



City of Lemon Grove
City Council Regular Meeting Agenda

Tuesday, June 18, 2019, 6:00 p.m.

Lemon Grove Community Center
3146 School Lane, Lemon Grove, CA

The City Council also sits as the Lemon Grove Housing Authority, Lemon Grove Sanitation District Board, Lemon Grove Roadway Lighting District Board, and Lemon Grove Successor Agency

Call to Order

Pledge of Allegiance:

Changes to the Agenda:

Presentation:

Introduction of New Sergeant for the San Diego County Sheriff's Office – Lemon Grove Substation – Sergeant Zheath Sanchez

Introduction of New Employee – Noah Alvey, Community Development Manager

Public Comment:

(Note: In accordance with State Law, the general public may bring forward an item not scheduled on the agenda; however, the City Council may not take any action at this meeting. If appropriate, the item will be referred to staff or placed on a future agenda.)

City Council Oral Comments and Reports on Meetings Attended at the Expense of the City.

(GC 53232.3 (d)) (53232.3.(d) states that members of a legislative body shall provide brief reports on meetings attended at the expense of the local agency at the next regular meeting of the legislative body.)

1. Consent Calendar:

(Note: The items listed on the Consent Calendar will be enacted in one motion unless removed from the Consent Calendar by Council, staff, or the public.)

A. Waive Full Text Reading of All Ordinances on the Agenda

Reference: Kristen Steinke, City Attorney

Recommendation: Waive the full text reading of all ordinances included in this agenda; Ordinances shall be introduced and adopted by title only.

B. City of Lemon Grove Payment Demands

Reference: Molly Brennan, Finance Director

Recommendation: Ratify Demands

C. Eighth Amendment to Option Agreement Between City of Lemon Grove and San Diego Community Land Trust

Reference: Mike Viglione, Associate Planner

Recommendation: Adopt a Resolution entitled, "A Resolution of the City Council of the City of Lemon Grove, California, Approving the Eighth Amendment to an Option Agreement with the San Diego Community Land Trust for the Parcel Identified as 8084 Lemon Grove Way (475-450-19-00)."

D. Conditional Use Permit CUP-170-0001 Time Extension

Reference: Mike Viglione, Associate Planner

Recommendation: Adopt a Resolution entitled, "A Resolution of the City Council of the City of Lemon Grove, California, Approving a Time Extension of Approved Conditional Use Permit CUP-170-0001 located at 6470 Federal Boulevard," Extending the Expiration Date of Conditional Use Permit CUP-170-0001 from June 9, 2019 to June 19, 2020.

E. 2020 Minimum Wage Increase

Reference: Roberto Hidalgo, Human Resources Manager

Recommendation: Adopt a Resolution entitled, "A Resolution of the City Council of the City of Lemon Grove, California, Approval of Minimum Wage Increase to Ensure Compliance with the California Minimum Wage Increase as Governed by State Law."

F. Approve the Engineer's Report Detailing Zone L Assessments for Fiscal Year 2019-2020.(Roadway Lighting District Item)

Reference: Stephanie Boyce, Management Analyst

Recommendation: Adopt a Resolution entitled, "A Resolution of the Lemon Grove Roadway Lighting District Board Approving the Engineer's Report Regarding the Zone L Charges for Fiscal Year 2019-2020."

G. Approve the Engineer's Report Detailing Sewer Service Charges for Fiscal Year 2019-2020.(Sanitation District Item)

Reference: Stephanie Boyce, Management Analyst

Recommendation: Adopt a Resolution entitled, "A Resolution of the Sanitation District of the City of Lemon Grove, California, Approving the Engineer's Report Regarding the Sewer Service Charges for Fiscal Year 2019-2020."

H. Reappointment of Planning Commissioner Seth Smith

Reference: Lydia Romero, City Manager

Recommendation: Adopt a Resolution entitled, "A Resolution of the City Council of the City of Lemon Grove, California, Appointing Seth Smith to a Four (4) Year Term on the Lemon Grove Planning Commission."

I. Urban Forestry Tree Maintenance Agreement

Reference: Mike James, Assistant City Manager / Public Works Director

Recommendation: Adopt a Resolution entitled, "A Resolution of the City Council of the City of Lemon Grove, California, Approving an Urban Forestry Tree Maintenance Agreement with West Coast Arborists, Inc."

J. Professional Services Agreement for Stormwater Program, Construction and Development Support

Reference: Mike James, Assistant City Manager / Public Works Director

Recommendation: Adopt a Resolution entitled, "A Resolution of the City Council of the City of Lemon Grove, California, Approving an Agreement for Professional Services with D-Max Engineering, Inc. for Stormwater Support Services."

K. Levy and Collection of Assessments within the Lemon Grove Wildflower Landscape Maintenance Assessment District 97-1 for Fiscal Year 2019-2020.

Reference: Molly Brennan, Finance Manager

Recommendation: Adopt a Resolution entitled, "A Resolution of the City Council of the City of Lemon Grove, California, Approving the Levy and Collection of Assessments with the Lemon Grove Wildflower Landscape Maintenance Assessment District 97-1 for Fiscal Year 2019-2020."

L. Rejection of Claim

Reference: Mike James, Assistant City Manager / Public Works Director

Recommendation: City Council rejects the Claim submitted by David Bryan Turner Jr.

Reports to Council:

2. Fiscal Year 2019-2020 Consolidated Operating and Capital Budget

Reference: Molly Brennan, Finance Manager

Recommendation: Adopt a Resolution entitled, "A Resolution of the City Council of the City of Lemon Grove, California, Approving the City of Lemon Grove Budget for Fiscal Year 2019-2020 and Authorizing Expenditures Thereto"; and,

Adopt a Resolution entitled, "A Resolution of the City Council of the City of Lemon Grove, California, Approving a Salary Plan and Classification Summary"; and,

Adopt a Resolution entitled, "A Resolution of the City Council of the City of Lemon Grove, California, Establishing the Appropriations Limit for Fiscal Year 2019-2020"; and,

Adopt a Resolution entitled, "A Resolution of the Lemon Grove Roadway Lighting District Board Approving the Lemon Grove Roadway Lighting District Budget for Fiscal Year 2019-2020 and Authorizing Expenditures Thereto"; and,

Adopt a Resolution entitled, "A Resolution of the Lemon Grove Sanitation District Board Approving the Lemon Grove Sanitation District Budget for Fiscal Year 2019-2020 and Authorizing Expenditures Thereto."

3. San Miguel Avenue Traffic Analysis

Reference: Mike James, Assistant City Manager / Public Works Director

Recommendation: Receive Report and Provide Direction.

4. Drainage Master Plan Update

Reference: Mike James, Assistant City Manager / Public Works Director

Recommendation: Adopt a Resolution entitled, "A Resolution of the City Council of the City of Lemon Grove, California, Approving the Drainage Master Plan."

Closed Session:

1. LIABILITY CLAIM

Government Code Section 54956.95

Claimant: Robert Brohead

Claimed Against: City of Lemon Grove

2. LIABILITY CLAIM
Government Code Section 54956.95
Claimant: Marcos Martinez
Claimed Against: City of Lemon Grove
3. LIABILITY CLAIM
Government Code Section 54956.95
Claimant: Reyna Ortiz Mendoza
Claimed Against: City of Lemon Grove
4. CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION
Government Code Section 54956.9
Name of Case: City of Lemon Grove v. The Grove Collective, et al.
(CASE NO. 37-2016-00015271-CU-BC-CTL)
5. CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION
Government Code Section 54956.9
Name of Case: Hatsuko Hoss

Adjournment

In compliance with the Americans with Disabilities Act (ADA), the City of Lemon Grove will provide special accommodations for persons who require assistance to access, attend and/or participate in meetings of the City Council. If you require such assistance, please contact the City Clerk at (619) 825-3800 or email schapel@lemongrove.ca.gov. A full agenda packet is available for public review at City Hall.

AFFIDAVIT OF NOTIFICATION AND POSTING

STATE OF CALIFORNIA)
COUNTY OF SAN DIEGO) SS
CITY OF LEMON GROVE)

I, Shelley Chapel, MMC, City Clerk of the City of Lemon Grove, hereby declare under penalty of perjury that a copy of the above Agenda of the Regular Meeting of the City Council of the City of Lemon Grove, California, was delivered and/or notice by email not less than 72 hours before the hour of 7:00 p.m. on June 13, 2019, to the members of the governing agency, and caused the agenda to be posted on the City's website at www.lemongrove.ca.gov and at Lemon Grove City Hall, 3232 Main Street Lemon Grove, CA 91945.

/s/: Shelley Chapel

Shelley Chapel, MMC, City Clerk



CITY OF LEMON GROVE

CITY COUNCIL STAFF REPORT

Item No. 1.A

Meeting Date: June 18, 2019
Submitted to: Honorable Mayor and Members of the City Council
Department: City Manager's Office
Staff Contact: Kristen Steinke, City Attorney
Item Title: **Waive the Full Text Reading of all Ordinances**

Summary: Waive the full text reading of all ordinances included in this agenda. Ordinances shall be introduced and adopted by title only.

Environmental Review:

- Not subject to review Negative Declaration
 Categorical Exemption, Section | | Mitigated Negative Declaration

Fiscal Impact: None.

Public Notification: None.



CITY OF LEMON GROVE

CITY COUNCIL STAFF REPORT

Item No. 1.B

Meeting Date: June 18, 2019
Submitted to: Honorable Mayor and Members of the City Council
Department: City Manager's Office
Staff Contact: Molly Brennan, Finance Manager
<mailto:MBrennan@lemongrove.ca.gov>

Item Title: **City of Lemon Grove Payment Demands**

Recommended Action: Ratify Demands.

Environmental Review:

- | | |
|-----------------------------------------------------------|---------------------------------------------------------|
| <input checked="" type="checkbox"/> Not subject to review | <input type="checkbox"/> Negative Declaration |
| <input type="checkbox"/> Categorical Exemption, Section | <input type="checkbox"/> Mitigated Negative Declaration |

Fiscal Impact: None.

Public Notification: None.

City of Lemon Grove Demands Summary

Approved as Submitted:

Molly Brennan, Finance Manager

For Council Meeting: 06/18/19

ACH/AP Checks 05/23/19-06/05/19 151,661.52

Payroll - 06/04/19 136,321.46

Total Demands 287,982.98

CHECK NO	INVOICE NO	VENDOR NAME	CHECK DATE	Description	INVOICE AMOUNT	CHECK AMOUNT
ACH	May21 19	Employment Development Department	05/23/2019	State Taxes 5/21/19	6,122.16	6,122.16
ACH	May8-May21 19	Calpers Supplemental Income 457 Plan	05/23/2019	457 Plan 5/8/19-5/21/19	6,083.53	6,083.53
ACH	1000256517	City of San Diego	05/28/2019	Metro Sewer System FY19-QTR 4 - 4/1/19-6/30/19	730,471.00	730,471.00
ACH	May21 19	US Treasury	05/28/2019	Federal Taxes 5/21/19	22,412.69	22,412.69
ACH	59181591	WEX Bank	05/29/2019	Fuel - Fire Dept - Apr'19	241.04	241.04
ACH	9469819	LEAF	05/29/2019	Ricoh C3502 Copier System-PW Yard - Jun'19	160.51	160.51
ACH	May19	Wage Works	05/31/2019	FSA Reimbursement - May'19	1,216.96	1,216.96
ACH	May19	Power Pay Biz/Evo	06/03/2019	Online Credit Card Processing - May'19	77.84	77.84
ACH	Jun19	Pers Health	06/04/2019	Pers Health Insurance - Jun19	45,273.78	45,273.78
ACH	Apr24-May21 19	California Public Empl Retirement System	06/04/2019	Pers Retirement 4/24/19-5/21/19	58,725.19	58,725.19
ACH	May19	Authorize.Net	06/04/2019	Merchant Fees -May'19	23.05	23.05
11375	C8838 C8838	A-Pot Rentals, Inc.	05/29/2019	Portable Restroom Rental- 5/9/19-6/8/19 Portable Restroom Rental- 6/9/19-7/8/19	132.10 132.10	264.20
11376	156558	Ace Uniforms & Accessories, Inc.	05/29/2019	Uniform - Ortiz	804.83	804.83
11377	11996	AdminSure	05/29/2019	Workers' Compensation Claims Administration - Jun'19	440.42	440.42
11378	051019	American General Life Insurance Company	05/29/2019	Life Insurance - L Romero	232.18	232.18
11379	5/12/2019	AT&T	05/29/2019	Phone Service 4/13/19-5/12/19	82.52	82.52
11380	5656460131 5656711062	AutoZone, Inc.	05/29/2019	Diesel Exhaust Fluid - LGPW #32 GapVax Diesel Exhaust Fluid - LGPW #32 GapVax	26.94 26.94	53.88
11381	I294099	Bestway Laundry Solutions	05/29/2019	Unimac 20# Washer Extractor/Micro Controller - Fire Stn	6,052.41	6,052.41
11382	945363-9	BJ's Rentals	05/29/2019	Boom Knuckle Rental - Del Mar Fair Banners	359.25	359.25
11383	June 2019	California Dental Network Inc.	05/29/2019	California Dental Insurance -Jun19	368.84	368.84
11384	20071898	Canon Financial Services Inc.	05/29/2019	Canon Plotter Contract Charge 5/21/19-6/20/19	144.00	144.00
11385	4022082444 4022532337	Cintas Corporation #694	05/29/2019	Janitorial Supplies - 5/16/19 Janitorial Supplies - 5/23/19	216.14 577.98	794.12
11386	2105 2106	Clark Telecom & Electric Inc.	05/29/2019	Street Light Dig Alert Mark Outs- Apr'19 Street Light Repairs- Apr'19	272.87 1,489.10	1,761.97
11387	81959044	Corelogic Solutions, LLC.	05/29/2019	Image Requests - Apr'19	5.50	5.50
11388	5/18/2019	Cox Communications	05/29/2019	Copy Room/City Manager Fax Line- 5/18/19-6/17/19	3.46	3.46
11389	4952 4953 4954 4955 4956 4957 4959	D- Max Engineering Inc.	05/29/2019	1993 Dain Dr Stormwater Inspection thru 4/30/19 6800 Mallard Ct Stormwater Inspection thru 4/30/19 Celsius Phase II Stormwater Inspection thru 4/30/19 Golden Doors Stormwater Inspection thru 4/30/19 LGA Realignment Stormwater Inspection thru 4/30/19 LG FY18-19 Street Rehab CIP thru 4/30/19 D-Max Stormwater Prof Svcs thru 4/30/19	217.90 222.90 337.90 139.15 513.30 252.85 2,030.00	3,714.00
11390	20192796 20192859	Dudek	05/29/2019	Prof Svcs: Inspection Support Svcs/Grove Hill Proj 3/30/19-4/26/19 Prof Svcs: Inspection Support Svcs/Sewer CIP Proj 3/30/19-4/26/19	2,000.00 3,105.00	5,105.00
11391	Escobar	Escobar, Mario	05/29/2019	Refund/Escobar, Mario/Div Dep CD1-800-0051	46.78	46.78
11392	4/29-30/19	Esgil Corporation	05/29/2019	75% Building Fees- 4/29/19-4/30/19	1,439.18	1,439.18

11393	129688	Fire Etc.	05/29/2019	Innerzone 2 Goggles- Face/Eye Protection - Ortiz	285.54	285.54
11394	Foreman	Foreman, Michael	05/29/2019	Refund/Foreman, Michael/Deposit - LBH- 5/11/19	200.00	200.00
11395	Gebreamiak	Gebreamiak,Lidia	05/29/2019	Refund/Gebreamiak, Lidia/Deposit - CommCtr- 5/4/19	300.00	300.00
11396	INV101496 INV1015377	George Hills Company	05/29/2019	PINS Annual Software License Fee TPA Claims- Adjusting/Other Services - Apr 19	1,350.00 911.60	2,261.60
11397	100000010308300	Globalstar USA, Inc.	05/29/2019	Satellite Service 4/16/19-5/15/19	171.17	171.17
11398	AR010146 AR010146 AR010146	Grossmont Union High School District	05/29/2019	Business Cards- Gonzalez/Torres Business Cards- Viglione/Ortuno Business Cards- Dimarucut	51.00 51.00 25.50	127.50
11399	1477719	Liebert Cassidy Whitmore	05/29/2019	Prof Svcs: LE 050-00201 FLSA Audit thru 4/30/19	2,685.05	2,685.05
11400	Mendoza	Mendoza, Jennifer	05/29/2019	Refund/Mendoza, Jennifer/Deposit - CC- 5/15/19	200.00	200.00
11401	WO-57582-1	Office Advantage, Inc.	05/29/2019	Office Supplies - Fire	121.83	121.83
11402	10247201	Penske Ford	05/29/2019	Wiper Blades - LGPW #31	28.45	28.45
11403	31720102	RCP Block & Brick, Inc.	05/29/2019	Hi-Strength Concrete Mix/Rapid Set Concrete Mix - Gazebos	62.56	62.56
11404	Rivera	Rivera, Rachel	05/29/2019	Refund/Rivera, Rachel/Deposit - CommCtr- 5/19/19	200.00	200.00
11405	91165765-001	SiteOne Landscape Supply, LLC	05/29/2019	Tree Stakes/Ties/Sprinkler Cover Seal Assembly - PW/Grounds	120.68	120.68
11406	CLG-10 CLG-11 CLG-6 CLG-7 CLG-8 CLG-9 CLM-1	Smith, Kevin	05/29/2019	Service Call- AC Unit #11 - Repair/City Hall Service Call- AC Unit #4 - Repair/Sheriff Stn Service Call- Furnace Unit #11 Repair/City Hall Service Call- AC Unit #4 Repair/Sheriff Stn Service Call- AC Unit #5 Repair/City Hall Service Call- Lead and Lag AC Units - Repair/City Hall Service Call- AC Unit - Replace Compressor/Senior Ctr	113.00 425.00 85.00 197.50 97.00 180.00 2,620.00	3,717.50
11407	11074 11382	Spring Valley Lawn Mower Shop	05/29/2019	Repair - E10 Rescue Saw - Fire Repair - E210 Rescue Saw - Fire	118.13 176.33	294.46
11408	Standard	Standard, Natasha	05/29/2019	Refund/Standard, Natasha/Deposit - LeeHouse/Courtyard- 5/19/19	200.00	200.00
11409	FTB-00001139	State Controller	05/29/2019	FTB Charges- 2018 Offsets- 1/1/18-12/31/18	82.27	82.27
11410	XA290037346:01 XA290037424:01	Velocity Truck Centers/LA Truck Centers,LLC	05/29/2019	LGPW #32 GapVax - Windshield Wipers Vehicle Wipes	62.04 2.35	64.39
11411	9830043373 9830042816	Verizon Wireless	05/29/2019	Mobile Broadband Access- 4/13/19-5/12/19 PW Tablets- 4/13/19-5/12/19	76.02 188.78	264.80
11412	147758	West Coast Arborists, Inc.	05/29/2019	Tree Maintenance - 4/16/19-4/30/19	338.00	338.00
11413	L1072895TF	American Messaging	06/05/2019	Pager Replacement Program 6/1/19-6/30/19	49.69	49.69
11414	5/22/2019 13081475	AT&T	06/05/2019	Backup City Hall Internet 4/23/19-5/22/19 Fire Backup Phone Line- 4/22/19-5/21/19	89.25 39.61	128.86
11415	943993-9 943994-9	BJ's Rentals	06/05/2019	Eq Rntl/Weed Wacker/Hedge Pole Trimmer-Weed AbateMt -NorthAve Boom Knuckle Rental - Del Mar Fair Banners	217.46 359.25	576.71
11416	Reimb 5/30/19	Boyce, Stephanie	06/05/2019	Reimb: Womens Leadership Summit/San Marino - Boyce 5/28-29/19	172.16	172.16
11417	PettyCash-6/4 PettyCash-6/4 PettyCash-6/4 PettyCash-6/4 PettyCash-6/4 PettyCash-6/4 PettyCash-6/4 PettyCash-6/4 PettyCash-6/4 PettyCash-6/4	Brenda Wardrip	06/05/2019	Petty Cash- CommCtr Roof Repair Petty Cash- Mileage 11/1/18-3/4/19/Chapel Petty Cash- Parking/Investment Training/Brennan/Carrasco 2/21/19 Petty Cash- Supplies/Easter Eggstravaganza Petty Cash- Fuel/Facility Truck Petty Cash- TAC Mtg/City of SD PUD/Boyce/Mileage Petty Cash- Passport Postage Petty Cash- Livescan- Dimarucut 3/15/19 Petty Cash- Livescan- Torres 4/17/19 Petty Cash- Livescan- Shirazi 5/10/19	50.36 42.89 22.00 92.63 10.35 32.70 7.35 52.00 52.00 52.00	414.28
11418	Brennan 6/19/19	California Municipal Rev & Tax Assn	06/05/2019	CMRTA Div IV Mtg/San Diego - Brennan 6/19/19	35.00	35.00
11419	6/4/19	California State Disbursement Unit	06/05/2019	Wage Withholding Pay Period Ending 6/4/19	161.53	161.53
11420	20121948	Canon Financial Services Inc.	06/05/2019	Canon Copier Contract Charge 6/1/19	642.60	642.60
11421	4029387710	Canon Solutions America, Inc.	06/05/2019	Canon Maintenance-Copier Usage 2/27/19-5/26/19	762.10	762.10
11422	4019499253	Cintas Corporation #694	06/05/2019	Janitorial Supplies - 4/4/19	218.66	218.66
11423	1000257621	City of San Diego	06/05/2019	Chollas Creek TMDL- Cost Share	27,028.42	27,028.42

11424	177	CityPlace Planning, Inc.	06/05/2019	Interim Dev Svcs Dir Tasks - Apr '19	7,363.14	7,363.14
11425	2792	Clothing International, Inc.	06/05/2019	Summer Day Camp T-Shirts	2,236.03	2,236.03
11426	5/6/2019 5/19/2019 5/6/2019 5/9/2019	Cox Communications	06/05/2019	Calsense Modem Line:2259 Washington 5/6/19-6/5/19 Phone/PW Yard/2873 Skyline- 5/19/19-6/18/19 Calsense Modem Line:7071 Mt Vernon 5/6/19-6/5/19 Calsense Modem Line:8235 Mt Vernon 5/9/19-6/8/19	21.03 212.03 19.93 94.39	347.38
11427	15437	Custom Auto Wrap Inc.	06/05/2019	Summer Daycamp Banners for Schools	846.39	846.39
11428	4951	D- Max Engineering Inc.	06/05/2019	6859 Federal MMD Stormwater Quality Reviews 3/1/19-5/14/19	343.75	343.75
11429	0419.01.0370 0419.26.0363	Dexter Wilson Engineering, Inc.	06/05/2019	FY19/20 Sewer Svc Charge Analysis for LG Sanitation District Metro JPA Wastewater Issues - Apr'19	1,960.00 9,042.50	11,002.50
11430	18dsbfee2722	Dig Safe Board	06/05/2019	State Fee/Regulatory Monthly Costs/Dig Alert 2018	42.80	42.80
11431	E10 Lic Plate	DMV	06/05/2019	E10 - Replacement License Plate	29.00	29.00
11432	0528192305	Domestic Linen- California Inc.	06/05/2019	Shop Towels & Safety Mats 5/28/19	86.10	86.10
11433	5/1-2/19 5/6-9/19 5/13-16/19	Esgil Corporation	06/05/2019	75% Building Fees- 5/1/19-5/2/19 75% Building Fees- 5/6/19-5/9/19 75% Building Fees- 5/13/19-5/16/19	1,855.20 7,499.88 1,638.27	10,993.35
11434	244840 244847	Evans Tire & Service Center	06/05/2019	LGPW#03 '00 Ford Ranger - 4 Tires/Wheel Balance LGPW#04 '08 Chevy Colorado - 4 Tires/Wheel Balance	295.49 676.00	971.49
11435	26713	Excell Security, Inc.	06/05/2019	Senior Center Security Guards - 5/25/19	479.04	479.04
11436	Hanning	Hanning, Ilse	06/05/2019	Water Usage for Weed Abatement-Between Lawton & Camino dl Palm	31.13	31.13
11437	0031253-IN 0031253-IN	Hinderliter De Llamas & Associates	06/05/2019	Contract Services - Sales Tax - Qtr 2 Sales Tax Audit Services - Qtr 4 2018	1,350.00 295.59	1,645.59
11438	Jun4 19	ICMA	06/05/2019	ICMA Deferred Compensation Pay Period Ending 6/4/19	580.77	580.77
11439	1550	Janazz, LLC SD	06/05/2019	IT Services- City Hall- May'19	2,500.00	2,500.00
11440	133690	Knott's Pest Control, Inc.	06/05/2019	On Call Pest Control- Senior Center 5/15/19	110.00	110.00
11441	Reimb 5/30/19	Kunz, Airan	06/05/2019	Reimb: Lodging/Bike Patrol Trng/6/4/19-6/7/19 Kunz/Heiserman	527.24	527.24
11442	07-2525	Lemon Grove School District	06/05/2019	Fuel Services-PW: Apr'19	4,893.77	4,893.77
11443	Marks	Marks, Gabriela	06/05/2019	Refund/Marks, Gabriela/Overpaid Permit Fees	132.00	132.00
11444	Mc Kim	Mc Kim, Mary Anne	06/05/2019	Refund/Mc Kim, Mary Anne/Deposit - CommCtr- 5/11/19	200.00	200.00
11445	228119	Ninyo & Moore	06/05/2019	Materials Testing - FY17/18 Sewer CIP Proj thru 4/26/19	993.50	993.50
11446	PD-41996	Plumbers Depot Inc.	06/05/2019	LGPW#32 Load Level Indicator/Valve/Strainer -GapVax	1,356.51	1,356.51
11447	INV030359	RapidScale Inc.	06/05/2019	Virtual Hosting/Back Up Svc/Cloud Storage 5/31/19	3,675.78	3,675.78
11448	31720740	RCP Block & Brick, Inc.	06/05/2019	Bulk Concrete Sand - Fire Station	209.47	209.47
11449	17546-I(3) 17546F(14)	Rick Engineering Company	06/05/2019	Prof Svc: City Engineer As-Needed Svcs 3/30/19-4/26/19 Prof Svc: 2017/18 CIP Sewer Proj- 8 Locations 3/30/19-4/26/19	32,888.88 2,113.39	35,002.27
11450	Reimb 5/22/19	Rodriquez, Frankie	06/05/2019	Reimb: Ipad Cover with Keyboard	141.04	141.04
11451	5/22/2019 5/22/2019 5/22/2019	SDG&E	06/05/2019	3225 Olive- 4/21/19-5/20/19 3500 1/2 Main- 4/21/19-5/20/19 3601 1/2 LGA-4/21/19-5/20/19	103.27 182.08 31.82	317.17
11452	12674	Smart Cover Systems Inc.	06/05/2019	DSM/Flow Meters on Manhole Covers for Satellite/Installation	370.00	370.00
11453	00082191	The East County Californian	06/05/2019	Public Hearing Notice - Inflatable Jumper Prog Fee 5/23/19	147.00	147.00
11454	520190388	Underground Service Alert of Southern Ca.	06/05/2019	75 New Ticket Charges - May'19	133.75	133.75
11455	9830510945	Verizon Wireless	06/05/2019	Fire Prev Phone Line/MDC Engine Tablets- 4/21/19-5/20/19	365.21	365.21
					151,661.52	151,661.52



CITY OF LEMON GROVE

CITY COUNCIL STAFF REPORT

Item No. 1.C

Meeting Date: June 18, 2019

Submitted to: Honorable Mayor and Members of the City Council

Department: Community Development Department

Staff Contact: Mike Viglione, Associate Planner

mviglione@lemongrove.ca.gov

Item Title: Eighth Amendment to Option Agreement Between City of Lemon Grove and the San Diego Community Land Trust

Recommended Action: Adopt a resolution amending the Option Agreement to provide a one-year time extension.

Summary:

In September 2014, the City and San Diego Community Land Trust (SDCLT) entered into a Purchase Option Agreement for the eventual sale of 8084 Lemon Grove Way which is Lemon Grove Housing Authority owned land. The Purchase Option Agreement requires SDCLT to complete milestones by specified dates to ensure that SDCLT progresses towards purchase of 8084 Lemon Grove Way. The final project milestone—securing building and site improvement permits and securing, as to form, the 99-year ground lease proposed to be used as the conveyance of Affordable Unit interests—was to be completed by May 19, 2016, and the Seventh Option Amendment extended this date to June 31, 2019. A further time extension will allow the applicant to finalize construction permits required by the ultimate milestone.

Discussion:

On September 22, 2014, the City and San Diego Community Land Trust (SDCLT) entered into a Purchase Option Agreement for the eventual sale of 8084 Lemon Grove Way which is owned by the Lemon Grove Housing Authority (City Council Resolution No. 2014-3284 dated September 16, 2014). A nine unit housing development is currently entitled on the subject property based on approvals in 2007 and amendments approved on March 1, 2016. The Purchase Option Agreement allows SDCLT to purchase the property for one dollar per unit in exchange for constructing the units and restricting them to moderate income households via their 99-year ground lease mechanism. The Purchase Option

Agreement requires SDCLT to achieve certain project milestones by specified dates to ensure project feasibility.

The first milestone—submission of a business plan—was to be achieved by December 2014. The business plan was submitted on December 1, 2014, and the City Council reviewed the business plan and provided feedback to SDCLT on January 6, 2015.

The second milestone—securing entitlements and construction financing—was to be achieved by September 2, 2015, and October 19, 2015, respectively. Minimal revisions to the approved Tentative Map (TM0052) and Planned Development Permit (PDP06-09) were proposed and amendments to the floor and elevation plans were approved by the City Council on March 1, 2016. Entitlements for both the tentative map and planned development permit are secured since there has been substantial progress towards the issuance of a final map, grading plan, improvement plan and building permits for the completion of the project. While the first three amendments extended the deadline to provide evidence of construction financing, the fourth amendment approved on October 17, 2017, revised the second milestone to allow SDCLT to secure financing a minimum of 10 days prior to exercising the option.

The third milestone—submission of building and site improvement applications—was to be achieved by April 4, 2016. This milestone required submission of development plans and technical studies required for a grading permit, building permit, landscape permit, and a final map. Appropriate plans and reports include building and site construction plans, grading plans, a landscape documentation package, an acoustical analysis, a Storm Water Quality Management Plan and a hydrology report, and potentially other necessary reports, studies, and plans in accordance with City Council Resolutions 2694 and 2695, which approved TM0052 and PDP06-09 respectively. In addition, a “Hold Harmless” agreement was required for each submittal. In February of 2016, SDCLT submitted the necessary permit applications achieving the third milestone.

The fourth milestone—securing building and site improvement permits and securing approval as to form of the 99-year ground lease proposed to be used as the conveyance of Affordable Unit interests—was originally to be achieved by May 19, 2016 but subsequent amendments to the Purchase Option Agreement extended the deadline to June 31, 2019. The fourth milestone requires that the permits applied for in the third milestone be issued and improvements secured either through a bond or cash deposit with appropriate fees paid prior to transfer of the Property.

City Council approved the Ground Lease as to form on October 17, 2017 and multiple building and improvement plan checks have occurred to date. The project Storm Water Quality Management Plan was finalized on March 28, 2019 and only minor Grading and Improvement Plan corrections remain. Staff anticipate that the resubmittal of the

Grading and Improvement Plans required for satisfaction of the fourth milestone is imminent and that finalization of the building and engineering permits required by the fourth milestone can be completed within one year.

Accordingly, the proposed Eighth Amendment to the Option Agreement Between City of Lemon Grove and San Diego Community Land Trust extends the deadline for the fourth milestone to June 31, 2020 and extends the Option Term to September 22, 2020. A one-year extension would also likely be sufficient to accommodate Ground Lease and Tentative Map revisions in the event SDCLT requests such changes.

Should the City Council decide to take no action and/or decline to amend the Option Agreement, it is likely the Option Agreement will terminate on June 31, 2019 due to nonfulfillment of the fourth milestone. As a consequence, the developer would need to renegotiate a new Option Agreement with the City should they continue to pursue the project. At that time, the City Council may choose to pursue other opportunities for the property if this Option Agreement in fact does terminate.

Environmental Review:

- Not subject to review Negative Declaration
 Categorical Exemption, Section | | Mitigated Negative Declaration

Fiscal Impact: None.

Public Notification: None.

Staff Recommendation: Adopt a resolution amending the Option Agreement to provide a one-year time extension.

