using 2008, SASD Design Standards
- Overlay proposed grading with latest land use plan and determine contributing flow areas at nodes. (See Table 10: Land Use Area/ESD Summary, bound at rear)
- Analyze flow in pipe runs and size collection system using peak wet weather flows (Q_{PWWF}). (See Table 11 Sewer Calculations, bound at rear)

3.2 Flow Components Updates

Flow Formulas

Table 2 summarizes the formulas and factors used to calculate wastewater flows for the FSPA.

TABLE 2: DESIGN FLOW FORMULAS

Collector and Trunk Sewers	**Formula or Value**
ESDs	Number of equivalent residential dwelling units
ESD =	310 GPD per ESD
ADWF (mgd) =	(ESDs X 310) ÷ 1,000,000
Infiltration and Inflow (I/I)	1400 gal/ac/day ~ new pipelines
Infiltrations and Inflow (I/I)	1600 gal/ac/day ~ existing pipelines
Collector & Trunk~ PF =	$3.5 \div (1.8 \times ADWF^{0.05})$, Minimum PF 1.2
Peak Dry Weather Flow - PDWF (mgd) =	ADWF x PF
Peak Wet Weather Flow - PWWF (mgd) =	PDWF + $Q_{I/I}$

ESD Factors

Table 4 summarizes the ESD factors based on the maximum density value for each land use category. For conservative flow projections, and to allow for changes in the land use plan, the ESD count per parcel is based on the larger of acres times maximum density or 6 ESD's/acre. Multi family unit ESDs are based on 0.75 ESD per unit times the maximum anticipated density allowed in the zone. Mixed use district (MU) meets the description as a Transit Oriented Development (TOD), and is described in the CSD-1 Trunk Manual as:

> *"Transit Oriented Developments (TOD's) are areas of mixed residential and commercial uses centered around transit corridors. TOD's are projected to consist of approximately 40 percent commercial and 60 percent medium density land uses. Based on this distribution, the areal unit flow rate for TOD's is calculated to be 11 ESD's per acre"*

Wastewater flow projected for schools varies depending on type of school and is the larger of the Average Dry Weather Flows (ADWF) as shown in Table 3 below.

TABLE 3: SCHOOL DESIGN FLOWS

Type of School	ADWF (mgd)	ADWF
Elementary School (ES)	0.0250	or (acres x 6 ESD/acre) x (310 gpd/ESD)
Middle School (MS)	0.0600	or (acres x 6 ESD/acre) x (310 gpd/ESD)
High School (HS)	0.0800	or (acres x 6 ESD/acre) x (310 gpd/ESD)

Non-Tributary Areas Within FSPA

A provision in Measure W, approved by city of Folsom voters in 2004, requires that 30 percent of the SOI area be preserved as permanent OS. In the FSPA, the 30 percent OS can be generally divided into two categories: 1) landscape strips, and 2) OS area adjacent to drainage corridor, oak woodlands, environmentally sensitive areas and steep terrain. Category one OS, the landscape strips adjacent to roadways, are included as potential flow contributing areas calculated at 6 ESD/ac. Category two open space, is permanently encumbered by Measure W and is considered non-flow contributing for this WWIP. (See Table 10, Land Use Area/ESD Summary, bound at rear)

TABLE 4: LAND USES AND ESDS

Land Use	Abbreviation	(ESDs / acre)
Single Family	SF [1]	6
Single Family High Density	SFHD [1]	6.9
Multi Family Low Density	MLD	= (11.9x75%) = 8.9
Multi Family Medium Density	MMD	= (20.0x75%) = 15.0
Multi Family High Density	MHD [2]	= (30.0x75%) = 22.5
Mixed Use District	MU [3]	11
Office Park	OP	6
Community Commercial	CC	6
General Commercial	GC	6
Regional Commercial	RC	6
Park (Community)	P	6
Park (Neighborhood)	P	6
Local Park		included within residential
High School-Middle School	PQP	= > of (0.025 mgd) or (6 ESD/ac)
Elementary School	PQP	= > of (0.060 mgd) or (6 ESD/ac)
Country Day School	PQP	= > of (0.080 mgd) or (6 ESD/ac)
Open Space	OS	= 6.0 in assumed areas

Notes:

[1] Per SASD standards, the minimum flow is calculated as the larger of 6 ESDs/ac. or the expected number of units (density).

[2] Per SASD standards one Multi-Family unit = 0.75 ESD.

[3] Transit oriented development use 11 ESD's/acre, per CSD-1 trunk design manual, 2002.

[4] Landscape strip area only adjacent to roadways are included as flow contributing.

3.3 Projected Flows

These calculations assume all wastewater within the FSPS boundary is directed to the Folsom South Pump Station (FSPS).

The summary of FSPA sewered area (2,601 acres) matches the Land Use Summary (3,502) acres minus large block OS areas (901 acres). Only landscaped OS parcels adjacent to roadways are included as contributing to the ESD count. Acreages for Schools (P-QP) are broken out into High School (HS), Middle School (MS) and Elementary School (ES) per SASD requirements.

Table 5 summarizes the following:

- Average Dry Weather Flow (ADWF) and Inflow and Infiltration per land use
- ADWF for the FSPA
- Peaking Factor (PF) for the FSPA
- Peak Dry Weather Flow (PDWF) for the FSPA
- Peak Wet Weather Flow (PWWF) for the FSPA

TABLE 5: WASTEWATER FLOW PROJECTIONS

Land Use	LUP Area, acres	Sewered Area, acres	Max Density, DU	ESD factor (ESD/acre)	Total ESD	Q_{ADWF} (mgd)	$Q_{I/I}$ (mgd)
SF - Single Family	562.7	562.7	3.9	6.0	3,382	1.05	0.79
SFHD - Single Family High Density	475.7	475.7	6.9	6.9	3,300	1.02	0.67
MLD - Multi Family Low Density	301.1	301.1	11.9	8.9	2,691	0.83	0.42
MMD - Multi Family Medium Density	75.8	75.8	20	15.0	1,140	0.35	0.11
MHD - Multi Family High Density	48.9	48.9	30	22.5	1,102	0.34	0.07
MU - Mixed Use District	33.1	33.1	30	11.0	365	0.11	0.05
OP - Office Park	113.3	113.3		6.0	685	0.21	0.16
CC - Community Commercial	39.9	39.9		6.0	241	0.07	0.06
GC - General Commercial	206.3	206.3		6.0	1,248	0.39	0.29
RC - Regional Commercial	130.3	130.3		6.0	788	0.24	0.18
P - Park (Community)	64.5	64.5		6.0	390	0.12	0.09
P - Park (Neighborhood)	44.7	44.7		6.0	270	0.08	0.06
LP - Local Park	Included			6.0		0.00	0.00
PQP - High School/Middle School	79.3	39.7	HS portion only	6 or 0.080 mgd	259	0.08	0.06
PQP -Middle School (only)	Included	39.6	MS portion only	6 or 0.060 mgd	239	0.07	0.06
PQP - Elementary School	50.0	50.0		6 or 0.025 mgd	404	0.13	0.07
PQP - Country Day School	49.7	32.1	HS portion only	6 or 0.080 mgd	258	0.08	0.04
PQP - Country Day School (MS)	Included	17.6	MS portion only	6 or 0.060 mgd	194	0.06	0.02
OS - Open Space	1053.0	152.1	Sideline strips at roadways	6.0	916	0.28	0.21
Roadway	173.6	173.6		6.0	1,045	0.32	0.24
Plan Area Total	**3,501.90**	**2,601.0**			**18,918**	**5.86**	**3.64**

Peaking Factor:	**1.53**
Peak Dry Weather Flow:	**8.99**
Peak Wet Weather Flow:	**12.64**

SECTION 4 - SEWER COLLECTION SYSTEM ANALYSIS

4.1 Pipe Design Assumptions and Calculations

Assumptions

Preliminary pipeline alignments and profiles were laid out and pre-designed with the following assumptions:

- Maintain sewer alignments within proposed roadway rights of ways if possible. If a non-roadway alignment is proposed, show locations of possible easements.
- Limit sewer depths to less than 20 feet, where practicable.
- Try to avoid pump station(s).
- If the above conditions cannot be met, study and list alternatives. (See Section 5 - Pipeline Alignment Alternatives).

Pipes were designed and analyzed according the criteria outlined by SASD design standards, as shown Table 6.

TABLE 6: PIPE DESIGN SLOPES & VELOCITIES

Collector and Trunk Sewer						
Pipe Diameter	Minimum Design Slope	Minimum Schematic Slope	Velocities		Maximum Design Capacity (At min. slope) (mgd)	d/D ratio
			Min. (fps)	Max. (fps)		
8"	0.0035	0.0060	2.0	8.0	0.38	0.7
10"	0.0025	0.0035	2.0	8.0	0.58	0.7
12" [2]	0.0020	0.0024	2.0	8.0	1.03	1.0
15"	0.0015	0.0018	2.0	8.0	1.6	1.0
18"	0.0012	0.0014	2.0	8.0	2.35	1.0
21"	0.0011	0.0012	2.0	8.0	3.4	1.0
24"	0.0010	0.0011	2.0	8.0	4.5	1.0
27"	0.0010	0.0010	2.0	8.0	6.2	1.0
30"	0.0010	0.0010	2.0	8.0	8.2	1.0
33"	0.0010	0.0010	2.0	8.0	10.5	1.0
36"	0.0010	0.0010	2.0	8.0	13.63	1.0
FORCE MAIN [3]			3.0	8.0	N/A	1.0

Notes: [1] *Sewer Based on minimum design slope(excluding force main), Manning's 'n'=0.013, and full pipe.*

[2] A 12-inch sewer may be either a collector or a trunk. A 12-inch trunk has no service connections and design minimum slope and velocity assume full pipe.

[3] Force main head loss is to use Hazen Williams C factor = 100.

Calculations and Results

In general, gravity service for 90.3 percent of the FSPA sewered ESDs is achievable. Within most roadways, pipe slopes are adjusted to values above the minimum requirements. Design calculations for pipes are summarized in Table 11. To provide flexibility for density transfers in the FSPA, all pipe sizes have been sized to maintain a maximum of 0.7 or less depth-to-diameter (d/D) ratio for pipes 12 inch and larger.

Inverts are calculated at all nodes, and determined by extending slopes upstream from critical downstream inverts, and matching all pipe crowns. Inverts are evaluated at culvert and bridge crossing locations. At drainage crossings, the gravity sewer will usually be above the drainage structure. At bridge crossing of creeks, the gravity sewer will be hung on the side of the bridge or under bridge soffit.

Pipe velocities have been evaluated for all major pipe sections shown in Exhibit C. The results, shown in Table 11, indicate that pipe velocities exceed the minimum required velocity of 2 feet per second (fps).

Easement Locations

Potential easements may be required for sewer trunk alignments at three locations:

- East side of Lot MLD-158, fronting Alder Creek corridor
- West side of Lots SF-148, P-QP-147, and P-149, fronting Alder Creek corridor
- Border between Lots MHD-74 and GC-75

These alignments were chosen to avoid placing sewer in roadways with profile grades that would result in sewer depths in excess of 35 feet.

4.2 Pipeline Depth Analysis

The city of Folsom has expressed an interest in minimizing sewer depth for future maintenance. This section reviews the general depths of the proposed system. The final depths may vary with grading and land use updates, however, the general sewer depth zones are reflected in Exhibit E. As shown, the depth zones are the following:

- Force mains (depth generally less than 10 feet)
- 10 to 15 feet
- 15 to 20 feet
- More than 20 feet deep
- Attached to bridge structure or elevated at an Open Space (OS) drainage crossing.

Note that bridge crossings details and elevated crossings at OS drainage ways will not be detailed in this document.

The summary of proposed pipe sizes and depths are shown in Table 7.

TABLE 7: SEWER DEPTH SUMMARY

		DEPTH ZONES			
SIZE	TOTAL LENGTH	Attached to Bridge	10-15'	15-20'	>20'
8	53,042	1,040	35,482	16,520	0
10	15,644	0	7,474	8,170	0
12	14,203	0	4,377	8,240	1,586
15	6,914	0	2,201	3,407	1,306
18	8,151	0	630	7,521	0
21	3,352	0	2,944	408	0
24	0	0	0	0	0
27	4,541	0	1,213	3,000	328
30	6,902	760	1,058	5,084	0
TOTAL	**112,749**	**1,800**	**55,379**	**52,350**	**3,220**

4.3 Pipeline Alignment Alternatives

Alternatives have been analyzed in two areas where projected sewer depth is greater than 20 feet. These alternatives look at constructing sewer pump stations near sewer basin low points and sewer force mains within street rights of ways. Exhibits F and G show these alternatives. Preliminary cost estimates has been prepared to determine the relative cost difference for these alternates compared to the WWIP gravity system. See Exhibit I for the Alternative Sewer Facilities Cost Estimates.