Attachments:

Attachment A – Resolution Amending the Option Agreement

RESOLUTION NO. 2019-

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LEMON GROVE, CALIFORNIA, APPROVING THE EIGHTH AMENDMENT TO AN OPTION AGREEMENT WITH THE SAN DIEGO COMMUNITY LAND TRUST FOR THE PARCEL IDENTIFIED AS 8084 LEMON GROVE WAY (475-450-19-00)

WHEREAS, on June 20, 2006, and June 19, 2007, the former Lemon Grove Community Development Agency and a developer entered into loan agreements for the development of nine townhome units at 8084 Lemon Grove Way; and

WHEREAS, said developer defaulted on the loan agreements, resulting in the parcel identified as 8084 Lemon Grove Way becoming property of the City of Lemon Grove; and

WHEREAS, in 2014, the San Diego Community Land Trust (SDCLT) provided a formal offer to purchase 8084 Lemon Grove Way from the City of Lemon Grove; and

WHEREAS, SDCLT's offer included a commitment to develop and construct a minimum of nine affordable housing units to be ground leased for a 99-year period to households earning from 80 percent to 120 percent of the San Diego Area Median Income at the time of sale or resale; and

WHEREAS, on June 17, 2014, the City Council directed City staff to negotiate purchase agreements with SDCLT, based on its offer; and

WHEREAS, on May 17, 2016, the City Council approved an amendment to the Option Agreement with SDCLT extending the expiration date of Option Agreement milestone 7.4 to October 19, 2016 and the option term to March 22, 2017 (both six month extensions) and including an Optionee requirement to execute an Affordable Housing Agreement and Regulatory Agreement and a Notice of Affordability Restrictions on Transfer of Property; and

WHEREAS, the City negotiated a second amendment to the Option Agreement with SDCLT further extending the expiration date of milestone 7.4 to April 19, 2017, and the option term to September 22, 2017 (both six month extensions); and

WHEREAS, the City negotiated a third amendment to the Option Agreement with SDCLT further extending the expiration date of milestone 7.4 to October 19, 2017, and the option term to March 22, 2018 (both six month extensions) and requiring milestone 7.2 – secure construction financing – to be completed by July 19, 2017; and

WHEREAS, the City negotiated a fourth amendment to the Option Agreement with SDCLT further extending the expiration date of milestone 7.4 to April 19, 2018, and the option term to September 22, 2018 (both six month extensions) requiring milestone 7.2 – secure construction financing – to be completed a minimum of 10 days prior to the execution of the option; and accepted the form of Ground Lease, Ground Lease Rider and Regulatory Agreement; and

WHEREAS, the City negotiated a fifth amendment to the Option Agreement with SDCLT further extending the expiration date of milestone 7.4 to October 19, 2018 and the option term to March 22, 2019 (both six month extensions); and

WHEREAS, the City negotiated a sixth amendment to the Option Agreement with SDCLT further extending the expiration date of milestone 7.4 to January 31, 2019; and

WHEREAS, the City negotiated a seventh amendment to the Option Agreement with SDCLT further extending the expiration date of milestone 7.4 to June 31, 2019 and the option term to September 22, 2019 and providing for the right to review and modify the accepted ground lease used as the conveyance of Affordable Unit interests; and

WHEREAS, the City has negotiated an eighth amendment to the Option Agreement with the San Diego Community Land Trust further extending the expiration date of milestone 7.4 to June 31, 2020 and the option term to September 22, 2020 (both one year extensions); and

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Lemon Grove, California hereby:

1. Approves an Eighth Amendment to the Option Agreement (Exhibit A) between the City of Lemon Grove and the San Diego Community Land Trust; and
2. Authorizes the City Manager to execute said Amendment and related documents reasonably necessary for fulfilling the terms of the Option Agreement, as amended, subject to minor modifications.

PASSED AND ADOPTED on _____, 2019, the City Council of the City of Lemon Grove, California, adopted Resolution No. _____, passed by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Racquel Vasquez, Mayor

Attest:

Shelley Chapel, MMC, City Clerk

Approved as to Form:

Kristen Steinke, City Attorney

EXHIBIT A (PAGES 8 THROUGH 9)
EIGHTH AMENDMENT TO OPTION AGREEMENT

This Eighth Amendment to Option Agreement (“**Eighth Amendment**”) is entered into as of June __, 2019, by and between and between THE CITY OF LEMON GROVE a public body (“**Optionor**”) and THE SAN DIEGO COMMUNITY LAND TRUST a California 501(c)(3) non-profit organization (“**Optionee**”),

RECITALS:

A. Optionor and Optionee entered into that certain Option Agreement dated September 22, 2014 relating to the Property commonly known as 8084 Lemon Grove Way, Lemon Grove, CA (APN 475-450-19-00), as amended by the First Amendment dated March 18, 2016, as amended by the Second Amendment dated October 5, 2016, as amended by the Third Amendment dated April 17, 2017, as amended by the Fourth Amendment dated October 18, 2017, as amended by the Fifth Amendment dated April 18, 2018, as amended by the Sixth Amendment dated October 18, 2018, and as amended by the Seventh Amendment dated January 17, 2019 (together the “**Option Agreement**”).

B. Optionor and Optionee desire to further amend the Option Agreement set forth herein. All initially capitalized terms not otherwise defined herein shall have the same meanings as set forth in the Option Agreement.

AGREEMENT:

NOW THEREFORE, and in consideration of the mutual agreements contained herein and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Optionor and Optionee hereby agree as follows:

1. Extension of Option Term. Paragraph 4 of the Option Agreement is deleted in its entirety and replaced as follows:

“4. Option Term. The Option may be exercised upon the Effective Date and no later than September 22, 2020 (the “**Option Term**”), unless terminated earlier under the terms of Section 6. If the Option is not exercised in accordance with the provisions and conditions hereof during the Option Term, then the Option shall expire and the parties shall have no further obligations under this Agreement with the exception of any surviving indemnification obligations as provided in this Agreement.”

2. Extension of deadline for Permits and Optionor’s Approval. Subparagraph 7.4 of the Option Agreement is deleted in its entirety and replaced as follows:

“7.4 No later than June 31, 2020, Optionee shall have (i) completed all requirements necessary for Building and Site Improvement Permits (including building, street improvement, and grading plans shall be issued and the final map approved by City Council), with the exception of payment of fees for the foregoing permits and plans (“Permit Fees”). All outstanding Permit Fees shall be delivered to Escrow prior to the transfer of the Property to Optionor and shall be a Developer (Optionee) deliverable under section 2.6 of the revised Real Estate Purchase and Sale Agreement (“PSA”), as attached to the Fourth Amendment as Fourth Amendment Exhibit A.”

3. Counterparts. This Eighth Amendment may be signed in multiple counterparts with the same force and effect as if all original signatures appeared on one copy; and in the event, this Seventh Amendment is signed in counterparts, each counterpart shall be deemed an original and all of the counterparts shall be deemed to be one Seventh Amendment.

4. Effect of Eighth Amendment. Except as amended hereby, the Option Agreement remains in full force and effect.

IN WITNESS WHEREOF, Optionor and Optionee have executed this Eighth Amendment as of the date set forth above.

OPTIONOR:

THE CITY OF LEMON GROVE,

By: _____

Name: _____

Its: _____

Approved as to legal form:

By _____
Kristen S. Steinke, City Attorney

OPTIONEE:

THE SAN DIEGO COMMUNITY LAND TRUST,

By: _____

Name: _____

Its: _____



CITY OF LEMON GROVE

CITY COUNCIL STAFF REPORT

Item No. 1.D

Meeting Date: June 18, 2019

Submitted to: Honorable Mayor and Members of the City Council

Department: Community Development Department

Staff Contact: Mike Viglione, Associate Planner

mviglione@lemongrove.ca.gov

Item Title: Conditional Use Permit CUP-170-0001 Time Extension

Recommended Action: Adopt a resolution entitled, “A Resolution of the City Council of the City of Lemon Grove, California, Approving a Time Extension of Approved Conditional Use Permit CUP-170-0001 located at 6470 Federal Boulevard,” extending the expiration date of Conditional Use Permit CUP-170-0001 from June 19, 2019 to June 19, 2020.

Summary:

On June 19, 2018, the City Council adopted Resolution No. 2018-3591 (resolution) thereby approving Conditional Use Permit (CUP) application CUP-170-0001 authorizing the establishment of a Medical Marijuana Dispensary (MMD) at 6470 Federal Boulevard. Per Section 2, Condition E, of the resolution, CUP-170-0001 “...expires on June 19, 2019 (or such longer period as may be approved by the City Council of the City of Lemon Grove prior to said expiration date) unless all requirements of the CUP have been met prior to said expiration date.” Tenant Improvement Building Permit B18-000-0575 was issued on May 28, 2019, but the applicant cannot complete construction or satisfy all resolution conditions required to commence operations before the June 19, 2019 expiration date. A one-year time extension will allow the applicant to complete the permitted tenant improvements, satisfy remaining conditions of approval, and commence operations.

Discussion:

In November 2016, voters in the City of Lemon Grove passed Measure V, an initiative removing the City’s the prohibition of medical marijuana dispensaries and establishing performance standards and a permit process by which a MMD may be established. Measure V was subsequently codified in Chapter 17.32 of the Lemon Grove Municipal Code (LGMC), which identifies a CUP as the required permit process.

Pursuant to LGMC Chapter 17.32, City Council held a duly noticed public hearing on June 19, 2018, for Conditional Use Permit application CUP-170-0001 for a MMD at 6470 Federal Boulevard and ultimately adopted Resolution 2019-3591 conditionally approving the application. CUP-170-0001 authorizes the establishment of a MMD at the aforementioned address, which is an approximately one acre parcel in the Light Industrial zone, but does not include permissions for cannabis cultivation, manufacturing, processing, delivery services or any other accessory cannabis use. The approved CUP incorporates tenant improvements for the conversion of existing office and warehouse space into a MMD facility and exterior site improvements like screening, landscaping and Stormwater improvements, and parking area improvements. In-lieu of the immediate street improvements required pursuant to LGMC Chapter 12.10 and Section 17.24.010(H), the approval resolution includes a requirement to pay a \$636,000 in-lieu fair-share contribution toward drainage improvements, street improvements, utility undergrounding and weed abatement along Federal Blvd. and Chollas Creek.

An environmental assessment was also prepared for CUP-170-0001 as required by the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq., and the State CEQA guidelines, Section 15000 et seq. of the California Code of Regulations, and certified with the resolution. Initial Environmental Study and Mitigated Negative Declaration of Environmental Impact ND18-02 identified mitigation measures to reduce potential impacts to Air Quality, Biological Resources, Greenhouse Gas Emissions, Noise, Public Services, Transportation and Traffic, and Mandatory Findings of Significance, below the threshold of significance. These mitigation measures are incorporated into the approved project design and resolution as conditions to ensure that potential project impacts are addressed.

Among the conditions set forth in the resolution are two separate provisions which limit the term of CUP-170-0001. Section 2, Condition E, of the resolution states that the CUP expires on June 19, 2019 (or such longer period as may be approved by the City Council of the City of Lemon Grove prior to said expiration date), unless all requirements of the CUP are satisfied prior to the expiration date. Separately, Section 2, Condition C (22) establishes a requirement to renew the Conditional Use Permit every three years and reserves for City Council the right to review the renewal.

The applicant obtained Building Permit B18-000-0575 for the Tenant Improvement on May 28, 2019, and continues to demonstrate progress toward perfection of the CUP but is unable to satisfy all resolution requirements by June 19, 2019. The project has not been modified since the original City Council approval, nor have the existing conditions or circumstances which informed City Council approval changed.

As such, staff recommends the City Council grant a one-year extension to the June 19, 2019 expiration date in Section 2, Condition E, pursuant to the authority to authorize a

longer term reserved to the City Council in the precedent condition. No modifications to the periodic renewal requirement in Section 2, Condition C (22) of the resolution are warranted or recommended.

Environmental Review:

Not subject to review

Negative Declaration

Categorical Exemption

Mitigated Negative Declaration ND-18-02

Fiscal Impact: None.

Public Notification: None.

Staff Recommendation: Adopt a resolution extending the expiration date of Conditional Use Permit CUP-170-0001 from June 19, 2019 to June 19, 2020.

Attachments:

Attachment A – Resolution Approving a One-Year Time Extension for CUP-170-0001

RESOLUTION NO. 2019-

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LEMON GROVE,
CALIFORNIA, APPROVING A TIME EXTENSION OF APPROVED
CONDITIONAL USE PERMIT CUP-170-0001 LOCATED AT 6470 FEDERAL
BOULEVARD**

WHEREAS, on June 19, 2018, the City Council approved Conditional Use Permit CUP-170-0001 authorizing the establishment of a Medical Marijuana Dispensary on a .96 acre lot in the Light Industrial zone at 6470 Federal Boulevard pursuant to Chapter 17.32 of the Lemon Grove Municipal Code; and

WHEREAS, City Council certified a Mitigated Negative Declaration of Environmental Impact (ND18-02) that found the project, as mitigated, would have no significant effect on the environment with the original approval; and

WHEREAS, Building Permit B18-000-0575 for the required interior Tenant Improvement and exterior site improvements was issued on May 28, 2019; and

WHEREAS, the applicant is progressing toward satisfaction of all applicable requirements of Conditional Use Permit CUP-170-0001 as outlined in City Council approval Resolution No. 2018-3591; and

WHEREAS, the project has not been modified since the original City Council approval; and

WHEREAS, the existing conditions and/or circumstances which informed City Council approval have not changed; and

WHEREAS, Resolution No. 2018-3591 requires the satisfaction of all requirements enumerated therein by June 19, 2019, or such longer period as may be approved by the City Council; and

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Lemon Grove, California hereby:

1. Approves a one-year extension of the expiration date stated in Resolution No. 2018-3591, Section 2, Condition E to June 19, 2020, subject to all other remaining requirements and conditions enumerated in Resolution No. 2018-3591.

PASSED AND ADOPTED on _____, 2019, the City Council of the City of Lemon Grove, California, adopted Resolution No. _____, passed by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Racquel Vasquez, Mayor

Attest:

Shelley Chapel, MMC, City Clerk

Approved as to Form:

Kristen Steinke, City Attorney



CITY OF LEMON GROVE

CITY COUNCIL STAFF REPORT

Item No. 1.E

Meeting Date: June 18, 2019

Submitted to: Honorable Mayor and Members of the City Council

Department: City Manager's Office

Staff Contact: Roberto Hidalgo, Human Resources Manager

rhidalgo@lemongrove.ca.gov

Item Title: 2020 Minimum Wage Increase

Recommended Action: Adopt a Resolution entitled, "A Resolution of the City Council of the City of Lemon Grove, California, approval of minimum wage increase to ensure compliance with the California Minimum Wage increase as governed by State law."

Summary: Effective January 1, 2020, minimum wage will increase from \$12.00 to \$13.00 hourly. The proposed salary recommendations (Attachment B) are based on requirements by State law. Additionally, the first five (5) steps thereafter will continue to maintain a 5% differential between salary steps with the last two (2) maintaining a 2.5% differential.

Discussion: The City of Lemon Grove has a past practice of State compliance. As an employer with 26 or more employees, the minimum wage will increase to \$13.00 per hour. In the future, the City will continue to adhere to the State's schedule, which increases the minimum wage to \$15 per hour by 2022.

Environmental Review:

- Not subject to review Negative Declaration
 Categorical Exemption, Section | | Mitigated Negative Declaration

Fiscal Impact:

The total projected annual cost to the City will be approximately \$6,240.00, based on an average of 12 hourly extra help employees impacted by the minimum wage increase and a 20-hour work week. These costs are already budgeted for FY 2019-20.

Public Notification:

None.

Staff Recommendation: Approve minimum wage increase to ensure compliance with the California Minimum Wage increase as governed by State law.

Attachments:

Attachment A – Resolution

Attachment B – Part-Time Salary Table

RESOLUTION NO. 2019-

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LEMON GROVE,
CALIFORNIA, APPROVAL OF MINIMUM WAGE INCREASE TO ENSURE
COMPLIANCE WITH THE CALIFORNIA MINIMUM WAGE INCREASE AS
GOVERNED BY STATE LAW**

WHEREAS, the FY 2019/20 General Fund budget funds positions that require adherence to the new minimum wage increase; and

WHEREAS, this wage modified will affect the part-time salary schedule to include the positions of Recreation Leader I and II, Office Aide, and Maintenance Service Worker; and

WHEREAS, this increase will also affect the salary steps for these part-time positions; and

WHEREAS, the City must comply with the State approved minimum wage law.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Lemon Grove, California, hereby approves

PASSED AND ADOPTED on _____, 2019, the City Council of the City of Lemon Grove, California, adopted Resolution No. _____, passed by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Racquel Vasquez, Mayor

Attest:

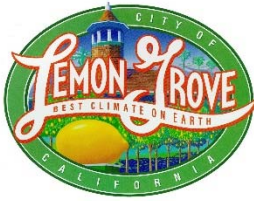
Shelley Chapel, MMC, City Clerk

Approved as to Form:

Kristen Steinke, City Attorney

PART-TIME SALARY TABLE**2020**

Maintenance Service Worker	A	B	C	D	E	F	G
Hourly	13.00	13.65	14.33	15.05	15.80	16.20	16.61
Office Aide	A	B	C	D	E	F	G
Hourly	13.00	13.65	14.33	15.05	15.80	16.20	16.61
Recreation Leader 1	A	B	C	D	E	F	G
Hourly	13.00	13.65	14.33	15.05	15.80	16.20	16.61
Recreation Leader II	A	B	C	D	E	F	G
Hourly	13.56	14.24	14.95	15.70	16.49	16.90	17.32



LEMON GROVE ROADWAY LIGHTING DISTRICT

DISTRICT BOARD STAFF REPORT

Item No. 1.F

Meeting Date: June 18, 2019

Submitted to: Honorable Chair and Members of the District Board

Department: Public Works Department

Staff Contact: Stephanie Boyce, Management Analyst

sboyce@lemongrove.ca.gov

Item Title: **Approve the Engineer's Report Detailing Zone L Assessments
for Fiscal Year 2019-20**

Recommended Action: Adopt a resolution approving the engineer's report detailing Zone L Assessments for Fiscal Year 2019-20.

Summary: Zone L is composed of various mid-block areas throughout the City. The voters in each area identified as Zone L held an election in June 1997 to impose a \$12.00 annual assessment for single family homes and an annual assessment of \$12.00 per each \$100,000 valuation for non-residential zoned parcels in the area. The purpose of the assessment is to pay for operations, maintenance, and energy costs of mid-block street lights in each zone. Since the current assessment was created in 1997, no assessment increases have been imposed.

Discussion: On May 31, 2019, the engineer's report was completed by Harris and Associates (Harris). Harris provided the Lighting District with a detailed list of each zone within the Lighting District and the applicable service charge (tax roll). The engineer's report consists of the assessment roll for the District after a \$12.00 per benefit unit assessment has been applied to each parcel in Zone L. Staff confirmed through an internal quality assurance check that the report is accurate. Copies of the engineer's report and tax roll are available for review at the District Engineer's office. The report must be certified and the tax roll filed with the County of San Diego by August 10, 2019 to be included in the FY 2019-20 property tax statements.

Staff recommends that the Board of Directors adopt a resolution (**Attachment A**) approving the engineer's report and directs the District Clerk to file the required certification document with the San Diego County Auditor and Controller on or before August 10, 2019.

*Approve the Engineer's Report Detailing
Zone L Assessments for FY 2019-20*

June 18, 2019

Page | 1

Environmental Review:

Not subject to review

Negative Declaration

Categorical Exemption, Section |

Mitigated Negative Declaration

Fiscal Impact: The itemized roll lists 5,269 parcels, 7,458.03 benefit units, and a total assessment of \$89,496.36

Public Notification: None.

Staff Recommendation: Adopt a resolution approving the engineer's report detailing Zone L Assessments for Fiscal Year 2019-20.

Attachments:

Attachment A – Resolution

Attachment B – Engineer's Report

RESOLUTION NO. 2019 -

RESOLUTION OF THE LEMON GROVE ROADWAY LIGHTING DISTRICT BOARD APPROVING THE ENGINEER’S REPORT REGARDING THE ZONE L CHARGES FOR FISCAL YEAR 2019-20

WHEREAS, on June 17, 1997 the Board of Directors of the Lemon Grove Roadway Lighting District adopted Resolution No. 102 reciting the facts of an election held in the District on June 3, 1997, declaring the results of said election and levying the annual assessment; and

WHEREAS, the engineer’s report for the Lemon Grove Roadway Lighting District on file with the Clerk of the Board gives a full and detailed description of the improvements, the boundaries of the Assessment District and the two zones therein, and the proposed assessments upon assessable lots and parcels of land within the District.

NOW, THEREFORE, BE IT RESOLVED that the Lemon Grove Roadway Lighting District Board of Directors of the City of Lemon Grove, California hereby:

1. Approves, affirms and adopts the engineer’s report, which contains every fee and charge set forth; and
2. Directs the Clerk of the Board to file an approved, affirmed, and adopted copy of the engineer’s report and a statement endorsing the engineer’s report with the County of San Diego Auditor and Controller on or before August 10, 2019.

PASSED AND ADOPTED on _____, 2019, the Board of Directors of the Lemon Grove Roadway Lighting District, adopted Resolution No. _____, passed by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Racquel Vasquez, Chair

Attest: Shelley Chapel, MMC, District Clerk

Approved as to Form: Kristen Steinke, District Attorney



CITY OF LEMON GROVE

ENGINEER'S REPORT

FISCAL YEAR 2019-2020

LEMON GROVE ROADWAY LIGHTING DISTRICT

May 2019

PREPARED BY



Harris & Associates

600 B Street, Suite 2000

San Diego, CA 92101

www.weareharris.com



ENGINEER'S REPORT FOR
FISCAL YEAR 2019–2020
LEMON GROVE ROADWAY LIGHTING DISTRICT
City of Lemon Grove
State of California

APPROVED BY THE BOARD OF DIRECTORS FOR THE LEMON GROVE ROADWAY LIGHTING DISTRICT OF THE CITY OF LEMON GROVE, STATE OF CALIFORNIA ON THE _____ DAY OF _____, 2019.

SHELLEY CHAPEL, MMC
CLERK of the BOARD
LEMON GROVE ROADWAY LIGHTING DISTRICT
CITY of LEMON GROVE, STATE of CALIFORNIA

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STATEMENT OF ASSESSMENT ENGINEER

Statement of Assessment Engineer

AGENCY: LEMON GROVE ROADWAY LIGHTING DISTRICT
OF THE CITY OF LEMON GROVE

PROJECT: LEMON GROVE ROADWAY LIGHTING DISTRICT

TO: THE BOARD OF DIRECTORS FOR THE
LEMON GROVE ROADWAY LIGHTING DISTRICT
CITY OF LEMON GROVE
STATE OF CALIFORNIA

ENGINEER'S REPORT FOR FISCAL YEAR 2019–2020

The preparation of this Annual Engineer's Report ("Report") is in conformance with the obligation of the Board of Directors for the Lemon Grove Roadway Lighting District of the City of Lemon Grove to provide lighting services upon each lot or parcel of land in the district in proportion to the estimated benefit to be received by each such lot or parcel of land for Fiscal Year 2019–2020. Services will be provided through June 30, 2020.

Pursuant to the Landscaping and Lighting Act of 1972 (Part 2 Division 15 of the Streets and Highways Code of the State of California, commencing with Section 22500) ("Act"), Article XIID, Section 4(a) of the State of California Constitution, and in accordance with the City of Lemon Grove's Resolution being adopted by the Board of Directors of the Lemon Grove Roadway Lighting District on the 4th day of June, 2019, this Report has been ordered for:

LEMON GROVE ROADWAY LIGHTING DISTRICT

(Hereinafter referred to as the "District"),

I, K. Dennis Klingelhofer, authorized representative of the District, the duly appointed Assessment Engineer submit the following Report which consists of the following four (4) parts and Appendices:

PART I

Description of Improvements: This part provides a general description of improvements proposed to be maintained in the District. Plans and specifications for the improvements are on file with the District Engineer.

PART II

Estimate of Cost: This part contains the cost estimate of the proposed maintenance including incidental costs and expenses for Fiscal Year 2019–2020.

PART III

District Diagram: This part incorporates a Diagram of the District showing the external boundaries of the District. The lines and dimensions of each lot or parcel within the District are those lines and dimensions shown on the maps of the San Diego County Assessor for the year in which this Report was prepared and are incorporated by reference herein and made part of this Report. The District Diagram is filed under separate cover with the Clerk of the Board.

PART IV

Method of Apportionment of the Assessments: This part describes the method of apportionment of assessments, based upon parcel classification of land within the District in proportion to the estimated special benefits to be received. The costs and expenses of the District have been assessed upon the parcels of land within the boundaries of District pursuant to the initial methodology established by Resolution No. 242 approved on the 13th day of August, 1979. For particulars as to the identification of parcels, reference is made to the District Diagram.

Appendices

- Appendix A – Assessment Roll
- Appendix B – Boundary of Lemon Grove Roadway Lighting District
- Appendix C – Resolution

In conclusion, it is my opinion that the costs and expenses of the District have been assessed to the lots and parcels within the boundaries of the District in proportion to the estimated benefits to be received by each lot or parcel from the services provided.

DATED this 31st day of May, 2019

 Harris & Associates

K. Dennis Klingelhofer, P.E., Assessment Engineer
R.C.E. No. 50255
Engineer of Work
County of San Diego
State of California

PART I – PLANS AND SPECIFICATIONS

Part I – Plans and Specifications

Pursuant to the City of Lemon Grove Resolution being adopted on the 4th day of June, 2019, by the Board of Directors for the Lemon Grove Roadway Lighting District the authorized services and improvements for the District include:

Lighting services for each lot or parcel of land within the District benefiting from the use of the streets and their appurtenances such as street lights.

Plans and specifications for the improvements are on file with the District Engineer.

PART II – ESTIMATE OF COSTS

Part II – Estimate of Costs

Fiscal Year 2019–2020	
	Estimated Annual Maintenance Costs
I. Facilities to Maintain	
Repair and Maintenance Rehab	\$ 14,248.00
Energy	<u>\$ 125,000.00</u>
Total Estimated Maintenance	\$ 139,248.00
II. Incidental Expenses	
City Administration	\$ 48,621.00
Assessment Engineer	<u>\$ 6,350.00</u>
Total Incidental Expenses	\$ 54,971.00
Recapitulation	
I. Facilities to Maintain	\$ 139,248.00
II. Incidental Expenses	<u>\$ 54,971.00</u>
Total Estimate of Costs FY 2019–2020	\$ 194,219.00
Income	
Estimated Local Benefit Lighting Fees	\$ 89,496.36
Interest	<u>\$ 500.00</u>
Total Estimated Income FY 2019–2020	\$ 89,996.36

PART III – DISTRICT DIAGRAMS

Part III – District Diagrams

The boundaries of Lemon Grove Roadway Lighting District are shown on the map in Appendix B. The lines and dimensions of each lot or parcel within the District are those lines and dimensions as shown on the maps of the San Diego County Assessor for the year in which this Report was prepared and are incorporated by reference herein and made part of this Report. The District Diagram is filed under separate cover with the Clerk of the Board.

PART IV – METHOD OF APPORTIONMENT

Part IV – Method of Apportionment

The amount of the estimated assessment on each lot or parcel of land in the District is in proportion to the estimated benefit to be received by each such lot or parcel of land from the use of the streets and their appurtenances such as street lights. The use or benefit of a public street is best determined by the use of that land adjacent to the public street. Each lot or parcel of land in the District was determined to have a specific land use by the County of San Diego's Department of Transportation. Each type of land use was assigned a Land Use Factor determined by trip generation rated by land use as they relate to a single-family residential land use. The trip generation rates by land use were prepared by the Transportation Planning Division of the City of San Diego Planning Department and are a compilation of trip generation studies done in San Diego and other western U.S. locations.

The Land Use Factor is multiplied by the number of dwelling units, if the land use is single-family or multi-family residential, or by the number of acres for any other land use. The product of this multiplication is the number of benefit units for each lot or parcel of land to be assessed. The number of benefit units for each of the lots or parcel of land is then multiplied by the annual assessment rate per benefit unit to establish the fee for a particular lot or parcel of land. Resolution No. 102 was adopted on June 17, 1997 establishing a \$12.00 assessment per benefit unit.

Allocation of Special Benefit Assessments

The actual derivation of the Land Use Factors are as follows:

1. Each parcel of land in the District was determined by the Department of Transportation to have a specific land use.
2. Each type of land use was assigned a Land Use Factor determined by trip generation rates by land use as they relate to a single-family residential land use. The trip generation rates by land use were prepared by the City of San Diego Transportation Planning Division, Planning Department and are a compilation of trip generation studies done in San Diego and other western U.S. locations.
3. If a land use was not included in the study, the Department of Transportation made a determination as to its probable trip generation, compared it to single-family residential, and assigned a Land Use Factor on that basis.
4. Single-family residential land use was assigned a Land Use Factor of 1.0 regardless of parcel size. The theory is that all single-family residences generate approximately the same number of trips, and therefore, receive the same benefit from the use of the streets, and their appurtenances such as street lights.
5. Definition of the Land Use Factors other than single-family residential are as follows:



Land Use	Assigned Factor
Vacant Land	0.0
Irrigated Farmland, Rural Land and Agricultural Preserves	0.01
Cemetery, Mausoleum and Mortuary	0.01
Golf Courses	0.01
Marina, Docks	0.5
Average Multi-Family Residence	0.6
Mobile Home Parks	0.7
Public Building School, Library	1.0
Churches and Meeting Halls	1.0
General Recreation Parks and Camps	1.0
Factory—Light Manufacturing, Small Automotive Garages	1.0
Factory—Heavy Manufacturing, Extra Active, Mining	2.0
Warehousing and Bulk Storage	2.0
Hospitals, Convalescent Hospitals and Rest Homes	6.0
Regional Shopping Centers	10.0
Auto Sales and Service Agency, Radio and T.V. Stations, Bank	10.0
All Commercial Office and Store Building	12.0
Medical Offices	17.0
Dental and Animal Hospitals	17.0
Community Shopping Centers, Hotel, Motel, Parking Lot/Garage	21.0
Used Car Lot, Theater, Bowling Alley, Restaurant, Car Wash and Large Chain Grocery or Drug Stores	21.0
Neighborhood Shopping Center, Service Station	34.0

APPENDIX A – ASSESSMENT ROLL

Appendix A – Assessment Roll

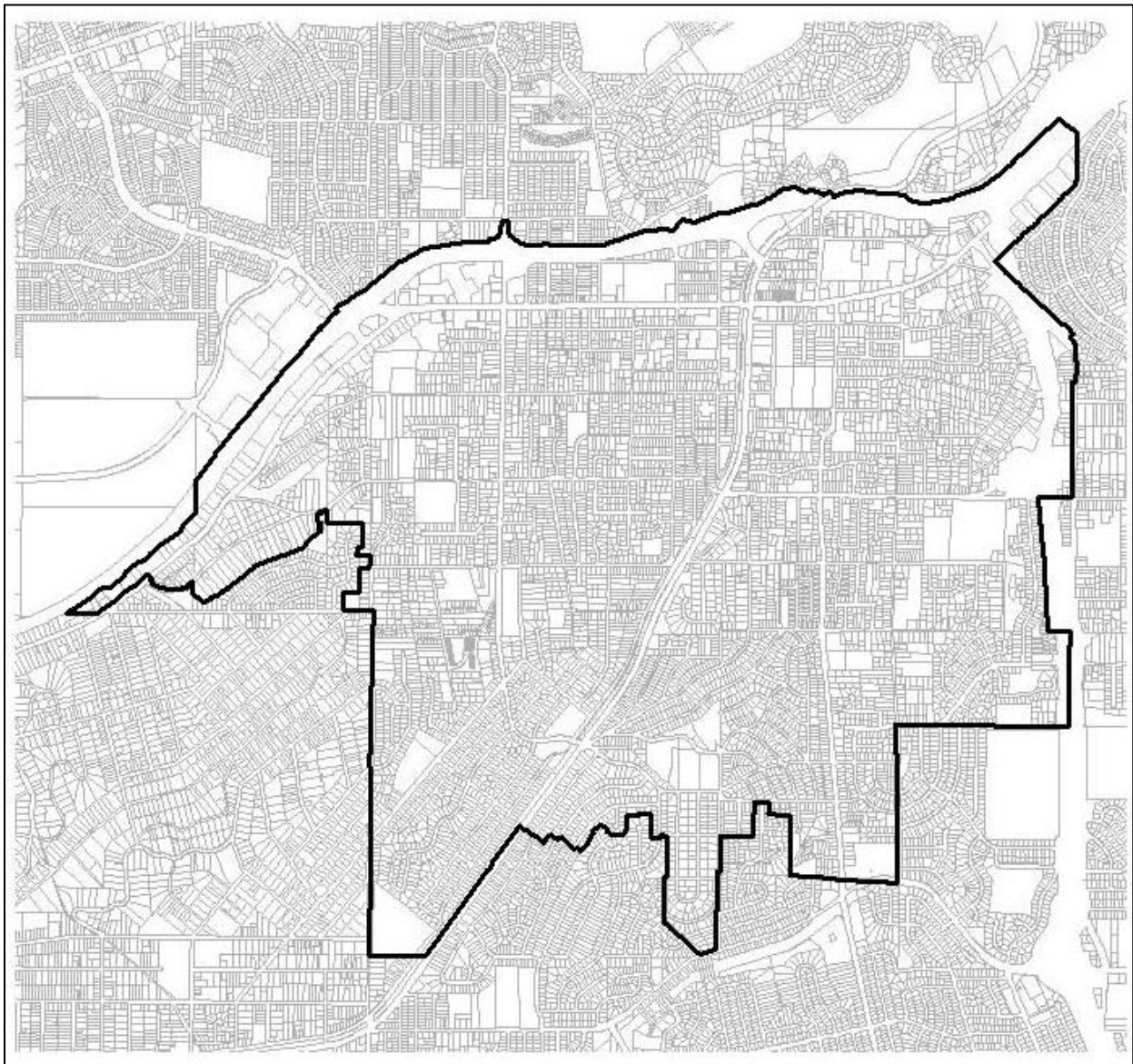
(Filed under separate cover)

A list of the Assessor's Parcel Numbers from the preliminary County Roll¹ and the proposed Fiscal Year 2019–2020 assessments for all parcels within the boundaries of Lemon Grove Roadway Lighting District that meet the special benefit methodology described in Part IV.

¹ Preliminary County Roll obtained from San Diego County Assessor's Property Tax System, May 2019, and may change up until the Final Roll has been determined by the County.

APPENDIX B – BOUNDARY MAP OF DISTRICT

Appendix B – Boundary Map of District



APPENDIX C – RESOLUTION

Appendix C – Resolution

RESOLUTION NO. 2019-_____

RESOLUTION OF THE LEMON GROVE ROADWAY LIGHTING DISTRICT APPROVING THE ENGINEER'S REPORT REGARDING THE ZONE L CHARGES FOR FISCAL YEAR 2019-2020

WHEREAS, on June 17, 1997 the Board of Directors of the Lemon Grove Roadway Lighting District adopted Resolution No. 102 reciting the facts of an election held in the District on June 3, 1997, declaring the results of said election and levying the annual assessment; and

WHEREAS, the engineer's report for the Lemon Grove Roadway Lighting District on file with the Clerk of the Board gives a full and detailed description of the improvements, the boundaries of the Assessment District and the two zones therein, and the proposed assessments upon assessable lots and parcels of land within the District.

NOW, THEREFORE, BE IT RESOLVED that the Lemon Grove Roadway Lighting District Board of Directors of the City of Lemon Grove, California hereby:

1. Approves, affirms and adopts the engineer's report, which contains every fee and charge set forth; and
2. Directs the Clerk of the Board to file an approved, affirmed, and adopted copy of the engineer's report and a statement endorsing the engineer's report with the County of San Diego Auditor and Controller on or before August 10, 2019.



LEMON GROVE SANITATION DISTRICT

DISTRICT BOARD STAFF REPORT

Item No. 1.G

Meeting Date: June 18, 2019

Submitted to: Honorable Chair and Members of the District Board

Department: Public Works Department

Staff Contact: Stephanie Boyce, Management Analyst

sboyce@lemongrove.ca.gov

Item Title: **Approve the Engineer's Report Detailing Sewer Service Charges for Fiscal Year 2019-20**

Recommended Action: Adopt a resolution approving the engineer's report detailing Sewer Service Charges for Fiscal Year 2019-20.

Summary: On June 4, 2019 the Sanitation District Board adopted Ordinance No. 30 , which established the annual sewer service charges for Fiscal Year 2019-20 (FY 2019-20). The service charge established for FY 2019-20 is \$619.10 per Equivalent Dwelling Unit (EDU.)

Discussion: On May 31, 2019, Harris prepared an engineer's report and provided a detailed list of each parcel within the Sanitation District with the applicable service charge (tax roll). Staff confirmed, through an internal quality assurance check, that the report and tax roll are accurate. Copies of the engineer's report and tax roll are available for viewing at the District Engineer's office. A letter certifying that all assessments are in compliance with Article XIII C and D of the Constitution of the State of California and that the 6,845 parcels equaling \$6,752,205.36 are subject to the Fixed Special Assessment, must be filed with the San Diego County Auditor and Controller by August 10, 2019 in order to be included in the FY 2019-20 property tax statements.

Staff recommends that the Board of Directors adopt a resolution (**Attachment A**) approving the engineer's report and direct the District Clerk to file the required certification document with the San Diego County Auditor and Controller on or before August 10, 2019.

Environmental Review:

Not subject to review

Negative Declaration

*Approving the Engineer's Report
Detailing Sewer Service Charges for FY
2019-20*

June 18, 2019

Page | 1

Categorical Exemption, Section | Mitigated Negative Declaration

Fiscal Impact: The itemized roll list 6,845 parcels, 10,906.49 EDUs, and a total assessment of \$6,752,205.36

Public Notification: None.

Staff Recommendation: Adopt a resolution approving the engineer's report detailing Sewer Service Charges for Fiscal Year 2019-20.

Attachments:

Attachment A – Resolution

Attachment B – Engineer's Report

RESOLUTION NO. 2019 -

RESOLUTION OF THE SANITATION DISTRICT OF THE CITY OF LEMON GROVE, CALIFORNIA, APPROVING THE ENGINEER'S REPORT REGARDING THE SEWER SERVICE CHARGES FOR FISCAL YEAR 2019-2020

WHEREAS, pursuant to Section 5473 of the Health and Safety code, the Board has determined that the sewer service charges for Fiscal Year 2019-20 shall be collected on the tax roll in the same manner, and by the same persons, and at the same time as, together with and not separately from the general taxes and has caused to be prepared and filed with the District Clerk a written engineer's report containing a description of each parcel of property receiving service from the Sanitation District and the amount of charges for each parcel for the Fiscal Year 2019-20 computed in conformity with the charges prescribed by the applicable Resolution of the District; and

WHEREAS, on June 4, 2019 the Sanitation District Board adopted Ordinance No. 30, which established the annual sewer service charges for Fiscal Year 2019-20; and

WHEREAS, the service charge established for Fiscal Year 2019-20 is \$619.10 per Equivalent Dwelling Unit; and:

WHEREAS, such report was prepared by Harris and filed with the District Engineer.

NOW, THEREFORE, BE IT RESOLVED that the Lemon Grove Sanitation District Board of Directors of the City of Lemon Grove, California hereby:

1. Approves, affirms and adopts the engineer's report, which contains every fee and charge set forth; and
2. Directs the Clerk of the Board to file an approved, affirmed, and adopted copy of the engineer's report and a statement endorsing the engineer's report with the County of San Diego Auditor and Controller on or before August 10, 2019.

PASSED AND ADOPTED on _____, 2019, the Board of Directors of the Lemon Grove Sanitation District, adopted Resolution No. _____, passed by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

Racquel Vasquez, Chair

Attest: Shelley Chapel, MMC, District Clerk

Approved as to Form: Kristen Steinke, District Attorney



CITY OF LEMON GROVE

ENGINEER'S REPORT

FISCAL YEAR 2019-2020

LEMON GROVE SANITATION DISTRICT

May 2019

PREPARED BY



Harris & Associates

600 B Street, Suite 2000

San Diego, CA 92101

www.weareharris.com



ENGINEER'S REPORT FOR
FISCAL YEAR 2019–2020
LEMON GROVE SANITATION DISTRICT
City of Lemon Grove
State of California

APPROVED BY THE BOARD OF DIRECTORS FOR THE LEMON GROVE SANITATION DISTRICT OF THE CITY OF LEMON GROVE,
STATE OF CALIFORNIA ON THE _____ DAY OF _____, 2019.

SHELLEY CHAPEL, MMC
CLERK of the BOARD
LEMON GROVE SANITATION DISTRICT
CITY of LEMON GROVE, STATE of CALIFORNIA

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STATEMENT OF ASSESSMENT ENGINEER

Statement of Assessment Engineer

AGENCY: LEMON GROVE SANITATION DISTRICT
OF THE CITY OF LEMON GROVE

PROJECT: LEMON GROVE SANITATION DISTRICT

TO: THE BOARD OF DIRECTORS FOR THE
LEMON GROVE SANITATION DISTRICT
CITY OF LEMON GROVE
STATE OF CALIFORNIA

ENGINEER'S REPORT FOR FISCAL YEAR 2019–2020

The preparation of this Annual Engineer's Report ("Report") is in conformance with the obligation of the Board of Directors for the Lemon Grove Sanitation District of the City of Lemon Grove to provide sewer services upon each premise within the District that discharges sewage into sewer lines of the District for Fiscal Year 2019–2020 for the Lemon Grove Sanitation District. Services will be provided through June 30, 2020.

Pursuant to Ordinance No. 30, of the City of Lemon Grove, of the State of California Constitution, and in accordance with the City of Lemon Grove's Resolution being adopted by the Board of Directors of the Lemon Grove Sanitation District on the 4th day of June, 2019, this Report has been ordered for:

LEMON GROVE SANITATION DISTRICT

(Hereinafter referred to as the "District"),

I, K. Dennis Klingelhofer, authorized representative of the District, the duly appointed Assessment Engineer submit the following Report which consists of the following four (4) parts and Appendices:

PART I

Description of Improvements: This part provides a general description of improvements proposed to be maintained in the District. Plans and specifications for the improvements are on file with the District Engineer.

PART II

Estimate of Cost: This part contains the cost estimate of the proposed maintenance including incidental costs and expenses for Fiscal Year 2019–2020.

PART III

District Diagram: This part incorporates a Diagram of the District showing the external boundaries of the District. The lines and dimensions of each lot or parcel within the District are those lines and dimensions shown on the maps of the San Diego County Assessor for the year in which this Report was prepared and are incorporated by reference herein and made part of this Report. The District Diagram is filed under separate cover with the Clerk of the Board.

PART IV

Method of Apportionment of the Assessments: This part describes the method of apportionment of assessments, based upon parcel classification of land within the District in proportion to the estimated special benefits to be received. The costs and expenses of the District have been assessed upon the parcels of land within the boundaries of District pursuant to the initial methodology established by Ordinance No. 28 and as amended by Ordinance No. 30 approved on the 4th day of June, 2019. For particulars as to the identification of parcels, reference is made to the District Diagram.

Appendices

- Appendix A – Assessment Roll
- Appendix B – Boundary of Lemon Grove Sanitation District
- Appendix C – Resolution

In conclusion, it is my opinion that the costs and expenses of the District have been assessed to the lots and parcels within the boundaries of the District in proportion to the estimated benefits to be received by each lot or parcel from the services provided.

DATED this 31st day of May, 2019

 Harris & Associates

K. Dennis Klingelhofer, P.E., Assessment Engineer
R.C.E. No. 50255
Engineer of Work
County of San Diego
State of California

PART I – PLANS AND SPECIFICATIONS

Part I – Plans and Specifications

Pursuant to the City of Lemon Grove Resolution being adopted on the 4th day of June, 2019 by the Board of Directors for the Lemon Grove Sanitation District the authorized services and improvements for the District include:

Sewer services for each premise within the District that discharges sewage into the sewer lines of the District.

Plans and specifications for the improvements are on file with the District Engineer.

PART II – ESTIMATE OF COSTS

Part II – Estimate of Costs

Fiscal Year 2019–2020	
	Estimated Annual Maintenance Cost
I. Facilities to Maintain	
Sewer Main Rehab	\$ 2,356,495.00
Operations	\$ 5,415,450.00
Equipment	<u>\$ 0.00</u>
Total Estimated Maintenance	\$ 7,771,945.00
II. Incidental Expenses	
City Administration	\$ 1,462,594.00
Assessment Engineer	<u>\$ 16,240.00</u>
Total Incidental Expenses	\$ 1,478,834.00
Recapitulation	
I. Facilities to Maintain	\$ 7,771,945.00
II. Incidental Expenses	<u>\$ 1,478,834.00</u>
Total Estimate of Costs for FY 2019–2020	\$ 9,250,779.00

PART III – DISTRICT DIAGRAMS

Part III – District Diagrams

The boundaries of Lemon Grove Sanitation District are shown on the map in Appendix B. The lines and dimensions of each lot or parcel within the District are those lines and dimensions as shown on the maps of the San Diego County Assessor for the year in which this Report was prepared and are incorporated by reference herein and made part of this Report. The District Diagram is filed under separate cover with the Clerk of the Board.

PART IV – METHOD OF APPORTIONMENT

Part IV – Method of Apportionment

There is hereby levied and assessed upon each premise within the District that discharges sewage into the sewer lines of the District and upon each person owning, letting or occupying such premises an annual sewer service charge.

The annual sewer service charge is made up of two components. The first component is based on the District's annual cost to collect and transport wastewater, and is equally divided among the number of Equivalent Dwelling Units (EDUs) connected to the District's system. The second component is the District's cost for wastewater treatment and disposal fees paid to the City of San Diego for capacity and use of the San Diego Metropolitan Sewer System, and is allocated to users of the District's system based on the users' generation of annual wastewater flow, biochemical oxygen demand, and suspended solids discharged into the District's system.

The discharge characteristics of an average single family user is 1.0 EDU and shall be composed of wastewater flow of 240 gallons per day for 365 days per year and constituent levels of sewage strength of 200 milligrams per (mg/l) biochemical oxygen demand (BOD) and 200 milligrams per liter (mg/l) suspended solids (SS).

The discharge characteristics of commercial/industrial users is a minimum sewer capacity of 1.2 EDU for each business unit with flow quantity and strength measured by BOD and SS as set forth in the current edition of the California State Water Resources Control Board (State) publication "Policy for Implementing The State Revolving Fund For Construction Of Wastewater Treatment Facilities" or comparable industry standards acceptable to the State and approved by the District's Engineer. Minimum sewage strength capacity per commercial/industrial EDU is 200 mg/1BOD and mg/1SS.

Allocation of Special Benefit Assessments

Annual Sewer Service charges shall be determined as follows:

Residential Units

Type	EDU Capacity	Estimated Flow (Gallons per Day)	Annual Cost
Single Family	1.0	240	\$619.10
Condominium	1.0	240	\$619.10
Multi-Family	1.0	240*	\$619.10
Mobile Home	1.0	240*	\$619.10

* Note: Rates may be adjusted to reflect flow based upon potable water records as determined by the District's Engineer in proportion to the estimated volume of wastewater discharge to the sewer.



Commercial/Industrial Business Units

The minimum charge per commercial unit shall be 1.2 EDUs equaling \$742.92 per annum. Higher charges will be assessed for commercial/industrial EDUs with sewage strength higher than combined 400 mg/1 BOD and mg/1SS. Flow based sewer capacity to business units shall be assigned as follows:

Type	EDU Capacity
Food Service Establishments	3 minimum
Hotel and Motels	
<i>Living unit without kitchen</i>	.38
<i>Living unit with kitchen</i>	.60
Commercial, Professional, Industrial Buildings	
<i>Any office, store, or industrial condominium or establishment.</i> <i>1st 1,000 sq ft</i>	1.20
Each additional 1,000 sq ft or portion thereof	.70
Self-Service Laundry per washer	1.00
Church, theaters, and auditoriums/per each 150 person seating capacity	1.50
Schools**	
Elementary Schools for 50 pupils or fewer	1.00
Junior High Schools for 40 pupils or fewer	1.00
High Schools for 24 pupils or fewer	1.00

*** Note: Additional EDUs will be prorated based upon the above values. The number of pupils shall be based on the average daily attendance of pupils at the school during the preceding fiscal year, computed in accordance with the education code of the State of California. However, where the school has had no attendance during the preceding fiscal year, the Director shall estimate the average daily attendance for the fiscal year for which the fee is to be paid and compute the fee based on such estimate.*



Land Use	Assigned Factor
Vacant Land	0.0
Irrigated Farmland, Rural Land and Agricultural Preserves	0.01
Cemetery, Mausoleum and Mortuary	0.01
Golf Courses	0.01
Marina, Docks	0.5
Average Multi-Family Residence	0.6
Mobile Home Parks	0.7
Public Building School, Library	1.0
Churches and Meeting Halls	1.0
General Recreation Parks and Camps	1.0
Factory—Light Manufacturing, Small Automotive Garages	1.0
Factory—Heavy Manufacturing, Extra Active, Mining	2.0
Warehousing and Bulk Storage	2.0
Hospitals, Convalescent Hospitals and Rest Homes	6.0
Regional Shopping Centers	10.0
Auto Sales and Service Agency, Radio and T.V. Stations, Bank	10.0
All Commercial Office and Store Building	12.0
Medical Offices	17.0
Dental and Animal Hospitals	17.0
Community Shopping Centers, Hotel, Motel, Parking Lot/Garage	21.0
Used Car Lot, Theater, Bowling Alley, Restaurant, Car Wash and Large Chain Grocery or Drug Stores	21.0
Neighborhood Shopping Center, Service Station	34.0

APPENDIX A – ASSESSMENT ROLL

Appendix A – Assessment Roll

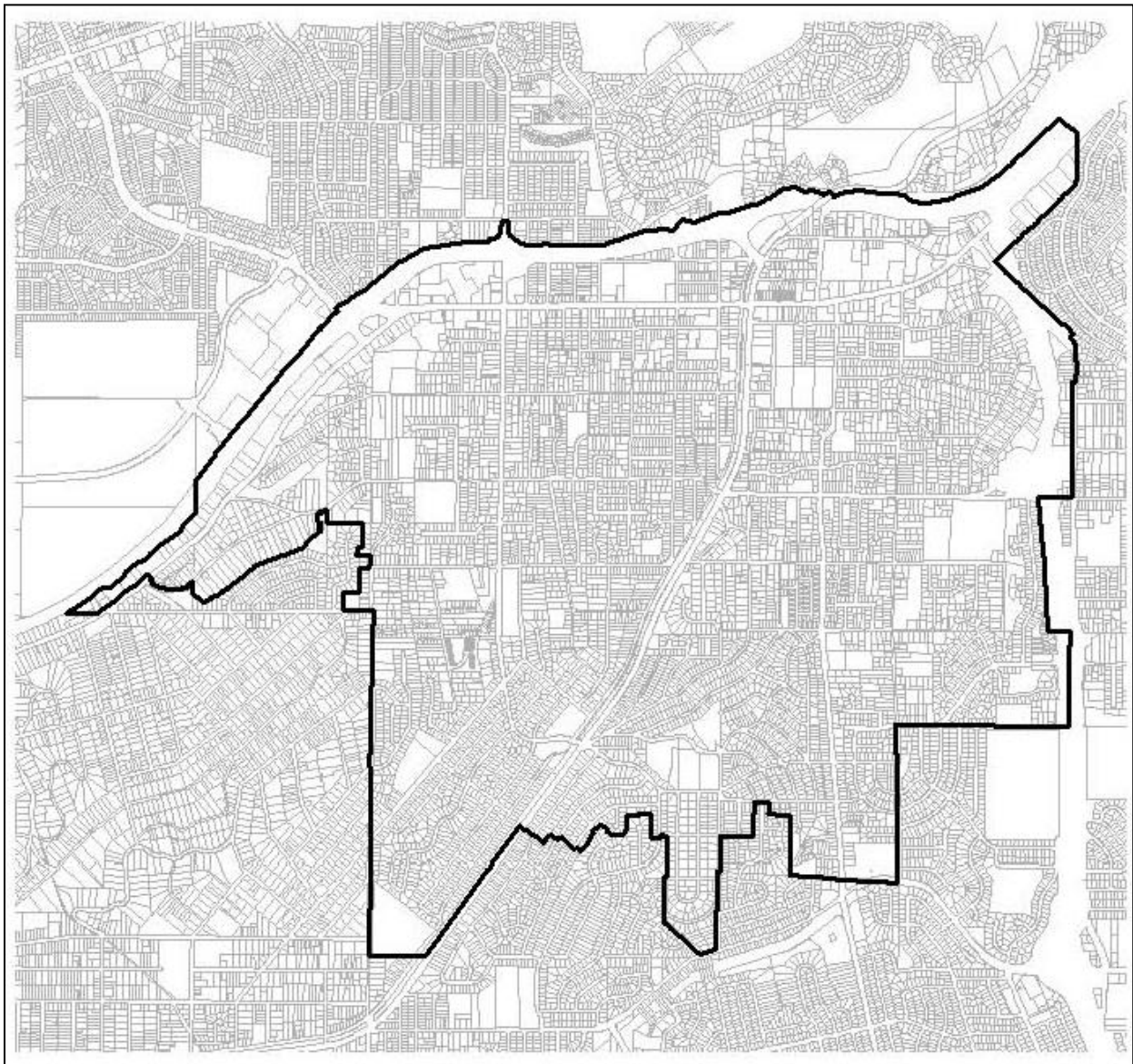
(Filed under separate cover)

A list of the Assessor's Parcel Numbers from the preliminary County Roll¹ and the proposed Fiscal Year 2019–2020 assessments for all parcels within the boundaries of Lemon Grove Sanitation District that meet the special benefit methodology described in Part IV.

¹ Preliminary County Roll obtained from San Diego County Assessor's Property Tax System, May 2019, and may change up until the Final Roll has been determined by the County.

APPENDIX B – BOUNDARY MAP OF DISTRICT

Appendix B – Boundary Map of District



APPENDIX C – RESOLUTION

Appendix C – Resolution

RESOLUTION NO. 2019-_____

RESOLUTION OF THE BOARD OF DIRECTORS OF THE [SANITATION DISTRICT APPROVING THE ENGINEER'S REPORT REGARDING THE SEWER SERVICE CHARGES FOR FISCAL YEAR 2019-2020]

WHEREAS, pursuant to Section 5473 of the Health and Safety code, the Board has determined that the sewer service charges for Fiscal Year 2019-20 shall be collected on the tax roll in the same manner, and by the same persons, and at the same time as, together with and not separately from the general taxes and has caused to be prepared and filed with the District Clerk a written engineer's report containing a description of each parcel of property receiving service from the Sanitation District and the amount of charges for each parcel for the Fiscal Year 2019-20 computed in conformity with the charges prescribed by the applicable Resolution of the District; and

WHEREAS, on June 4, 2019, the Sanitation District Board adopted Ordinance No. 30, which established the annual sewer service charges for Fiscal Year (FY 2019-20); and

WHEREAS, The service charge established for FY 2019-20 is \$619.10 per Equivalent Dwelling Unit (EDU); and:

WHEREAS, such report was prepared by Harris & Associates and filed with the District Engineer. |

NOW, THEREFORE, BE IT RESOLVED that the [Lemon Grove Sanitation District Board of Directors] of the City of Lemon Grove, California [hereby:

1. Approves, affirms and adopts the engineer's report, which contains every fee and charge set forth; and
2. Directs the Clerk of the Board to file an approved, affirmed, and adopted copy of the engineer's report and a statement endorsing the engineer's report with the County of San Diego Auditor and Controller on or before August 10, 2019. |

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CITY OF LEMON GROVE

CITY COUNCIL STAFF REPORT

Item No. 1.H

Meeting Date: June 18, 2019

Submitted to: Honorable Mayor and Members of the City Council,

Department: City Manager's Office

Staff Contact: Lydia Romero, City Manager

Item Title: **Reappointment of Planning Commissioner Seth Smith**

Recommended Action: Adopt a Resolution reappointing Planning Commissioner Seth Smith to a four (4) year term.

Summary: In April 2018, the Lemon Grove City Council appointed five residents to the re-established Planning Commission, established initial terms for each appointee and Chair and Vice Chair. Appointed Members took office July 1, 2018. Commissioner Seth Smith was initially given a one (1) year term to serve on the Planning Commission. Staff is recommending the reappointment of Commissioner Smith to a four (4) year term. Commissioner Smith has attended all five (5) scheduled meetings, has come prepared and is thoughtful in his deliberations on the dais. Staff has spoken with Commissioner Smith and he expressed interest in serving the Lemon Grove community another four (4) years as a Planning Commissioner.

Environmental Review:

- Not subject to review Negative Declaration
 Categorical Exemption, Section | | Mitigated Negative Declaration

Staff Recommendation: Adopt Resolution appointing Planning Commissioner Seth Smith to a four (4) year term on the Lemon Grove Planning Commission.

Attachments: **Attachment A** – Resolution

RESOLUTION NO. 2019-

**RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LEMON GROVE,
CALIFORNIA, APPOINTING SETH SMITH TO A FOUR (4) YEAR TERM ON
THE LEMON GROVE PLANNING COMMISSION**

WHEREAS, on March 6, 2018, the Lemon Grove City Council adopted Ordinance 448 re-establishing the Lemon Grove Planning Commission; and

WHEREAS, on April 18, 2018, the Lemon Grove City Council appointed five (5) members to the re-established Planning Commission; and

WHEREAS, Planning Commissioner Seth Smith was given an initial term of one (1) year to serve; and

WHEREAS, his term concludes June 30, 2019; and

WHEREAS, Planning Commissioner Seth Smith is interested in serving a four (4) year term on the Planning Commission.

NOW, THEREFORE, the City Council of the City of Lemon Grove, California hereby appoints Seth Smith to a four (4) year term on the Lemon Grove Planning Commission with the term expiring on June 30, 2023.

PASSED AND ADOPTED on _____, 2019, the City Council of the City of Lemon Grove, California, adopted Resolution No. _____, passed by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Racquel Vasquez, Mayor

Attest: Shelley Chapel, MMC, City Clerk

Approved as to Form: Kristen Steinke, City Attorney



CITY OF LEMON GROVE

CITY COUNCIL STAFF REPORT

Item No. 1.1

Meeting Date: June 18, 2019

Submitted to: Honorable Mayor and Members of the City Council

Department: City Manager's Office

Staff Contact: Mike James, Assistant City Manager

mjames@lemongrove.ca.gov

Item Title: Urban Forestry Tree Maintenance Agreement

Recommended Action: Adopt a resolution (Attachment A) approving an urban forestry tree maintenance agreement.

Summary: Since 2014, West Coast Arborists, Inc. (WCA) has provided urban forestry tree maintenance services to City. WCA's goal has been, and continues to be the preservation of the integrity and health of the City's urban forest. The relationship between WCA and the City has been very productive and is critical to the maintenance of the City's urban forest. Looking forward city staff is requesting that the same services are continued for an additional five years.

Discussion: The City of Lemon Grove has an inventory of 1,351 public trees, valued at \$3.4 million, located throughout the City. Continuing the partnership with WCA will assist staff by ensuring the safety and health of each tree. The City's urban forestry tree maintenance program will include:

- Regularly scheduled pruning schedule for all trees,
- Removal of dead and dying trees and/or high risk trees,
- Proper tree replacement and planting in accordance to each planting site,
- Computerized inventory management,
- Services request response, and
- Emergency response.

Regularly scheduled tree service reduces (but does not eliminate) the likelihood of tree limbs dropping, tree disease or pest infestation. A systematic tree maintenance program also reduces the need for emergency or service request pruning, reduces tree mortality and liability concerns, and improves the health of the entire tree program.

During Fiscal Year 2018-2019 (FY 2018-19) a total of \$72,000 (\$45,000 TDA Funds, \$25,000 General Funds, and \$2,000 Wildflower LMD) was allocated to manage 1,351 trees located within City maintained areas. City maintained areas include City facilities, parks, and street medians. City maintained trees do not include trees adjoining private property, commonly referred to as parkway trees.

The remaining portion of this staff report details the procurement process that recommends the continued partnership with WCA, highlights the qualifications and special services provided by WCA, details significant deliverables that will be provided as part of the scope of work, and concludes with program considerations that staff has moving forward.

Procurement Process: Whenever practical, the City participates in cooperative purchasing agreements, “piggybacking” onto contracts which are economically advantageous. Piggybacking is the extension of pricing, terms and/or conditions to other governmental agencies at the mutual consent of all parties. This is permissible under the City’s Municipal Code Section 3.24.090. In this instance, WCA has offered the City pricing from a 2017 City of Encinitas bid and subsequent agreement.

In October 2017, the City of Encinitas’ provided public notice that it would accept proposals for urban forestry maintenance services via the request for proposals (RFP) process. 82 prospective bidders received the RFP, 12 companies downloaded the document, and two companies responded to the RFP. Nine companies obtained the RFP and two companies provided proposals. The scope of work included inspection services, pruning, planting, watering, removal, emergency response, root barrier installation, plant wellness, service request pruning, report preparation and tree inventory management. Staff from the City of Encinitas evaluated the proposals, performed reference checks, performed facility inspection, and concluded that WCA met the required qualifications to provide high quality urban forestry tree case services to the City.

Qualifications and Special Services of WCA: WCA has been in business continuously since 1972. It employs over 650 employees, has over 50 ISA Certified Arborists, 100 ISA Certified Tree Workers, a fleet of over 700 vehicles, and over 200 contracts with public agencies in California and Arizona. In San Diego County, WSA has contracts with the cities of Carlsbad, Chula Vista, Coronado, County of San Diego, Del Mar, El Cajon, Encinitas, Imperial Beach, La Mesa, Oceanside, Poway, San Diego, Santee, Solana Beach, and Vista.

WCA’s approach to managing a local government’s tree inventory is unique in that it combines licensed experience and professional equipment/tools that the City does not have nor can readily train for in the near future. For example, WCA can provide:

- An assessment of each individual City-owned tree that includes size, health status, prior maintenance activity, recommended maintenance activity, and a value.
- A comprehensive computer software program called ArborAccess. This program was developed to track all information related to the City’s tree inventory, ordering

and tracking service requests, resident requests for service, maintenance scheduling, and budget projects.

- Specialized tree trimming equipment such as an aerial towers (up to 95 feet), dump/chipper trucks, and roll off trucks.
- Professional urban forestry staff such as ISA Certified Arborists and ISA Certified Tree Workers. Employees are also trained in young tree care, structural pruning standards, and utility line clearance (when working within 10 feet of the power lines available 24/7.
- Insight from professional organizations such as the International Society of Arboriculture (ISA), Maintenance Superintendent's Association (MSA), California Landscape Contractors Association (CLCA), Tree Care Industry Association (TCIA), Street Tree Seminar (STS), and Professional Tree Care Association (PTCA).

Staff believes that WCA has the special equipment, certified staffing and professional training standards to manage all tree maintenance service requests the City has now as well as in the future.

Key Points of the Agreement: The proposed contract with WCA will allow the City to receive:

- A long-term contract with 2019 prices with an annual adjustment based on San Diego Regional Consumer Price Index,
- Free annual access to WCAs ArborAccess software tree maintenance tracking system (valued at \$2,500 per year),
- Training and support services on the software program,
- 24/7 availability for emergency call outs, and
- Specialty tree maintenance services that will support a systematic work schedule that maintains all trees in the City.

Program Considerations: There are two program areas that city staff recommends that the City Council consider as funding allows.

1. *Tree City USA Designation:* This program has been in existence since 1976. It is a nationwide movement that provides the framework necessary for communities to manage and expand their public trees. More than 3,400 communities have

made the commitment to becoming a Tree City USA. Each have achieved Tree City USA status by meeting four core standards of sound urban forestry management:

- a. Maintaining a tree board or department,
- b. Having a community tree ordinance,
- c. Spending at least \$2 per capita on urban forestry and
- d. Celebrating Arbor Day.

Should this be something that the City Council is interested in, city staff will work with WCA to confirm the City meets the requirements, apply for status, and continue to work to maintain its status annually.

- 2. *Urban Forestry Policy:* With the recent tree maintenance concerns occurring in the past year throughout the County, public works staff have received an increase in the number of calls for service regarding safety concerns of trees on private property, in the public right-of-way, and on City's owned property. Currently only the trees that have records of being planted or maintained by the City are recorded into the City's inventory. All other trees are presumed to be planted/maintained by private property owners. An example of this is a tree that is planted between the sidewalk and street directly in front of a residential dwelling. Currently, there are 1,351 trees in the City's inventory estimated at a value of \$3.4 million. In referring to the budget there is approximately \$72,000 from general fund and non-general fund sources to maintain that inventory. That amount is approximately 30 percent of what may be needed if all the trees in the right-of-way were incorporated the City's maintained inventory. Staff estimates the total annual cost would likely cost upwards of \$300,000 per year. Staff can escalate the progress of the Urban Forestry Policy for the City Council to review. In order to complete this analysis, city staff will have to work with WCA to create a proposal to assess (e.g. geocode, measure sizes, and assess the health) for all private trees in the ROW. Additionally, a second proposal will be necessary to show how much it will cost for WCA to maintain all trees in the City ROW.

Environmental Review:

- Not subject to review
- Negative Declaration
- Categorical Exemption, Section | |
- Mitigated Negative Declaration

Fiscal Impact: In the Fiscal Year 2019-2020 proposed budget, there is \$72,000 allocated to WCA for the urban forestry tree maintenance services.

Public Notification: None.

Staff Recommendation: Adopt a resolution (**Attachment A**) approving an urban forestry tree maintenance agreement.

Attachments:
Attachment A – Resolution

RESOLUTION NO. 2019 -

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LEMON GROVE,
CALIFORNIA, APPROVING AN URBAN FORESTRY TREE MAINTENANCE
AGREEMENT WITH WEST COAST ARBORISTS, INC.**

WHEREAS, the City maintains approximately 1,351 trees located in its parks, facilities and street medians; and

WHEREAS, a comprehensive tree maintenance program is essential for ensuring the safety and health of each tree as well as addressing more complicated tree assessments and planting strategies; and

WHEREAS, the City's Municipal Code Section 3.24.090 authorizes the City to participate in cooperative purchasing agreements with contracts bid by other cities, which are economically advantageous while still able to provide the desired level of services; and

WHEREAS, in 2017, the City of Encinitas publicly advertised a request for proposals for urban forestry maintenance services and awarded a contract to West Coast Arborists, Inc. (WCA); and

WHEREAS, WCA has agreed to extend the same terms of the 2017 City of Encinitas' agreement to the City of Lemon Grove; and

WHEREAS, staff believes that WCA provides a special and unique service package of special tree maintenance equipment, ISA certified staff, and maintains a professional training standard that can manage all tree maintenance service requests in the City.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Lemon Grove, California, hereby:

1. Approves an agreement (Exhibit 1) with West Coast Arborists, Inc. for urban forestry tree maintenance services in the City of Lemon Grove; and
2. Establishes a five-year term ending on June 30, 2024; and
3. Authorizes the City Manager or her designee to execute and manage all contract documents.