The two Alternatives are summarized as:

Alternative 1: West side of Alder Creek

Construct a 0.6 mgd (Q_{PWWF}) pump station, and a 6-inch force main west in Street A to a reception manhole with gravity outfall sewer at the Oak Avenue intersection. From the Oak/Street A intersection, a 10-inch transitioning to a 12-inch gravity sewer that flows north in Oak Ave to the Easton Valley Parkway trunk sewer. (Reference Exhibit E)

The cost difference for Alternative 1 compared to WWIP is approximately $405,500. Alternate 1 benefits include:.

- Reduced depth of gravity sewers from Street A to Oak Avenue.
- Parcels can develop more independently as all backbone sewers will be in the street

Alternate 1 negatives include:

- Added sewer pump station and force main system capital cost
- Future operation and maintenance cost (O&M)
- Loss of open space for pump station

Alternative 2: East side of Alder Creek

Construct a 4.8 mgd pump station, and parallel 8-inch and 12-inch force mains north along the west side (within easement) of Lots P-149 and a portion of P-QP-147 to a reception manhole 800 feet south of Street B. A 24-inch gravity sewer exits the reception manhole and flows to the proposed system. (Reference Exhibit F)

The additional cost for Alternative 2 over the WWIP is approximately $4.9 M.

Alternative 2 benefits include:

- Reduced depth of gravity sewers from Street A to Street B.
- Parcels can develop more independently as all backbone sewers will be in the street

Alternative 2 negatives include:

- Added sewer pump station and force main system capital cost
- Future operation and maintenance cost (O&M)
- Loss of open space for pump station

FSPS Force Main

Currently, alternative routes are being evaluated to connect the force main system from the proposed FSPS to the force main system downstream of the existing FE 3B PS north of Highway 50. Depending on the timing of development and construction of an Oak Avenue over crossing, the force main system may require a jacked casing crossing under Highway 50.

SECTION 5 - EID SERVICE AREA DISCUSSION

The WWIP provides service to 189.4 gross / 134.4 sewered acres at the east edge of the FSPA that are currently within the El Dorado Irrigation District (EID) service boundary. Land use, acres, ESDs and PWWFs for the entire EID area within the FSPA, are summarized in Table 8.

TABLE 8: EID SERVICE AREA – FLOW CALCULATIONS

LAND USE	LOT NO	AREA (ac)	ESD/AC	ESD's	ADWF	PF	PWWF	I/I	Q_{PWWF} (mgd)
SF	192	20.1	6.0	121	0.04	1.97	0.07	0.03	0.10
SF	193	13.7	6.0	82	0.03	2.00	0.05	0.02	0.07
SFHD	191	31	6.9	214	0.07	1.93	0.13	0.04	0.17
GC	189	3	7.9	24	0.01	2.09	0.02	0.00	0.02
GC	187	17	6.0	102	0.03	1.99	0.06	0.02	0.09
GC	188	9.4	6.0	56	0.02	2.03	0.04	0.01	0.05
GC	184	1.3	6.0	8	0.00	2.17	0.01	0.00	0.01
GC	185	3.8	6.0	23	0.01	2.09	0.01	0.01	0.02
MLD	190	27.9	8.9	248	0.08	1.92	0.15	0.04	0.19
OS	196	13.5	0	-					0
OS	197	1.3	0	-					0
OS	195	26.6	0	-					0
OS	194	3	0	-					0
ROADWAY		7.2	6	43	0.01	2.05	0.03	0.01	0.04
MAJ CIRC.		10.6							0
TOTAL		**189.4**		**921**					**0.76**
Net Sewered Acres		**134.4**							

Notes: [1] *Open Space and Major Circulation (future interchange ROW) are non-flow contributing.*

To provide service to EID lands, the FSPA requires two sewer pump stations, PS 3 and PS 4, at local low points along the east edge of the FSPA. A combination of force mains and gravity sewers along the east boundary would transport wastewater to Pump Station 2 at the NW corner of Empire Ranch and White Rock Roads.

Reference Exhibit C for the proposed pump station locations.

In response to initial contact by the FSPA developers, the EID has indicated that it wants to provide sewer service to all lands within its district boundary. Based on conceptual grading prepared by CTA Engineering for lands within the EID service area boundary, connection to EID gravity sewer lines may be possible. Table 9 summarizes each EID POC location, benefit, as well as estimated projected wastewater flow to each POC.

TABLE 9: EID POINT OF CONNECTION SUMMARY

EID POC	Location	Benefit	Gross Area (ac)	Net Sewered Area (ac)	ESDs	PWWF (mgd)
1	Winterfield Court	Eliminates PS 4	101.8	71.5	502	0.41
2	Stonebriar Drive / Prima Way intersection	Eliminates PS 3	77.7	48.0	371	0.31
3	Ranch Bluff Way south of White Rock Road	Reduces PS 2 pumping	10.2	8.0	48	0.04
TOTAL			**189.4**	**127.2**	**921**	**0.76**

If EID is to be a service provider, detailed routing studies and downstream capacity at these three POCs must be confirmed by EID or others.

Reference Exhibit H for location of the three possible EID POCs, and Table 12, bound at the rear, for EID wastewater projection calculations per each EID POC.

EID Service Area Summary

The FSPA WWIP proposes service to the EID service area. EID, however, has stated it wants to provide service to lands within its service area boundary. Adherence to the current EID service boundary line will require two additional sewer pump stations (PS 3 and PS 4) to transport wastewater west to the FSPS.

This study recommends that EID, the city of Folsom, and the FSPA owners group meet to resolve the service provider for the EID service area.

SECTION 6 – CONCLUSIONS, RECOMMENDATIONS, NEXT STEPS

Calculated Wastewater Flow Summary

SASD, 2008 Design Standards were used to calculate flows for 2601 sewered acres in the FSPA. A comparison of projected FSPA wastewater flows to previous SRCSD Master Plan studies is as follows.

Wastewater Projection Study	Basin	ESDs	PWWF (mgd)
SRCSD Interceptor Master Plan, 2000, Black & Veatch	FS11 to *FE 3B PS	22,035	14.48
Folsom Specific Plan Area (FSPA)	FS11 to *FE 3B PS	18,918	12.64

**FE 3B PS is an existing SRCSD Pump Station located north of Highway 50 at the south side of Iron Point Road approximately 1500 feet west of Oak Avenue.*

Pump Stations and the EID Service Area Summary

All wastewater within the FSPA boundary, including 189.4 gross / 134.4 sewered acres within the EID service area, is directed by gravity sewers and pump stations/force mains to the proposed Folsom South Pump Station (FSPS). The proposed FSPS is located at the north side of Easton Valley Parkway approximately 1500 feet west of Oak Avenue. The FSPS will pump wastewater to the north side of Highway 50 and tie into the existing SRCSD force main system at the downstream side of FE 3B PS. See Exhibit C.

Upstream of the proposed FSPS, gravity systems will provide service to over 90% of ESDs in the FSPA. Lands within the EID service area, and a sub-shed east of Empire Ranch Road will be served by three small pump stations described as PS 2, 3, and 4 with peak pumping capacities as follows:

Description	Location	Q_{PWWF}
FSPA PS 2	NW corner of White Rock and Empire Ranch Roads	1.39
FSPA PS 3	East FSPA boundary near existing Stonebriar Court	0.65
FSPA PS 4	East FSPA boundary near existing Winterfield Court	0.38

Reference Exhibit C for the proposed Pump Station 2, 3, and 4 locations.

EID has stated that it wants to provide service to lands within its service area boundary. Based on conceptual grading prepared by CTA Engineering for lands within the EID service area boundary, connection to EID gravity sewer lines may be possible at:

EID POC	Location	Benefit
1	Winterfield Court	Eliminates PS 4
2	Stonebriar Drive / Prima Way intersection	Eliminates PS 3
3	Ranch Bluff Way south of White Rock Road	Reduces PS 2 pumping

If EID is to be a service provider, detailed routing studies and downstream capacity at these three POCs (921 ESDs) must be confirmed by EID or others. Reference Exhibit H for location of the three possible EID POCs.

Conclusion...SRCSD Capacity

This WWIP confirms that the projected FSPA PWWF, including flow from the EID service area (12.64 mgd), is less than the projected FSPA/SOI flow in the SRCSD Interceptor Plan, 2000 (14.48 mgd). Based on that Interceptor Plan, this report concludes that SRCSD Pump Station FE 3B and the downstream interceptor system have adequate capacity to serve the FSPA.

Recommendations... EID/City of Folsom Sewer Service Area

EID, the city of Folsom, and the FSPA owners group should meet to resolve the service provider for the EID service area.

Next Steps

As the FSPA environmental and entitlement process moves forward, the following tasks are anticipated, and may require updates to this WWIP:

- Coordination with EID, the city of Folsom and owners group to resolve the EID sewer service area issue. If EID is confirmed as the service provider, perform routing studies, evaluate EID capacity, and quantify required upgrades to the EID system to provide an acceptable level of service.

- Confirmation by SRCSD that downstream interceptor and treatment facilities are adequate and/or upgrades are sequenced accordingly.

- Develop a complete OPCC for the WWIP for build out and phasing options, to serve as basis for a FSPA finance plan.

- Finalize the FPSA phasing and Land Use Plans.

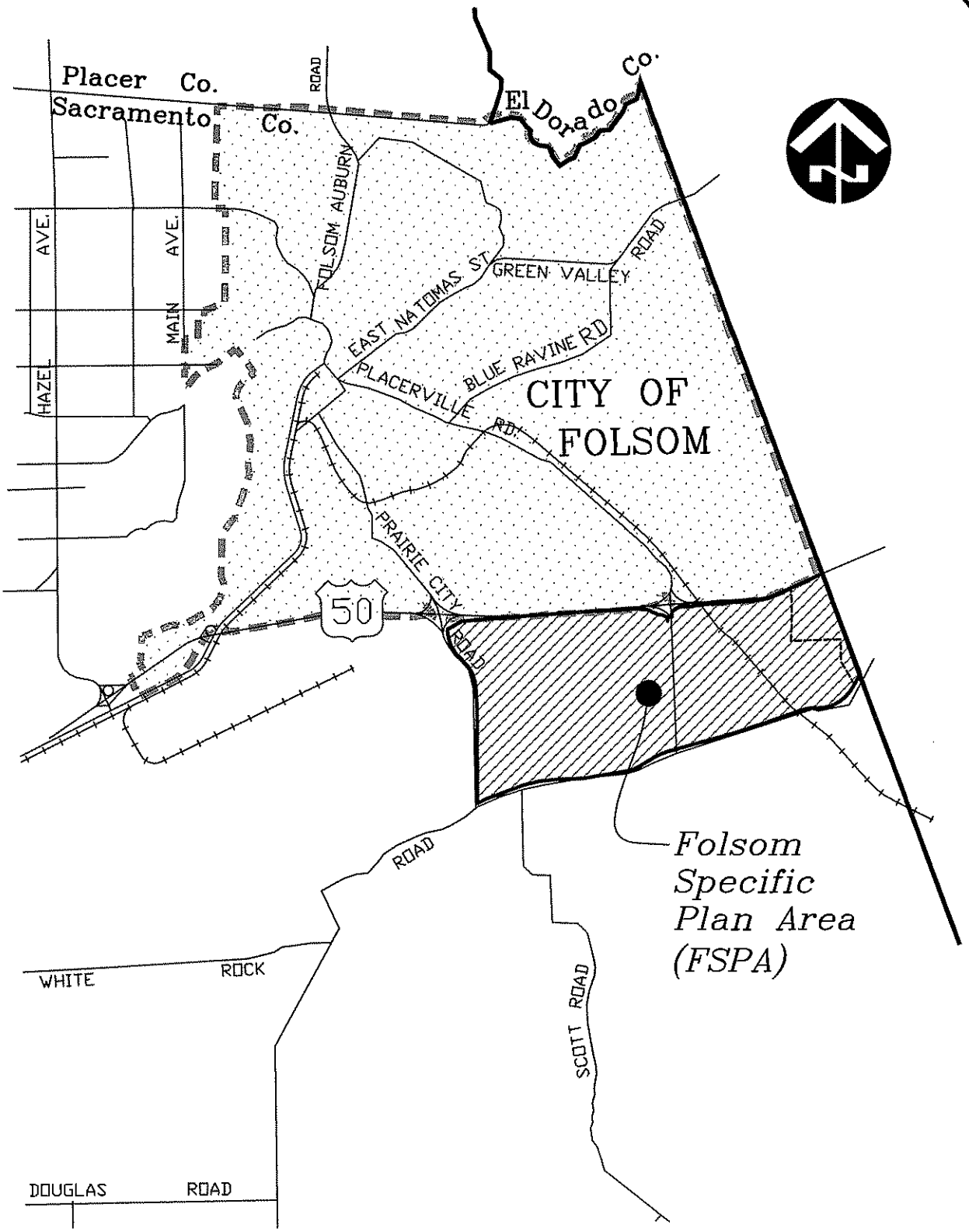
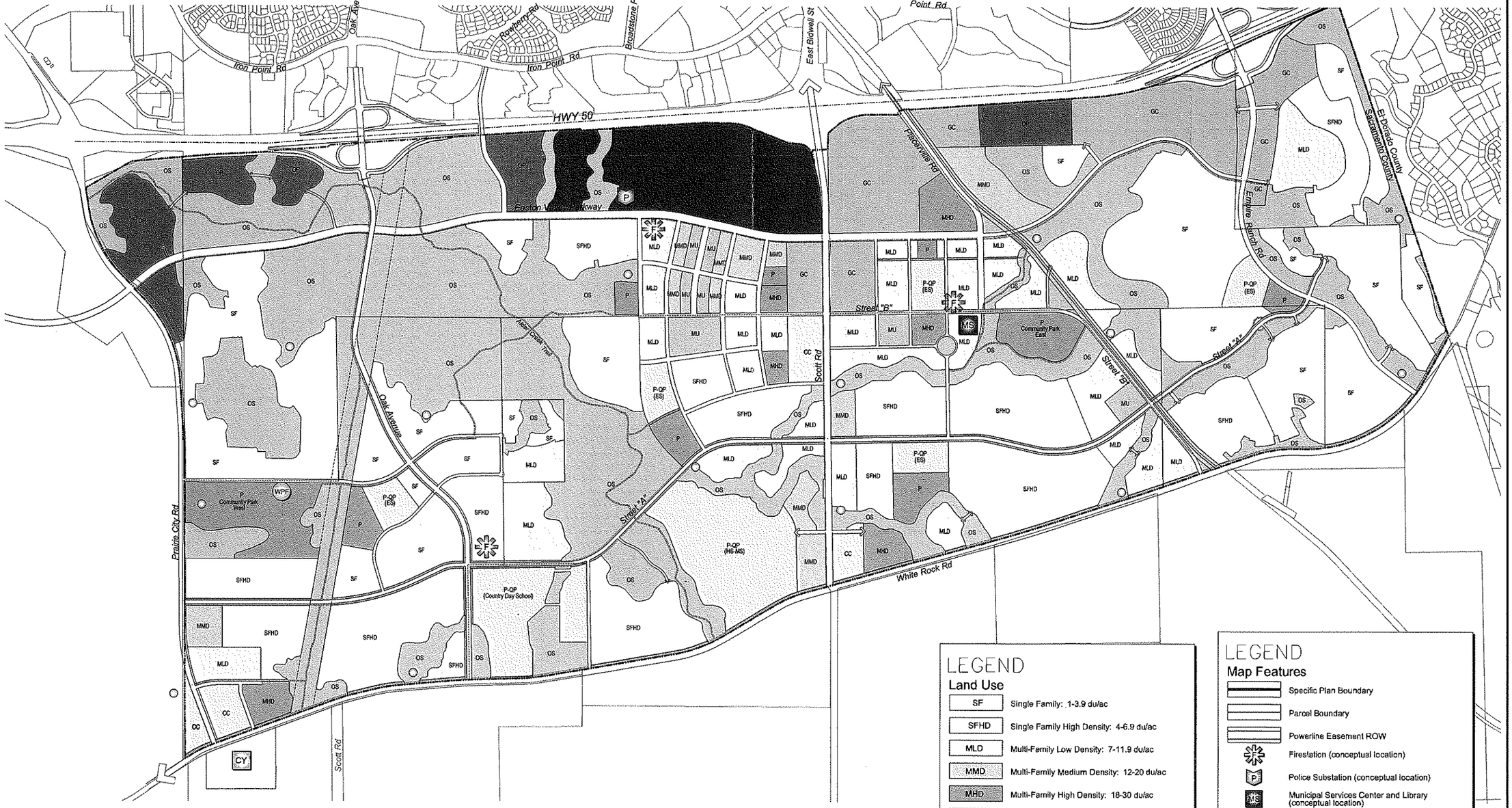