PASSED AND ADOPTED on _____, 2019, the City Council of the City of Lemon Grove, California, adopted Resolution No. _____, passed by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Racquel Vasquez, Mayor

Attest:

Shelley Chapel, MMC, City Clerk

Approved as to Form:

Kristen Steinke, City Attorney

AGREEMENT TO PROVIDE SERVICES

This Agreement for Professional Services ("Agreement") is made and entered into as of the date of execution by the City of Lemon Grove ("City"), a general law city organized and operating under the laws of the State of California and West Coast Arborists, Inc. ("Contractor").

RECITALS

City is a general law city and is in need of professional services for the following project: **TREE MAINTENANCE SERVICES** ("Project").

Contractor is duly licensed and/or has the necessary qualifications to provide such services for the Project.

Now, therefore, the parties' desire by this Agreement to establish the terms for the City to retain Contractor to provide the services described as follows:

1. SERVICES

Contractor shall provide the City with tree maintenance services as specified in the scope of work attached hereto as [Attachment 'A' \(page 10\)](#).

2. COMPENSATION

- a. Subject to paragraphs 2(b) - (d) below, City shall pay for the services provided by Contractor in accordance with the Schedule of Charges set forth in [Attachment 'B' \(page 22\)](#) attached hereto and hereby made a part of this Agreement; provided, however, that the contents of this Agreement shall supercede any provision in [Attachment 'A'](#) that is inconsistent herewith.
- b. In no event shall the total amount paid for base services rendered by Contractor pursuant to this Agreement exceed the sum of \$72,000.00 per fiscal year beginning in Fiscal Year 2019-2020. The itemized costs identified in [Attachment 'B'](#) will dictate the cost rate that the Contractor will be allowed to charge with prior work approval from the City.
- c. Each month Contractor shall furnish City with an original invoice for all work performed and expenses incurred during the preceding month. The invoice shall detail charges by categories, including labor, travel, materials, equipment, supplies, sub-contractor charges and miscellaneous expenses. City shall independently review each invoice submitted to determine whether the work performed and expenses incurred are in compliance with the provisions of this Agreement. In the event that no charges or expenses are disputed, the invoice shall be approved and paid according to the terms set forth in paragraph 2(d). In the event any charges or expenses are disputed, the original invoice shall be returned by City to Contractor for correction and resubmission.
- d. Except as to any charges for work performed or expenses incurred by Contractor which are disputed by City, City will use its best efforts to cause Contractor to be paid within thirty (30) days of receipt of Contractor's invoice. Payment to Contractor for work performed pursuant to this Agreement shall not be deemed to waive any defects in the work performed by Contractor.

3. ADDITIONAL WORK

Contractor shall not be compensated for any services outside of the Scope of Services, except as provided in this paragraph. If changes in the work seem merited by Contractor or the City, and informal consultations with the other party indicate that a change is warranted, a change in scope of the work shall be processed by the City in the following manner: a letter outlining the changes shall be forwarded to the City by Contractor with a statement of estimated changes in fee or time schedule. An amendment to this Agreement shall be prepared by the City and executed by both parties before performance of such services or the City will not be required to pay for the changes in the scope of work. Such amendment shall not render ineffective or

invalidate unaffected portions of this Agreement.

If any work or materials are ordered under this section on a "cost-plus basis," Contractor shall provide the Public Works Director or designee written reports showing the name and number of each worker employed thereon, the number of hours employed thereon, the character of work Contractor is doing, and the wages paid or to be paid, also showing the materials delivered and any other items that may enter into the cost, the quantity, and the character of each such material, from whom purchased and the net amount paid or to be paid therefore, and, such other information as directed. If required, Contractor shall produce any books, vouchers, other records, or memoranda that will assist the Public Works Director or designee in determining the true, necessary cost of the work and materials to be paid for. Utilizing such cost-plus basis, Contractor shall be paid for all of its costs of performance (labor, materials, equipment, management and other services) plus a maximum of fifteen percent (15%) additional percentage for overhead and profit.

4. MAINTENANCE OF RECORDS

Books, documents, papers, accounting records, and other evidence pertaining to work done and costs incurred pursuant to this Agreement shall be maintained by Contractor and made available at all reasonable times during the term of this Agreement and for four (4) years from the date of final payment under the Agreement for inspection by the City.

5. OWNERSHIP AND USE OF WORK

All documents and materials prepared pursuant to this Agreement shall be considered the property of City, and will be turned over to City upon demand, but in any event upon completion of the work. City reserves the right to publish, disclose, distribute and otherwise use, in whole or in part, any reports, data or other materials prepared under this Agreement without the permission of Contractor. All materials shall be delivered in a reproducible form. As used herein, "documents and materials" include any original maps, models, designs, drawings, photographs, studies, surveys, reports, data, notes, computer files prepared or developed pursuant to this Agreement.

6. FINDINGS CONFIDENTIAL

Any reports, information, data or materials given to or prepared or assembled by Contractor under this Agreement shall not be made available to any individual or organization by Contractor without prior written approval of City.

7. CONFLICT OF INTEREST

Contractor hereby expressly covenants that no interest presently exists, nor shall any interest, direct or indirect, be acquired which would conflict in any manner with the performance of services pursuant to this Agreement.

8. TERM OF AGREEMENT AND TIME OF PERFORMANCE

Contractor shall perform its services hereunder in a prompt and timely manner. Work shall commence upon receipt of a written Notice to Proceed and/or Purchase Order from the City. The Notice to Proceed shall set forth the commencement date of the Work. The term of this Agreement shall be for a period commencing on the Execution Date, and terminating on June 30, 2024, unless terminated earlier as set forth herein or extended per Section 9 of this Agreement.

9. OPTION TO EXTEND AGREEMENT

The City reserves the following rights to extend the term of this Agreement.

- a. As mutually agreeable, the City and Contractor may extend this Agreement for an additional one-year period, not to exceed June 30, 2025 by giving written notice thereof to Contractor not less than thirty (30) calendar days before the end of the Agreement term.

- b. Each Fiscal Year, the city may adjust agreement prices in accordance with Section 10 of this Agreement.

10. **COMPENSATION ADJUSTMENT UPON EXERCISE OF OPTION TO EXTEND**

Period of Coverage: Contractor agrees to provide awarded items and/or services as specified in [Attachment 'B'](#) for the entire duration of the contract term.

Agreement Prices: Unit costs quoted shall remain firm through June 20, 2020. Three price increases may be allowed for before the beginning of each fiscal year as the result of:

- a. Manufacturer or supplier price increases in the product(s) offered
- b. Governmental or regulatory agency increases to the trade
- c. Regional Consumer Price Index (CPI) increases to the industry

Any request for a price increase must be substantiated with documentation from a manufacturer, supplier, or governmental agency and must be submitted in writing at least thirty (30) days prior to July 1st of each year. The City will be the sole judge of acceptable option year price increases should it decide to exercise its option to extend under this Agreement.

11. **DELAYS IN PERFORMANCE**

Neither the City nor Contractor shall be considered in default of this Agreement for delays in performance caused by circumstances beyond the reasonable control of the non-performing party. For purposes of this Agreement, such circumstances include but are not limited to, abnormal weather conditions; floods; earthquakes; fire; epidemics; war; riots and other civil disturbances; strikes, lockouts, work slowdowns, and other labor disturbances; sabotage or judicial restraint.

Should such circumstances occur, the non-performing party shall, within a reasonable time of being prevented from performing, give written notice to the other party describing the circumstances preventing continued performance and the efforts being made to resume performance of this Agreement.

13. **COMPLIANCE WITH LAW**

- a. Contractor shall comply with all applicable laws, ordinances, codes and regulations of the federal, state and local government. If Contractor's failure to comply with applicable laws, ordinances, codes and regulations results in damage or liability to City, Contractor shall be responsible for indemnifying and holding the City harmless as provided in this Agreement.
- b. Contractor shall assist the City, as requested, in obtaining and maintaining all permits, if any, required of Contractor by Federal, State and local regulatory agencies.
- c. Contractor shall be responsible for **payment of PREVAILING WAGES** as required by the provisions of Section 1773 of the Labor Code of the State of California and to adhere to current prevailing wage determination rates posted by State of California's Department of Industrial Relation at www.dir.ca.gov/dlsr/DPreWageDetermination.htm .

Contractor shall keep accurate payroll records available for inspection in accordance with the requirements of Labor Code Section 1776.

14. **STANDARD OF CARE**

Contractor's services will be performed in accordance with generally accepted professional practices and principles and in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions.

15. ASSIGNMENT AND SUBCONTRACTORS

Contractor shall not assign, transfer, convey, sublet, or otherwise dispose of this Agreement, or Contractor's right, title of interest in or to the same or any part thereof to any other person, company or corporation, including any franchisee of Contractor, without previous consent in writing from the City. If the Contractor shall without previous written consent, assign, transfer, convey, sublet, or otherwise dispose of the Agreement or its obligations, duties, responsibilities, rights, title or interest therein, or any of the monies to become due under the Agreement, to any other person, company, or other corporation, including any franchisee of the Contractor, the Agreement may at the option of the City, be terminated, revoked, and annulled, and the City shall thereupon be relieved and discharged from any and all liability and obligations growing out of the Agreement to the Contractor, and to its assignee or transferee. No right under the Agreement, nor any right to any money to become due hereunder, shall be asserted against the City in law or equity by reason of any so-called assignment of the Agreement, or any part thereof, or by reason of the assignment of any monies to become due hereunder unless authorized as aforesaid by written consent of the City.

16. ORAL MODIFICATIONS INEFFECTIVE

No oral order, objection, claim or notice by any party to the other shall affect or modify any of the terms or obligations contained in any of the Agreement Documents and none of the provisions of the Agreement Documents shall be held to be waived or modified by reason of any act whatsoever, except by a waiver or modification thereof in writing and signed by the Director and the Contractor.

17. INDEPENDENT CONTRACTOR

Contractor is retained as an independent Contractor and is not an employee of the City. No employee or agent of Contractor shall by this Agreement become an employee of the City. The work to be performed shall be in accordance with the work described in the Scope of Services ([Attachment 'A'](#)) attached hereto, subject to such directions and amendments from the City as herein provided. Contractor shall have no authority, express or implied, pursuant to this Agreement to bind City to any obligation whatsoever, except as specifically provided in writing by the City.

18. INTEGRATION

This Agreement represents the entire understanding of the City and Contractor as to those matters contained herein, and supersedes and cancels any prior oral or written understanding, promises or representations with respect to those matters covered hereunder. This Agreement may not be modified or altered except in writing signed by both parties hereto. This is an integrated Agreement.

19. INSURANCE**Commercial General Liability**

Contractor shall take out and maintain, during the performance of all Work under this Agreement and for twelve (12) months following the completion of all Work, in amounts not less than specified in the Agreement Documents, Commercial General Liability Insurance, in a form and with insurance companies acceptable to the City.

Coverage for Commercial General Liability insurance shall be at least as broad as the following:

- 1) **Insurance Services Office Commercial General Liability coverage** (Occurrence Form CG 0001)
- 2) **Commercial General Liability Insurance must include coverage for the following:**

- a. Bodily Injury and Property Damage
- b. Personal Injury/Advertising Injury
- c. Premises/Operations Liability
- d. Products/Completed Operations Liability
- e. Aggregate Limits that Apply per Project
- f. Explosion, Collapse and Underground (UCX) exclusion deleted
- g. Contractual Liability with respect to this Agreement
- h. Broad Form Property Damage
- i. Independent Contractors Coverage.

All such policies shall name the City, the City Council and each member of the City Council, its officers, employees, agents and volunteers as Additional Insureds under the policy.

The general liability policy may utilize either deductibles or provide coverage excess of a self-insured retention, subject to written approval by the City.

Automobile Liability

At all times during the performance of the Work under this Agreement, and for twelve (12) months following completion of all Work, the Contractor shall maintain Automobile Liability Insurance for bodily injury and property damage including coverage for owned, non-owned and hired vehicles, in a form and with insurance companies acceptable to the City.

Coverage for automobile liability insurance shall be at least as broad as Insurance Services Office Form Number CA 0001 (ed. 6/92) covering automobile liability, Code 1 (any auto). The automobile liability program may utilize deductibles, but not a self-insured retention, subject to written approval by the City.

All such policies shall name the City, the City Council and each member of the City Council, its officers, employees, agents and volunteers as Additional Insured under the policies.

Workers' Compensation / Employers Liability

At all times during the performance of the work under this Agreement, and for twelve (12) months following completion of all Work, the Contractor shall maintain workers' compensation in compliance with applicable statutory requirements and Employer's Liability Coverage in amounts not less than the limits specified in the Agreement Documents.

Such insurance shall include an insurer's Waiver of Subrogation in favor of the City and will be in a form and with insurance companies acceptable to the City.

If insurance is maintained, the workers' compensation and employer's liability program may utilize either deductibles or provide coverage excess of a self-insured retention, subject to written approval by the City.

Before beginning work, the Contractor shall furnish to the City satisfactory proof that he or she has taken out for the period covered by the Work under this Agreement, full compensation insurance for all persons employed directly by Contractor or through subcontractors in carrying out the Work contemplated under this Agreement, all in accordance with the "Workers' Compensation and Insurance Act," Division IV of the Labor Code of the State of California and any acts amendatory thereof.

Minimum Policy Limits Required

The following insurance limits are required for the Agreement:

	<u>Combined Single Limit</u>
Commercial General Liability	\$1,000,000 per occurrence / \$2,000,000 aggregate for bodily injury, personal injury and property damage
Automobile Liability	\$1,000,000 per occurrence for bodily injury and property damage
Employer’s Liability	\$1,000,000 per occurrence

Evidence Required

Prior to execution of the Agreement, the Contractor shall file with the City evidence of insurance from an insurer or insurers certifying to the coverage of all insurance required herein. Such evidence shall include original copies of the ISO CG 2010 (or insurer's equivalent) signed by the insurer's representative, Certificate of Insurance (most recent version of Acord 25 Form or equivalent), and Additional Insured Endorsement verifying compliance with paragraph 15.c.iv above. All evidence of insurance shall be signed by a properly authorized officer, agent or qualified representative of the insurer and shall certify the names of the insured, any additional primary insureds, where appropriate, the type and amount of the insurance, the location and operations to which the insurance applies, and the expiration date of such insurance.

Policy Provisions Required

The City, as an additional insured, shall be expressly endorsed onto each policy as a cancellation notice recipient such that the City shall receive a copy of any cancellation notice in the event any policy is cancelled.

General Liability and Automobile Liability insurance policies shall contain a provision stating that the Contractor’s policies are primary insurance and that the insurance of the City, or any named additional insurers, shall not be called upon to contribute to any loss.

Qualifying Insurers

All policies required must be issued by acceptable insurance companies, as determined by the City, which satisfy the following minimum requirements:

Insurance carriers shall be qualified to do business in California and maintain an agent for process within the State. Such insurance carrier shall have not less than an “A-” policyholder’s rating and a financial rating of not less than “Class VII” according to the latest Best Key Rating Guide. Due to market fluctuations in the Workers Compensation sector, the City reserves the right and at its sole discretion to review and accept the Contractor’s proposed Workers compensation insurance.

Additional Insurance Provisions

The foregoing requirements as to the types and limits of insurance coverage to be maintained by Contractor, and any approval of said insurance by the City, is not intended to and shall not in any manner limit or qualify the liabilities and obligations otherwise assumed by the Contractor pursuant to this Agreement, including but not limited to, the provisions concerning indemnification.

If at any time during the life of the Agreement, the Contractor fails to maintain in full force any insurance required by the Agreement documents, the City may acquire the necessary insurance

for the Contractor and deduct the cost thereof from the appropriate progress payments due the Contractor.

Contractor shall include any subcontractors as insured under its policies or shall furnish separate certificates and endorsements for each subcontractor indicating that subcontractor maintains the same levels of insurance as are required by the Contractor. All coverage's for subcontractors shall be subject to all of the requirements stated herein.

The City may require the Contractor to provide complete copies of all insurance policies in effect for the duration of the Work.

Neither the City nor the City Council, nor any member of the City Council, nor any of the directors, officers, employees, agents or volunteers shall be personally responsible for any liability arising under or by virtue of the Agreement.

20. INDEMNIFICATION

To the fullest extent permitted by law, Contractor agrees to indemnify, defend (with independent counsel approved by the City) and hold harmless the City and its officers, employees and elected and appointed officials, and volunteers (each, an "Indemnified Party") from and against all liabilities (including without limitation all claims, losses, damages, penalties, fines, and judgments, associated investigation and administrative expenses, and defense costs, including but not limited to reasonable attorneys' fees, court costs and costs of alternative dispute resolution) regardless of nature or type, expressly including but not limited to those arising from bodily injury or property damage, arising out of or resulting from any error or negligent or wrongful act or omission of the Contractor, Contractor's agents, officers, employees, subcontractors, or independent contractors hired by Contractor under this Agreement. The Contractor's obligations apply regardless of whether or not a liability is caused or contributed to by the negligence (including passive negligence) or other act or omission of an Indemnified Party, except to the extent that liability is caused by the active negligence or willful misconduct of an Indemnified Party. In such case, the Contractor's indemnification obligation shall be reduced in proportion to the Indemnified Party's share of liability for its active negligence or willful misconduct, if any. The acceptance or approval of the Contractor's work by an Indemnified Party shall not relieve or reduce the Contractor's indemnification obligation. The provisions of this Section 16 shall survive completion of the work under this Agreement or the termination of this Agreement and are not limited by the provisions relating to insurance.

21. LAWS, VENUE AND ATTORNEY'S FEES

This Agreement shall be interpreted in accordance with the laws of the State of California. If any action is brought to interpret or enforce any term of this Agreement, the action shall be brought in a state or federal court situated in the County of San Diego, State of California. In the event of any such litigation between the parties, the prevailing party shall be entitled to recover all reasonable costs incurred, including reasonable attorney's fees, as determined by the court.

22. UNFORESEEN DIFFICULTIES

All loss or damage arising out of the nature of the Work to be done under the Agreement, or from any unforeseen obstructions or difficulties which may be encountered during the progress of the Work and in the prosecution of the same, or from encumbrances on the line of work, shall be sustained by the Contractor, except as may be otherwise specifically provided by the Agreement Documents.

23. TERMINATION OR ABANDONMENT

- a. City may terminate this Agreement, with or without cause, at any time by giving thirty (30) days written notice of termination to Contractor. In the event such notice is given, Contractor shall cease immediately all work in progress.

- b. Contractor may terminate this Agreement at any time upon thirty (30) days written notice of termination to City.
- c. If either Contractor or City fails to perform any material obligation under this Agreement, then, in addition to any other remedies, City or Contractor may terminate this Agreement immediately upon written notice.
- d. Upon termination of this Agreement, all property belonging to City which is in Contractor's possession shall be returned to City. Contractor shall furnish City with a final invoice for work performed by Contractor. City shall have no obligation to pay Contractor for work performed after termination of this Agreement.

24. ORGANIZATION

Contractor shall assign Michael Palat as Project Manager as indicated in the staffing plan described in the Scope of Services ([Attachment 'A'](#)). The Project Manager shall not be removed from the Project or reassigned without the prior written consent of the City. Contractor shall make every reasonable effort to maintain the stability and continuity of Contractor's staff assigned to perform the services required under this Agreement.

25. NOTICE

Any notice or instrument required to be given or delivered by this Agreement may be given or delivered by depositing the same in any United States Post Office, certified mail, return receipt requested, postage prepaid, addressed to:

CITY: City of Lemon Grove
3232 Main Street
Lemon Grove, CA 91945
Attn: Public Works Director

CONTRACTOR: West Coast Arborist
8524 Commerce Street
Suite B
San Diego, CA 92121
Attn: Michael Palat

26. THIRD PARTY RIGHTS

Nothing in this Agreement shall be construed to give any rights or benefits to anyone other than the City and the Contractor.

27. SEVERABILITY AND WAIVER

The unenforceability, invalidity or illegality of any provision(s) of this Agreement shall not render the other provisions unenforceable, invalid or illegal. Waiver by any party of any portion of this Agreement shall not constitute a waiver of any other portion thereof.

28. NONDISCRIMINATION

Contractor shall not discriminate, in any way, against any person on the basis of race, color, religious creed, national origin, ancestry, sex, age physical handicap, medical condition or marital status in connection with or related to the performance of this Agreement.

29. DRUG-FREE WORKPLACE

It is the policy of the City of Lemon Grove to maintain a drug-free workplace. The unlawful manufacture, distribution, dispensation, possession and/or use of controlled substances in the workplace are prohibited. Controlled substances are those defined in 21 USC Section 812 and include, but are not limited to, such substances as marijuana, heroin, cocaine and amphetamines. The workplace is presumed to include all City of Lemon Grove facilities and premises where City of Lemon Grove employees may visit in the execution of their job duties such as homes, schools, hospitals, etc. All City of Lemon Grove employees are required to comply with this policy as an essential condition of employment. Individuals who are not considered City of Lemon Grove employees, but who perform work at City worksites for the City's benefit are required to comply with this policy. Such individuals who unlawfully manufacture, distribute, dispense, possess or use controlled substances in the City workplace may be barred

from further work for and in the City's facilities as well as from future consideration.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

CITY OF LEMON GROVE

"CONTRACTOR"

By: _____

By: _____

Lydia Romero, City Manager

Print Name: _____

APPROVED AS TO FORM:

Title: _____

LOUNSBERY FERGUSON ALTONA & PEAK

By signing above, I attest that I am an authorized representative / agent, that I am authorized by my signature to bind this company contractually and certify under penalty of perjury the accuracy of the representations made on the Agreement and related documents.

By: _____

Kristen Steinke, City Attorney

ATTACHMENT 'A' – SCOPE OF WORK

The requirement of this Contract is to provide professional Urban Forestry Tree Maintenance Service for planting, pruning, trimming, staking, raising, removal, disposal, stump grinding and chipping, inventorying, documenting and all other services required to maintain the City of Lemon Grove's trees in a safe, attractive and overall healthy condition.

The City proposes to enter into a Contract with a qualified Contractor who is proactive in their work and can meet the requirements set forth in this proposal package. The Contractor will be required to perform and complete the proposed Tree Maintenance Services in a thorough and professional manner, and to provide all labor, tools, equipment, materials and supplies necessary to complete the work according to generally accepted International Society of Arboriculture (ISA) practices and standards, and in a timely manner that will meet the City's requirements. The successful proposer will be required to comply with all current prevailing wage requirements as set forth in the Labor Code administered by the Department of Industrial Relations.

There are two main program goals. First, the City requires an update to the current tree inventory and database, which includes updating and maintaining records throughout the term of the Contract. Second, the City requires an annual tree maintenance program to support and develop its Urban Forest. The following requirements are meant to meet these goals.

1. Tree Inventory

1) Tree Software Program

The Contractor shall operate and maintain, at no additional cost to the City, an computerized internet based urban forestry management program that includes, but is not limited to, municipal tree inventory, ability to send online work requests for services, work order tracking, work histories and the ability to update site specific tree data and work records, invoices tracking and job balances, reports, value of the urban forest, GPS accessibility, and various other computer information management system tools.

2) Record Keeping

The Contractor will provide, at no additional cost to the City, access to a record keeping system consisting of a password protected Internet-driven tracking program and internet-based software program that allows the City to maintain information about its tree population, including the description of each tree by species, height, diameter, work history, and tree and planting site location. The program shall have the capability to produce detailed listings of trees and site information, work histories, service requests, summary reports and pictures of City tree species.

3) GPS

The City would like the contractor to track the maintenance and characteristic information of the trees in the City's tree inventory feature class in ArcGIS version 10. Or, the contractor

shall incorporate the City's tree inventory FacilityID field into their own database, and include x and y (lat/long) fields necessary to map the trees in GIS.

For on-going data maintenance, when a new tree is planted, the new tree site will be added as a record to the tree inventory, and will include the latitude/longitude coordinates (collected by the contractor using a Global Positioning System (GPS) device with minimum sub-meter accuracy). Lat/long coordinates shall be included at the time a new record is added, and will not be input at a later date through a bulk update process. Trees that are removed will not be deleted from the tree inventory, but will be coded as 'vacant'.

At required intervals, the contractor shall provide an ArcGIS version 10 file or personal geodatabase containing the updated tree feature class. Or, the contractor may provide an Excel spreadsheet or Access database table containing updated information that can be joined to the City's GIS tree inventory based on FacilityID. If the contractor provides their own updated tree inventory database to the City, there will be a one-time requirement to provide a data dictionary of fields containing tree maintenance and tree characteristic information that corresponds to similar fields in the City's GIS tree inventory, so that the City is confident that accurate data synchronization/updating can occur.

A. Experience

The Contractor shall have at a minimum five (5) years experience in collecting tree inventories and developing inventory databases, including an extensive program that simplifies the management of the City's Urban Forest. The Contractor shall have developed a complete and comprehensive computer software program in at least five (5) California cities. The program should have specialized reports designed specifically for City representatives' needs. The program should be developed based on the needs of the City and allow the City to modify and structure the program to address its specific needs. The user-friendly program should allow customers to generate a variety of reports quickly.

B. Training and Support

The Contractor shall provide, at no additional cost to the City, training and support on the software system they provide for the entire term of the contract. Contractor shall provide training to designated City staff during the hours of 7:00 A.M. to 4:30 P.M. Monday through Thursday. The Contractor shall be readily available by telephone or e-mail and shall respond to the City's inquiries in a timely manner.

2. Annual Maintenance Program

A. Public Relations

The Contractor shall endeavor to maintain good public relations at all times with the public. All work shall be conducted in a manner which will cause the least possible interference with or annoyance to, the public.

B. Work Schedule

Upon Contract award, the contractor shall be required to submit a work schedule based on the City's annual pruning requirements which is a systematic tree pruning program composed of existing grid or per-designed districts that are pruned in their entirety on a set schedule; removal & replacement programs which consist of removing trees designated by the City and replanting appropriate trees as replacements; and planting new appropriate trees in areas where trees do not currently exist. The proposal shall include a recommended annual work plan, daily work schedules, and personnel and vehicles that would be required to complete the annual maintenance program. Depending on the City's current and future program needs the scheduled work may require multiple crews to perform concurrently within the same time constraints.

The Contractor is also required to provide service for trees prior to their regular and scheduled trim cycle in order to correct an immediate problem or concern as determined by the City's Designated Representative. Such request(s) shall be addressed and work completed within two (2) weeks of notice by the City.

C. Work Hours and City Notification

The Contractor's working hours, for normal work, shall be limited to the hours between 7:00 A.M. and 4:30 P.M. Monday through Friday, excluding recognized holidays. Deviation from normal working hours will not be allowed without prior authorization from the City's designated representative. The Contractor shall notify the City's Designated Representative no later than 8:00 A.M. each morning they are working in the City. The notification shall include what work is being done and where, the name of the onsite supervisor and his or her direct phone number.

D. Emergency Response

The Contractor shall be responsible for responding to tree related emergency situations during normal business hours, after-hours, weekends and holidays. The Contractor shall have the capacity to deal with any tree related emergency situation ranging from limbs down on single trees to storm related damage that involves a large number of trees requiring the commitment and focus of significant resources and staffing levels for several days. Response time and protocol during emergencies is critical to the City of Lemon Grove.

As part of this Contract, the Contractor shall be required to make the City their priority client for responses during emergencies that cover the San Diego area.

- 1) Telephone responses by the Contractor to tree related emergency calls during normal business hours and after-hours shall be made within (15) fifteen minutes of the initial call.
- 2) The response time for a crew to arrive on-site for tree related emergencies during normal business hours of operation is thirty (30) minutes.
- 3) The response time for a crew to arrive on-site for tree related emergencies outside of normal business hours of operation is ninety (90) minutes.

Failure to meet these requirements may be cause for termination of the Contract.

E. Competent Supervisor and Project Manager

The Contractor shall have competent working supervisors at each jobsite at all times when work is being performed. Each supervisor must be capable of communicating effectively both in written and oral English, and holding the necessary certifications or credentials as described for that position. All supervisors must possess adequate technical background to ensure that all work is accomplished per provisions of this Contract.

Contractor is required to have a competent Project Manager available by telephone on a twenty-four (24) hour basis that is assigned to provide direct and prompt attention to requests from the City for emergency and after-hours tree service requests.

F. Qualified Staff

Contractor shall employ sufficient personnel qualified by reason of education, training and experience to discharge the services agreed to be performed by Contractor. Contractor shall provide service of the highest quality at all times, and personnel retained to perform this service shall be temperate, competent and otherwise fully qualified to fulfill the Contractor's obligations under the Contract.

G. Uniforms

All employees of Contractor performing services shall appear neat and well-groomed at all times and shall be dressed in clean, unaltered uniforms at no additional cost to the City, with suitable company identification. No portion of the uniform may be removed while working. Employees not in uniform shall be immediately removed from the work area. The Contractor shall provide a standard uniform consisting of at least a collared shirt with buttons, complimenting pants, a belt and boots appropriate to the work. All shirts, jackets or safety vests shall be clearly marked with company identification and the name of the employee wearing the uniform in the field. Contractor employees shall wear orange safety vests when operating machinery and/or while working near moving traffic as required by any applicable laws.

H. Knowledge, Skills and Abilities

The Contractor's employees shall be subject to the following minimum knowledge, skills, abilities and requirements:

- 1) The proper license to operate equipment;
- 2) Ability to operate and maintain equipment in accordance with the manufacturer's recommendations;
- 3) Mechanical ability to make required operator adjustments to the equipment being used;
- 4) Knowledgeable of safety regulations as they relate to tree care and traffic control;
- 5) First Aid Certification from a nationally recognized organization (minimum of one member of each crew);
- 6) Ability to communicate orally and in writing in English; and,
- 7) Demonstrated knowledge of tree care and related operations.

I. ISA Standards

The Contractor shall deliver a level of quality that is compatible with International Society of Arboriculture (ISA) standards, and standards and requirements described herein in providing tree services compatible with standard practice that results in a neat, clean and attractive appearance to trees and associated sites serviced under the terms of the Contract.

J. Clean Worksite

Upon completion of work on individual street segments that are under the Contract, Contractor shall clean the work site and all grounds adjacent to the work area of all rubbish, excess materials and equipment. All sections of the work area shall be left in a neat and presentable condition. Care should be taken to prevent spillage on streets over which work or hauling is done, and any such spillage or debris deposited on street due to Contractor operation shall be cleaned up immediately.

K. Equipment

- 1) Overnight parking of equipment, leaving unattended debris and staging of materials on City streets will not be permitted. Waste bins shall be removed from individual street segments once the work has been completed.
- 2) All equipment used and all maintenance practices employed shall be subject to the inspection of the City's designated representative and shall meet safety and functional requirements described herein. All vehicles and equipment operating under this Contract shall be properly marked with company identification. All equipment must be maintained in a good state of repair. All safety guards shall be in place. No equipment shall leak oil or fluids. Equipment drive belts and hoses shall be covered and in good repair and show no sign of fraying. No equipment shall present any potential danger to the operator, co-workers, passing motorists or pedestrians. Failure to comply with this provision will be cause to have the equipment removed from the job site.
- 3) It is the Contractor's responsibility to maintain a sufficient inventory of equipment so as to complete work as specified. An inventory of equipment shall be provided with proposal. This inventory shall include the brand name, model number, weight and capacities of all equipment to be used in the performance of the Contract. All equipment is to be approved by the City prior to the start of the Contract. It is the Contractor's responsibility to notify the City's designated representative of any change in the equipment inventory during the performance of the Contract. This notification shall come in the form of an updated equipment inventory list, presented in the form of a memo on dated company letterhead. Failure to comply with this provision will be grounds to remove the Contractor from the job site until such time as equipment inventory discrepancies are addressed and may be grounds to terminate the Contract.

L. Disposal of Refuse and Debris/Landfill Diversion Requirement:

All vegetation and debris generated by the Contractor in the performance of the work shall become the property of the Contractor and shall be removed from the work site promptly. The

Contractor shall dispose of all generated debris at no additional cost to City and shall, at minimum, dispose of the material as is consistent with the requirements of AB 939. The Contractor is encouraged to divert as much material as possible from the landfill, meeting or exceeding the City's goal of seventy-five (75) percent diversion rate. It is anticipated that one-hundred (100) percent of the material from the work could be diverted, unless a particular tree is diseased or not suitable for reuse.

M. Protecting the Urban Forest

If, at any time, the Contractor is unclear, on what course of action to follow in the field, the Contractor shall consult with the City's designated representative. The Contractor should never proceed with an action that will result in the permanent disfigurement of the structure or value of a tree. Contractors responsible for the disfigurement of trees shall be penalized in an amount equal to the appraised value of the subject tree as determined by an independent Consulting Arborist.

N. Safety Requirements

The Contractor shall conduct all work outlined in the Contract in such a manner as to meet all accepted standards for safe practices during the operation and to safely maintain stored equipment, machines and materials or other hazards consequential or related to the work; and agrees additionally to accept the sole responsibility for complying with all City, County, State or other legal requirements including, but limited to, full compliance with the terms of the applicable OSHA, CAL EPA Safety Orders and ANSI Z133.1 Safety Requirements for Arboricultural Operations at all times so as to protect all person, including Contractor employees, agents of the City, vendors, members of the public or others from foreseeable injury or damage to their property.

O. Traffic Control

The Contractor shall be responsible for traffic control and safety regulations as related to any City, State or County requirements while working in the public right-of-way or on any City project. The design and operation of work zone traffic controls must comply with US Department of Transportation/Federal highway Administrative guidelines and any City, County or State supplements guidelines and/or regulations and laws. All operations will be conducted by the Contractor to provide maximum safety for the public according to the most recent edition of the MUCTD (Manual on Uniform Traffic Control Devices) and any California supplements to the MUCTD and any local regulations.