EXHIBIT A

VICINITY MAP

N.T.S.



GRAPHIC SCALE
600 0 300 600

City of Folsom
SACRAMENTO COUNTY, CA

Folsom Plan Area Specific Plan
Proposed Land Use Plan-05.28.08

rrmdesigngroup
creating environments people enjoy
210 East F Street | Davis, California 95616
P: (530) 847-1794 | F: (530) 847-2211 | www.rrmdesign.com

LEGEND
Land Use

SF	Single Family: 1-3.9 du/ac
SFHD	Single Family High Density: 4-6.9 du/ac
MLD	Multi-Family Low Density: 7-11.9 du/ac
MMD	Multi-Family Medium Density: 12-20 du/ac
MHD	Multi-Family High Density: 18-30 du/ac
MU	Mixed Use: 9-30 du/ac
OF	Office Park
CC	Community Commercial
GC	General Commercial
RC	Regional Commercial
P	Parks (Community/Neighborhood Parks)
OS	Open Space
PQP	Public/Quasi-Public

LEGEND
Map Features

- Specific Plan Boundary
- Parcel Boundary
- Powerline Easement ROW
- Firestation (conceptual location)
- Police Substation (conceptual location)
- Municipal Services Center and Library (conceptual location)
- City Corporate Yard (conceptual off-site location - 25 ac)
- Water Public Facility (conceptual location)
- Detention Basins

Notes:
1) Public facilities and civic uses will be located and sized per Facilities Analysis.
2) Corporate Yard to be located outside project aree subject to agreement by owners and City.
3) Corporate Yard and Water Public Facility are placeholders subject to negotiations with landowners and subject to finalizing the technical studies needed to support the appropriate locations of these facilities.
4) Local parks are not currently shown on the Land Use map, but are accounted for in the Land Use statistics.

EXHIBIT B

LEGEND

- MANHOLE/ NODE NUMBER
- CONTRIBUTING AREA (ACRES)
- CONTRIBUTING EQUIVALENT SINGLE FAMILY DWELLINGS
- CUMULATIVE AREA (ACRES)
- CUMULATIVE EQUIVALENT SINGLE FAMILY DWELLINGS
- PEAK WET WEATHER FLOW (MILLION GALLONS PER DAY)
- TRUNK SEWER
- FORCE MAIN
- PUMP STATION
- OPEN SPACE

NOTE:

1) Slopes shown in this exhibit indicate the average slopes between flow nodes used to calculate trunk pipe sizes only. Actual final design level slopes between future manhole placements may differ from average slopes indicated.
2) Average flow calculations are based on the Land Uses and areas as shown in the Draft Folsom Plan Area Specific Plan, dated June 6, 2008.
3) Node rim elevations, west of Placerville Road, have been determined from preliminary grading and profiles generated by MacKay and Somps. Grading is subject to change with future land use updates.
4) Roadway areas for sewer calculations include certain areas outside the project boundary, specifically White Rock Road and Prairie City Road. Roadway areas account for 6 ESD/Ac for contributing shed areas to the back of walk, at a minimum, and also frontage areas where anticipated.
5) Open Space (OS) designated along Alder Creek, has been excluded from sewer flow projections.
6) Design calculations are based on SASD, 2008 standards.

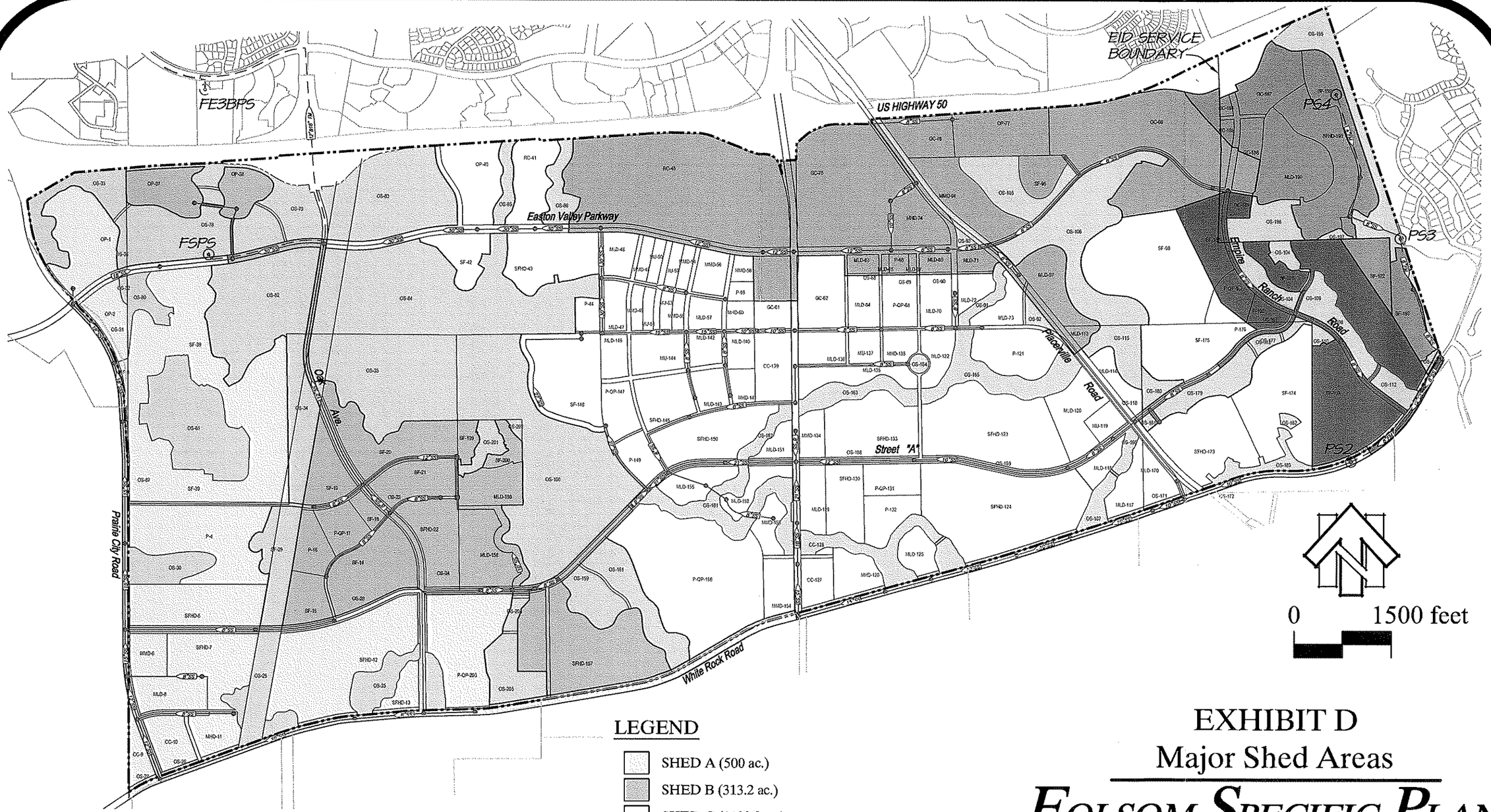
DRAFT

0 250 500 1000
SCALE: 1" = 500'

EXHIBIT C
Wastewater Infrastructure Plan

City of Folsom Plan Area
County of Sacramento, California
Scale: 1" = 500'
August 2008

MACKAY & SOMPS
ENGINEERS PLANNERS SURVEYORS
1771 Tribute Road, Suite E, Sacramento, CA 95815 (916) 929-0092



LEGEND

- SHED A (500 ac.)
- SHED B (313.2 ac.)
- SHED C (1100.9 ac.)
- SHED D (403.9 ac.)
- SHED E (109.1 ac.)
- SHED F (174.3 ac.)
- OPEN SPACE

NOTE:
OPEN SPACE AREAS ARE EXCLUDED FROM SHED AREAS EXCEPT FOR AREAS ALONG ROADWAY FRONTAGES.

EXHIBIT D
Major Shed Areas

FOLSOM SPECIFIC PLAN

County of Sacramento, California

August 28, 2008

MACKAY & SOMPS
ENGINEERS PLANNERS SURVEYORS
1771 Tribute Road, Suite E, Sacramento, CA 95815 (916) 929-6092

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CONNECT TO EXISTING FORCE MAIN

FE3BPS

JACKED CASING UNDER HIGHWAY 50 OR ATTACHED TO BRIDGE OVERCROSSING

US HIGHWAY 50

Easton Valley Parkway

FSPS

PS4

PS3

PS2

Empire Ranch Road

Placerville Road

Oak Ave

Prairie City Road

White Rock Road

Street "A"

SEE ALT 1 EXHIBIT F

SEE ALT 2 EXHIBIT G

0 1500 feet

LEGEND

- FORCE MAINS (DEPTH VARIES)
- 10' TO 15' DEEP (55,400± LF)
- 15' TO 20' DEEP (52,400± LF)
- 20' TO 25' DEEP (3,200± LF)
- SEWER ATTACHED TO BRIDGE OR SUPPORT SYSTEM OVER DRAINAGEWAY

EXHIBIT E

Sewer Depth Map

FOLSOM SPECIFIC PLAN

County of Sacramento, California

August 28, 2008

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ENGINEERS PLANNERS SURVEYORS
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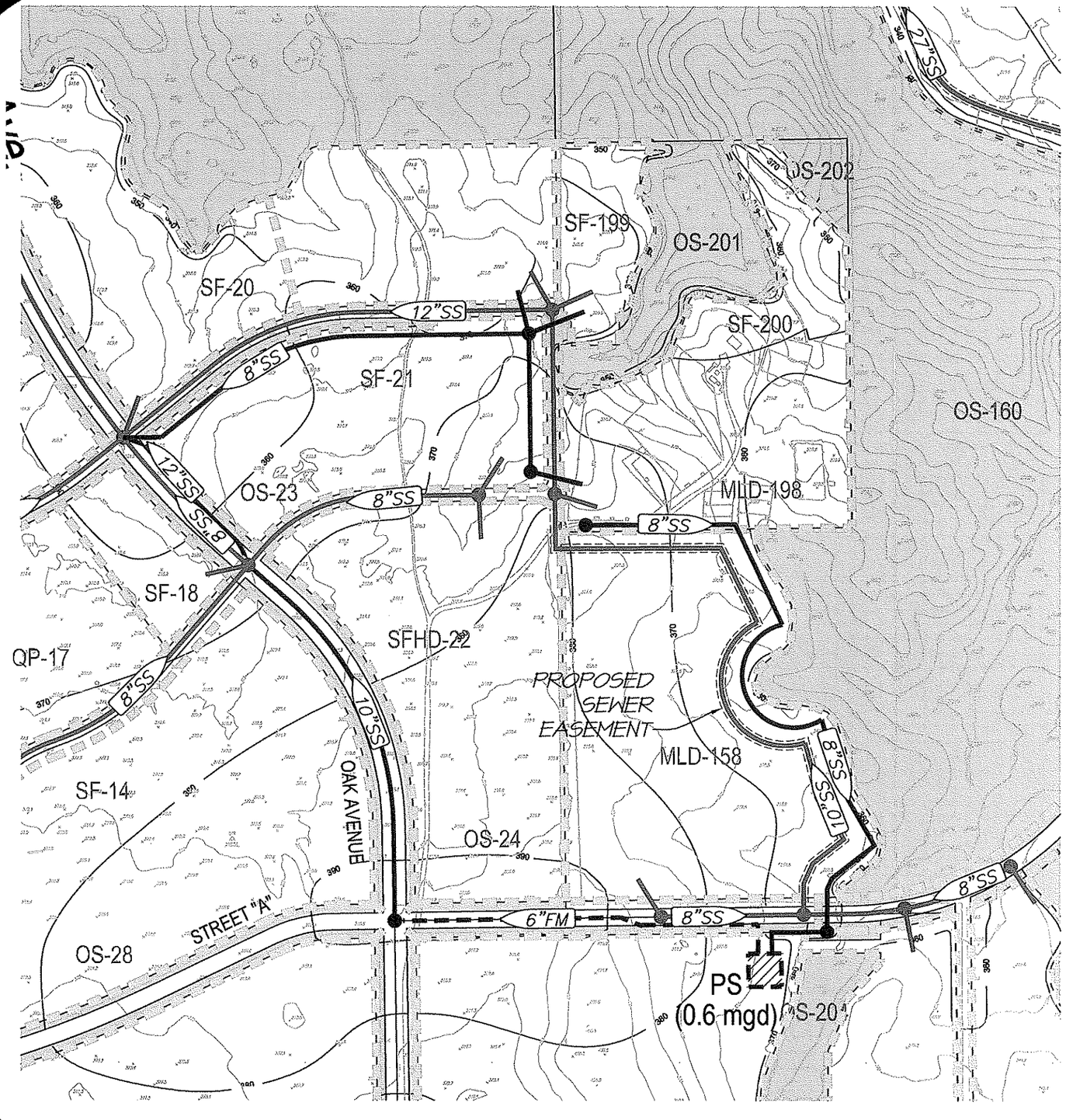

LEGEND

- 8"SS — PROPOSED SEWER
- 10"SS — ALTERNATE SEWER
- 8"FM — ALTERNATE FORCE MAIN
- SEWER SUB-SHED LINE
- PS — PUMP STATION
- OPEN SPACE

0 400 feet

DRAFT

EXHIBIT F

Alternative 1
Pump Station and Force Main

FOLSOM SPECIFIC PLAN

County of Sacramento, California

August 28, 2008

MACKAY & SOMPS
ENGINEERS PLANNERS SURVEYORS
1771 Tribute Road, Suite E, Sacramento, CA 95815 (916) 929-6092

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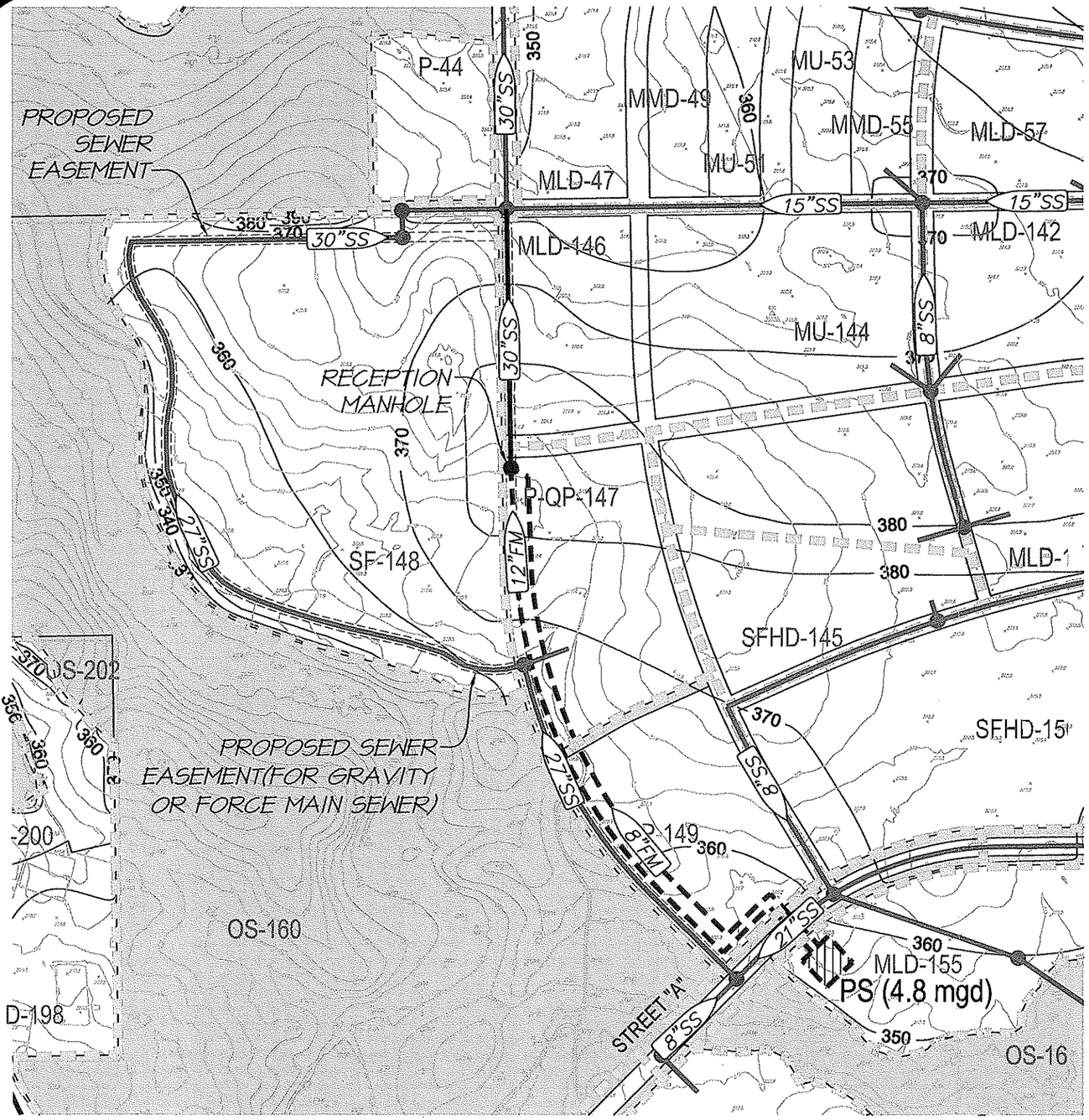

LEGEND

- 27"SS — PROPOSED SEWER
- 30"SS — ALTERNATE GRAVITY SEWER
- 8"FM — ALTERNATE FORCE MAIN
- SEWER SUB-SHED LINE
- PS — PUMP STATION
- OPEN SPACE

0 400 feet

DRAFT

EXHIBIT G

Alternative 2
Pump Station and Force Main

FOLSOM SPECIFIC PLAN

County of Sacramento, California

August 28, 2008

MACKAY & SOMPS
ENGINEERS PLANNERS SURVEYORS
1771 Tribute Road, Suite E, Sacramento, CA 95815 (916) 929-6092

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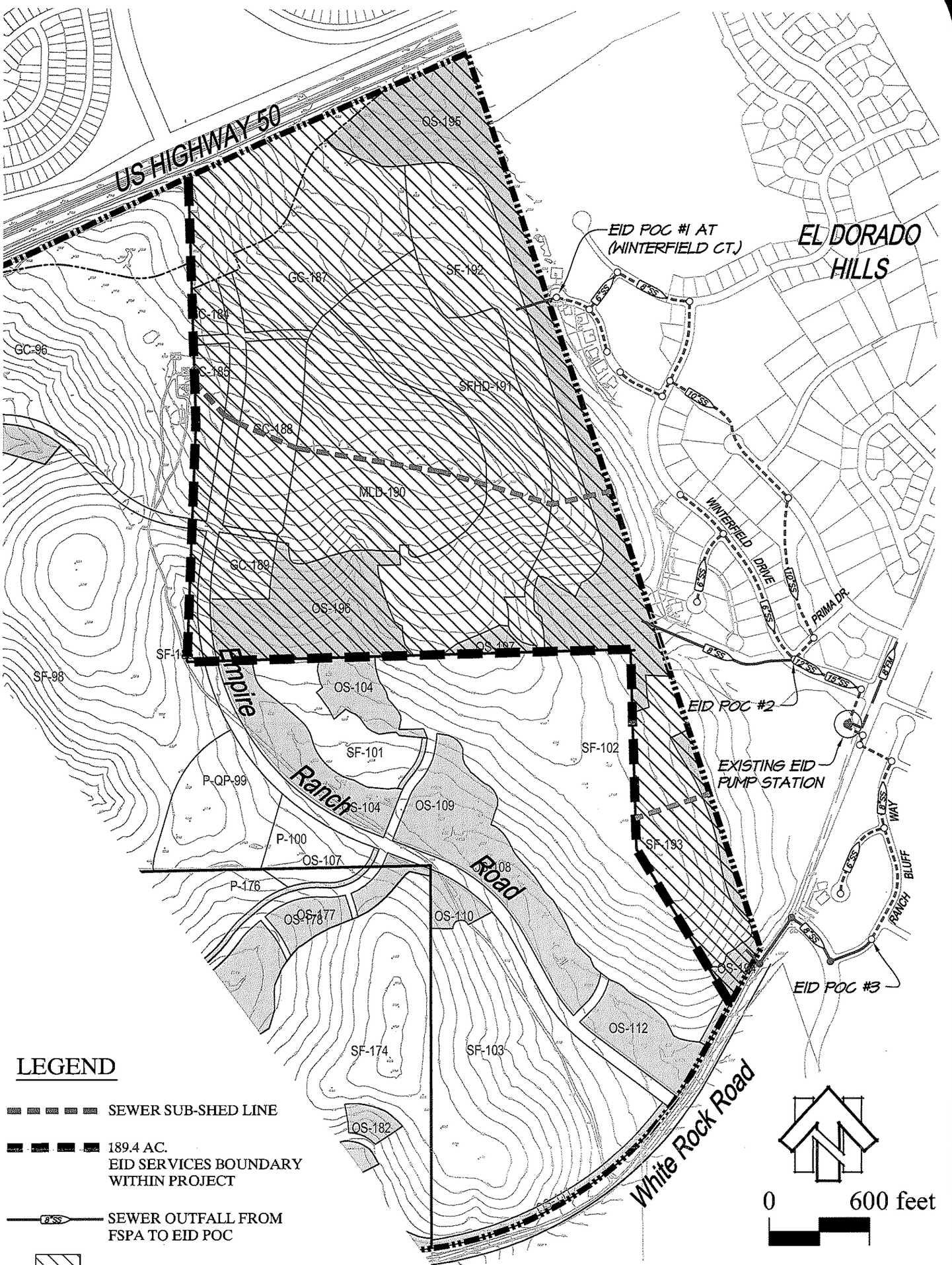

LEGEND

- SEWER SUB-SHED LINE
- 189.4 AC. EID SERVICES BOUNDARY WITHIN PROJECT
- 8"SS SEWER OUTFALL FROM FSPA TO EID POC
- EID SERVICE AREA
- OPEN SPACE