Where work is in progress, each street shall be open to local traffic at all times unless prior arrangements have been made and approved by the City's designated representative.

The Contractor shall display standardized warning signage when controlling traffic around any area used for staging or working in any area that is subject to pedestrian or vehicular traffic. At no time shall traffic be permitted to enter, or operations allowed to continue, in any work zone that presents a dangerous conditions to pedestrian and/or vehicular traffic.

The Contractor may be required to submit a traffic control plan to the Engineering Department as directed by the City's designated representative.

P. Utility Coordination

The Contractor shall recognize the rights of utility companies within the public right-of-way or on any City project and their need to maintain and repair their facilities. The Contractor shall exercise due and proper care to prevent damage to utility facilities and to adjust schedules when utility operations prevent the Contractor from maintenance during a specified time frame. No additional compensation will be allowed for complying with these requirements. Contractor shall notify the City's designated representative of any utility that is disturbed or damaged and shall contact the appropriate utility to arrange for repair.

Q. Authority and Inspections

- 1) The City's designated representatives shall, at all times, have access to the work and shall be furnished with every reasonable facility for acquiring full knowledge with respect to the progress, workmanship and characters of materials and equipment used and employed in the work. Whenever the Contractor varies the period during which work is carried out, they shall give due notice to the City's designated representative so that property access for inspection may be provided. Any inspection of work shall not relieve the Contractor of any obligations to fulfill the Contract as prescribed. Any and all questions regarding the performance of the work shall be directed to the City's designated representative.
- 2) If it appears that the work to be done or any matter relative thereto is not sufficiently detailed or explained by the specifications, the Contractor shall apply to the City's designated representative for such further explanation as may be necessary and shall conform to such explanation or interpretation as part of the Contract so far as may be consistent with the intent of the original requirements.
- 3) All work shall be completed to the satisfaction of and under the supervision of the City's designated representative. Failure to comply with any requirement contained herein may result in suspension of work without time extension or termination of Contract. Inspection of work will be done by the City's designated representative, during the performance of work or when deemed necessary.
- 4) If any portion of the work done under the Contract proves defective or not in accordance with the requirements, and if the imperfection in the same is not of sufficient magnitude or importance to make the work dangerous or undesirable, the City's designated representative shall have the right and authority to retain the work, but he/she may make such deductions in the payment due the Contractor as may be just and reasonable.

Any work which is defective or deficient in any of the requirements or specifications shall be remedied or removed and replaced by the Contractor in an acceptable manner and within a reasonable amount of time as determined by the City, at the Contractor's own expense.

In any other case, a letter will be sent to Contractor noting deficiencies, and the Contractor shall make a reasonable and good faith effort to correct the deficiencies within a reasonable period of time not to exceed three (3) days from notification. After this time period, if unacceptable conditions still exist, the City has the right to terminate the Contract or deduct payment as is proportionately appropriate for non-compliance with the requirements and specifications of the Contract.

R. Quantities/ Minor Modifications and/or Additional Work

The City reserves the right to increase or decrease the quantity of any item(s) or portion(s) of the work described in the requirements or specifications or the proposal form or to omit portions of the work so described as may be deemed necessary or expedient by the City's designated representative and the Contractor shall agree not to claim or bring suit for damages, whether for loss of profits or otherwise, on account of any decrease or omission of any kind of work to be done. The City shall reduce the price accordingly. Alterations, modifications or deviations from the work described in this document shall be subject to prior written approval of the City. Any price adjustments shall be made by mutual consent of the City and Contractor.

Should a change or extra work be found necessary by the City, all changes and extra work shall be performed at the same unit price of any proposal item listed. If the work is not listed as a proposal item, the Contractor shall submit a fair cost for the work to be performed. A change order authorization, in writing, will be issued by the City.

S. Invoicing

Contractor shall be required to submit invoices on a monthly basis. Invoice format shall include but not be limited to the date the work took place, a list of each street that work took place, the address of each individual work site and the activity, the species and its current condition, height, trunk diameter and canopy spread of each individual tree. Each invoice shall include an exact copy in electronic format that is compatible with the City's Tree Inventory program. Failure to submit invoices in this format may result in non-payment until these requirements are met.

T. Withholding Payment

The City may withhold payment to such extent as may be necessary to protect the City from loss due to one or more of the following reasons:

- 1) Defective, unsatisfactory or inadequate work not corrected;
- 2) Claims filed, or reasonable evidence indicating probable filing of claims;
- 3) Failure of the Contractor to make proper payments to subcontractors or for materials or labor;
- 4) A reasonable doubt that the contract can be completed for the balance unpaid; and,
- 5) Damage that resulted from an incident involving property damage.

U. Stop Work

- 1) If the Contractor, after having officially commenced work on said Contract, should discontinue work for any cause, he/she shall notify the City's Designated Representative of the intent to do so, and shall further notify of the date for restarting operations.

- 2) The City, at the discretion of the City's Designated Representative, may require the Contractor to Stop Work if any condition presents an unreasonable liability to the City, until such time as the condition is corrected to the satisfaction of the City.

V. Risk Management

Tree work is a controlled task. At no time should work be performed so as to result in a loss of control incident (e.g. free-falling large limbs or trunk sections, hinge cutting to avoid use of ropes/hoisting equipment, lack of safety apparatus/equipment guards, improper use/loading of equipment). Failure to maintain control at all times is dangerous and can result in serious injury. A loss control incident will not be tolerated and may result in termination of this Contract. The Contractor shall be responsible for mitigating any damage related to a loss of control incident.

W. Investigation

Contractor shall cooperate fully with the City in the investigation of any accident, injury or death occurring on City property or while in the performance of work based on the contract, including a complete written report submitted to the City's Designated Representative within twenty-four (24) hours following the occurrence.

Should any structure or property be damaged during permitted or contracted tree operation, the persons conducting the work shall immediately notify the proper owners or authorities. Repairs to property damaged by the responsible party shall be made within forty-eight (48) hours, except utility lines, which shall be repaired the same working day. Repairs on private property shall be made in accordance with the appropriate building code under permits issued by the City of Lemon Grove. Any damage caused by the permitted or contracted persons shall be repaired or restored by them at their expense to a condition similar or equal to that existing before such damage or injury, or they shall repair such damage in a manner acceptable to the City.

Special attention is drawn to existing irrigation systems, plant material, landscape features, lights and utility boxes in City parkways, parks and public landscape areas and the need to avoid damage and to repair any damage that occurs within a reasonable amount of time as determined by the City's Designated Representative.

The Contractor's responsibility shall be continuous and not be limited to working hours or days.

ATTACHMENT 'A' – PROJECT SPECIAL REQUIREMENTS

These project special requirements are intended to further address the Tree Maintenance Services program requirements and to help the Contractor fully understand what is needed to fulfill the Contract. Within this section are the descriptions and specifications for the detailed services and materials which will be necessary to provide services under the Contract and shall be included in the base price of the proposal and shall not result in additional charges to the City.

1. Work Quality & General Standards

All work as part of this contract shall comply with good arboreal practice for the particular species of trees being worked on and shall be consistent with national standards. All trees being trimmed will meet Pruning Standards as adopted by the International Society of Arboriculture, and/or "Pruning Landscape Trees" by U.C. Agricultural Extension Service #AXT-288. The Contractor shall also meet the requirements of the most current American National Standard Institute, Inc., "Safety Requirements for Tree Pruning, Trimming, Repair or Removal."

The City's Designated Representative shall determine if the Contractor has met all trimming requirements and payment shall not be made for trimming that is not in accordance with the above standards. The Contractor shall be deemed in contract default, if they consistently fail to comply with the contract standards.

No worker shall enter a fenced or otherwise secured area of private property without the consent of the property owner.

2. Public Noticing

At least seventy-two hours (72) prior to the commencement of any non-emergency work at any tree site, the Contractor shall notify the occupant(s) of that property of the type of work that shall be performed and the anticipated duration of the work. In addition, the Contractor shall supply and post standard signage at the site work at which work is to be performed, at least forty-eight (48) hours in advance of work with the signage clearly stating what type of work is to be done and what affect the work will have on parking availability at that particular site. The Contractor may not use any material to affix signs to trees that may cause death or permanent damage to the tree(s).

3. Tool Sanitation

On all trees, including palms, known or suspected to be diseased, pruning tools and cut surfaces shall be disinfected with a ten (10) percent chlorine bleach solution after each cut and between trees where there is danger of transmitting the disease on tools. Fresh solution shall be mixed daily. Old solutions shall be disposed of through proper disposal methods. Dumping used or old bleach solutions on the ground or down the storm drain and will result in severe penalties to the Contractor and may result in the termination of this Contract.

4. Wildlife protection

Prior to the commencement of any work in the vicinity of any tree, each tree shall be visually surveyed, from all sides, for the sole purpose of detecting the presence of bird nests or wildlife of any

type. If a nest is found and is determined to be active, there shall be no work of any type in the tree in which the nest is found without the written permission of the City's Designated Representative. At no time shall any nest or wildlife be removed from its location. In the event that wildlife is accidentally displaced and needs assistance, the Contractor shall notify Animal Control and/or the nearest appropriate animal rescue facility, as identified in the Contractor's submittal required herein regarding "Protection of Wildlife", shall be contacted for assistance.

5. Pre-inspection

Prior to the commencement of any work in the vicinity of any tree, the Contractor shall identify the location of utilities, irrigation components and/or any private property element(s) that could be compromised by any work activity. If identified, the Contractor shall take appropriate action to protect same. If, during the course of pre-inspection, the Contractor identifies damage that exists before the onset of work, the Contractor shall document the damages with photos and report such damage to the City's Designated Representative prior to commencing work in that area. All photo documentation shall have the time and date embedded. Any claim of damage that cannot be refuted by photo-documentation and/or a written report to the City's Designated Representative shall be considered the responsibility of the Contractor.

6. Setup, Operations, Equipment Staging

The Contractor shall setup, operate and stage in a manner that presents the least amount of disruption to residents, businesses, the public and traffic flow. Outside of an emergency situation, at no time will multiple setups or equipment staging be allowed on both sides of a street within the same block. Equipment shall never be stored or left unattended on a public street, City facility or private property without prior authorization from the City's Designated Representative or in the case of private property, owner of that property. The staging of equipment shall not be exempt from the work hour restrictions defined herein.

7. Identification and reporting of hazards

While performing work of any type, the tree worker should inspect for any obvious hazards related to trees. All hazardous situations should be corrected or promptly reported to the City. Any defective or weakened trees shall be reported to the City's Designated Representative.

8. Cleanup of greenwaste & debris:

Limbs, logs or any other debris resulting from any tree operations shall be promptly and properly removed. The work area shall be kept safe at all times until all operations are completed. Under no circumstances shall the accumulation of brush, limbs, logs or other debris be allowed to pose a hazard to the public. During production trimming and removals, debris shall be removed from public rights of way and private property within one (1) hour of the completion of work on the tree from which the debris was generated. All trimming activities shall cease immediately if clean up equipment ceases to function or is not available (e.g. loader, roll off equipment, staff). Street rights-of-way shall not be used to stage unattended debris generated during standard work hours. All debris from tree operations shall be cleaned up each day before the work crew leaves the site. All lawn areas shall be raked, all streets/sidewalks shall be swept, and all brush, branches, or other debris shall be removed from the site. Areas are to be left in a condition equal to or better than that

which existed prior to the commencement of tree operations. No material is to be allowed to enter any storm drain. All brush generated from tree trimming operations shall be recycled where practical.

A. Greenwaste Report:

Greenwaste that is transported to an offsite facility for grinding into mulch shall be documented and submitted to the City's Designated Representative on a monthly basis. Weight slips shall be required as proof of disposal and shall be included in the monthly Greenwaste Report.

B. Wood Chips and/or Mulch:

1) Chips or mulch generated from trimming operations within the City may be dumped and spread at a City designated site upon specific permission from the City's Designated Representative.

C. Milling:

- 1) At the direction of the City's Designated Representative, large tree trunks, which meet proper specifications, will be required to be milled into lumber suitable for use in a variety of applications. Milled lumber shall be returned to the City at a cost to be included in the bid proposal.
- 2) At the direction of the City's Designated Representative, wood waste generated from tree removals shall be chipped into pure wood chips with an even uniform size. These chips shall be dumped and spread in specified locations in the City.

9. Education and Outreach

Education is an integral and primary element of the City's Urban Forest Management Program. The Contractor is required to provide support to the City's education and outreach efforts at no additional cost to the City. The Contractor is required to participate in the City's Arbor Day Event, which is typically held in April or May each year, and will be required to provide additional education and outreach support to the City when requested.

10. Tree City USA:

The City of Lemon Grove is not a designated as a "Tree City USA," as determined by the Arbor Day Foundation. The Contractor will assist the City in its endeavor to apply for and receive designation as a "Tree City USA" member. This will help to ensure the City receives and maintains this designation.

11. Cooperative Bidding:

Other Public agencies may be extended the opportunity to purchase off this proposal and subsequent agreement if the successful vendor(s) and the City of Lemon Grove agree. The lack of exception to this clause in vendor's response will be considered agreement. However, the City of Lemon Grove is not an agent of, partner to or representative of these outside agencies and is not obligate or liable for any action or debts that may arise out of such independently negotiated "piggy-back" procurements.

ATTACHMENT 'B' – PROPOSED COSTS

The Contractor proposes to furnish all materials, supplies, equipment and/or services set forth herein, subject to all conditions outlined in the agreement, at prices indicated below. All applicable services include cleanup and disposal.

Tree Planting – (per tree)

Tree planting includes tree, materials and planting costs.

	<u>Unit Price in Figures</u>
15 Gallon (double staked per specs)	<u>\$145.00</u>
24 inch Box (double staked per specs)	<u>\$240.00</u>
36 inch Box (double staked per specs)	<u>\$825.00</u>
48 inch Box	<u>\$1,450.00</u>
60 inch Box	<u>\$2,450.00</u>

Tree Watering (per hour)

Watering of young trees, water truck/operator-per hour	<u>\$70.00</u>
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Tree Pruning (by Grid)

Price per tree to Prune by Grid	<u>\$62.00</u>
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Tree Pruning (per Service Requests)

Full prune tree	
0" - 6" Diameter Standard Height	<u>\$62.00</u>
7" - 12" Diameter Standard Height	<u>\$82.00</u>
13" - 18" Diameter Standard Height	<u>\$102.00</u>
19" - 24" Diameter Standard Height	<u>\$142.00</u>
25" - 30" Diameter Standard Height	<u>\$232.00</u>
31" - 36" Diameter Standard Height	<u>\$302.00</u>
36"+ Diameter Standard Height	<u>\$402.00</u>
 Crown Raise/Clearance Prune Hardwood tree	
0" - 6" Diameter Standard Height	<u>\$25.00</u>
7" - 12" Diameter Standard Height	<u>\$25.00</u>
13" - 18" Diameter Standard Height	<u>\$25.00</u>
19" - 24" Diameter Standard Height	<u>\$25.00</u>
25" - 30" Diameter Standard Height	<u>\$25.00</u>
31" - 36" Diameter Standard Height	<u>\$25.00</u>
36"+ Diameter Standard Height	<u>\$25.00</u>

<u>Palm Tree Trimming:</u>	<u>Unit Price in Figures</u>
Prune Date Palm (Phoenix spp.)	<u>\$150.00</u>
Clean Trunk for Date Palm (Phoenix spp.)	<u>\$20.00</u>
Prune Fan Palm (Washingtonia spp.)	<u>\$62.00</u>
Clean Trunk for Fan Palm (Washingtonia spp.)	<u>\$12.00</u>
Prune all other Palm Species	<u>\$62.00</u>
<u>Tree Removal – (per inch)</u>	
Tree and Stump removal per inch trunk Diameter at Standard Height (DSH)	
0" - 6" DSH	<u>\$20.00</u>
7" - 12" DSH	<u>\$30.00</u>
13" - 18" DSH	<u>\$30.00</u>
19" - 24" DSH	<u>\$30.00</u>
25" - 30" DSH	<u>\$30.00</u>
31" - 36" DSH	<u>\$40.00</u>
Over 36" DSH	<u>\$40.00</u>
Stump grinding per stump diameter inch at grade	<u>\$15.00</u>
<u>Milling Cost – (per board foot)</u>	
Milling Lumber per Board Foot	<u>\$8.00</u>
<u>Root Pruning – (per linear foot)</u>	
Per foot of roots pruned	<u>\$15.00</u>
<u>Root Barrier Installation – (per linear foot)</u>	
Per foot of root barrier installed	<u>\$20.00</u>
<u>General Labor Rates – (by hour)</u>	
Hourly rate for 1 Ground-person	<u>\$70.00</u>
Hourly rate for 1 Equipment Operator	<u>\$70.00</u>
Hourly rate for 1 Trimmer	<u>\$70.00</u>
<u>Day Rate Service Crew - (per day)</u>	
Boom truck per eight (8) hour day to include a chip body, low decibel chipper, 1 trimmer, 2 ground persons	<u>\$1,680.00</u>
<u>Specialty Equipment Day Rate – (per day)</u>	
Per eight (8) hour day	<u>\$1,200.00</u>
<u>Emergency Services – (per hour)</u>	
Fully equipped 3 person crew called in for emergency service:	
During normal business hours	<u>\$210.00</u>
After hours, weekends &/or holidays	<u>\$300.00</u>

<u>General Arborist Reports – (per hour)</u>	<u>Unit Price in Figures</u>
Arborists Reports	<u>\$140.00</u>
Resistograph Testing	<u>\$140.00</u>
Ground Penetrating Radar	<u>\$800.00</u>
Air Spade Services	<u>\$140.00</u>
Fumigation	<u>\$140.00</u>
Fertilization	<u>\$140.00</u>
Level 1,2,3 Risk Assessments	<u>\$140.00</u>
Soil Testing / Tree Well Enhancements	<u>\$140.00</u>
<u>GPS Tree Inventory – (per tree site)</u>	
Cost per tree site	<u>\$3.00</u>



CITY OF LEMON GROVE

CITY COUNCIL STAFF REPORT

Item No. 1.J

Meeting Date: June 18, 2019

Submitted to: Honorable Mayor and Members of the City Council

Department: City Manager's Office

Staff Contact: Mike James, Assistant City Manager

mjames@lemongrove.ca.gov

Item Title: **Professional Services Agreement for Stormwater Program,
Construction and Development Support**

Recommended Action: Adopt a resolution (Attachment A) approving an agreement for stormwater program, construction and development support.

Summary: The Regional Water Quality Control Board (RWQCB) through its Stormwater Municipal Permit requires the City to complete a number of tasks described in the Jurisdictional Runoff Management Plan (JRMP) during Fiscal Year 2019-20. These tasks include outfall monitoring, industrial, commercial and municipal field inspections, and structural best management practices maintenance verification and inspections. In addition to the JRMP, the City is required to implement its section of the San Diego Bay Watershed Water Quality Improvement Plan.

Discussion: The City has contracted with D-Max Engineering, Inc. (D-Max) in previous years to assist the City in meeting the requirements of the State's Mandated Stormwater Permit in addition to construction and development support. The City's current contract for the above mentioned services expires on June 30, 2019. City staff recommends continuing the contract with D-Max to assist City staff with meeting these permit requirements and continue to assist with construction and development support. The proposed agreement is for a not-to-exceed amount of \$120,000 through June 30, 2020. Funds are allocated next fiscal year within Fund 26 - Storm Water Program, which receives its funding from business license fees, building permit fees, development review deposits, and the General Fund all of which approximately \$50,000 are recoverable. City staff recommends that the City Council adopts a resolution approving this agreement for professional services.

Environmental Review:

Not subject to review

Negative Declaration

Categorical Exemption, Section | |

Mitigated Negative Declaration

Fiscal Impact: In the Fiscal Year 2019-2020 proposed budget, there is \$120,000 allocated to D-Max for Stormwater program, construction and development support.

Public Notification: None.

Staff Recommendation: Adopt a resolution (Attachment A) approving an agreement for stormwater program, construction and development support.

Attachments:

Attachment A – Resolution

RESOLUTION NO. 2019 -

**RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LEMON GROVE,
CALIFORNIA APPROVING AN AGREEMENT FOR PROFESSIONAL
SERVICES WITH D-MAX ENGINEERING, INC. FOR STORMWATER
SUPPORT SERVICES**

WHEREAS, the Regional Water Quality Control Board (RWQCB) adopted Order No. R9-2013-0001 (Permit) replacing the previously issued stormwater permit Order No. R9-2007-0001; and

WHEREAS, the Permit went into effect on June 27, 2013; and

WHEREAS, the Permit required the City to develop a Jurisdictional Runoff Management Program (JRMP) no later than June 27, 2015, which the City completed; and

WHEREAS, the City is required to conduct outfall monitoring, industrial, commercial and municipal inspections, and structural best management practices verification and inspections within Fiscal Year 2019-20; and

WHEREAS, the City is also required to implement the San Diego Bay Watershed Water Quality Improvement Plan; and

WHEREAS, the City has contracted with D-Max Engineering, Inc. (D-Max) to provide the aforementioned support through June 30, 2019; and

WHEREAS, the City's existing contract with D-Max for the above mentioned support expires on June 30, 2019; and

WHEREAS, the City has requested a stormwater services agreement to continue contracting with D-Max to meet the Permit requirements through June 30, 2020 and provide additional construction and development support; and

WHEREAS, funds have been allocated within Fund 26 - Storm Water Program, which receives its funding from business license fees, building permit fees, development review deposits and General Fund, to support the expense to provide said services by D-Max with a not to exceed amount of \$120,000.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Lemon Grove, California, hereby:

1. Approves an Agreement with D-Max (Exhibit 1) for professional services for stormwater support services; and
2. Authorizes the City Manager or her designee to execute said agreement.

PASSED AND ADOPTED on _____, 2019, the City Council of the City of Lemon Grove, California, adopted Resolution No. _____, passed by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Racquel Vasquez, Mayor

Attest:

Shelley Chapel, MMC, City Clerk

Approved as to Form:

Kristen Steinke, City Attorney

**AGREEMENT FOR
PROFESSIONAL STORMWATER SUPPORT SERVICES**

THIS AGREEMENT is approved and effective upon the date of the last signature, by and between the CITY OF LEMON GROVE, a municipal corporation (the "CITY"), and D-Max Engineering, Inc., a water and environmental sciences firm (the "CONSULTANT").

RECITALS

WHEREAS, the CITY desires to employ a CONSULTANT to provide professional stormwater services support for the CITY.

WHEREAS, the CITY has determined that the CONSULTANT is qualified by experience and has the ability to perform the services desired by the CITY, and the CONSULTANT is willing to perform such services.

NOW, THEREFORE, THE PARTIES HERETO DO MUTUALLY AGREE AS FOLLOWS:

1. **ENGAGEMENT OF CONSULTANT.** The CITY hereby agrees to engage the CONSULTANT and the CONSULTANT hereby agrees to perform the services hereinafter set forth in accordance with all terms and conditions contained herein.

The CONSULTANT represents that all services required hereunder will be performed directly by the CONSULTANT or under direct supervision of the CONSULTANT.

2. **SCOPE OF SERVICES.** The CONSULTANT will perform services set forth in Exhibit A.

The CONSULTANT can expect to perform outfall monitoring, existing development inspections, enforcement support and annual reporting, structural best management practices maintenance verification and inspections. As-needed stormwater compliance tasks, technical review of stormwater plans and reports and construction phase inspections.

The CONSULTANT shall be responsible for all research and reviews related to the work and shall not rely on CITY personnel for such services, except as authorized in advance by the CITY. The CONSULTANT shall participate in meetings if required by a task order to keep staff advised of the progress on the project.

The CITY may unilaterally, or upon request from the CONSULTANT, from time to time reduce or increase the Scope of Services to be performed by the CONSULTANT under this Agreement per project. Upon doing so, the CITY and the CONSULTANT agree to meet in good faith and confer for the purpose of negotiating a corresponding reduction or increase in the compensation associated with said change in services.

3. **PROJECT COORDINATION AND SUPERVISION.** Noah Alvey, Development Services Manager, is hereby designated as the Project Manager for the CITY and will monitor the progress and execution of this Agreement. The CONSULTANT shall assign a single Project Manager to provide supervision and have overall responsibility for the progress and execution of this Agreement for the CONSULTANT. Arsalan Dadkhah, Ph. D., PE is hereby designated as the Project Manager for the CONSULTANT.

4. **COMPENSATION AND PAYMENT.** The compensation for the CONSULTANT shall be based on monthly billings covering actual work performed. Billings shall include labor classifications, respective rates, hours worked and reimbursable expenses, if any. The total cost

for all work described within Exhibit A shall not exceed ONE HUNDRED TWENTY THOUSAND DOLLARS (\$120,000.00) without prior written authorization from the CITY for twelve months of service. Monthly invoices will be processed for payment and remitted within

thirty (30) days from receipt of invoice, provided that work is accomplished consistent with Exhibit A as determined by the CITY.

On an annual basis, the CONSULTANT may request an increase in the schedule of fees of no more than the increase in the Consumer Price Index for the previous one year period.

The CONSULTANT shall maintain all books, documents, papers, employee time sheets, accounting records, and other evidence pertaining to costs incurred and shall make such materials available at its office at all reasonable times during the term of this Agreement and for three (3) years from the date of final payment under this Agreement, for inspection by the CITY and for furnishing of copies to the CITY, if requested.

5. **LENGTH OF AGREEMENT.** This Agreement will last through June 30, 2020 from the executed date of the Agreement or until all work has been completed by the CONSULTANT and accepted by the CITY, whichever occurs first.

6. **DISPOSITION AND OWNERSHIP OF DOCUMENTS.** The Memoranda, Reports, Maps, Drawings, Plans, Specifications and other documents prepared by the CONSULTANT for this Project, whether paper or electronic, shall become the property of the CITY for use with respect to this Project, and shall be turned over to the CITY upon completion of the Project, or any phase thereof, as contemplated by this Agreement.

Contemporaneously with the transfer of documents, the CONSULTANT hereby assigns to the CITY and CONSULTANT thereby expressly waives and disclaims, any copyright in, and the right to reproduce, all written material, drawings, plans, specifications or other work prepared under this Agreement, except upon the CITY's prior authorization regarding reproduction, which authorization shall not be unreasonably withheld. The CONSULTANT shall, upon request of the CITY, execute any further document(s) necessary to further effectuate this waiver and disclaimer.

The CONSULTANT agrees that the CITY may use, reuse, alter, reproduce, modify, assign, transfer, or in any other way, medium or method utilize the CONSULTANT's work product for the CITY's purposes, and the CONSULTANT expressly waives and disclaims any residual rights granted to it by Civil Code Sections 980 through 989 relating to intellectual property and artistic works.

Any modification or reuse by the CITY of documents, drawings or specifications prepared by the CONSULTANT shall relieve the CONSULTANT from liability under Section 14 but only with respect to the effect of the modification or reuse by the CITY, or for any liability to the CITY should the documents be used by the CITY for some project other than what was expressly agreed upon within the Scope of this project, unless otherwise mutually agreed.

7. **INDEPENDENT CONSULTANT.** Both parties hereto in the performance of this Agreement will be acting in an independent capacity and not as agents, employees, partners or joint venture with one another. Neither the CONSULTANT nor the CONSULTANT'S employees are employees of the CITY and are not entitled to any of the rights, benefits, or privileges of the CITY's employees, including but not limited to retirement, medical, unemployment, or workers' compensation insurance.

This Agreement contemplates the personal services of the CONSULTANT and the CONSULTANT's employees, and it is recognized by the parties that a substantial inducement to the CITY for entering into this Agreement was, and is, the professional reputation and competence of the CONSULTANT and its employees. Neither this Agreement nor any interest herein may be

assigned by the CONSULTANT without the prior written consent of the CITY. Nothing herein contained is intended to prevent the CONSULTANT from employing or hiring as many employees, or subcontractors, as the CONSULTANT may deem necessary for the proper and efficient performance of this Agreement. All agreements by CONSULTANT with its subcontractor(s) shall require the subcontractor to adhere to the applicable terms of this Agreement.

8. **CONTROL.** Neither the CITY nor its officers, agents or employees shall have any control over the conduct of the CONSULTANT or any of the CONSULTANT's employees except as herein set forth, and the CONSULTANT expressly agrees not to represent that the CONSULTANT or the CONSULTANT's officers, agents, or employees are in any manner officers, agents, or employees of the CITY. It is understood that the CONSULTANT, its officers, agents, and employees are as to the CITY wholly independent consultants and that the CONSULTANT's obligations to the CITY are solely such as are prescribed by this Agreement.

9. **COMPLIANCE WITH APPLICABLE LAW.** The CONSULTANT, in the performance of the services to be provided herein, shall comply with all applicable State and Federal statutes and regulations, and all applicable ordinances, rules and regulations of the CITY OF LEMON GROVE, whether now in force or subsequently enacted. The CONSULTANT, and each of its subcontractors, shall obtain and maintain a current CITY OF LEMON GROVE business license prior to and during performance of any work pursuant to this Agreement.

10. **LICENSES, PERMITS, ETC.** The CONSULTANT represents and covenants that it has all licenses, permits, qualifications, and approvals of whatever nature that are legally required to practice its profession. The CONSULTANT represents and covenants that the CONSULTANT shall, at its sole cost and expense, keep in effect at all times during the term of this Agreement, any license, permit, or approval which is legally required for the CONSULTANT to practice its profession.

11. **STANDARD OF CARE.** The CONSULTANT, in performing any services under this Agreement, shall perform in a manner consistent with that level of care and skill ordinarily exercised by members of the CONSULTANT's trade or profession currently practicing under similar conditions and in similar locations. The CONSULTANT shall take all special precautions necessary to protect the CONSULTANT's employees and members of the public from risk of harm arising out of the nature of the work and/or the conditions of the work site.

Unless disclosed in writing prior to the date of this Agreement, the CONSULTANT warrants to the CITY that it is not now, nor has it within the preceding five (5) years, been debarred by a governmental agency or involved in debarment, arbitration or litigation proceedings concerning the CONSULTANT's professional performance or the furnishing of materials or services relating thereto.

The CONSULTANT is responsible for identifying any unique products, treatments, processes or materials whose availability is critical to the success of the project the CONSULTANT has been retained to perform, within the time requirements of the CITY, or, when no time is specified, then within a commercially reasonable time. Accordingly, unless the CONSULTANT has notified the CITY otherwise, the CONSULTANT warrants that all products, materials, processes or treatments identified in the project documents prepared for the CITY are reasonably commercially available. Any failure by the CONSULTANT to use due diligence under this sub-paragraph will render the CONSULTANT liable to the CITY for any increased costs that result from the CITY's later inability to obtain the specified items or any reasonable substitute within a price range that allows for project completion in the time frame specified or, when not specified, then within a commercially reasonable time.

12. NON-DISCRIMINATION PROVISIONS. The CONSULTANT shall not discriminate against any employee or applicant for employment because of age, race, color, ancestry, religion, sex, sexual orientation, marital status, national origin, physical handicap, or medical condition. The CONSULTANT will take positive action to insure that applicants are employed without regard to their age, race, color, ancestry, religion, sex, sexual orientation, marital status, national origin, physical handicap, or medical condition. Such action shall include but not be limited to the following: employment, promotion, demotion, transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The CONSULTANT agrees to post in conspicuous places available to employees and applicants for employment any notices provided by the CITY setting forth the provisions of this non-discrimination clause.

13. CONFIDENTIAL INFORMATION. The CITY may from time to time communicate to the CONSULTANT certain confidential information to enable the CONSULTANT to effectively perform the services to be provided herein. The CONSULTANT shall treat all such information as confidential and shall not disclose any part thereof without the prior written consent of the CITY. The CONSULTANT shall limit the use and circulation of such information, even within its own organization, to the extent necessary to perform the services to be provided herein. The foregoing obligation of this Section 13, however, shall not apply to any part of the information that (i) has been disclosed in publicly available sources of information; (ii) is, through no fault of the CONSULTANT, hereafter disclosed in publicly available sources of information; (iii) is already in the possession of the CONSULTANT without any obligation of confidentiality; (iv) has been or is hereafter rightfully disclosed to the CONSULTANT by a third party, but only to the extent that the use or disclosure thereof has been or is rightfully authorized by that third party; or (v) is disclosed according to law or court order.

The CONSULTANT shall not disclose any reports, recommendations, conclusions or other results of the services or the existence of the subject matter of this Agreement without the prior written consent of the CITY. In its performance hereunder, the CONSULTANT shall comply with all legal obligations it may now or hereafter have respecting the information or other property of any other person, firm or corporation.

CONSULTANT shall be liable to CITY for any damages caused by breach of this condition, pursuant to the provisions of Section 14.

14. INDEMNIFICATION AND HOLD HARMLESS. The CONSULTANT shall indemnify, defend, and hold harmless the CITY, and its elected officials, officers, agents and employees from any and all claims, demands, costs or liability that arise out of, pertain to, or relate to the negligence, recklessness, or willful misconduct of CONSULTANT, its employees, agents, and subcontractors in the performance of services under this Agreement. CONSULTANT's duty to indemnify under this section shall not include liability for damages for death or bodily injury to persons, injury to property, or other loss, damage or expense arising from the sole negligence or willful misconduct by the CITY or its elected officials, officers, agents, and employees. CONSULTANT's indemnification obligations shall not be limited by the insurance provisions of this Agreement. The CITY AND CONSULTANT expressly agree that any payment, attorney's fees, costs or expense CITY incurs or makes to or on behalf of an injured employee under the CITY's self-administered workers' compensation is included as a loss, expense, or cost for the purposes of this section, and that this section will survive the expiration or early termination of this Agreement.