EXHIBIT H
EID Shed Analysis

FOLSOM SPECIFIC PLAN

County of Sacramento, California

August 28, 2008

MACKAY & SOMPS
ENGINEERS PLANNERS SURVEYORS
1771 Tribute Road, Suite E, Sacramento, CA 95815 (916) 929-6092

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Exhibit I

ALTERNATIVE SEWER FACILITIES ROUTING

OPINION OF PROBABLE CONSTRUCTION COST

for

Folsom Specific Plan Area

County of Sacramento, California

September 15, 2008

MACKAY & SOMPS
CIVIL ENGINEERS, INC.
SACRAMENTO, CALIFORNIA (916) 929-6092

Folsom Specific Plan Area

Opinion of Probable Construction Costs:
Alternative 1: West Side of Alder Creek

Alternative 1:	Construct a 0.6 mgd (QPWWF) pump station, and a 6-inch force main west along Street A to a reception manhole with gravity outfall sewer at the Oak Avenue intersection. From the Oak/Street A intersection, 10-inch and 12-inch gravity sewers flow north in Oak Ave to the Easton Valley Parkway trunk sewer. (Reference Exhibit E)
In place of Proposed:	Gravity sewer (10 inch and 12 inch) trunk lines from Point 1 to Point 2 (As shown on Exhibit E) *Note: Easement may be required within lot MLD 158 (Cost not Included)*

ALTERNATIVE 1

ITEM No.	QUANTITY	UNIT	DESCRIPTION	UNIT PRICE	AMOUNT
1.	1,450	LF	6" Sewer Force Main	$60.00	$109,000
2.	1,400	LF	10" Gravity Sewer (10' - 15' deep)	$75.00	$119,000
3.	610	LF	12" Gravity Sewer (10' - 15' deep)	$85.00	$52,000
4.	5.0	EA	48" Trunk SSMH (400' spacing)	$8,500.00	$43,000
5.	0.6	MGD	Sanitary Sewer Pump/Lift Station	$1,000,000.00	$600,000
			Subtotal		$923,000
			Construction Contingency (30%)		$277,000
			Engineering, Staking, Permits, Inspection (20%)		$185,000
				TOTAL ALTERNATIVE 1	**$1,385,000**

PROPOSED

ITEM No.	QUANTITY	UNIT	DESCRIPTION	UNIT PRICE	AMOUNT
1.	2,360	LF	10" Trunk Gravity Sewer (10' - 15' deep)	$75.00	$177,000
2.	625	LF	12" Trunk Gravity Sewer (15' - 20' deep)	$100.00	$63,000
3.	1,600	LF	12" Trunk Gravity Sewer (20' - 25' deep)	$125.00	$200,000
4.	12	EA	48" Trunk SSMH (400' spacing)	$8,500.00	$102,000
5.	27,600	SF	12' Maintenance access road (2" AC/10" AB)	$4.00	$111,000
			Subtotal		$653,000
			Construction Contingency (30%)		$195,900
			Engineering, Staking, Permits, Inspection (20%)		$130,600
				TOTAL PROPOSED	**$979,500**
				TOTAL COST DIFFERENCE	**$405,500**

Notes:
1. Estimated costs rounded up to the nearest $1000.

Folsom Specific Plan Area

Opinion of Probable Construction Costs:
Alternative 2: East Side of Alder Creek

Alternative 2:	Construct a 4.8 mgd pump station, and 8-inch and 12-inch force mains north along the west side (within easement) of Lots P-149 and a portion of P-QP-147 to a reception manhole 800 feet south of Street B. A 24-inch gravity sewer exits the reception manhole and flows to the point of connection. (Reference Exhibit F) *Note: Easement may be required with lots P-149 and P-QP-147 (Cost not included)*
In place of Proposed:	Gravity sewer (27 inch) trunk line from Point 1 to Point 2 (As shown on Exhibit F) *Note: Easement may be required with lots P-149 and P-QP-147 (Cost not included)*

ALTERNATIVE 2

ITEM No.	QUANTITY	UNIT	DESCRIPTION	UNIT PRICE	AMOUNT
1.	1,900	LF	8" Sewer Force Main (10' deep)	$80.00	$152,000
2.	1,900	LF	12" Sewer Force Main (10' deep)	$120.00	$228,000
3.	800	LF	24" Gravity Sewer (10' - 15' deep)	$150.00	$120,000
4.	4.8	MGD	Sanitary Sewer Pump/Lift Station	$900,000.00	$4,320,000
5.	75,000	SF	12' Maintenance access road (2" AC/10" AB)		
			Subtotal		$4,820,000
			Construction Contingency (30%)		$1,446,000
			Engineering, Staking, Permits, Inspection (20%)		$964,000
				TOTAL ALTERNATIVE 2	**$7,230,000**

PROPOSED

ITEM No.	QUANTITY	UNIT	DESCRIPTION	UNIT PRICE	AMOUNT
1.	2,550	LF	27" Gravity Sewer (15' - 20' deep)	$260.00	$663,000
2.	2,000	LF	27" Gravity Sewer (20' - 25' deep)	$275.00	$550,000
3.	12	EA	60" Trunk SSMH (400' spacing)	$11,000.00	$132,000
4.	53,400	SF	12' Maintenance access road (2" AC/10" AB)	$4.00	$214,000
			Subtotal		$1,559,000
			Construction Contingency (30%)		$467,700
			Engineering, Staking, Permits, Inspection (20%)		$311,800
				TOTAL PROPOSED	**$2,338,500**
				TOTAL COST DIFFERENCE	**$4,891,500**

Notes:
1. Estimated costs rounded up to the nearest $1000.

FOLSOM PLAN AREA

TABLE 10
(ESD/Acre)

Node ID	SF (6.0 ESD/AC)		SFHD (6.9 ESD/AC)		MLD (8.9 ESD/AC)		MMD (15.0 ESD/AC)		MHD (22.5 ESD/AC)		MU (11.0 ESD/AC)		P (6.0 ESD/AC)		E. SCHOOL (0.025 mgd)		M. SCHOOL (0.060 mgd)		H. SCHOOL (0.080 mgd)		CC (6.0 ESD/AC)		OP (6.0 ESD/AC)		GC (6.0 ESD/AC)		RC (6.0 ESD/AC)		ROADWAY (6.0 ESD/AC)		Node Area (AC)	Node ESD
	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD		
A1	66.9	402		0		0		0		0		0		0		0		0		0		0		0		0		0	3.3	20	70.2	422
A2		0		0		0		0		0		0		0		0		0		0		0	29.8	179		0		0		0	29.8	179
A3		0		0		0		0		0		0		0		0		0		0		0		0		0		0	4.0	24	4.0	24
A4	18.5	111		0		0		0		0		0		0		0		0		0		0	11.5	69		0		0	2.4	15	32.4	195
A5	28.6	172		0		0		0		0		0		0		0		0		0		0		0		0		0	7.7	47	36.3	219
A6		0		0		0		0		0		0	44.5	267		0		0		0		0		0		0		0	3.3	20	47.8	267
A7		0		0		0		0		0		0		0		0		0		0		0		0		0		0	6.7	41	6.7	41
A8		0	30.6	212		0		0		0		0		0		0		0		0		0		0		0		0	3.2	20	33.8	232
A9	11.0	66		0		0		0		0		0		0		0		0		0		0		0		0		0	4.6	28	15.6	94
A10		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	0.0	0
A11		0	11.2	78		0	8.8	132		0		0		0		0		0		0		0		0		0		0		0	20.0	210
A12		0		0		0		0		0		0		0		0		0		0		0		0		0		0	6.1	37	6.1	37
A13		0	14.7	102	13.6	122		0	9.8	221		0		0		0		0		0		0		0		0		0		0	38.1	445
A14		0		0		0		0		0		0		0		0		0		0	17.4	105		0		0		0	11.5	69	28.9	174
A15		0	58.7	406		0		0		0		0		0		0		0		0		0		0		0		0	3.8	23	62.5	429
A16		0	6.3	44		0		0		0		0		0		0		0		0		0		0		0		0	8.5	51	14.8	95
A17		0		0		0		0		0		0		0		0		0	32.1	258		0		0		0		0	18.0	108	50.1	366
FSPS		0		0		0		0		0		0		0		0		0		0		0		0		0		0	2.9	18	2.9	18
Total:	125.0	751	121.5	842	13.6	122	8.8	132	9.8	221	0.0	0	44.5	267	0.0	0	0.0	0	32.1	258	17.4	105	41.3	248	0.0	0	0.0	0	86.0	521	**500.0**	**3467**

FOLSOM PLAN AREA

TABLE 10

(ESD/Acre)

Node ID	SF (6.0 ESD/AC)		SFHD (6.9 ESD/AC)		MLD (8.9 ESD/AC)		MMD (15.0 ESD/AC)		MHD (22.5 ESD/AC)		MU (11.0 ESD/AC)		P (6.0 ESD/AC)		E. SCHOOL (0.0250 mgd)		M. SCHOOL (0.0600 mgd)		H. SCHOOL (0.0800 mgd)		CC (6.0 ESD/AC)		OP (6.0 ESD/AC)		GC (6.0 ESD/AC)		RC (6.0 ESD/AC)		ROADWAY (6.0 ESD/AC)		Node Area (AC)	Node ESD
	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD		
B1		0		0		0		0		0		0		0		0		0		0		0		0		0		0	4.5	27	4.5	27
B2		0		0		0		0		0		0		0		0		0		0		0	11.0	66		0		0		0	11.0	66
B3		0		0		0		0		0		0		0		0		0		0		0	16.4	99		0		0		0	16.4	99
B4		0		0		0		0		0		0		0		0		0		0		0		0		0		0	19.6	118	19.6	118
B5	16.8	101		0		0		0		0		0		0		0		0		0		0		0		0		0	4.8	29	21.6	130
B6	13.7	83		0		0		0		0		0		0		0		0		0		0		0		0		0	0.4	3	14.1	86
B7	3.6	22		0		0		0		0		0		0		0		0		0		0		0		0		0	7.3	44	10.9	66
B8	28.9	174		0		0		0		0		0	10.0	60	10.0	81		0		0		0		0		0		0	0.6	4	49.5	319
B9	16.0	96	20.7	143		0		0		0		0		0		0		0		0		0		0		0		0		0	36.7	239
B10	15.5	93		0		0		0		0		0		0		0		0		0		0		0		0		0	1.3	8	16.8	101
B11	4.9	30		0	13.0	116		0		0		0		0		0		0		0		0		0		0		0	0.3	2	18.2	148
B12		0		0		0		0		0		0		0		0		0		0		0		0		0		0	1.2	8	1.2	8
B13		0		0	24.7	220		0		0		0		0		0		0		0		0		0		0		0	2.5	15	27.2	235
B14		0		0		0		0		0		0		0		0	17.6	194		0		0		0		0		0	1.7	11	19.3	205
B15		0	43.4	300		0		0		0		0		0		0		0		0		0		0		0		0	2.8	17	46.2	317
Total:	99.4	599	64.1	443	37.7	336	0.0	0	0.0	0	0.0	0	10.0	60	10.0	81	17.6	194	0.0	0	0.0	0	27.4	165	0.0	0	0.0	0	47.0	286	**313.2**	**2164**

TABLE 10
LAND USE (ESD/Acre) Summary:
Shed B

FOLSOM PLAN AREA

TABLE 10

(AREA/ESD)

Node ID	SF (6.0 ESD/AC)		SFHD (6.9 ESD/AC)		MLD (8.9 ESD/AC)		MMD (15.0 ESD/AC)		MHD (22.5 ESD/AC)		MU (11.0 ESD/AC)		P (6.0 ESD/AC)		E. SCHOOL (0.025 mgd)		M. SCHOOL (0.060 mgd)		H. SCHOOL (0.080 mgd)		CC (6.0 ESD/AC)		OP (6.0 ESD/AC)		GC (6.0 ESD/AC)		RC (6.0 ESD/AC)		ROADWAY (6 ESD/AC)		Node Area (AC)	Node ESD
	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD		
C1	11.6	70		0		0		0		0		0		0		0		0		0		0	20.6	124		0		0	2.7	17	34.9	211
C2		0		0		0		0		0		0		0		0		0		0		0		0		0	17.5	105	3.2	20	20.7	125
C3		0	25.6	177		0		0		0		0		0		0		0		0		0		0		0		0	8.8	53	34.4	230
C4		0		0		0		0		0		0		0		0		0		0		0		0		0		0	1.5	9	1.5	9
C5		0		0	7.8	70	6.0	90		0	6.0	66		0		0		0		0		0		0		0		0	4.1	25	23.9	251
C6		0		0		0	10.4	156		0		0	2.7	17		0		0		0		0		0		0		0	2.0	12	15.1	185
C7		0		0	6.4	57		0		0		0		0		0		0		0		0		0		0		0		0	6.4	57
C8		0		0		0		0		0		0	4.5	27		0		0		0		0		0		0		0		0	4.5	27
C9		0		0	6.3	57	5.4	81		0	5.1	57		0		0		0		0		0		0		0		0	4.9	30	21.7	225
C10		0		0	5.6	50		0	4.3	97		0		0		0		0		0		0		0		0		0	2.4	15	12.3	162
C11		0		0		0		0		0		0		0		0		0		0	6.6	40		0	5.8	35		0	0.8	5	19.0	115
C12		0		0	5.5	49		0		0		0		0		0		0		0		0		0		0		0	0.8	5	6.3	54
C13		0		0		0		0	4.7	106		0		0		0		0		0		0		0		0		0	4.5	27	9.2	133
C14		0		0	12.2	109		0		0	11.2	124		0		0		0		0		0		0		0		0	5.0	30	28.4	263
C15		0	6.6	46	7.0	63		0		0		0	8.9	54		0		0		0		0		0		0		0	3.5	21	26.0	184
C16	35.9	216		0		0		0		0		0		0	10.0	81		0		0		0		0		0		0		0	45.9	297
C17		0		0		0		0		0		0		0		0		0		0		0		0		0		0	1.7	11	1.7	11
C18		0		0		0		0		0		0		0		0	39.6	237	39.7	258		0		0		0		0	2.1	13	81.4	508
C19		0		0		0		0		0		0		0		0		0		0		0		0		0		0	1.4	9	1.4	9
C20		0		0	10.5	94		0		0		0		0		0		0		0		0		0		0		0		0	10.5	94
C21		0		0	7.5	67		0		0		0		0		0		0		0		0		0		0		0		0	7.5	67
C22		0	25.4	176		0		0		0		0		0		0		0		0		0		0		0		0	4.7	29	30.1	205
C23		0		0	4.9	44		0		0		0		0		0		0		0		0		0		0		0	5.7	35	10.6	79
C24		0	29.6	205		0		0		0		0		0		0		0		0		0		0		0		0	7.5	45	37.1	250
C25		0	51.3	354		0		0		0		0		0		0		0		0		0		0		0		0	2.3	14	53.6	368
C26		0		0	23.2	207		0		0	5.2	58		0		0		0		0		0		0		0		0		0	28.4	265
C27		0		0		0		0		0		0		0		0		0		0		0		0		0		0	1.4	9	1.4	9
C28		0	6.7	47		0		0		0		0		0		0		0		0		0		0		0		0	0.3	2	7.0	49
C29	116.8	701		0		0		0		0		0		0		0		0		0		0		0		0		0	3.7	23	120.5	724
C30		0	15.2	105	9.6	86		0		0		0	11.7	71	10.0	81		0		0		0		0		0		0	7.0	42	53.5	385
C31		0		0		0	9.4	141		0		0		0		0		0		0	8.2	50		0		0		0	3.0	18	20.6	209
C32		0		0		0		0	10.3	232		0		0		0		0		0		0		0		0		0	2.5	15	12.8	247
C33		0		0	7.7	69		0		0		0		0		0		0		0		0		0		0		0	4.8	29	12.5	98
C34		0	44.4	307		0		0		0		0		0		0		0		0		0		0		0		0	2.8	17	47.2	324
C35		0	20.9	145		0		0		0		0		0		0		0		0		0		0		0		0	4.7	29	25.6	174
C36		0		0	16.3	146		0		0		0		0		0		0		0		0		0		0		0	2.2	14	18.5	160
C37		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	0.0	0
C38		0	25.8	179		0		0		0		0		0		0		0		0		0		0		0		0		0	25.8	179
C39		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	0.0	0
C40		0		0	9.0	81		0		0		0		0		0		0		0		0		0	18.9	114		0	4.7	29	51.5	338
C41		0		0	8.5	76		0	5.7	129	5.6	62		0		0		0		0		0		0		0		0	3.2	20	23.0	287
C42		0		0	20.0	178		0		0		0		0		0		0		0		0		0		0		0	3.9	24	23.9	202
C43		0		0	9.1	81		0		0		0		0	10.0	81		0		0		0		0		0		0	1.5	9	20.6	171
C44		0		0	8.0	72		0		0		0	20.0	120		0		0		0		0		0		0		0	0.3	2	28.3	194
C45		0		0	5.9	53		0		0		0		0		0		0		0		0		0		0		0	1.4	9	7.3	62
C46		0		0		0	6.4	96		0		0		0		0		0		0		0		0		0		0		0	6.4	96
C47		0		0		0	7.2	108		0		0		0		0		0		0		0		0		0		0		0	7.2	108
C48		0	7.6	53		0		0		0		0		0		0		0		0		0		0		0		0		0	7.6	53
C49		0		0		0		0		0		0		0		0		0		0	7.2	44		0		0		0		0	7.2	44
Total:	164.3	987	259.1	1794	191.0	1709	44.8	672	25.0	564	33.1	367	47.8	289	30.0	242	39.6	237	39.7	258	22.0	134	20.6	124	24.7	149	17.5	105	117.0	716	**1100.9**	**8496**

TABLE 10

LAND USE (ESD/Acre) Summary:
Shed C

FOLSOM PLAN AREA

TABLE 10

(AREA/ESD)

Node ID	SF (6.0 ESD/AC)		SFHD (6.9 ESD/AC)		MLD (8.9 ESD/AC)		MMD (15.0 ESD/AC)		MHD (22.5 ESD/AC)		MU (11.0 ESD/AC)		P (6.0 ESD/AC)		E. SCHOOL (0.025 mgd)		M. SCHOOL (0.060 mgd)		H. SCHOOL (0.080 mgd)		CC (6.0 ESD/AC)		OP (6.0 ESD/AC)		GC (6.0 ESD/AC)		RC (6.0 ESD/AC)		ROADWAY (6.0 ESD/AC)		Node Area (AC)	Node ESD
	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD		
D1		0		0		0		0		0		0		0		0		0		0		0		0	9.0	54	112.8	677	1.5	9	123.3	740
D2		0		0		0		0		0		0		0		0		0		0		0		0		0		0	9.5	57	9.5	57
D3		0		0	4.9	44		0		0		0	2.0	12		0		0		0		0		0		0		0	2.5	15	9.4	71
D4		0		0		0		0		0		0		0		0		0		0		0		0	63.5	381		0		0	63.5	381
D5		0		0		0		0		0		0		0		0		0		0		0		0		0		0	2.7	17	2.7	17
D6		0		0		0		0		0		0		0		0		0		0		0	24.0	144	13.6	82		0		0	37.6	226
D7		0		0		0		0	14.2	320		0		0		0		0		0		0		0		0		0	6.0	36	20.2	356
D8		0		0	7.6	68	22.1	332		0		0		0		0		0		0		0		0		0		0	1.6	10	31.3	410
D9		0		0		0		0		0		0		0		0		0		0		0		0		0		0	3.7	23	3.7	23
D10	8.7	53		0		0		0		0		0		0		0		0		0		0		0		0		0		0	8.7	53
D11		0		0	17.8	159		0		0		0		0		0		0		0		0		0		0		0	6.3	38	24.1	197
D12		0		0		0		0		0		0		0		0		0		0		0		0	63.2	380		0	0.4	3	63.6	383
D13		0		0		0		0		0		0		0		0		0		0		0		0	4.9	30		0	1.4	9	6.3	39
Total:	8.7	53	0.0	0	30.3	271	22.1	332	14.2	320	0.0	0	2.0	12	0.0	0	0.0	0	0.0	0	0.0	0	24.0	144	154.2	927	112.8	677	35.6	217	**403.9**	**2953**

TABLE 10
LAND USE (ESD/Acre) Summary:
Shed D

FOLSOM PLAN AREA
TABLE 10
(AREA/ESD)

Node ID	SF (6.0 ESD/AC)		SFHD (6.9 ESD/AC)		MLD (8.9 ESD/AC)		MMD (15.0 ESD/AC)		MHD (22.5 ESD/AC)		MU (11.0 ESD/AC)		P (6.0 ESD/AC)		E. SCHOOL (0.025 mgd)		M. SCHOOL (0.060 mgd)		H. SCHOOL (0.080 mgd)		CC (6.0 ESD/AC)		OP (6.0 ESD/AC)		GC (6.0 ESD/AC)		RC (6.0 ESD/AC)		ROADWAY (6.0 ESD/AC)		Node Area (AC)	Node ESD
	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD		
E1	37.0	222		0		0		0		0		0		0		0		0		0		0		0		0		0	1.0	6	38.0	228
E2	39.8	239		0		0		0		0		0		0		0		0		0		0		0		0		0	0.5	3	40.3	242
E3	7.2	44		0		0		0		0		0		0		0		0		0		0		0		0		0	1.4	9	8.6	53
E4		0		0		0		0		0		0	4.8	29		0		0		0		0		0		0		0	2.4	15	7.2	44
E5	1.2	8		0		0		0		0		0		0	10.0	81		0		0		0		0	3.0	18		0	0.8	5	15.0	112
Total:	85.2	513	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	4.8	29	10.0	81	0.0	0	0.0	0	0.0	0	0.0	0	3.0	18	0.0	0	6.1	38	**109.1**	**679**

TABLE 10
LAND USE (ESD/Acre) Summary:
Shed E

FOLSOM PLAN AREA

TABLE 10

(AREA/ESD)

Node ID	SF (6.0 ESD/AC)		SFHD (6.9 ESD/AC)		MLD (8.9 ESD/AC)		MMD (15.0 ESD/AC)		MHD (22.5 ESD/AC)		MU (11.0 ESD/AC)		P (6.0 ESD/AC)		E. SCHOOL (0.025 mgd)		M. SCHOOL (0.060 mgd)		H. SCHOOL (0.080 mgd)		CC (6.0 ESD/AC)		OP (6.0 ESD/AC)		GC (6.0 ESD/AC)		RC (6.0 ESD/AC)		ROADWAY (6.0 ESD/AC)		Node Area (AC)	Node ESD
	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD	Area (AC)	ESD		
PS2		0		0		0		0		0		0				0		0		0									8.1	49	8.1	49
F1	40.3	242		0		0		0		0		0		0		0		0		0		0		0		0		0	2.2	14	42.5	256
F2		0		0		0		0		0						0		0		0										0	0.0	0
PS3	23.4	141	14.1	98	14.1	126		0		0		0		0		0		0		0		0		0		0		0		0	51.6	365
F3		0		0		0		0		0						0		0		0										0	0.0	0
PS4	15.3	92	16.9	117	13.8	123		0		0		0		0		0		0		0		0		0	23.4	141		0	2.7	17	72.1	490
Total:	79.0	475.0	31.0	215	27.9	249	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	23.4	141.0	0.0	0.0	13.0	80.0	**174.3**	**1160**

TABLE 10

LAND USE (ESD/Acre) Summary:

Shed F

FOLSOM PLAN AREA

TABLE 11 - Sewer Calculations

Node ID	Down-stream Node	Area		ESD		Q_{ADWF} (mgd)	Peaking Factor (PF)	Q_{PDWF} (mgd)	$Q_{I/I}$ (mgd)	Q_{PWWF} (mgd)	Pipe Size (in)	Slope (ft/ft)	Pipe Length (ft)	Upstream Invert	Downstream Invert	Upstream Rim Elevation	Depth @ Upstream Invert	Cum PWWF Velocity	Depth of Flow (ft.)	(d/D)%
		Per Node (AC)	Cum. (AC)	Dir.	Cum.															
A17	A16	50	50	366	366	0.11	1.89	0.21	0.07	0.28	8	0.0085	794	355.30	348.55	369.2	13.9	3.00	0.29	43.6
A16	A15	15	65	95	461	0.14	1.87	0.27	0.09	0.36	8	0.0095	1,076	348.45	338.22	361.3	12.8	3.32	0.32	48.2
A15	A14	63	127	429	890	0.28	1.81	0.50	0.18	0.68	10	0.0085	3,159	338.05	311.19	354.5	16.4	3.74	0.43	51.2
A14	A12	29	156	174	1,064	0.33	1.80	0.59	0.22	0.81	12	0.0020	997	310.19	308.19	330.0	19.8	2.25	0.67	66.9
A13	A12	38	38	445	445	0.14	1.87	0.26	0.05	0.31	8	0.0150	1,495	331.52	309.09	345.0	13.5	3.79	0.26	39.2
A12	A10	6	201	37	1,546	0.48	1.76	0.85	0.28	1.13	12	0.0035	685	308.09	305.69	325.5	17.4	3.00	0.69	69.3
A11	A10	20	20	210	210	0.07	1.93	0.13	0.03	0.15	8	0.0150	1,164	324.15	306.69	340.0	15.8	3.11	0.18	27.1
A10	A7	-	221	-	1,756	0.54	1.75	0.95	0.31	1.26	15	0.0017	725	305.44	304.20	324.8	19.4	2.37	0.80	63.7
A9	A8	16	16	94	94	0.03	1.99	0.06	0.02	0.08	8	0.0250	1,233	366.55	335.72	378.9	12.3	3.08	0.11	17.2
A8	A7	34	49	232	326	0.10	1.89	0.19	0.07	0.26	8	0.0150	2,011	335.62	305.45	350.2	14.6	3.61	0.24	35.7
A7	A6	7	277	41	2,123	0.66	1.74	1.14	0.39	1.53	18	0.0012	1,332	303.95	302.35	323.7	19.7	2.19	0.88	58.8
A6	A5	48	324	287	2,410	0.75	1.73	1.29	0.45	1.74	18	0.0015	1,887	302.25	299.41	319.3	17.1	2.46	0.89	59.5
A5	A4	36	361	219	2,629	0.81	1.72	1.40	0.50	1.91	18	0.0015	918	299.31	297.93	317.1	17.8	2.51	0.95	63.1
A4	A3	32	393	195	2,824	0.88	1.71	1.50	0.55	2.05	18	0.0165	1,117	297.83	279.39	316.7	18.9	6.24	0.49	33.0
A2	A3	30	30	179	179	0.06	1.94	0.11	0.04	0.15	8	0.0045	250	281.92	280.79	295.0	13.1	2.00	0.24	36.6
A3	A1	4	427	24	3,027	0.94	1.71	1.60	0.60	2.20	18	0.0035	1,511	279.29	274.00	295.0	15.7	3.60	0.79	52.8
B1	FSPS	5	2,101	27	15,451	4.79	1.55	7.44	2.94	10.38	30	0.0060	368	257.21	255.00	271.0	13.8	6.49	1.26	50.3
A1	FSPS	70	497	422	3,449	1.07	1.69	1.81	0.70	2.51	18	0.0250	756	273.90	255.00	291.0	17.1	7.67	0.49	32.9
FSPS	FE3BPS	3	2,601	18	18,918	5.86	1.53	8.99	3.64	12.64	**see below**	**see below**				272.0				
PS1	FE3BPS									4	12	-0.0084	7,400					7.88	1.00	100.0
PS1	FE3BPS									8	18	-0.0084	7,400					7.00	1.50	100.0