15. WORKERS' COMPENSATION. The CONSULTANT shall comply with all of the provisions of the Workers' Compensation Insurance and Safety Acts of the State of California, the applicable provisions of Division 4 and 5 of the California Government Code and all amendments thereto; and all similar state or Federal acts or laws applicable; and shall indemnify, and hold harmless

the CITY and its elected officials, officers, agents, and employees from and against all claims, demands, payments, suits, actions, proceedings and judgments of every nature and description, including reasonable attorneys' fees and defense costs presented, brought or recovered against the CITY or its elected officials, officers, agents, and employees for or on account of any liability under any of said acts which may be incurred by reason of any work to be performed by the CONSULTANT under this Agreement.

16. **INSURANCE.** The CONSULTANT, at its sole cost and expense, shall purchase and maintain, and shall require its subcontractors, when applicable, to purchase and maintain throughout the term of this Agreement, the following insurance policies:

A. If checked, Professional Liability Insurance (errors and omissions) with minimum limits of \$1,000,000 per occurrence.

B. Automobile insurance covering all bodily injury and property damage incurred during the performance of this Agreement, with a minimum coverage of \$1,000,000 combined single limit per accident. Such automobile insurance shall include non-owned vehicles.

C. Comprehensive general liability insurance, with minimum limits of \$1,000,000 combined single limit per occurrence, covering all bodily injury and property damage arising out of its operation under this Agreement.

D. Workers' compensation insurance covering all of CONSULTANT's employees.

E. The aforesaid policies shall constitute primary insurance as to the CITY, its elected officials, officers, agents, and employees so that any other policies held by the CITY shall not contribute to any loss under said insurance. Said policies shall provide for thirty (30) days prior written notice to the CITY of cancellation or material change.

F. Said policies, except for the professional liability and workers' compensation policies, shall name the CITY and its elected officials, officers, agents, and employees as additional insureds.

G. If required insurance coverage is provided on a "claims made" rather than "occurrence" form, the CONSULTANT shall maintain such insurance coverage for three years after expiration of the term (and any extensions) of this Agreement.

H. Any aggregate insurance limits must apply solely to this Agreement.

I. Insurance shall be written with only California admitted companies which hold a current policy holder's alphabetic and financial size category rating of not less than A VIII according to the current Best's Key Rating Guide, or a company equal financial stability that is approved by the CITY.

J. This Agreement shall not take effect until certificate(s) or other sufficient proof that these insurance provisions have been complied with, are filed with and approved by the CITY. If the CONSULTANT does not keep all of such insurance policies in full force and effect at all times during the terms of this Agreement, the CITY may elect to treat the failure to maintain the requisite insurance as a breach of this Agreement and terminate the Agreement as provided herein.

17. **LEGAL FEES.** If any party brings a suit or action against the other party arising from any breach of any of the covenants or agreements or any inaccuracies in any of the representations and warranties on the part of the other party arising out of this Agreement, then in that event, the prevailing party in such action or dispute, whether by final judgment or out-of-court settlement, shall be entitled to have and recover of and from the other party all reasonable costs and expenses of suit, including reasonable attorneys' fees.

For purposes of determining who is to be considered the prevailing party, it is stipulated that attorneys' fees incurred in the prosecution or defense of the action or suit shall not be considered

in determining the amount of the judgment or award. Attorneys' fees to the prevailing party if other than the CITY shall, in addition, be limited to the amount of attorneys' fees incurred by the CITY in its prosecution or defense of the action, irrespective of the actual amount of attorney's fees incurred by the prevailing party.

18. **MEDIATION/ARBITRATION.** If a dispute arises out of or relates to this Agreement, or the breach thereof, the parties agree first to try, in good faith, to settle the dispute by mutual negotiation between the principals, and failing that through nonbinding mediation in San Diego, California, in accordance with the Commercial Mediation Rules of the American Arbitration Association (the "AAA"). The costs of mediation shall be borne equally by the parties.

19. **TERMINATION.** This Agreement may be terminated with or without cause by the CITY. Termination without cause shall be effective only upon thirty (30) days written notice to the CONSULTANT. During said 30-day period the CONSULTANT shall perform all services in accordance with this Agreement. The CONSULTANT may terminate this agreement upon thirty (30) days prior notice in the event of a continuing and material breach by the CITY of its obligations under this Agreement including but not limited to payment of invoices. Termination with or without cause shall be effected by delivery of written Notice of Termination to the CONSULTANT as provided for herein.

This Agreement may also be terminated immediately by the CITY for cause in the event of a material breach of this Agreement that is not cured to the CITY's satisfaction within a ten (10) day prior cure period, or material misrepresentation by the CONSULTANT in connection with the formation of this Agreement or the performance of services, or the failure to perform services as directed by the CITY.

The CITY further reserves the right to immediately terminate this Agreement upon: (1) the filing of a petition in bankruptcy affecting the CONSULTANT; (2) a reorganization of the CONSULTANT for the benefit of creditors; or (3) a business reorganization, change in business name or change in business status of the CONSULTANT.

In the event of termination, all finished or unfinished Memoranda, Reports, Maps, Drawings, Plans, Specifications and other documents prepared by the CONSULTANT, whether paper or electronic, shall immediately become the property of and be delivered to the CITY, and the CONSULTANT shall be entitled to receive just and equitable compensation for any work satisfactorily completed on such documents and other materials up to the effective date of the Notice of Termination, not to exceed the amounts payable hereunder, less any damages caused the CITY by the CONSULTANT's breach, if any. Thereafter, ownership of said written materials shall vest in the CITY all rights set forth in Section 6.

20. **NOTICES.** All notices or other communications required or permitted hereunder shall be in writing, and shall be personally delivered; or sent by overnight mail (Federal Express or the like); or sent by registered or certified mail, postage prepaid, return receipt requested; or sent by ordinary mail, postage prepaid; or sent by facsimile or fax; and shall be deemed received upon the earlier of (i) if personally delivered, the date of delivery to the address of the person to receive such notice, (ii) if sent by overnight mail, the business day following its deposit in such overnight mail facility, (iii) if mailed by registered, certified or ordinary mail, five (5) days within California or ten (10) days if the address is outside the State of California after the date of deposit in a post office or mailbox regularly maintained by the United States Postal Service, (iv) if given by facsimile or fax, when sent. Any notice, request, demand, direction or other communication delivered or sent as specified above shall be directed to the following persons:

To the CITY:

Noah Alvey
Development Services Manager
CITY OF LEMON GROVE
3232 Main Street
Lemon Grove, CA 91945

To the CONSULTANT:

Arsalan Dadkhah, Ph. D., PE
D-Max Engineering, Inc.
7220 Trade Street Suite 119
San Diego, CA 92121

Notice of change of address shall be given by written notice in the manner specified in this Section. Rejection or other refusal to accept or the inability to deliver because of changed address of which no notice was given shall be deemed to constitute receipt of the notice, demand, request or communication sent.

21. **CONFLICT OF INTEREST AND POLITICAL REFORM ACT OBLIGATIONS.** During the term of this Agreement, the CONSULTANT shall not perform services of any kind for any person or entity whose interests conflict in any way with those of the CITY OF LEMON GROVE. The CONSULTANT also agrees not to specify any product, treatment, process or material for the project in which the CONSULTANT has a material financial interest, either direct or indirect, without first notifying the CITY of that fact. The CONSULTANT shall at all times comply with the terms of the Political Reform Act and the Lemon Grove Conflict of Interest Code. The CONSULTANT shall immediately disqualify itself and shall not use its official position to influence in any way any matter coming before the CITY in which the CONSULTANT has a financial interest as defined in Government Code Section 87103. The CONSULTANT represents that it has no knowledge of any financial interests that would require it to disqualify itself from any matter on which it might perform services for the CITY.

If checked, the CONSULTANT shall comply with all of the reporting requirements of the Political Reform Act and the CITY OF LEMON GROVE Conflict of Interest Code. Specifically, the CONSULTANT shall:

1. Go to www.fppc.ca.gov
2. Download the Form 700: Statement of Economic Interests
3. Completely fill out the form
4. Submit the form to the Public Works Department with the signed Agreement.

The CONSULTANT shall be strictly liable to the CITY for all damages, costs or expenses the CITY may suffer by virtue of any violation of this Paragraph 21 by the CONSULTANT.

22. **MISCELLANEOUS PROVISIONS.**

A. *Computation of Time Periods.* If any date or time period provided for in this Agreement is or ends on a Saturday, Sunday or federal, state or legal holiday, then such date shall automatically be extended until 5:00 p.m. Pacific Time of the next day which is not a Saturday, Sunday or federal, state or legal holiday.

B. *Counterparts.* This Agreement may be executed in multiple counterparts, each of which shall be deemed an original, but all of which, together, shall constitute but one and the same instrument.

C. *Captions.* Any captions to, or headings of, the sections or subsections of this Agreement are solely for the convenience of the parties hereto, are not a part of this Agreement, and shall not be

used for the interpretation or determination of the validity of this Agreement or any provision hereof.

D. *No Obligations to Third Parties.* Except as otherwise expressly provided herein, the execution and delivery of this Agreement shall not be deemed to confer any rights upon, or obligate any of the parties hereto, to any person or entity other than the parties hereto.

E. *Exhibits and Schedules.* The Exhibits and Schedules attached hereto are hereby incorporated herein by this reference for all purposes.

F. *Amendment to this Agreement.* The terms of this Agreement may not be modified or amended except by an instrument in writing executed by each of the parties hereto.

G. *Waiver.* The waiver or failure to enforce any provision of this Agreement shall not operate as a waiver of any future breach of any such provision or any other provision hereof.

H. *Applicable Law.* This Agreement shall be governed by and construed in accordance with the laws of the State of California.

I. *Entire Agreement.* This Agreement supersedes any prior agreements, negotiations and communications, oral or written, and contains the entire agreement between the parties as to the subject matter hereof. No subsequent agreement, representation, or promise made by either party hereto, or by or to an employee, officer, agent or representative of any party hereto shall be of any effect unless it is in writing and executed by the party to be bound thereby.

J. *Successors and Assigns.* This Agreement shall be binding upon and shall inure to the benefit of the successors and assigns of the parties hereto.

K. *Construction.* The parties acknowledge and agree that (i) each party is of equal bargaining strength, (ii) each party has actively participated in the drafting, preparation and negotiation of this Agreement, (iii) each such party has consulted with or has had the opportunity to consult with its own, independent counsel and such other professional advisors as such party has deemed appropriate, relative to any and all matters contemplated under this Agreement, (iv) each party and such party's counsel and advisors have reviewed this Agreement, (v) each party has agreed to enter into this Agreement following such review and the rendering of such advice, and (vi) any rule or construction to the effect that ambiguities are to be resolved against the drafting party shall not apply in the interpretation of this Agreement, or any portions hereof, or any amendments hereto.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the date and year first above written.

CITY OF LEMON GROVE

D-MAX ENGINEERING, INC.

Lydia Romero, City Manager

Arsalan Dadkhah, President

Date

Date

APPROVED AS TO FORM:

Kristen Steinke, City Attorney

Date

Exhibit 'A'

D-MAX Engineering, Inc.

Consultants in Water & Environmental Sciences



May 24, 2019

Mr. Mike James
City of Lemon Grove
3232 Main Street
Lemon Grove, CA 91945

Re: Proposal for Storm Water Program, Construction, and Development Support for City of Lemon Grove, California

Dear Mr. James:

D-MAX Engineering, Inc. is pleased to submit this proposal to assist the City of Lemon Grove (City) with storm water program, construction, and development tasks required by San Diego Regional Water Quality Control Board (Regional Board) Order No. R9-2013-0001 as amended by Order Nos. R9-2015-0001 and R9-2015-0100 (Municipal Permit) for fiscal years 2019-2020 through 2023-2025. All work will be completed in accordance with the City's Jurisdictional Runoff Management Program (JRMP); Municipal Permit, and the City's grading, storm water, and post-construction BMP ordinances.

Scope of Services

The annual scopes of services for the major groups of tasks to be completed are described below.

Task A. MS4 Outfall Monitoring

Dry Weather Major MS4 Outfall Monitoring and Reporting Program

The Municipal Permit requires the City to perform Dry Weather Major MS4 Outfall Discharge Monitoring each monitoring year (October 1 through September 30). The City is required to visit at least 80 percent of its major MS4 outfalls twice per monitoring year. The work will include field screening at the City's four major outfalls twice, for a total of eight field screening site visits. Field work will be completed by September 30.

This will complete the required monitoring for the period between October 1 and September 30.

The field work will include flow measurement, observations, and trash assessment at each site. Data will be recorded such that relevant parameters can be reported in the regional standard format.

The summary report associated with this monitoring will include a list of monitoring sites, results in tabular form, and results of follow-up investigations. A spreadsheet of relevant data in the regional standard format will be provided along with the report.

Non-Storm Water Persistent Flow Sampling

In accordance with Section D.2.b. of the Municipal Permit, the City is required to perform non-storm water persistent flow MS4 outfall discharge monitoring. If, during dry weather MS4 outfall monitoring, sites are found to have persistent flow, the City will determine which persistent non-storm water discharges contain pollutant concentrations in excess of the respective non-storm water action levels (NAL) at a minimum of five of these sites per watershed within its jurisdiction.

7220 Trade Street ■ Suite 119 ■ San Diego, CA 92121 ■ (858) 586-6600 ■ Fax (858) 586-6644



Or, if a jurisdiction has less than five persistent outfalls, all of the persistent outfalls will be sampled. Based on the results of the City's 2017-2018 Dry Weather MS4 Outfall Monitoring Program, one of the City's major outfalls is considered to be persistently flowing: Site 69.

As required by the Municipal Permit, we will visit the persistently flowing outfall to collect samples twice between July 1, 2018 and September 30, 2018. We anticipate completing the two rounds of sampling in one day.

Field tests will be completed for pH, temperature, conductivity, turbidity, and dissolved oxygen using calibrated field meters. Grab samples will be collected and submitted to a certified laboratory for the constituents identified in Appendix 2D of the Storm Drain Outfall Monitoring Plan of the San Diego Bay WMA WQIP. All sampling and analyses will be conducted in accordance with 40 Code of Federal Regulations (CFR) Part 136. Due to recent changes in the 303(d) list, some additional tests will be required in 2019 that were not conducted in previous years. These include synthetic pyrethroid pesticides and a low detection limit test for the organophosphate pesticides diazinon, chlorpyrifos, and malathion. These new tests collectively add about \$2,000 in analytical costs when compared to tests done in 2018.

As directed by the San Diego Bay WMA Storm Drain Outfall Monitoring Plan, a field duplicate and a field blank will be submitted to the laboratory with each batch of samples collected. Since there will be only one batch of samples submitted to the laboratory, one duplicate and one field blank will also be submitted.

In addition, as required by the San Diego Bay WMA WQIP, we will also collect one sample for total hardness from the receiving water upstream of the point where any flow from the outfall converges with the receiving water where possible.

The monitoring summary report to be completed under Task 1 will summarize the results of the analyses, and will include a comparison of results to the applicable NALs as provided in the Municipal Permit. We will also discuss potential sources of NAL exceedances and recommendations for further investigation or potential steps towards eliminating persistent flows. We will also make recommendations about the relative priority of further investigations at other sites based on the collected data and known or suspected sources of flow as well as recommendations about MS4 cleaning or maintenance based on trash assessments and MS4 outfall structural condition assessments.

Follow-Up and Upstream Investigations

Follow-up visits and upstream source investigations may be required in some cases. Investigations will be in accordance with the County of San Diego Follow Up Investigation Procedures and will focus mainly on identifying sources of flow, particularly in cases where observations (color, clarity, odor, floatables, etc.) indicate a high possibility of an illegal discharge occurring. After investigations have been completed, results will be summarized and included in the program's monitoring report. Any illegal discharges identified will be immediately reported to the City at the time they are discovered.



Task B. Industrial, Commercial, and Municipal Inspections, Inspection Follow-Up, and Enforcement Support

Industrial, Commercial, and Municipal Field Inspections

The City has 312 inventoried industrial and commercial businesses and 13 inventoried municipal facilities, for a total of 325 facilities. We will inspect 97 facilities annually, which will include all high priority facilities and additional inventoried facilities which are due for an inspection, to meet the minimum Permit requirement of inspecting 20% of inventoried industrial, commercial, and municipal facilities per year. Our approach to these inspections is described below.

Inspection Procedures

We will work with the City to prepare and send out a notification letter to businesses that have been selected for inspections, using the letter prepared last year as a template. We will prepare mailing labels for the City to use to send out these letters.

Optional task: We can also directly send out the letters on behalf of the City if the City provides us with City logo envelopes for the mailing.

Sending out notification letters alerts businesses to the upcoming inspections, notifies them that a City contractor will be completing the inspections, and helps identify businesses that may have gone out of businesses.

For municipal facilities, we will contact the facility manager to set up an appointment where necessary.

Initial Inspection Coordination

In the past we have had extensive communication with City staff about how to interpret and answer the questions on the City's inspection form. We have documented that direction from the City and are familiar with the City's preferences, so we do not need to have additional meetings or discussions with City staff to understand inspection procedures. If the City has any educational materials to be passed out during inspections, we will pick those up from City Hall before beginning inspections.

Facility Inspections

We will contact the businesses and municipal facilities identified as needing scheduled appointments to set up times to inspect them. We will organize the rest of the sites on the inspection list by address so that our inspectors can visit nearby facilities at the same time, which makes the process more efficient.

The site inspection procedure involves a thorough examination of the facility and all outdoor activities that have the potential to generate urban runoff pollution. We will record information on the City's inspection form. The site inspection includes the following steps.

- i. **Meet With Responsible Party:** Our inspectors will visit sites during normal business hours and wear company-issued photo identification. Upon meeting the responsible party, our inspector will introduce the storm water program, the purpose of the inspection, and distribute relevant educational materials. The introduction to the program will include a brief overview of the federal and state water quality laws, local requirements, impacts of urban runoff, the concept of Best Management Practices (BMPs), and a description of the local water bodies and pollutants of concern. At this

time the inspector will also verify and update facility contact information and evaluate whether the assigned SIC code reflects the principal activity of the facility. Recommended inventory updates will be documented if the site visit finds that the listed business has moved out or is not conducting activities that would require it to be on the City's inventory.

➤ *We understand that maintaining good relations with local businesses is important for the City of Lemon Grove and that, while interacting with businesses, we will be perceived by the public as City agents. Our inspectors are trained to interact with businesses with utmost professionalism, respect, and courtesy.*

- ii. **BMP and Potential Pollutant Assessment:** Our inspector will conduct a thorough walk-through of the facility accompanied by the facility manager/responsible party, to inspect all areas exposed to storm water. The inspector will evaluate existing BMP effectiveness and evaluate the site to assess whether illegal discharges or illicit connections are present.

➤ *Since the City is subject to bacteria and metals TMDLs for Chollas Creek, our inspections will pay extra attention to potential sources of these pollutants and corresponding BMPs. We will work with responsible parties to identify simple and cost-effective BMPs to address sources of these pollutants whenever possible. Our inspectors are experienced in identifying sources of metals and bacteria at industrial and commercial businesses and municipal facilities.*

➤ *We understand the City has committed to reducing the percentage of uncovered grease bins in its portion of the Chollas Creek watershed in the San Diego Bay WQIP. We will track this information during inspection and include it in the final inspection summary spreadsheet so that the City can track progress toward the WQIP numeric goal.*

If specific BMPs are not implemented or are found to be ineffective, corrections will be recommended and recorded in the appropriate section of the inspection form. Photographs will be taken to document BMP deficiencies. If an illegal discharge or illegal connection is observed or significant corrective action is needed right away, the City will be notified promptly.

➤ *We will work with businesses to make corrections during the inspection whenever possible. This approach is responsive to the Regional Board's stated desire to resolve problems quickly, and it also reduces the amount of follow-up and enforcement work that City staff will need to do.*

- iii. **Industrial Permit Subjectivity Assessment:** Based on the SIC code assigned based on part "i" above, we will identify whether the business may be subject to the State Industrial General Permit. We will check records at the business and/or on the State's SMARTS website to determine whether businesses have already obtained coverage under the Permit. Businesses that may be subject but cannot demonstrate that they have filed for coverage will be identified as potential non-filers. We also will directly report potential non-filers to the Regional Board on behalf of the City as required by the Municipal Permit.

- iv. **Inspection Summary and Conclusion:** At the completion of the walk-through, the inspector will summarize and clearly communicate all required corrective actions to the responsible party and discuss potential options for resolving the deficiencies noted. The inspector will also assign a storm water knowledge score and an overall BMP implementation score.

➤ *We take a collaborative approach with businesses to achieve compliance rather than simply tabulate BMP deficiencies. Our inspectors make every effort to identify*



practical and cost effective solutions and to leave a positive impression on business personnel.

Documentation

- i. Using our experience with the City's conventions and preferences, the inspection form will be completed for each site visit and reviewed for quality control in our office. This fiscal year, we created a new electronic form and report. We will provide electronic copies of the report (pdf format) and electronic copies of inspection photos to the City.
- ii. We will provide copies of completed inspection forms to businesses that have corrective actions that require follow-up. Where possible, PDF copies of the reports will be emailed. When an email address is not provided, we will send reports to the City for mailing to the responsible party.

Optional task: We can also directly send out inspection reports on behalf of the City if the City provides us with City logo envelopes for the mailing.

- iii. We will prepare a summary spreadsheet of inspection results to the City. The spreadsheet will be based on the initial inspection list. It will also include the following:
 - a. Updated address information, where applicable
 - b. Updated SIC codes and priorities where appropriate based on inspection results
 - i. This includes identifying when a business was no longer at the stated address or when the business was found to conduct activities that do not require it to be on the industrial/commercial inventory (e.g., nail salons or dry cleaners). In these cases the priorities will be changed to "not inventoried" and they will be considered to have been removed from the inventory.
 - c. Updated "potential pollutant sources" information for the pollutants listed on the City's inspection form.
 - i. *Together with the information in parts "a" and "b" above, this will provide an updated inventory as of the end of the inspection program. This will help the City in preparing its inventory for the next fiscal year and with annual reporting.*
 - d. Inspection date
 - e. Whether the business needs a follow-up inspection. If yes, notes about the reason a follow-up is required will also be included.
 - f. Whether the business was identified as a potential Industrial General Permit non-filer.
 - i. *This will give the City data it needs to report potential non-filers to the Regional Board.*
 - g. Grease bin storage status: covered, uncovered, or N/A (no grease bin).
 - i. *This will give the City data to report on grease bin coverage for the San Diego Bay WQIP.*

Inspection Follow-Up and Enforcement Support

Based on our experience, some businesses will have deficiencies that need to be corrected. Where possible, we will work with businesses to resolve these issues at the time of the inspection. Where resolution during an inspection is not possible, we will follow-up with businesses. Generally this will involve emails or phone calls to businesses to remind them that they need to send in proof of correction, typically emailed photos along with brief text descriptions. We will also complete follow-up site inspections where necessary to document corrections or support City enforcement efforts, and we will prepare case histories and other documentation as requested by the City to support enforcement actions.



Industrial and Commercial Inventory Update

We will update the City's industrial and commercial business inventory based on the results of the inspections and business license information provided by the City. The end product of this process will be the industrial and commercial inventory for the subsequent fiscal year.

Prepare Inspection Numbers for Annual Reporting

Based on the inspections completed, we will prepare information to be input to the City's JRMP Annual Report form. This includes identifying numbers of inventoried facilities, inspection, discharges, violations, enforcement actions, and similar data for each class of inspected facilities: industrial, commercial, and municipal. We will prepare this information in the same format as shown on the JRMP Annual Report form, and will send supporting backup documentation used to prepare the annual reporting numbers.

Task C. Structural BMP Maintenance Verification and Inspections

Structural BMP Inventory Update

D-MAX will work with the City to obtain contact information for sites being added to the inventory. We will also re-prioritize the inventoried projects using the flow chart in the City's recently updated JRMP and add in approximate size/area for each project, as required by the Permit. We expect the approximate project size will be estimated based on viewing the project areas in Google Maps or by project reports provided by the City. We also expect that the City will provide us with paper or electronic copies of plan sheets and/or Storm Water Quality Plan (SWQMP) for all inventoried projects that D-MAX did not review and therefore does not already have copies of the documents.

Structural BMP Maintenance Verification

We will update the annual maintenance verification letters and create new letters for any other projects added to the inventory, using contact information provided by the City as part of the inventory update. We will mail out the letters and respond to questions from recipients of the letters as needed. Where letters are returned as undeliverable or the person to whom the letter is mailed indicates they are no longer the party responsible, we will work with the City to identify the new contact person. City assistance may be needed to determine current parcel owners if other avenues to identify contacts are not successful. We will process returned forms and enter them into the City's inventory spreadsheet to document that maintenance was verified. If projects do not return forms, we will send them one follow-up mailing to remind them to return the form.

Structural BMP Inspections

We will inspect all high priority sites before October 1. We expect this will be approximately five sites. We will also inspect sites that do not return maintenance verification forms. We expect that will be approximately four additional inspections, for a total of nine inspections. At each inspection, we will document results on an inspection form and record the overall inspection result (compliant or not) in the City's inventory spreadsheet. Where deficiencies are noted, we will follow up with the responsible person to obtain proof of correction. In cases where a responsible party cannot be contacted, we will request assistance from the City in identifying the appropriate person to contact regarding the required corrections. Where responsible parties are not responsive, we will request enforcement assistance from the City. If deficiencies that require corrections beyond standard maintenance actions, such as correcting grading or outlet

structures within a BMP, are noted, we will work with the City to prepare case files based on past plan sheets and other submittals on an as-needed basis as part of the as-needed component in Task D below.

Task D. As-Needed Storm Water Compliance Tasks

We will also support the City in other as-needed storm water compliance tasks, such as the following, to the extent budget allows and as directed by the City's project manager:

- Represent the City at JRMP Municipal Co-permittee Meetings. Review municipal permit associated documents, provide meeting and associated document summaries, coordinate with City staff and provide City recommendations to the group.
- Provide TMDL program support. Review and comment on reports, represent the City at meetings, provide summaries of meetings and reviewed documents, coordinate with City staff and provide City recommendations to the group.
- BMP Design Manual Updates.
- WQIP (SD Bay Watershed) Updates.
- Trash Amendments implementation planning support including full capture system planning, cost estimates, map preparation, and updating GIS files.
- Residential Management Areas inspections.
- Assist with the preparation of the fiscal analysis for the JRMP Annual Report.

Task E. Technical Review of Storm Water Plans and Reports

We will review the following submittals and provide written comments to the City based on our review:

- Erosion control plan sheets
- Post-construction best management practice (BMP) plans, usually referred to as Storm Water Quality Management Plans (SWQMP), including the review of hydromodification reports.
 - Review of the SWQMP will also include review of grading plan sheets, where applicable, to verify that BMPs proposed in the SWQMP are also shown on the plans.

When necessary, we are also available to discuss comments with project proponents in meetings, on the phone, or over email. In some cases, this direct communication helps resolve deficiencies more quickly, allowing projects to comply with requirements and gain approval for storm water submittals sooner. Deliverables for each reviewed project will include the following:

- A completed erosion control plan review checklist, using the standard form from the JRMP, for each erosion control plan reviewed.
- A review letter summarizing comments for each submitted SWQMP.
- A final electronic copy of the SWQMP and associated plan sheets (to be provided by the project applicant). The project's submitted storm water requirements applicability checklist will be required to be included with the SWQMP as an appendix.
- A draft storm water facilities maintenance agreement (to be provided by the project applicant and recorded at the completion of the project).

We will also maintain an overall list of reviews completed by D-MAX and can provide that list to the City when necessary for reporting or other purposes.



Task F. Construction Phase Inspections

During the construction phase, we will provide the following services:

- Attend pre-construction meeting to describe storm water requirements.
 - We will review the requirements as presented on the erosion control plan and in the SWQMP, focusing on key actions necessary to maintain compliance. The importance of erosion control BMPs, which have been the subject of multiple recent enforcement actions by the Regional Board, will also be stressed. The goal of the storm water discussion during the pre-construction meeting is to establish clear expectations for the contractor as a proactive step to minimize future risk of noncompliance.
- Conduct regular, routine inspections based on the site prioritization assigned via the process included in the JRMP.
 - During the wet season, high priority sites are inspected twice per month, medium priority sites are inspected monthly, and low priority sites are inspected as needed.
 - During site inspections, we will walk the site with the responsible person and discuss the condition of the sites and potential corrective actions during the inspection where possible. We expect that the first inspection at each project inspection will generally be longer than subsequent inspections. During all inspections after the first inspection, our inspector will document the extent to which deficiencies noted during the preceding inspections have been resolved.
 - We will document inspection results and required corrective actions on a City of Lemon Grove construction inspection form. The form will clearly identify instances of non-compliance and our recommendations for resolving the non-compliance. We will include photos, marked up schematics, or other figures as necessary to illustrate places where correction needs to be made. Inspection documentation will be delivered through email and, if necessary, by fax.
- Conduct as-needed follow-up or pre- and post-rain event inspections.
 - Additional follow-up inspections may be necessary to verify corrections required during routine inspections have been made. Often follow-up inspections are completed prior to rain to verify corrections have been made before a storm and/or after a storm to verify that BMPs performed adequately. In some cases, emailed photos demonstrating that required corrections have been made may be accepted in lieu of an onsite follow-up inspection.
- Collected runoff samples as needed
 - Runoff samples will be collected as needed to assess BMP effectiveness. Samples are collected from storm runoff and are typically analyzed for turbidity and pH. Additional analyses can also be completed when necessary.
- Enforcement documentation assistance
 - If enforcement action beyond providing written correction notices based on inspections becomes necessary, we will provide the City with a written description of violation(s) noted and necessary supporting documentation to



support preparation of other enforcement actions, such as correct work notices, notices of violation, administrative citations, and stop work orders.

- We understand that City staff will notify the Regional Board in the event that escalated enforcement action is taken.
- Post-construction BMP installation verification
 - Following completion of all the post-construction BMPs at a site, we will perform an inspection to verify that these post-construction BMPs have been constructed or installed as proposed in the SWQMP. These inspections will check for common problems like bioretention area drains not being located high enough to provide the design amount of surface ponding.
- Final SWQMP and storm water-related plan sheets, including documentation of field changes to proposed post-construction BMPs, if applicable
 - If any field changes to post-construction BMPs are proposed, we will work with City staff to require submittal of an amendment to the SWQMP and revised plan sheets to document the change. All proposed changes are subject to the same review process described above and should not be approved to be constructed until approved through that process. Where approved, the project proponent will also be required to submit revised electronic copies of the updated plan sheets and SWQMP for the City's files.
 - If no field changes occur, the electronic files submitted will be saved to document the post-construction BMPs implemented.
- Verify storm water facilities maintenance agreement has been recorded prior to project finalization.
 - We will work with the City to ensure the project's maintenance agreement is recorded with the County. We will verify that the maintenance agreement accurately described the post-construction BMPs as built, and then our understanding is that City staff will work with the project proponent to record the agreement with the County Recorder.

Deliverables for each inspected project will include the following:

- Attendance at pre-construction meetings.
- A completed inspection form and associated photos for each inspection.
- A memo summarizing results of storm water runoff sampling for each sampling event.
- Final, updated SWQMP and associated plan sheets in electronic copy, if amended or revised based on construction changes (electronic copies to be provided by project applicant).
- A spreadsheet listing all the post-construction BMPs for which installation was verified during the fiscal year. This will be provided at the end of the fiscal year as part of the annual reporting process.

We will also maintain an overall list of dates inspections have been completed for reference by City staff. Sites will be added to the inspection list based on notification of pre-construction meetings provided to D-MAX by City staff.



Cost Estimate

Our proposed costs to complete the scope of services for each fiscal year described in our proposal are summarized in the table below. "Recoverable" work is expected to be funded by fees paid by developers.

Service	Cost
Non-Recoverable	
Task A. MS4 Outfall Monitoring	\$14,500
Task B. Existing Development Inspections, Enforcement Support, and Annual Reporting	\$28,000
Task C. Structural BMP Maintenance Verification and Inspections	\$8,500
Task D. As-needed Storm Water Compliance Tasks	\$19,000
	subtotal \$70,000
Recoverable	
Task E. Technical Review of Storm Water Plans and Reports	\$20,000
Task F. Construction Phase Inspections	\$30,000
	subtotal \$50,000
Overall Total	\$120,000

All services will be provided on a time and materials services in accordance with our attached fee schedule (Attachment A), not to exceed the overall cost total.

All invoices for work for Task E and F will clearly break out costs separately for each project reviewed or inspected:

- For Task E, Technical Review of Storm Water Plans and Reports, plan review cost will vary depending on the size and complexity of the project.
- For Task F, Construction Phase Inspections, we expect that the per inspection cost, including reporting and recordkeeping, will range from about \$250 to \$600 per inspection, with the amount depending on the extent of deficiencies noted at the sites, whether we are inspecting one site or multiple sites during a single trip to the City, the amount of follow-up correspondence necessary following each inspection, and whether post-construction BMPs were inspected.

Please feel free to contact us if you have any questions or would like to discuss this proposal in more detail. We look forward to working with you on this project.

Sincerely,
D-Max Engineering, Inc.