FOLSOM PLAN AREA

TABLE 11 - Sewer Calculations

Node ID	Down-stream Node	Area		ESD		Q_{ADWF} (mgd)	Peaking Factor (PF)	Q_{PDWF} (mgd)	$Q_{I/I}$ (mgd)	Q_{PWWF} (mgd)	Pipe Size (in)	Slope (ft/ft)	Pipe Length (ft)	Upstream Invert	Downstream Invert	Upstream Rim Elevation	Depth @ Upstream Invert	Cum PWWF Velocity	Depth of Flow (ft.)	(d/D)%
		Per Node (AC)	Cum. (AC)	Dir.	Cum.															
B15	B14	46.2	46.2	317	317	0.10	1.90	0.19	0.06	0.25	8	0.0060	389	352.27	349.93	362.3	10.0	2.56	0.30	44.9
B14	B12	19.3	65.5	205	522	0.16	1.86	0.30	0.09	0.39	8	0.0045	344	349.93	348.38	361.6	11.7	2.55	0.43	64.5
B13	B12	27.2	27.2	235	235	0.07	1.92	0.14	0.04	0.18	8	0.0450	487	370.30	348.38	384.0	13.7	4.80	0.15	22.1
B12	B11	1.2	93.9	8	765	0.24	1.82	0.43	0.13	0.56	10	0.0025	2,358	348.21	342.31	362.2	14.0	2.23	0.56	67.5
B11	B10	18.2	112.1	148	913	0.28	1.81	0.51	0.16	0.67	12	0.0020	625	341.31	340.06	360.1	18.8	2.16	0.59	58.7
B9	B7	36.7	36.7	239	239	0.07	1.92	0.14	0.05	0.19	8	0.0150	860	365.98	353.08	375.0	9.0	3.32	0.20	30.5
B8	B7	49.5	49.5	319	319	0.10	1.90	0.19	0.07	0.26	8	0.0100	1,438	367.46	353.08	376.0	8.5	3.10	0.26	39.5
B10	B5	16.8	128.9	101	1,014	0.31	1.80	0.57	0.18	0.75	12	0.0020	1,586	340.06	336.88	360.1	20.0	2.21	0.63	63.1
B6	B5	14.1	14.1	86	86	0.03	2.00	0.05	0.02	0.07	8	0.0150	855	350.71	337.88	364.0	13.3	2.50	0.12	18.7
B7	B5	10.9	97.1	66	624	0.19	1.84	0.36	0.14	0.49	8	0.0250	608	353.08	337.88	365.7	12.6	5.16	0.29	43.9
B5	B4	21.6	261.7	130	1,854	0.57	1.75	1.01	0.37	1.37	12	0.0115	3,960	336.88	291.34	360.0	23.1	4.99	0.53	53.2
C1	B4	34.9	1788.2	211	13,287	4.12	1.57	6.46	2.50	8.96	30	0.0135	2,404	322.30	289.84	340.0	17.7	8.42	0.92	36.9
B3	B2	16.4	16.4	99	99	0.03	1.99	0.06	0.02	0.08	8	0.0100	656	269.83	263.27	286.0	16.2	2.26	0.15	22.1
B4	B1	19.6	2069.5	118	15,259	4.73	1.55	7.35	2.90	10.25	30	0.0225	1,450	289.84	257.21	304.0	14.2	10.51	0.87	34.6
B2	B1	11.0	27.4	66	165	0.05	1.95	0.10	0.04	0.14	8	0.0045	789	263.27	259.71	282.0	18.7	1.96	0.23	35.0
B1	PS1	4.5	2101.4	27	15,451	4.79	1.55	7.44	2.94	10.38	30	0.0060	368	257.21	255.00	271.0	13.8	6.49	1.26	50.3

FOLSOM PLAN AREA

TABLE 11 - Sewer Calculations

Node ID	Down-stream Node	Area		ESD		Q_{ADWF} (mgd)	Peaking Factor (PF)	Q_{PDWF} (mgd)	$Q_{I/I}$ (mgd)	Q_{PWWF} (mgd)	Pipe Size (in)	Slope (ft/ft)	Pipe Length (ft)	Upstream Invert	Downstream Invert	Upstream Rim Elevation	Depth @ Upstream Invert	Cum PWWF Velocity	Depth of Flow (ft.)	(d/D)%
		Per Node (AC)	Cum. (AC)	Dir.	Cum.															
C45	C43	7.3	7.3	62.0	62	0.02	2.02	0.04	0.01	0.05	8	0.0060	541	437.42	434.17	450.0	12.6	1.61	0.13	19.3
C44	C43	28.3	28.3	194.0	194	0.06	1.94	0.12	0.04	0.16	8	0.0300	412	446.53	434.17	465.0	18.5	4.00	0.15	22.9
C43	C42	20.6	56.2	170.6	427	0.13	1.87	0.25	0.08	0.33	8	0.0150	1,141	434.17	417.05	450.0	15.8	3.84	0.27	40.3
C42	C40	23.9	80.1	202.0	629	0.19	1.84	0.36	0.11	0.47	8	0.0220	1,346	417.05	387.43	430.0	13.0	4.87	0.30	44.4
C41	C49	23.0	23.0	287.0	287	0.09	1.91	0.17	0.03	0.20	8	0.0300	1,751	417.37	364.84	430.0	12.6	4.31	0.17	26.1
C49	C48	7.2	30.2	44.0	331	0.10	1.89	0.19	0.04	0.24	8	0.0035	1,650	364.84	359.06	383.0	18.2	2.06	0.34	50.7
PS2	C39	8.1	283.4	49.0	1839	0.57	1.75	1.00	0.40	1.39	8	-0.006	1,166	527	533.59	539.00	12.4	6.18	0.67	100.0
C39	C37	0.0	283.4	0.0	1839	0.57	1.75	1.00	0.40	1.39	10	0.0240	2,740	533.59	467.83	546.7	13.1	6.59	0.48	57.9
C38	C37	25.8	25.8	179.0	179	0.06	1.94	0.11	0.04	0.14	8	0.0035	300	469.05	468.00	485.0	16.0	1.81	0.26	38.3
C37	C36	0.0	309.2	0.0	2018	0.63	1.74	1.09	0.43	1.52	10	0.0320	437	467.83	453.84	482.0	14.2	7.51	0.47	55.9
C36	C35	18.5	327.7	160.0	2178	0.68	1.74	1.17	0.46	1.63	10	0.0270	1,348	453.84	417.44	466.0	12.2	7.14	0.51	61.7
C35	C34	25.6	353.3	174.0	2352	0.73	1.73	1.26	0.49	1.75	10	0.0250	874	417.44	395.59	434.6	17.2	7.03	0.56	66.6
C34	C33	47.2	400.5	324.0	2676	0.83	1.72	1.42	0.56	1.98	15	0.0075	1,368	394.34	384.08	414.0	19.7	4.66	0.66	52.9
C33	C32	12.5	413.0	98.0	2774	0.86	1.71	1.47	0.58	2.05	15	0.0035	733	384.08	381.51	399.1	15.0	3.48	0.87	69.6
C32	C31	12.8	425.8	247.0	3021	0.94	1.71	1.60	0.60	2.19	15	0.0080	2,201	381.51	363.90	397.2	15.7	4.90	0.69	55.1
C31	C30	20.6	446.4	209.0	3230	1.00	1.70	1.70	0.62	2.33	18	0.0025	630	363.65	362.07	374.4	10.8	3.20	0.91	60.8
C29	C27	120.5	120.5	724.0	724	0.22	1.83	0.41	0.17	0.58	8	0.0550	1,058	558.16	499.97	570.0	11.8	7.20	0.26	38.6
C28	C27	7.0	7.0	49.0	49	0.02	2.04	0.03	0.01	0.04	8	0.0035	300	501.02	499.97	512.0	11.0	1.26	0.13	20.1
C27	C26	1.4	128.9	9	782	0.24	1.82	0.44	0.18	0.62	8	0.0350	731	499.97	474.38	515.0	15.0	6.22	0.30	45.6
C26	C25	28.4	157.3	265	1,047	0.32	1.80	0.58	0.22	0.80	8	0.0210	833	474.38	456.88	485.8	11.4	5.44	0.42	62.3
C25	C24	53.6	210.9	368	1,415	0.44	1.77	0.78	0.30	1.07	10	0.0248	2,399	456.71	397.21	470.2	13.5	6.27	0.41	48.9
C46	C23	6.4	6.4	96	96	0.03	1.99	0.06	0.01	0.07	8	0.0050	2,400	373.55	361.55	380.8	7.3	1.66	0.16	23.7
C30	C23	53.5	499.9	385	3,614	1.12	1.69	1.89	0.70	2.59	21	0.0011	940	361.82	359.80	371.0	9.2	2.41	1.14	65.4
C24	C23	37.1	248.0	250	1,665	0.52	1.76	0.91	0.35	1.25	12	0.0325	1,829	396.21	360.55	409.0	12.8	7.16	0.38	37.7
C23	C22	10.6	764.9	79	5,454	1.69	1.65	2.79	1.07	3.86	21	0.0025	1,097	359.80	358.84	374.4	14.6	3.62	1.14	64.9
C47	C21	7.2	7.2	108	108	0.03	1.98	0.07	0.01	0.08	8	0.0070	1,098	362.75	356.40	370.0	7.3	1.94	0.15	23.1
C21	C20	7.5	14.7	67	175	0.05	1.94	0.11	0.02	0.13	8	0.0060	381	356.40	350.95	365.0	8.6	2.12	0.21	31.0
C48	C19	7.6	37.8	53	384	0.12	1.88	0.22	0.05	0.28	8	0.0090	1,400	359.06	346.46	378.0	18.9	3.05	0.28	42.3
C22	C19	30.1	795.0	205	5,659	1.75	1.65	2.89	1.11	4.01	21	0.0230	907	358.84	344.71	369.9	11.1	8.38	0.61	34.6
C20	C19	10.5	25.2	94	269	0.08	1.91	0.16	0.04	0.19	8	0.0110	614	350.95	346.46	360.0	9.1	2.98	0.22	33.2
C19	C17	1.4	859.4	9	6,321	1.96	1.64	3.21	1.20	4.41	21	0.0110	408	344.71	340.22	362.0	17.3	6.57	0.78	44.7

FOLSOM PLAN AREA

TABLE 11 - Sewer Calculations

Node ID	Down-stream Node	Area		ESD		Q_{ADWF} (mgd)	Peaking Factor (PF)	Q_{PDWF} (mgd)	$Q_{I/I}$ (mgd)	Q_{PWWF} (mgd)	Pipe Size (in)	Slope (ft/ft)	Pipe Length (ft)	Upstream Invert	Downstream Invert	Upstream Rim Elevation	Depth @ Upstream Invert	Cum PWWF Velocity	Depth of Flow (ft.)	(d/D)%
		Per Node (AC)	Cum. (AC)	Dir.	Cum.															
C18	C17	81.4	81.4	508	508	0.16	1.86	0.29	0.11	0.41	8	0.0035	250	342.85	341.97	351.0	8.2	2.31	0.49	72.8
C17	C16	1.7	942.5	11	6,840	2.12	1.63	3.46	1.32	4.78	27	0.0010	1,213	339.72	338.50	352.8	13.1	2.71	1.46	64.9
C16	C8	45.9	988.4	297	7,137	2.21	1.63	3.60	1.38	4.98	27	0.0010	3,000	338.50	335.50	351.0	12.5	2.73	1.50	66.9
C15	C14	26	26.0	184	184	0.06	1.94	0.11	0.04	0.15	8	0.0175	440	370.44	362.74	380.0	9.6	3.24	0.17	25.5
C13	C12	9.2	9.2	133	133	0.04	1.97	0.08	0.01	0.09	8	0.0150	474	372.21	365.10	382.0	9.8	2.70	0.14	21.2
C40	C11	51.5	131.6	338	967	0.30	1.81	0.54	0.18	0.73	10	0.0350	550	387.26	368.01	401.2	13.9	6.41	0.30	35.8
C12	C10	6.3	15.5	54	187	0.06	1.94	0.11	0.02	0.13	8	0.0110	522	365.10	359.35	375.0	9.9	2.68	0.18	27.4
C11	C10	19	150.6	115	1,082	0.34	1.80	0.60	0.21	0.81	10	0.0160	541	368.01	359.35	383.0	15.0	4.96	0.39	47.3
C14	C9	28.4	54.4	263	447	0.14	1.87	0.26	0.08	0.34	8	0.0150	594	362.74	353.83	373.0	10.3	3.87	0.27	40.9
C10	C9	12.3	178.4	162	1,431	0.44	1.77	0.79	0.25	1.04	15	0.0095	581	358.10	352.58	374.0	15.9	4.29	0.43	34.4
C9	C7	21.7	254.5	225	2,103	0.65	1.74	1.13	0.36	1.49	15	0.0095	1,306	352.58	340.17	369.0	16.4	4.73	0.52	41.9
C8	C7	4.5	992.9	27	7,164	2.22	1.63	3.61	1.39	5.00	27	0.0010	328	335.50	335.17	360.0	24.5	2.73	1.51	67.1
C6	C5	15.1	15.1	185	185	0.06	1.94	0.11	0.02	0.13	8	0.0150	611	365.80	356.63	380.0	14.2	2.98	0.17	25.1
C7	C4	6.4	1253.8	57	9,323	2.89	1.60	4.63	1.76	6.39	30	0.0010	850	334.92	334.07	360.0	25.1	2.91	1.63	65.3
C5	C4	23.9	39.0	251	436	0.14	1.87	0.25	0.05	0.31	8	0.0150	1,337	356.63	336.57	372.0	15.4	3.78	0.26	39.0
C4	C3	1.5	1294.3	9	9,768	3.03	1.60	4.84	1.81	6.65	30	0.0010	775	334.07	333.29	348.0	13.9	2.93	1.68	67.2
D1	C3	1.71	403.9	740	2,953	0.92	1.71	1.56	0.57	2.13	12	0.0200	2,548	384.25	333.29	398.6	14.4	6.84	0.59	58.9
C3	C2	34.4	1732.6	230	12,951	4.01	1.57	6.31	2.43	8.73	30	0.0060	1,018	333.29	327.18	355.0	21.7	6.21	1.14	45.5
C2	C1	20.7	1753.3	125	13,076	4.05	1.57	6.36	2.45	8.82	30	0.0055	887	327.18	322.30	344.0	16.8	6.03	1.17	46.9
C1	B4	34.9	1788.2	211	13,287	4.12	1.57	6.46	2.50	8.96	30	0.0135	2,404	322.30	289.84	340.0	17.7	8.42	0.92	36.9

FOLSOM PLAN AREA

TABLE 11 - Sewer Calculations

Node ID	Down-stream Node	Area		ESD		Q_{ADWF} (mgd)	Peaking Factor (PF)	Q_{PDWF} (mgd)	$Q_{I/I}$ (mgd)	Q_{PWWF} (mgd)	Pipe Size (in)	Slope (ft/ft)	Pipe Length (ft)	Upstream Invert	Downstream Invert	Upstream Rim Elevation	Depth @ Upstream Invert	Cum PWWF Velocity (fps)	Depth of Flow (ft.)	(d/D)%
		Per Node (AC)	Cum. (AC)	Dir.	Cum.															
D13	D12	6.3	6.3	39	39	0.01	2.06	0.02	0.01	0.03	8	0.1500	242	725.99	689.69	738.7	12.7	4.45	0.05	7.4
D12	D9	63.6	69.9	383	422	0.13	1.87	0.25	0.10	0.34	8	0.0550	2,351	689.69	560.38	703.0	13.3	6.22	0.20	29.3
D10	D9	8.7	8.7	53	53	0.02	2.03	0.03	0.01	0.05	8	0.0700	344	584.46	560.38	600.0	15.5	3.74	0.07	10.3
D9	D8	3.7	82.3	23	498	0.15	1.86	0.29	0.12	0.40	8	0.0550	1,804	560.38	461.16	575.4	15.0	6.51	0.21	31.8
D11	D8	24.1	24.1	197	197	0.06	1.93	0.12	0.03	0.15	8	0.0075	647	466.02	461.16	480.0	14.0	2.42	0.21	32.2
D8	D7	31.3	137.7	410	1,105	0.34	1.79	0.61	0.19	0.81	8	0.0300	541	461.16	444.93	475.0	13.8	6.26	0.37	55.6
D6	D5	37.6	37.6	226	226	0.07	1.92	0.13	0.05	0.19	8	0.0250	2,351	491.04	432.26	500.0	9.0	3.95	0.18	26.3
D5	D4	2.7	40.3	17	243	0.08	1.92	0.14	0.06	0.20	8	0.0250	485	432.26	420.13	448.0	15.7	4.03	0.18	27.3
D7	D3	20.2	157.9	356	1,461	0.45	1.77	0.80	0.22	1.02	8	0.0330	872	444.93	416.15	460.4	15.5	6.85	0.42	62.9
D4	D3	63.5	103.8	381	624	0.19	1.84	0.36	0.15	0.50	10	0.0050	762	419.96	416.15	437.0	17.0	2.84	0.42	50.1
D3	D2	9.4	271.1	71	2,156	0.67	1.74	1.16	0.38	1.54	12	0.0120	1,514	415.15	396.98	430.4	15.3	5.21	0.56	56.4
D2	D1	9.5	280.6	57	2,213	0.69	1.73	1.19	0.39	1.58	10	0.0250	476	397.15	385.25	413.7	16.6	6.89	0.52	62.0
D1	C3	123.3	403.9	740	2,953	0.92	1.71	1.56	0.57	2.13	12	0.0200	2,548	384.25	333.29	398.6	14.4	6.84	0.59	58.9

FOLSOM PLAN AREA

TABLE 11 - Sewer Calculations

Node ID	Down-stream Node	Area		ESD		Q_{ADWF} (mgd)	Peaking Factor (PF)	Q_{PDWF} (mgd)	$Q_{I/I}$ (mgd)	Q_{PWWF} (mgd)	Pipe Size (in)	Slope (ft/ft)	Pipe Length (ft)	Upstream Invert	Downstream Invert	Upstream Rim Elevation	Depth @ Upstream Invert	Cum PWWF Velocity (fps)	Depth of Flow (ft.)	(d/D)%
		Per Node (AC)	Cum. (AC)	Dir.	Cum.															
E5	E4	15.0	15.0	112	112	0.03	1.98	0.07	0.02	0.09	8	0.0300	1,427	652.04	609.23	662.0	10.0	3.40	0.12	17.4
E4	E3	7.2	22.2	44	156	0.05	1.95	0.09	0.03	0.13	8	0.0400	553	609.23	587.11	620.0	10.8	4.15	0.13	19.2
E3	E2	8.6	30.8	53	209	0.06	1.93	0.12	0.04	0.17	8	0.0070	277	587.11	585.17	600.0	12.9	2.43	0.23	34.6
E2	E1	40.3	71.1	242	451	0.14	1.87	0.26	0.10	0.36	8	0.0550	562	585.17	554.26	599.0	13.8	6.31	0.20	30.1
E1	PS2	38.0	109.1	228	679	0.21	1.83	0.39	0.15	0.54	8	0.0175	1,581	554.26	526.59	570.0	15.7	4.63	0.34	51.3
PS2	C39	8.1	283.4	49	1,839	0.57	1.75	1.00	0.40	1.39	8	-0.0060	1,166	526.59	533.59	539.0	12.4	6.18	0.67	100.0

Node ID	Down-stream Node	Area		ESD		Q_{ADWF} (mgd)	Peaking Factor (PF)	Q_{PDWF} (mgd)	$Q_{I/I}$ (mgd)	Q_{PWWF} (mgd)	Pipe Size (in)	Slope (ft/ft)	Pipe Length (ft)	Upstream Invert	Downstream Invert	Upstream Rim Elevation	Depth @ Upstream Invert	Cum PWWF Velocity (fps)	Depth of Flow (ft.)	(d/D)%
		Per Node (AC)	Cum. (AC)	Dir.	Cum.															
PS4	F3	72.1	72.1	490	490	0.15	1.86	0.28	0.10	0.38	4	-0.0933	1,340	609.05	734.05	618.0	9.0	6.80	0.33	100.0
F3	PS3	0.0	72.1	0	490	0.15	1.86	0.28	0.10	0.38	8	0.0950	1,478	731.71	591.30	743.0	11.3	7.81	0.18	27.0
PS3	F2	51.6	123.7	365	855	0.27	1.82	0.48	0.17	0.65	6	-0.0180	832	591.47	606.47	600.0	8.5	5.16	0.50	100.0
F2	F1	0.0	123.7	0	855	0.27	1.82	0.48	0.17	0.65	8	0.0425	1,728	602.30	528.86	615.0	12.7	6.77	0.30	44.4
F1	PS2	42.5	166.2	256	1,111	0.34	1.79	0.62	0.23	0.85	12	0.0035	459	527.86	526.25	546.0	18.1	2.83	0.57	57.2
PS2	C39	8.1	283.4	49	1,839	0.57	1.75	1.00	0.40	1.39	8	-0.0060	1,166	526.59	533.59	539.0	12.4	6.18	0.67	100.0

TABLE 12: EID SERVICE AREA - TOTAL SEWER CALC (EID POC-1)

LAND USE	LOT NO	AREA (ac)	ESD/AC	ESD's	Q_{PWWF} (mgd)
SF	192	15	6.0	90	0.08
SF	193	0	6.0	-	0.00
SFHD	191	17.7	6.9	122	0.10
GC	189	0	7.9	-	0.00
GC	187	17	6.0	102	0.09
GC	188	4.7	6.0	28	0.02
GC	184	1.3	6.0	8	0.01
GC	185	1.6	6.0	10	0.01
MLD	190	14.2	8.9	126	0.10
OS	196	0	0.0	-	
OS	197	0	0.0	-	
OS	195	17	0.0	-	
OS	194	0	0.0	-	
ROADWAY		2.7	6.0	16	0.01
MAJ CIRC.		10.6			
TOTAL		**101.8**		**502**	**0.415**
Net Sewered Acres		**71.5**			

TABLE 12
EID Wastewater Projections
POC - #1

TABLE 12: EID SERVICE AREA - TOTAL SEWER CALC (EID POC-2)

LAND USE	LOT NO	AREA (ac)	ESD/AC	ESD's	Q_{PWWF} (mgd)
SF	192	5.1	6.0	31	0.03
SF	193	5.7	6.0	34	0.03
SFHD	191	13.3	6.9	92	0.08
GC	189	3	7.9	24	0.02
GC	187	0	6.0	-	0.00
GC	188	4.7	6.0	28	0.02
GC	184	0	6.0	-	0.00
GC	185	2.2	6.0	13	0.01
MLD	190	13.7	8.9	122	0.09
OS	196	13.5	0.0	-	
OS	197	1.3	0.0	-	
OS	195	9.6	0.0	-	
OS	194	0.8	0.0	-	
ROADWAY		4.5	6.0	27	0.02
MAJ CIRC.		0			
TOTAL		**77.4**		**371**	**0.306**
Net Sewered Acres		**47.7**			

TABLE 12
EID Wastewater Projections
POC - #2

TABLE 12: EID SERVICE AREA - TOTAL SEWER CALC (EID POC-3)

LAND USE	LOT NO	AREA (ac)	ESD/AC	ESD's	Q_{PWWF} (mgd)
SF	192	0	6.0	-	0.00
SF	193	8	6.0	48	0.04
SFHD	191	0	6.9	-	0.00
GC	189	0	7.9	-	0.00
GC	187	0	6.0	-	0.00
GC	188	0	6.0	-	0.00
GC	184	0	6.0	-	0.00
GC	185	0	6.0	-	0.00
MLD	190	0	8.9	-	0.00
OS	196	0	0.0	-	
OS	197	0	0.0	-	
OS	195	0	0.0	-	
OS	194	2.2	0.0	-	
ROADWAY		0	6.0	-	0.00
MAJ CIRC.		0			
TOTAL		**10.2**		**48**	**0.042**
Net Sewered Acres		**8.0**			

TABLE 12
EID Wastewater Projections
POC - #3