John Quenzer, M.S.
Vice President



SCHEDULE OF FEES

January 1, 2019

LABOR

<u>Classification</u>	<u>Hourly Rate</u>
Word Processor/Admin	67
Drafter	77
Technician	77
Senior Technician	88
Staff Scientist I	98
Staff Scientist II	108
Assistant Project Scientist	124
Project Scientist	139
Senior Scientist	160
Principal Scientist	185
Staff Engineer I	108
Staff Engineer II	118
Assistant Project Engineer	134
Project Engineer	149
Senior Engineer	170
Principal Engineer	196

Field and hourly services will be charged portal to portal from our office, with a two-hour minimum.

Appearance as expert witnesses at court trials, mediation, arbitration hearings and depositions will be charged at \$250/hour. Time spent preparing for such appearances will be charged at the above standard hourly rates.

OTHER CHARGES

Subcontracted services, such as sub consultants, outside testing, drilling, and surveyors, will be charged at cost plus 15%. Other project-specific costs, such as rentals, expendable or special supplies, special project insurance, permits and licenses, shipping, subsistence, tolls and parking, outside copying/printing, etc., will be charged at cost plus 15%. Mileage will be charged at the current IRS rate. Meals, lodging, and travel expenses, when pre-approved by the City, will be charged at cost or at standard per diem rates, as applicable.

Client will be responsible for any applicable taxes in addition to the fees due for Services.



CITY OF LEMON GROVE

CITY COUNCIL STAFF REPORT

Item No. 1.K

Meeting Date: June 18, 2019

Submitted to: Honorable Mayor and Members of the City Council

Department: Finance Department

Staff Contact: Molly Brennan, Finance Manager

mbrennan@lemongrove.ca.gov

Item Title: **Levy and Collection of Assessments within the Lemon Grove Wildflower Landscape Maintenance Assessment District 97-1 for Fiscal Year 2019-2020**

Recommended Action: Adopt a resolution (Attachment B) approving the levy and collection of assessments within the Lemon Grove Wildflower Landscape Maintenance Assessment District 97-1 for Fiscal Year 2019-2020.

Summary: The Lemon Grove Wildflower Landscape Maintenance Assessment District 97-1 was created in September 1997, pursuant to the provisions of the Landscaping and Lighting Act of 1972. The District includes 46 properties.

The engineer's report was presented and approved by the City Council on September 2, 1997. In order to pay for maintenance of the landscaped areas, the assessment may be adjusted annually by the greater of 3 percent or the percentage increase of the Consumer Price Index (CPI), within a maximum cap of \$335 per parcel.

Staff recommends a 3 percent (3%) increase in the assessment for Fiscal Year 2019-2020 (FY 2019-20). The discussion below details the reasons supporting the increase and the proposed budget for the Wildflower Landscape Maintenance Assessment District.

Discussion: On September 2, 1997, the City Council created the Lemon Grove Wildflower Landscape Maintenance Assessment District 97-1 (District), pursuant to the provisions of the Landscaping and Lighting Act of 1972. At that meeting, an engineer's report detailed the need for an assessment in order to pay for the maintenance of the landscaped areas. The District includes 46 properties located along both sides of Gold Lake Road, Blue Lake Court, Long Lake Court, and Green Lake Court.

Each year, the City Council may increase the annual assessment by the greater of 3% or the percentage increase of the Consumer Price Index (CPI), with a maximum cap of \$335 per parcel. As reported in April 2019 by the United States Department of Labor, Bureau of Labor and Statistics, the CPI for All Urban Consumers in the San Diego area increased by 2.2% during the prior 12 months.

City staff continues to monitor the reserve balance goal of \$11,550 that was established in FY 2014-15. The reserve goal equals one-year of anticipated expenditures plus 40 percent of operational expenditures. Staff continues to rely on the services of two contractors to maintain the District’s landscaping and trees. The two contractors are West Coast Arborists and Aztec Landscaping Services, Incorporated.

Looking forward, the proposed FY 2019-20 budget realizes an increase in salaries, benefits, contract services, and Helix Water costs. In order to meet these cost increases as well as continue to set aside funds to fund the established reserve goal of \$11,550, staff recommends a 3% increase in the assessment from \$218.58 to \$225.15 during FY2019-20, which equals the greater of 3% or 2.2%, which is the annual increase in CPI.

The following District budget was prepared to reflect staff’s recommendation.

FY 2019-20 Budget Descriptions	Balance
<i>Beginning Fund Balance</i>	\$3,262
<i>Revenue</i>	
Interest	\$20
Annual Assessment Revenue	\$10,750
Total Resources	\$14,032
<i>Expenditure</i>	
Salaries – Regular	(\$2,445)
Benefits	(\$1,356)
Contract Services (Landscaping)	(\$3,600)
SDG&E	(\$130)
Helix Water	(\$1,550)
Total Expenditures	(\$9,081)
<i>Transfers</i>	
Transfer to City for Admin & Operations	(\$100)
Ending Fund Balance	\$4,851

At the end of FY 2019-20, staff anticipates \$4,851 will be available to add to the District’s reserve goal of \$11,550. Staff will continue to monitor the fiscal stability of the District

each year, paying close attention to the expenditures made and the need to adjust the annual assessment in order to safeguard the District's fiscal health to afford operational costs and reserve goals.

Environmental Review:

- Not subject to review Negative Declaration
 Categorical Exemption, Section | | Mitigated Negative Declaration

Fiscal Impact: The FY 2019-2020 budget anticipates a beginning fund balance and revenues of \$10,750 and expenditures/transfers totaling \$9,161.

Public Notification: None

Staff Recommendation: Staff recommends a three percent (3%) increase in the assessment from \$218.58 to \$225.15 during FY2019-20, which equals the greater of three percent (3%) or two point two percent (2.2%) which is the annual increase in CPI.

Attachment:

Attachment A – Resolution

RESOLUTION NO. 2019-

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LEMON GROVE, CALIFORNIA, APPROVING THE LEVY AND COLLECTION OF ASSESSMENTS WITH THE LEMON GROVE WILDFLOWER LANDSCAPE MAINTENANCE ASSESSMENT DISTRICT 97-1 FOR FISCAL YEAR 2019-2020

WHEREAS, on September 2, 1997, the City Council adopted Resolution No. 1805, declaring the results of a property owner protest proceeding held in the Lemon Grove Wildflower Landscaping Maintenance Assessment District 97-1 (District); and

WHEREAS, the engineer's report for the District, approved by Resolution No. 1804, on file with the City Clerk, gives a full and detailed description of the proposed amendments upon assessable lots and parcels of land within the District; and

WHEREAS, the City Council desires to increase the assessment against parcels of land with the District for the fiscal year commencing on July 1, 2019 and ending June 30, 2020, to pay the expenses of operating, maintaining and servicing landscaping and appurtenant facilities located within public places in the District; and

WHEREAS, the City Council has determined that a 3% increase in the annual assessment will be needed for Fiscal Year 2019-2020.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Lemon Grove, California, hereby:

1. Sets the assessment rate for Fiscal Year 2019-2020 in the Lemon Grove Wildflower Landscape Maintenance Assessment District 97-1 at \$225.15 per parcel; and
2. Directs the City Clerk to file the levy with the County of San Diego Auditor and Controller on or before August 10, 2019.

PASSED AND ADOPTED on June 18, 2019, the City Council of the City of Lemon Grove, California, adopted Resolution No. _____, passed by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Racquel Vasquez, Mayor

Attest:

Shelley Chapel, MMC, City Clerk

Approved as to Form:

Kristen Steinke, City Attorney



CITY OF LEMON GROVE

CITY COUNCIL STAFF REPORT

Item No. 1.L

Meeting Date: June 18, 2019

Submitted to: Honorable Mayor and Members of the City Council

Department: Public Works Department

Staff Contact: Mike James, Assistant City Manager

mjames@lemongrove.ca.gov

Item Title: Rejection of Claim

Recommended Action: That the City Council rejects a claim submitted by David Bryan Turner Jr.

Summary: In February 2019, the City of Lemon Grove received a claim from David Bryan Turner, Jr. After reviewing the claim, staff recommends that the City Council rejects the claim.

Environmental Review:

- Not subject to review Negative Declaration
 Categorical Exemption, Section | Mitigated Negative Declaration

Fiscal Impact: None.

Public Notification: None.

Staff Recommendation: That the City Council rejects a claim submitted by David Bryan Turner, Jr.

Attachments: None.



CITY OF LEMON GROVE

CITY COUNCIL STAFF REPORT

Item No. 2.

Meeting Date: June 18, 2019

Submitted to: Honorable Mayor and Members of the City Council

Department: Finance Department

Staff Contact: Molly Brennan, Finance Manager
mbrennan@lemongrove.ca.gov

Item Title: Fiscal Year 2019-2020 Consolidated Operating and Capital
Budget

Recommended Action:

- 1) Adopt a resolution (Attachment C) approving the Fiscal Year 2019-20 City of Lemon Grove Budget;
- 2) Adopt a resolution (Attachment D) approving the Salary Plan & Classification Summary;
- 3) Adopt a resolution (Attachment E) approving the Fiscal Year 2019-20 Appropriations Limit;
- 4) Adopt a resolution (Attachment F) approving the Fiscal Year 2019-20 Lemon Grove Roadway Lighting District Budget;
- 5) Adopt a resolution (Attachment G) approving the Fiscal Year 2019-20 Lemon Grove Sanitation District Budget.

Summary:

Staff presents the final Fiscal Year 2019-2020 (FY2019-20) Consolidated Budget (Attachment B) for the City of Lemon Grove, the Lemon Grove Roadway Lighting District, and the Lemon Grove Sanitation District.

Discussion:

On June 4, 2019, Staff presented a draft of the Fiscal Year 2019-20 consolidated operating and capital budget. Based on the feedback received, there are no changes between the draft budget presented on June 4th and the proposed final budget before you tonight. The highlights of the FY 2019-20 budget are detailed in the staff report from June 4th (Attachment A). This staff report provides a summary of each of the five resolutions presented for consideration.

Budget Resolutions

Staff presents a resolution (Attachment C) approving the budget for 23 funds operated by the City, as well as resolutions approving the budget of the Roadway Lighting District (Attachment F) and the Sanitation District (Attachment G). The FY 2019-20 consolidated budget (Attachment B) includes anticipated revenues and projected expenditures for all of these funds. The budget document follows a pattern similar to previous budget documents.

Salary Plan & Classification Summary

Staff presents a resolution (Attachment D) approving a Salary Plan & Classification Summary for FY 2019-20. The Salary Plan & Classification Summary reflects the proposed positions and pay schedules for FY 2019-20. The Salary Plan has two changes from the prior year. The addition of two new classifications and the addition of two new steps (F and G) for each non-uniform position. The new salary steps are each 2.5% increases over the prior step. Employees will be eligible for a step increase based on their annual performance review at their anniversary date.

Appropriations Limit

As part of considering the budget, State Constitution Article XIII-B (Propositions 4 and 111) requires the City Council to establish an Appropriations Limit. The limit is adjusted **each year by multiplying the previous year's limit by a factor based on either the change** in the California Per Capita Personal Income (CPCPI) or the Non-Residential Construction Valuation by the population change of the City. Staff presents a resolution (Attachment E) for City Council approval that establishes the FY 2019-20 Appropriations Limit at \$52,074,933. The proposed FY 2019-20 Budget is well within that limit.

Roadway Lighting District Budget

The Lemon Grove Roadway Lighting District manages two funds for two separate activities. Fund 11, the General Benefit Fund, provides funding for street light benefits throughout the community. Fund 12, the Local Benefit Assessment Fund, provides for enhanced lighting benefits at the mid-block. Staff recommends that the Lemon Grove Roadway Lighting District Board adopt the resolution (Attachment F), approving the **District's budget for FY 2019-20**.

Sanitation District Budget

The Lemon Grove Sanitation District manages four funds—an Operations Fund (15), two Capital Funds (16 & 19), and one Reserve Fund (17). In FY 2019-20, the District anticipates generating \$6.9 million in total revenue, and \$5.8 million in operating costs. In addition, the District anticipates spending \$2.4 million on capital improvement projects and \$1.5 million on Pure Water Phase I capital costs. Staff recommends that the Lemon Grove Sanitation District Board adopt the resolution (Attachment G), approving **the District's budget for FY 2019-20**.

Environmental Review:

- Not subject to review Negative Declaration
 Categorical Exemption, Section | | Mitigated Negative Declaration

Fiscal Impact: The consolidated budget reflects an expenditure plan of \$32.8 million in Fiscal Year 2019-20.

Public Notification: None

Staff Recommendation:

- 1) Adopt a resolution (Attachment C) approving the Fiscal Year 2019-20 City of Lemon Grove Budget;
- 2) Adopt a resolution (Attachment D) approving the Salary Plan & Classification Summary;
- 3) Adopt a resolution (Attachment E) approving the Fiscal Year 2019-20 Appropriations Limit;
- 4) Adopt a resolution (Attachment F) approving the Fiscal Year 2019-20 Lemon Grove Roadway Lighting District Budget;
- 5) Adopt a resolution (Attachment G) approving the Fiscal Year 2019-20 Lemon Grove Sanitation District Budget.

Attachment:

- Attachment A – June 4, 2019 FY19-20 Draft Budget Staff Report
Attachment B – Fiscal Year 2019-20 Consolidated Operating and Capital Budget
Attachment C – Resolution: Lemon Grove City Budget
Attachment D – Resolution: Salary Plan & Classification Summary
Attachment E – Resolution: Appropriations Limit
Attachment F – Resolution: Roadway Lighting District
Attachment G – Resolution: Sanitation District



CITY OF LEMON GROVE

CITY COUNCIL STAFF REPORT

Item No. 4

Meeting Date: June 4, 2019

Submitted to: Honorable Mayor and Members of the City Council

Department: Finance

Staff Contact: Molly Brennan, Finance Manager
mbrennan@lemongrove.ca.gov

Item Title: **Draft Fiscal Year 2019-20 Consolidated Operating & Capital Budget**

Recommended Action:

Review and discuss. Staff will return with a final FY2019-20 Consolidated Operating & Capital Budget at the June 18th City Council meeting for adoption.

Summary:

Attached is a draft of the City of Lemon Grove 2019-20 Consolidated Operating and Capital Budget (Attachment A). The purpose of tonight's review is to solicit comments and discussion regarding the upcoming financial plan for July 1, 2019 through June 30, 2020. Any changes supported by a majority of the City Council will be incorporated in the formal document presented at the June 18, 2019 City Council meeting for adoption.

Discussion:

The final fiscal year budget book spans almost a hundred pages, so staff is focusing in on activities and accounts that have significantly changed between FY2018-19 and the proposed FY2019-20 draft budget.

General Fund

FY2018-2019

Part of the budget process for creating the next year's budget is to review how the City is expected to end the current fiscal year (FY2018-19). The original adopted FY2018-19 budget anticipated a deficit of \$322,000. Due to some good luck in revenue collection combined with staffing vacancies and cost cutting measures, the General Fund is expected to break-even for July 1, 2018- June 30, 2019. This is good news for the City's General

Fund Reserves, which have not been required to pay for operating expenditures this year, leaving the City able to back-fill the structural deficit for a couple more years.

While some of the cost saving and revenue generating measures the City has pursued over the last year will continue to benefit the City's finances in following years, it does not make up for the falling sales tax revenue and increased Public Safety expenditures the City faces in FY2019-20.

Revenue

- Sales Tax revenue, the City's main source of General Fund revenue, is projected to decrease 4% between FY2018-19 and FY2019-20.
- Property Tax revenue, the City's second largest source of General Fund revenue, is projected to increase 5% between FY2018-19 and FY2019-20.
- Passport Acceptance Facility will be operational for whole fiscal year, bringing in a minimum of \$70,000 of new revenue.
- Overall, revenue is projected to be 4% less in FY2019-20 than FY2018-19.

Transfers

- In implementing the Overhead/Indirect Cost Allocation Plan Study, all Sanitation related overhead expenses are budget to be paid out of the Sanitation District and removed interfund transfer to General Fund.
- State Department of Finance approved repayment of \$400,000 in FY2019-20 of the City's loan to the previous Community Development Agency. Until the money is in our account, the state could change their mind. Cash will be returned to General Fund reserves, where it was originally loaned from. Reflected in budget as change in ending FY2019-20 Fund Balance.

Expenditures

- Some departmental salaries and benefits will look different than prior years due to implementation of the Overhead Cost Allocation Plan which adjusted distribution of overhead costs among all funds.
- Due to staffing vacancies during FY2018-19, estimated actuals for salaries and benefits will look lower than the FY2018-19 budget and the FY2019-20 budget.
- Sheriff's contract has built in 5% increase, about \$300,000 in dollar terms.
- Initial proposal to move animal control to Humane Society was out of our price range. FY2019-20 includes last year of current contract with Chula Vista at \$281,591. Staff will continue to negotiate with Humane Society for a lower priced proposal.
- Heartland Fire Chief proposed changing management structure of Heartland JPA to remove one Division Chief position. Each of the three City Managers still needs to approve before final. Draft budget removes personnel costs of the position, but

increases amount Lemon Grove will pay for Heartland to the other two Cities. Net savings for the City is assured.

- Labor negotiations are underway between the City and Fire Association for a new contract beginning July 1, 2019. No benefit or salary increases are reflected in the draft budget. If a contract is not agreed upon by the June 18th City Council meeting, a budget adjustment to reflect any salary or benefit changes will be brought to Council when the labor contract is approved.
- Cost of general liability insurance rising up to 60% of FY2018-19 premium, from \$65,773 to up to \$105,000. Increase is due to higher claims activity across all CSAC Excess Insurance Authority members, including Lemon Grove.

Bottom Line

- Draft FY2019-20 budget is facing a deficit of approximately \$426,032.
- General Fund Reserves exceed 25% threshold of annual expenditures, so can be used to backfill the deficit. However, without significant new revenue, reserves will dip below 25% in FY2021-22, or sooner if the economy slows down or if there is a recession.

Sanitation District

- Includes an annual transfer from the operating fund to the capital fund to pay for capital improvement projects. Since the Sanitation District is an enterprise fund, the fund balance reflects the balance of assets and liabilities, not only available cash. At the end of FY2018-19 the Sanitation Capital Fund will have about \$2.3M available cash for future capital projects. The Sanitation Capital fund draft budget includes all capital projects listed in the Sewer Master Plan for the associated fiscal year, although it is unlikely the FY2019-20 Sewer Main Rehab project will begin construction in FY2019-20.
- Increase in contractual services for sewer camera work and a root foam project. City owned sewer camera was being repaired and inoperable for a portion of FY2018-19. District will contract for missed sewer camera work in order to avoid falling behind in necessary maintenance. Also increased tools and supplies account to purchase back-up camera, so this situation will not happen again.
- New account in the Sanitation operating fund to reflect the first of three years the District will be paying for Pure Water Phase I capital costs at \$1,481,014 per year. Cash will be transferred from the Pure Water Reserve Fund to pay for this expense.

Personnel

Employee salaries and benefits are budgeted and paid across the funds they do work for, with the majority of personnel expenditures being paid out of the General Fund, Sanitation District, and Gas Tax Fund. Because positions are split-funded, changes to personnel wages or benefits are reflected across the funds.

- FY2019-20 draft budget includes an additional two new steps in the salary plan for non-uniform employees. After July 1, employees who are already at step E, will have an opportunity to receive a step increase in their salary at their next anniversary date performance review. Total increase cost in FY2019-20 of \$12,500, of which \$5,000 will be in the General Fund.
- Implementation of the Overhead Cost Allocation Plan adjusted the distribution of overhead employees among the funds. Therefore the salaries and benefits in the FY2019-20 draft budget will look different than years past.
- Two new classifications have been added to the salary plan, Senior Management Analyst and Administrative Services Director. Both positions are split-funded, meaning the salaries and benefits are paid from all of the funds the positions interact with.
- Both the CalPERS employer rates the City pays as a percentage of active employee wages and the required CalPERS unfunded accrued liability (UAL) payment are increasing. This increase is reflected across the funds in the account titled 'retirement.' The City's employees are in one of five different tiers of CalPERS plans. In FY2018-19 the UAL total for all five plans was \$458,805. In FY2019-20 it will be \$526,327, an increase of \$67,522 or 15%. In addition, the table below shows the percent of payroll for active employees the City paid in FY2018-19 versus what the City will have to pay in FY2019-20.

PERS Employer Rates		
Plan	FY18/19	FY19/20
Misc. Classic	10.609%	11.432%
Misc. 2nd Tier	7.634%	8.081%
Misc. PEPRA	6.842%	6.985%
Safety Classic	18.677%	20.073%
Safety PEPRA	12.141%	13.034%

Other Funds

- Due to increasing SB1 gas tax revenue and small increases in TransNet revenue, the City has up to \$960,000 to spend on street rehab and paving. The FY2019-20 Road Program project is being expanded and will represent the largest paving project the City has undertaken in many years.
- Self-Insured Liability Fund, which is used to pay for liability claims activity such as legal counsel and settlements. Since the City is responsible for the first \$125,000 of any claim, we are required to maintain a reserve equal to the liability for outstanding claims based on annual risk audits. Currently, the Self-Insured Liability fund has run out of money beyond the liability reserve. To continue paying claims related activity, the City needs to start transferring money from the General

Fund and Sanitation District into this fund on a regular basis. The draft budget includes transfer of \$50,000 from each fund.

- Capital Improvement Program (CIP): Staff plans to prepare and present a comprehensive CIP Plan for infrastructure and facilities to Council this summer.

Please advise staff of any changes to the budget for inclusion in the formal consolidated budget that will be presented for adoption at the following City Council meeting.

Environmental Review:

- Not subject to review Negative Declaration
 Categorical Exemption, Section | Mitigated Negative Declaration

Fiscal Impact: None

Public Notification: None

Attachments:

Attachment A – Lemon Grove Fiscal Year 2019-2020 Consolidated Operating and Capital Draft Budget

Staff Recommendation: Review and discuss. Staff will return with a final FY2019-20 Consolidated Operating & Capital Budget at the June 18th City Council meeting for adoption.

CITY OF LEMON GROVE

Fiscal Year 2019-2020

Consolidated Operating & Capital Budget



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CITY OF LEMON GROVE

Office of the City Manager

June 2019

Honorable Mayor and Members of the City Council:

On behalf of City staff I am pleased to present the Fiscal Year 2019-20 Budget for the City of Lemon Grove for your review and approval. The proposed FY 2019-20 budget totals \$32,790,771 with \$14,606,428 of that amount designated as the General Fund. The annual budget serves as a financial road map for the upcoming year, reflecting the City Council's goals, priorities, and objectives.

On May 30, 2019 the City Council of Lemon Grove set the strategic priorities for Fiscal Year 2019-20 to be community life, public streets & sidewalks, public safety & homelessness, and diversifying city revenue. These priorities reflect the continued commitment to improve the physical and built environment in Lemon Grove. To the extent possible, all aspects of the proposed budget for FY 2019-20 are designed to address these priorities.

At this point in time the City of Lemon Grove will accommodate basic operations by drawing down General Fund reserves – a practice that leads to organizational instability if it continues. As City staff and elected officials, it is our fiduciary responsibility to strive to balance annual operating revenue and expenditures and maintain a safety net of reserves for the future.

FINANCIAL OVERVIEW

General Fund

The General Fund is the City's main operating fund, where 49% of the City's activity takes place. Faced with a \$322,000 deficit in the FY2018-19 budget, City staff has been hard at work implementing cost saving and revenue generating projects. Due to these efforts, the anticipated General Fund deficit for FY 2019-20 has been revised down between the long-term projections shared in June 2018 and the reality we face today. However, these cost saving and revenue generating projects do not make up for the falling sales tax revenue and increased Public Safety expenditures the City faces in FY 2019-20. At the end of fiscal year, the budget anticipates a deficit of \$426,032.

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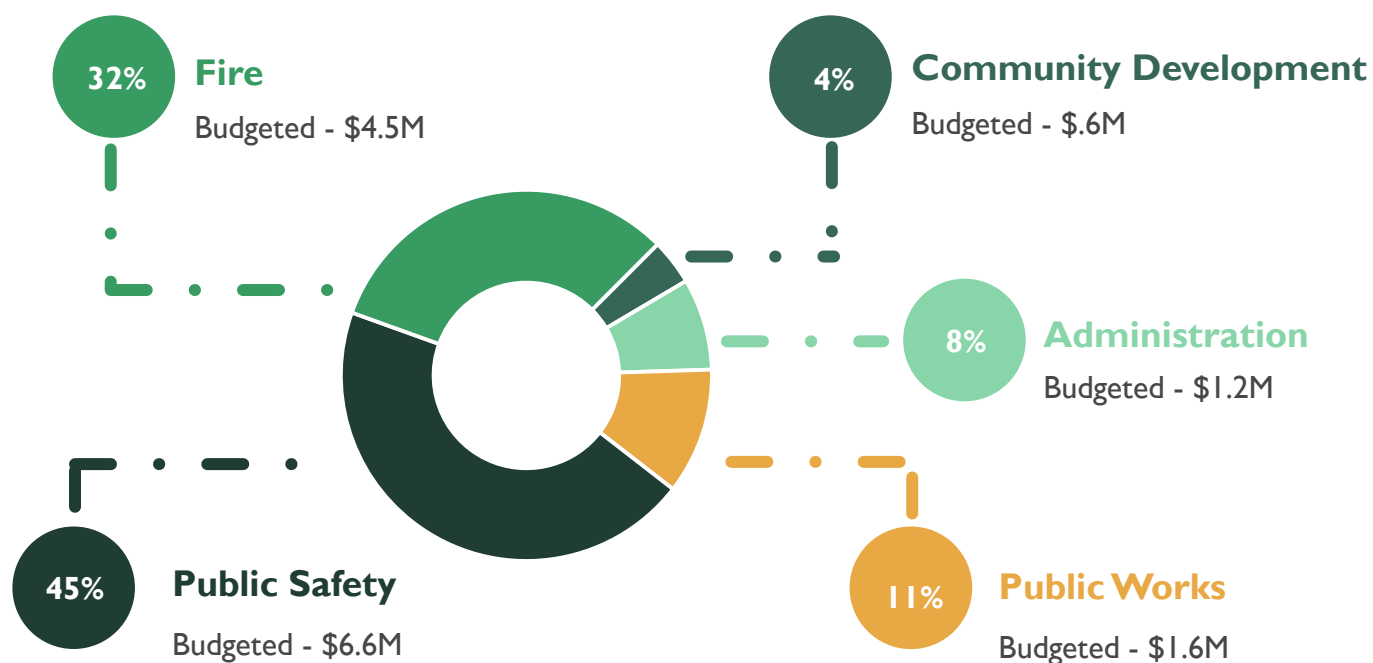


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In FY 2019-20, Sales Taxes, the General Fund's main revenue source, is projected to decrease by 4%. Overall, General Fund revenue is estimated to be 4% less in FY 2019-20 than in FY 2018-19, a decrease of \$624,000 in dollar terms.

The proposed General Fund expenditure budgets by department are shown in chart below. Law Enforcement, Animal Control, and Fire, the public safety services the City provides, represents 77% of total General Fund expenditures. Administration includes City Council, City Manager, City Attorney, Human Resources, City Clerk, and Finance. In sum, the General Fund budget reflects \$14.6 million in expenditures. One strategy the budget incorporates for reducing the deficit is deferring maintenance and equipment replacement. While this provides short-term relief, when equipment and facilities fail in the future, their replacements will have to be purchased with reserve funds. To get a fuller picture of the City's equipment and facility needs, staff will return to Council later in 2019 with a comprehensive Capital Improvement Program.



The slow growth of current revenue matched with the City's fast growing contractual obligations puts the City in a structural deficit cycle. A structural deficit means that year after year the City's deficit will grow if no action is taken. For FY 2019-20, the \$426,032 deficit means we need to use



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the City's reserves, or savings account, to pay for basic operations. Continuing the practice of tapping into reserve cash is a path to economic instability. There must be some economic stimulus to bring about an annual revenue stream that is equal to or greater than expenditures. City Council adopted reserve policy sets the base level of reserves at 25% of annual operating expenditures. At the current pace, in two years (FY 2021-22) the City's General Fund reserves will drop below the 25% threshold and at the end of five years (FY 2023-24), the reserve will be depleted if no action is taken to generate additional revenue.

Personnel

Employee salaries and benefits are budgeted across the funds they do work for, with the majority of personnel expenditures from the General Fund, Sanitation District, and Gas Tax Fund. Because positions are split-funded, changes to personnel wages or benefits are reflected across the funds. During FY 2018-19 consultants completed the Lemon Grove Overhead Cost Allocation Plan. The FY 2019-20 budget incorporates the results of the cost allocation plan to redistribute overhead salaries, benefits, and operating expenditures to be fair and accurate.

The largest personnel expenditures outside of wages are the City's required CalPERS retirement contributions. Both the CalPERS employer rates the City pays as a percentage of active employee wages and the CalPERS unfunded accrued liability (UAL) payment are increasing in FY 2019-20. The UAL is increasing by \$67,522 (15%) and the employer rates are going up between .143-1.396% depending on the plan. Knowing that UAL payments will continue to go up over the next 10-15 years, in FY 2018-19 the City opened a 115 Trust to leverage investments to reduce the financial impact of future increases.

The FY 2019-20 budget includes the addition of two new classifications and the addition of two new steps in the salary schedule for non-uniform employees. The steps are 2.5% increases and employees at step E will have the opportunity to receive a step increase at their next anniversary date performance review.

The current MOU contract with the Fire Association ends on June 30, 2019. Negotiations for a new contract are underway. The financial implications of the new contract are unknown at this point in time, so a budget adjustment will be necessary when the contract is finalized. This may increase the FY 2019-20 General Fund deficit.



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Special Revenue Funds

Special revenue funds are detailed in the fund listing section of the budget. They include gas tax, street construction reserve, park land dedication, supplemental law enforcement, grants, transportation development act, lighting district, Transnet, sidewalk reserve, integrated waste reduction, wildflower assessment district, serious traffic offender program, storm water program, regional transportation congestion improvement program, public education governmental access, capital equipment, and main street promenade community facilities district. These are all restricted in what programs and activities they can fund and are not available for General Fund use. They do, however, contribute to the General Fund through charges for services supplied by General Fund departments and divisions based on the formal cost allocation plan.

Of particular note in FY 2019-20, is the expanding amount of funds available for street improvements being generated by SB1. Between the funding from the Gas Tax and from TransNet, the City's FY 2019-20 road rehabilitation project, or street paving project, will be the largest in recent history at \$960,000.

Separate Entity Budgets

Sanitation District

Although included in the consolidated budget, the four sanitation related funds make-up a separate entity, the Lemon Grove Sanitation District. The City of Lemon Grove Councilmembers also serve as the governing board of the Sanitation District. The Sanitation District runs as an enterprise fund, so called because it operates in its own bubble in which the revenue for the service provided should equal the cost of providing the service. In this case, the enterprise is the conveyance and treatment of wastewater within the City of Lemon Grove.

For the FY 2019-20 Sanitation Budget, operations remain similar to prior years, with continued increases in the cost of wastewater treatment and approximately \$2.3 million in capital projects to replace portions of the 67 miles of sewer lines the District maintains. In addition, FY 2019-20 marks the first year the Sanitation District will pay capital costs to construct the Pure Water recycling system in coordination with the City of San Diego and other neighboring communities. On June 4, 2019 the Sanitation District Board adopted a FY 2019-20 sanitation rate increase of 2.875% to fund the expenditure increases mentioned above.



CITY OF LEMON GROVE

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Successor Agency

On February 1, 2012, the City of Lemon Grove assumed the role of the Successor Agency to the former Redevelopment Agency, taking responsibility for winding down the Redevelopment Agency's operations and liquidating its assets. All financial activity related to the Successor Agency is reflected in the Fund 60/64 budget. The City is responsible for paying annual debt service on the Former Redevelopment Agency's bonds. In FY 2019-20, the debt service payments will total approximately \$1.75 million. The State of California's Department of Finance through the County of San Diego, distributes bi-annual reimbursement to the City to cover the Successor Agency debt service.

Conclusion

The City Council continues to face some very difficult decisions. Often the hard part of governing comes when constituents express concerns for any cuts in service levels that directly impact them – very often wanting even more while the City does not have the resources to accommodate existing services, let alone added services. It is a fact of life that constituents will often be single issue oriented when viewing a budget that must address a wide variety of municipal needs.

We continue to endeavor toward financial and economic sustainability and stability. Staff is committed to pursuing additional cost saving and revenue generating projects throughout the year. Budgeting is a process of estimation and projection. As the fiscal year progresses, the budget will be revised through adjustments and the mid-year update to more accurately anticipate the General Fund deficit.

In closing, I would like to express my appreciation to the City Council for providing the leadership and direction in preparation of this budget. My personnel thanks goes to the City's Executive team and all City staff that continue to take City's fiscal stress to heart and worked to propose a bare bones operations budget. Special recognition and sincere appreciation goes out to Molly Brennan, Finance Manager and her dynamic finance team for doing an incredible of keeping all things finance and budget in order.

Respectfully submitted,

Lydia Romero
City Manager

FUND LISTING

The City manages its revenue and expenditures through various funds. Between the City, Roadway Lighting District, and Sanitation District, the FY 2019-20 consolidated budget is comprised of 29 funds. Each fund identified in this budget is described below.

GOVERNMENTAL FUNDS

01- General Fund

The primary day-to-day operating fund for the City, which reflects all financial activity that is not required to be accounted for in another fund. Public safety, government administration, community services, street maintenance, environmental programs, and park maintenance are funded through the General Fund.

03- Street Construction Capital Fund

This fund was initially established to combine funds for larger street projects. With the use of the City's accounting program, it is possible to designate various funding sources over several years to accomplish this same purpose. In Fiscal Year 2018-19 all remaining resources of this fund were expended on the Lemon Grove Realignment Project.

06- General Fund Reserve

The General Reserve Fund serves as the City's "savings account." This fund was created for several purposes: for use in times of emergency, one-time capital/equipment purchases, setting aside funds for replacing equipment, required grant matches, and to ensure funds are available for financial obligations (such as liability coverage and accumulated leave time).

18- Sidewalk Reserve Fund

This fund was initially established to pool funds for larger sidewalk projects.

32- Capital Equipment Fund

Initially this fund was established to track the purchase of a fire engine with grant funding in FY 2012-13. The City Council has now approved this fund to be used to set aside funds for future capital improvement projects throughout the City.

ENTERPRISE FUNDS

The Lemon Grove Sanitation District manages four Sanitation related enterprise funds.

15- Sanitation: Operating

The District relies on Fund 15 to collect revenue generated by Sanitation District rate payers and to pay the operational costs to operate the system.

16- Sanitation: Capital

The capital is used to set aside funds for equipment replacement, sewer rehabilitation projects, and rate stabilization.

17- Sanitation: Pure Water

The Pure Water Fund is used to save funds for the upcoming capital costs to construct the Pure Water recycling system in coordination with the City of San Diego and other neighboring communities.

19- Sanitation: Capacity

When there is a new tap-in to the sanitation system, the fee paid for the connection is maintained separately in this fund. This revenue may be used on projects that increase the capacity of the sewer system.

SPECIAL REVENUE FUNDS

02- Gas Tax Fund

Revenues for this fund come from the State of California Gasoline Tax. Fund proceeds may be used to research, plan, construct, improve, maintain, and operate local streets.

05- Parkland Dedication Ordinance Fund

The City Municipal Code requires that subdivision development set-aside park land that will eventually be developed as part of the municipal park system. The Code also allows the payment of a fee in-lieu of dedicating actual land. Proceeds in the fund may be used by the City for the purchase of park land, the development of new parks or the major rehabilitation of existing parks.

07- Supplemental Law Enforcement Fund

This fund, also known as the COPS fund, is supported by State grant proceeds. This fund is used to augment the staffing level of Sheriff Deputies. At one time, the grant amount paid for one deputy; today it pays for approximately half of one deputy position.

08- Grant Fund

This fund provides for management of grants currently being administered by the City. It functions as an "in-and-out" fund to ensure grant proceeds and expenditures are not mingled with the General Fund or other fund proceeds.

09- Community Development Block Grant Fund

This fund manages grant proceeds from the Community Development Block Grant program. Funds are expended and then reimbursed by the County of San Diego.

10- Transit Development Act Fund

Transit proceeds are allocated from the San Diego Metropolitan Transit Service (MTS) for maintenance of landscaping along the trolley corridor and maintenance of trolley stations and bus shelters throughout the City.

14- TransNet Fund

This fund manages proceeds from the TransNet allocation and street related projects eligible for TransNet funding. This fund is specifically used to finance significant right-of-way improvements (streets and sidewalks), storm drain, and traffic related projects.

21- Integrated Waste Reduction Fund

The City relies on this fund to manage its recycling and household hazardous waste disposal program as part of compliance with Assembly Bill 939 Integrated Waste Management Act of 1989. This program is supported by AB 939 funds which are collected for the aforementioned programs. The City relies on this fund for contractual services to provide household hazardous waste events, promote a higher level of recycling within the City, and prepare annual program reports as required by AB939.

23- Serious Traffic Offender Program Fund

This fund receives a portion of impound fees collected within the City. The City uses this fund to pay for Sheriff traffic division overtime and other traffic related expenses.

26- Storm Water Program Fund

The Storm Water Program Fund was established in FY 2005-06. The fund's purpose is to collect designated storm water program fees and support the City's storm water program- a State and Federal mandated program. The fund has not fully paid for the program since its inception. Increased mandates have increased fund expenditures over the past few years.

27- Regional Transportation Congestion Improvement Program

This fund was created in FY 2008-09 to manage fees related to the passage of the TransNet extension. These fees represent per housing unit fees for new residential development. Expenditures from this fund are to be used to initiate street improvement projects on a major arterial within the City.

30- Public Education and Government Fund

This fund collects designated monies from cable franchisees that operate within the City. The use of these monies is restricted to capital items that enhance or facilitate public access to government information.

SPECIAL ASSESSMENT DISTRICT FUNDS

22- Wildflower Assessment District Fund

This fund manages the Wildflower Landscaping Maintenance Assessment District. This fund tracks assessment revenue and expenditures related to landscape common areas within the Wildflower Assessment District.

33- Main Street Promenade Community Facilities District Fund

During FY 2013-14, the voters within the Main Street Promenade Community Facilities District voted to create an assessment to fund ongoing maintenance and capital improvements to the Main Street Promenade.

11 & 12- Roadway Lighting District

The Lemon Grove Roadway Lighting District manages two funds for two separate activities. Fund 11, the General Benefit Fund, provides funding for street light benefits throughout the community. Fund 12, the Local Benefit Assessment Fund, provides for enhanced lighting benefits at the mid-block.

INTERNAL SERVICE FUNDS

25- Self-Insured Workers Compensation Reserve Fund

In FY 2003-04, the City began to fund its own workers' compensation program. This was done to have better control over the drastic increases in workers' compensation insurance premiums. This fund covers catastrophic workers compensation claims.

29- Self-Insured Liability Reserve Fund

In FY 2011-12, the City established the Self-Insured Liability Reserve Fund to fund liability claims.

SUCCESSOR AGENCY FUNDS

60 & 64- Successor Agency Funds

This fund receives reimbursements for enforceable obligations approved by the California Department of Finance and makes payments for said obligations, namely debt service payments on bonds issued by the prior Lemon Grove Community Development Agency.

GENERAL FUND**REVENUE DETAIL**

SOURCE	2017/18 ACTUAL	FY 2018/19 BUDGET	FY 2018/19 PROJECTION	FY 2019/20 BUDGET	% CHANGE
BEGINNING FUND BALANCE - July 1	\$ 5,297,118	\$ 5,476,999	\$ 5,476,999	\$ 5,489,784	
Sales Tax	5,385,225	5,804,815	5,806,000	5,547,721	-4.4%
Property Tax Secured	2,347,009	2,391,140	2,489,995	2,543,670	2.2%
Property Tax Supplemental Roll	73,391	57,120	61,800	62,000	0.3%
Prop. Tax Homeowner's Relief	15,932	15,000	15,970	15,960	-0.1%
Prop. Tax Real Property Transfer Tax	92,242	80,000	83,104	90,000	8.3%
Property Tax Post Redevelopment	114,798	179,000	178,585	94,800	-46.9%
Property Tax in Lieu of VLF	2,429,012	2,608,600	2,608,597	2,742,418	5.1%
Franchise Fees	994,365	940,000	1,030,624	1,070,100	3.8%
Transient Occupancy Tax	53,413	51,000	52,903	52,000	-1.7%
Other Taxes	6,120,163	6,321,860	6,521,578	6,670,948	2.3%
Business License	85,069	96,600	82,584	85,000	2.9%
Animal License	12,415	12,400	10,535	10,000	-5.1%
Regulatory License	5,514	5,200	5,228	12,978	148.2%
Permits & Licenses	102,998	114,200	98,347	107,978	9.8%
Emergency Transport Fees	280,298	224,238	224,238	224,238	0.0%
Fire Cost Recovery	352,433	305,000	350,000	150,000	-57.1%
Other Fire Fees	3,151	3,500	1,900	1,500	-21.1%
Fire Fees - Business Licenses	23,139	32,000	23,000	24,000	4.3%
Fire Fees - Development Services	19,106	21,500	25,946	22,000	-15.2%
Fire Department Fees	678,127	586,238	625,084	421,738	-32.5%
Building Permits	336,648	340,000	358,107	250,000	-30.2%
Planning Permits	36,301	46,000	46,372	38,000	-18.1%
Engineer Permits	46,119	36,000	24,886	22,000	-11.6%
State Collected Fee - ADA	4,427	1,300	4,821	2,500	-48.1%
Development Fees	423,495	423,300	434,186	312,500	-28.0%
Day Camp	121,243	104,500	83,832	100,000	19.3%
Special Events	32,085	30,000	27,640	30,000	8.5%
Recreation Classes	6,837	6,450	5,869	6,300	7.3%
Softball	-	6,500	363	10,906	2904.4%
Parks & Recreation Fees	160,165	147,450	117,704	147,206	25.1%
Motor Vehicle License Fee	14,104	16,900	12,881	12,000	-6.8%
Sales Tax 1/2% (Public Safety)	44,882	46,130	46,832	47,058	0.5%
Traffic Safety Fines	46,283	42,500	38,218	38,500	0.7%
Booking Fee - County	6,907	6,500	7,369	6,500	-11.8%
Parking Fines	17,613	17,000	17,873	18,000	0.7%
Other Fines & Forfeitures	5,643	4,200	2,947	3,500	18.8%
Tow Fees	22,101	19,000	21,015	21,000	-0.1%
Fines & Forfeitures	143,428	135,330	134,254	134,558	0.2%
Investment Income	\$ 43,651	\$ 23,400	\$ 91,683	\$ 60,000	-34.6%

SOURCE	2017/18 ACTUAL	FY 2018/19 BUDGET	FY 2018/19 PROJECTION	FY 2019/20 BUDGET	% CHANGE
Rental - Long Term	180,050	181,600	169,360	132,000	-22.1%
Rental - Short Term	65,299	65,100	71,674	68,000	-5.1%
Passport Processing Fee	-	16,000	6,720	70,875	954.7%
Cost Recovery	6,943	10,000	4,412	10,000	126.7%
State Mandated Cost	22,641	25,000	22,117	22,000	-0.5%
Credit Card Surcharge	5,785	6,000	4,992	5,000	0.2%
Other Revenue	133,586	30,000	38,198	235,000	515.2%
Administrative Citations	171,997	100,000	105,089	96,800	-7.9%
Other Income	586,300	433,700	422,562	639,675	51.4%
Total General Fund	13,657,656	14,007,193	14,264,279	14,054,324	-1.5%
Gas Tax Fund	22,250	40,000	40,000	30,000	-25.0%
Supplemental Law Enforcement Service Fu	114,600	180,000	180,000	130,000	-27.8%
TDA Administration	13,050	10,000	10,000	10,000	0.0%
General Lighting District - Admin	9,400	9,400	9,400	9,400	0.0%
Local Lighting District - Admin	3,672	4,900	4,900	4,900	0.0%
Integrated Waste Administration	1,200	1,200	1,200	1,200	0.0%
Sanitation District Administration	489,294	305,073	305,073	-	-100.0%
Wildflower District Administration	100	100	100	100	0.0%
Successor Agency Loan Repayment	-	100,000	100,000	-	-
Successor Agency - Administration	-	60,813	60,813	102,776	69.0%
Transfer Workers Compensation Fund	-	-	9,200	20,000	117.4%
Transfer to Successor Agency	-	(17,761)	(17,761)	-	-100.0%
Transfer to Self-Insured Liability Fund	-	-	(100,000)	(50,000)	-50.0%
Transfer to Storm Water Fund	(195,388)	(168,581)	(62,500)	(132,304)	111.7%
Transfers	458,178	525,144	540,425	126,072	-76.7%
Total Revenues & Transfers	14,115,834	14,532,337	14,804,704	14,180,396	-4.2%
Total Resources	\$ 19,412,952	\$ 20,009,336	\$ 20,281,703	\$ 19,670,180	-3.0%
Total Expenditures	\$ 13,983,957	\$ 15,000,030	\$ 14,791,919	14,606,428	-1.3%
NET CHANGE IN FUND BALANCE	131,877	(467,693)	12,785	(426,032)	

GENERAL FUND

EXPENDITURES BY DEPARTMENT

Department	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
City Council	82,221	80,764	77,479	115,186	43%
City Manager	387,412	339,868	335,173	386,177	14%
City Attorney	359,317	206,000	181,301	195,000	-5%
City Clerk	75,257	76,154	76,500	111,459	46%
Finance	330,702	295,213	292,529	388,663	32%
Law Enforcement	5,856,843	6,291,487	6,291,185	6,590,770	5%
Fire	4,735,088	4,935,761	4,917,354	4,547,556	-8%
Community Development	584,253	631,626	574,773	626,876	-1%
Public Works	1,402,856	2,056,958	1,970,005	1,580,741	-23%
Non-Departmental	1,500	86,199	75,621	64,000	-26%
Total Expenditures	\$ 13,815,449	\$ 15,000,030	\$ 14,791,919	\$ 14,606,428	-3%

GENERAL FUND

EXPENDITURES BY TYPE

Expenditure Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget
Salaries & Benefits	5,395,433	5,542,988	5,441,526	5,564,758
Operating Supplies & Services	1,277,375	1,405,349	1,310,999	1,367,061
Contracted Services	7,055,952	7,352,147	7,342,321	7,587,918
Capital Expenditures	86,688	699,546	697,073	86,690
Total Expenditures	\$ 13,815,449	\$ 15,000,030	\$ 14,791,919	\$ 14,606,428

GENERAL FUND**DEPARTMENT: CITY COUNCIL****SUMMARY OF EXPENDITURES BY TYPE**

Expenditure Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries & Benefits	42,959	40,749	43,115	71,779	76%
Operating Expenditures	39,262	40,015	34,364	43,407	8%
Contracted Services	-	-	-	-	-
Capital Expenditures	-	-	-	-	-
Total Expenditures	\$ 82,221	\$ 80,764	\$ 77,479	\$ 115,186	49%

ACCOUNT DETAIL FOR THE DEPARTMENT OF THE CITY COUNCIL

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries	22,594	22,716	22,390	37,122	63%
Health Benefits	12,672	12,322	13,260	24,120	96%
Health Benefits-Retirees	2,448	2,448	2,448	2,448	0%
Medicare	341	329	330	640	94%
Life Insurance	51	51	47	65	28%
Long Term Disability Insurance	-	-	200	543	-
Retirement	4,853	2,883	4,440	6,841	137%
SALARIES & BENEFITS	42,959	40,749	43,115	71,779	76%
Community Promotions	2,476	3,000	1,500	1,500	-50%
Computer Maintenance	1,579	500	920	2,176	335%
Copier Service	200	-	-	-	-
Insurance-Liability	767	1,023	1,121	3,755	267%
Insurance-Property	536	714	614	420	-41%
Membership and Dues	23,542	23,000	22,357	23,221	1%
Mileage	4,640	5,141	4,070	7,035	37%
Office Supplies	1,370	1,000	700	700	-30%
Travel and Meetings	1,944	3,600	600	2,000	-44%
Utilities-Gas and Electric	2,209	2,036	2,482	2,600	28%
OPERATING EXPENDITURES	39,262	40,015	34,364	43,407	8%
TOTAL CITY COUNCIL EXPENDITURES	\$ 82,221	\$ 80,764	\$ 77,479	\$ 115,186	43%

GENERAL FUND**DEPARTMENT: CITY MANAGER****SUMMARY OF EXPENDITURES BY TYPE**

Expenditure Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries & Benefits	238,137	221,771	210,382	248,208	12%
Operating Expenditures	26,190	27,135	25,438	27,938	3%
Contracted Services	5,250	9,500	5,500	7,500	-21%
Capital Expenditures	-	-	-	-	-
Total Expenditures	\$ 269,578	\$ 258,406	\$ 241,320	\$ 283,646	10%

ACCOUNT DETAIL FOR THE DEPARTMENT OF THE CITY MANAGER

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries	168,208	172,331	163,683	195,370	14%
Overtime	1,698	2,263	5,000	2,500	5%
Health Benefits	16,200	16,020	13,801	17,730	12%
Health Benefits-Retirees	8,446	9,424	8,446	8,446	-12%
Deferred Compensation	3,115	3,708	3,240	3,240	-14%
Workers Compensation Insurance	799	1,055	750	1,441	51%
Medicare	2,475	2,532	2,446	2,903	15%
Life Insurance	496	380	489	784	83%
Long Term Disability	1,004	1,121	648	320	-123%
Retirement	35,698	12,937	11,879	15,475	21%
SALARIES & BENEFITS	238,137	221,771	210,382	248,208	13%
Computer Maintenance	5,686	6,500	5,843	6,612	2%
Copier Service	1,853	1,700	1,801	1,070	-35%
Insurance-Liability	2,301	2,350	2,599	3,755	54%
Insurance-Property	2,411	2,500	2,150	2,096	-19%
Membership and Dues	930	835	835	835	0%
Mileage	3,561	3,200	3,240	3,720	16%
Office Supplies	3,330	2,500	3,000	3,000	17%
Training	504	950	150	750	-133%
Travel and Meetings	1,180	1,100	1,100	1,100	0%
Utilities-Gas and Electric	2,209	3,100	2,482	2,600	-20%
Utilities-Telephone	1,906	2,100	1,870	2,000	-5%
Utilities-Water	319	300	369	400	27%
OPERATING EXPENDITURES	26,190	27,135	25,438	27,938	3%
Professional Services	5,250	9,500	5,500	7,500	-36%
CONTRACTED SERVICES	5,250	9,500	5,500	7,500	-36%
TOTAL CITY MANAGER EXPENDITURES	\$ 269,578	\$ 258,406	\$ 241,320	\$ 283,646	10%

GENERAL FUND**DEPARTMENT: HUMAN RESOURCES****SUMMARY OF EXPENDITURES BY TYPE**

Expenditure Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries & Benefits	96,152	59,172	70,634	74,610	26%
Operating Expenditures	17,178	19,790	13,719	22,921	16%
Contracted Services	4,504	2,500	9,500	5,000	100%
Capital Expenditures	-	-	-	-	-
Total Expenditures	\$ 117,834	\$ 81,462	\$ 93,853	\$ 102,531	26%

ACCOUNT DETAIL FOR THE DEPARTMENT OF HUMAN RESOURCES

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries	76,924	49,501	56,706	60,301	22%
Health Benefits	5,040	4,950	7,458	6,300	27%
Employee Assistance Program	-	-	1,277	1,280	-
Workers Compensation Insurance	208	274	201	1,441	425%
Medicare	1,114	718	768	875	22%
Life Insurance	17	19	15	14	-25%
Long Term Disability	676	-	500	114	-
Retirement	12,172	3,710	3,710	4,285	15%
SALARIES & BENEFITS	96,152	59,172	70,634	74,610	26%
Computer Maintenance	1,893	1,000	751	2,176	118%
Employee Recognition	1,779	1,000	1,000	1,000	0%
Insurance-Liability	384	400	439	1,251	213%
Insurance-Property	268	300	258	419	40%
Medical Examinations	1,538	3,000	1,500	1,500	-50%
Memberships and Dues	304	2,035	1,523	1,600	-21%
Mileage	-	480	200	300	-38%
Office Supplies	775	300	400	500	67%
Personnel Recruitment/Selectio	7,905	5,500	3,500	4,500	-18%
Training	263	3,000	3,000	3,000	0%
Travel & Meetings	1,313	1,900	500	1,000	-47%
Unemployment	-	-	-	5,000	-
Utilities- Gas & Electric	-	100	-	-	-100%
Utilities- Telephone	757	675	648	675	0%
Utilities- Water	-	100	-	-	-100%
OPERATING EXPENDITURES	17,178	19,790	13,719	22,921	16%
Professional Services	4,504	2,500	9,500	5,000	100%
CONTRACTED SERVICES	4,504	2,500	9,500	5,000	100%
TOTAL HR EXPENDITURES	\$ 117,834	\$ 81,462	\$ 93,853	\$ 102,531	26%

GENERAL FUND
DEPARTMENT: CITY CLERK

SUMMARY OF EXPENDITURES BY TYPE

Expenditure Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries & Benefits	69,067	60,669	61,845	90,570	49%
Operating Expenditures	6,190	15,485	14,655	19,889	28%
Contracted Services	-	-	-	1,000	-
Capital Expenditures	-	-	-	-	-
Total Expenditures	\$ 75,257	\$ 76,154	\$ 76,500	\$ 111,459	46%

ACCOUNT DETAIL FOR THE DEPARTMENT OF THE CITY CLERK

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries	50,676	50,036	51,340	74,100	48%
Health Benefits	4,988	5,500	5,304	7,560	37%
Workers Compensation Insurance	208	274	201	1,441	425%
Medicare	1,356	726	849	1,075	48%
Life Insurance	14	15	15	16	6%
Long Term Disability	542	695	323	136	-80%
Retirement	11,282	3,423	3,813	6,242	82%
SALARIES & BENEFITS	69,067	60,669	61,845	90,570	49%
Computer Maintenance	893	4,000	3,581	2,176	-46%
Copier Rental	200	150	133	150	0%
Insurance-Liability	384	400	439	1,251	213%
Insurance-Property	268	300	258	419	40%
Membership and Dues	50	250	410	280	12%
Mileage	-	200	259	250	25%
Office Supplies	594	500	500	700	40%
Printing	-	485	474	500	3%
Publishing	3,248	3,500	4,000	4,250	21%
Training	34	950	475	1,337	41%
Travel & Meetings	-	950	1,072	800	-16%
Utilities- Gas & Electric	-	500	-	-	-100%
Utilities- Telephone	519	200	804	776	288%
Utilities- Water	-	100	-	-	-100%
Passport Office Supplies	-	1,000	750	2,000	100%
Passport Postage	-	2,000	1,500	5,000	150%
OPERATING EXPENDITURES	6,190	15,485	14,655	19,889	28%
Professional Services	-	1,500	-	1,000	-
CONTRACTED SERVICES	-	1,500	-	1,000	-
TOTAL CITY CLERK EXPENDITURES	\$ 75,257	\$ 77,654	\$ 76,500	\$ 111,459	44%

GENERAL FUND**DEPARTMENT: CITY ATTORNEY****SUMMARY OF EXPENDITURES BY TYPE**

Expenditure Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries & Benefits	-	-	-	-	-
Operating Expenditures	-	-	-	-	-
Contracted Services	359,317	206,000	181,301	195,000	-5%
Capital Expenditures	-	-	-	-	-
Total Expenditures	\$ 359,317	\$ 206,000	\$ 181,301	\$ 195,000	-5%

ACCOUNT DETAIL FOR THE DEPARTMENT OF THE CITY ATTORNEY

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Code Enforcement Litigation Services	26,728	11,000	12,563	15,000	36%
Litigation-Non-City Attorney	-	-	-	-	-
Litigation Services-City Attorney	332,589	195,000	168,739	180,000	-8%
CONTRACTED SERVICES	359,317	206,000	181,301	195,000	-5%
TOTAL CITY ATTORNEY EXPENDITURES	\$ 359,317	\$ 206,000	\$ 181,301	\$ 195,000	-5%

GENERAL FUND
DEPARTMENT: FINANCE

SUMMARY OF EXPENDITURES BY TYPE

Expenditure Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries & Benefits	155,139	191,958	188,950	282,499	47%
Operating Expenditures	40,870	43,255	43,579	46,164	7%
Contracted Services	134,693	60,000	60,000	60,000	0%
Capital Expenditures	-	-	-	-	-
Total Expenditures	\$ 330,702	\$ 295,213	\$ 292,529	\$ 388,663	32%

ACCOUNT DETAIL FOR THE DEPARTMENT OF FINANCE

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries	109,621	134,771	136,075	199,344	48%
Overtime	41	-	-	-	-
Health Benefits	9,158	17,694	14,213	24,111	36%
Health Benefits-Retirees	7,711	7,711	7,711	7,711	0%
Workers Compensation Insurance	2,208	2,911	2,213	4,322	48%
Medicare	3,580	1,954	2,939	3,635	86%
Life Insurance	467	411	408	52	-87%
Long Term Disability	1,092	1,168	592	434	-63%
Retirement	21,260	25,337	24,798	42,890	69%
SALARIES & BENEFITS	155,139	191,958	188,950	282,499	47%
Computer Maintenance	10,393	10,500	10,500	11,129	6%
Copier Service	2,166	2,290	2,456	1,325	-42%
Credit Card and Bank Fees	15,005	15,000	15,619	15,500	3%
Insurance-Liability	2,301	2,310	2,503	3,755	63%
Insurance-Property	536	550	473	2,095	281%
Membership and Dues	110	400	110	110	-73%
Mileage	97	420	250	400	-5%
Office Supplies	3,908	4,000	3,800	3,500	-13%
Printing	485	400	-	300	-25%
Publishing	130	175	175	-	-100%
Training	951	1,500	1,500	1,500	0%
Travel and Meetings	-	1,000	800	1,000	0%
Utilities-Gas and Electric	2,209	2,100	2,482	2,600	24%
Utilities-Telephone	2,352	2,400	2,649	2,650	10%
Utilities-Water	228	210	263	300	43%
OPERATING EXPENDITURES	40,870	43,255	43,579	46,164	7%
Professional Services	134,693	60,000	60,000	60,000	0%
CONTRACTED SERVICES	134,693	60,000	60,000	60,000	0%
TOTAL FINANCE EXPENDITURES	\$ 330,702	\$ 295,213	\$ 292,529	\$ 388,663	32%

GENERAL FUND**DEPARTMENT: PUBLIC SAFETY****SUMMARY OF EXPENDITURES BY TYPE**

Expenditure Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries & Benefits	-	-	-	-	-
Operating Expenditures	100,890	116,540	100,826	101,864	-13%
Contracted Services	5,755,953	6,174,947	6,190,359	6,488,906	5%
Capital Expenditures	-	-	-	-	-
Total Expenditures	\$ 5,856,843	\$ 6,291,487	\$ 6,291,185	\$ 6,590,770	5%

ACCOUNT DETAIL FOR THE DEPARTMENT OF PUBLIC SAFETY

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
800 MHZ Radio System	24,282	34,000	24,282	24,282	-29%
ARJIS	16,332	16,300	16,332	16,332	0%
CAL ID	6,224	6,400	7,202	7,250	13%
RCS Lease	48,955	49,000	48,955	49,000	0%
Utilities-Water	1,776	1,650	2,051	2,000	21%
Fuel-Animal Control Vehicle	2,361	6,790	1,504	2,500	-63%
Repairs & Maint-Animal Cntl	960	2,400	500	500	-79%
OPERATING EXPENDITURES	100,890	116,540	100,826	101,864	-13%
Contractual Services-Sheriff	5,548,470	5,879,396	5,895,923	6,202,727	5%
Contractual Svcs-Animal Cntrl	203,075	289,951	289,956	281,591	-3%
Contract Services-After Hours	2,428	3,600	2,500	2,500	-31%
Contract Svcs-Dead Animal Removal	1,980	2,000	1,980	2,088	4%
CONTRACTED SERVICES	5,755,953	6,174,947	6,190,359	6,488,906	5%
TOTAL PUBLIC SAFETY EXPENDITURES	\$ 5,856,843	\$ 6,291,487	\$ 6,291,185	\$ 6,590,770	5%

GENERAL FUND**DEPARTMENT: FIRE****SUMMARY OF EXPENDITURES BY TYPE**

Expenditure Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries & Benefits	3,951,936	4,105,941	4,163,821	3,753,829	-9%
Operating Expenditures	413,797	464,330	392,048	420,625	-9%
Contracted Services	282,667	278,800	274,796	286,412	3%
Capital Expenditures	86,688	86,690	86,688	86,690	0%
Total Expenditures	\$ 4,735,088	\$ 4,935,761	\$ 4,917,354	\$ 4,547,556	-8%

ACCOUNT DETAIL FOR THE FIRE DEPARTMENT

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries	1,840,707	1,876,783	2,010,529	1,798,105	-4%
Scheduled Overtime	133,773	137,539	138,829	145,115	6%
Unscheduled Overtime	435,979	580,000	570,977	420,000	-28%
Reimbursable Overtime	337,932	305,000	287,222	150,000	-51%
Overtime	303	500	500	500	0%
Extra Help	23,264	12,000	12,913	15,455	29%
Quarterly JPA Reconciliation	94,924	118,220	73,320	120,000	2%
Health Benefits	216,386	215,000	216,000	216,000	0%
Health Benefits-Retirees	77,560	77,560	77,560	77,560	0%
Uniform Allowance	20,000	27,000	20,000	19,000	-30%
Holiday Pay	65,000	47,000	47,323	60,000	28%
Paramedic Recertification	49,647	48,500	48,097	50,769	5%
Education Award	11,792	8,910	8,907	11,907	34%
Workers Compensation Insurance	128,810	112,500	88,442	80,000	-29%
Medicare	41,039	36,000	45,607	39,686	10%
Life Insurance	522	400	443	387	-3%
Long Term Disability	2,655	300	2,271	3,245	982%
Retirement	471,643	502,729	514,882	546,100	9%
SALARIES & BENEFITS	3,951,936	4,105,941	4,163,821	3,753,829	-9%
ALS Supplies Pass Thru	25,321	26,000	26,000	26,000	0%
Communications Equipment	9,712	9,000	10,110	9,540	6%
Fire Prevention Software	6,641	3,600	3,531	3,550	-1%
City Emergency Preparedness	3,369	4,000	3,110	3,500	-13%
Community Risk Reduction	1,739	3,000	1,655	2,000	-33%
Computer Maintenance	25,918	28,600	23,548	31,358	10%
Copier Service	1,367	1,400	1,312	250	-82%
Departmental Expense	9,337	9,000	6,000	9,000	0%
Fire Station Supplies	5,310	4,500	4,710	4,750	6%
Fuel	28,826	26,000	28,700	28,000	8%
Insurance-Liability	24,836	24,900	27,233	40,055	61%
Insurance-Property	15,268	15,300	13,157	12,572	-18%

Account Description	2017-2018	2018-2019	2018-2019	2019-2020	% Change
	Actual	Budget	Projected	Budget	
JAC Reimbursable Expenditures	1,802	5,000	-	-	-100%
JPA Reconciliation Expenditures	4,098	5,000	2,912	4,000	-20%
JPA Reimbursable Expenditures	(807)	1,000	-	-	-100%
AFG Match	-	-	2,255	-	-
Medical Examinations	4,341	9,000	4,148	9,500	6%
Membership and Dues	90	600	100	100	-83%
Office Supplies	2,222	2,300	1,500	2,300	0%
Patient Care Reporting Pass Thru	4,521	5,800	4,369	4,500	-22%
Personal Exposure Reporting	424	325	325	325	0%
Personal Protective Clothing	16,760	17,500	16,000	17,500	0%
Regional Cooperative Care Program	26,091	39,000	35,000	35,000	-10%
Repair and Maintenance-Equipment	2,890	4,000	2,500	4,000	0%
Repair and Maintenance-Vehicles	78,578	75,000	63,001	65,000	-13%
Reserve Fire Fighter Expense	5,496	-	-	-	-
Self-Contained Breathing Apparatus	5,250	32,000	29,381	7,500	-77%
Subscriptions and Books	-	500	300	1,500	200%
Trauma Intervention Program (TIP)	3,825	3,825	3,825	3,825	0%
Tools and Supplies	14,633	10,000	10,000	10,000	0%
Training - Tution Reimbursement	32,240	40,000	5,826	20,000	-50%
Training - HFTA			17,933	18,000	-
Training-AMR Pass Thru	3,603	19,100	2,500	3,000	-84%
Travel and Meetings	2,006	3,000	2,303	3,000	0%
Uniforms	2,555	1,000	900	1,000	0%
Utilities-Gas and Electric	17,224	16,750	19,688	21,700	30%
Utilities-Telephone	5,336	6,500	6,710	6,200	-5%
Utilities-Water	2,826	2,530	2,581	2,800	11%
Vehicle Supplies	2,397	2,300	2,300	2,300	0%
Weed Abatement	17,753	7,000	6,625	7,000	0%
OPERATING EXPENDITURES	413,797	464,330	392,048	420,625	-9%
Dispatch Services	262,494	258,600	254,623	264,524	4%
Hazmat Emergency Response	20,173	20,200	20,173	21,888	9%
CONTRACTED SERVICES	282,667	278,800	274,796	286,412	3%
Fire Truck Loan	86,688	86,690	86,688	86,690	0%
CAPITAL EXPENDITURES	86,688	86,690	86,688	86,690	0%
TOTAL FIRE EXPENDITURES	\$ 4,735,088	\$ 4,935,761	\$ 4,917,354	\$ 4,547,556	-8%

GENERAL FUND**DEPARTMENT: COMMUNITY DEVELOPMENT****SUMMARY OF EXPENDITURES BY TYPE**

Expenditure Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries & Benefits	288,057	293,611	201,670	380,796	30%
Operating Expenditures	42,568	52,515	44,523	53,580	2%
Contracted Services	253,628	285,500	328,580	192,500	-33%
Capital Expenditures	-	-	-	-	-
Total Expenditures	\$ 584,253	\$ 631,626	\$ 574,773	\$ 626,876	-1%

ACCOUNT DETAIL FOR THE DEPARTMENT OF COMMUNITY DEVELOPMENT

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries	194,908	195,977	129,667	256,940	31%
Planning Commission Wages	-	1,615	1,550	2,250	39%
Overtime	1,684	6,500	6,800	6,000	-8%
Extra Help	2,629	7,000	5,000	7,000	0%
Health Benefits	22,315	22,000	15,259	27,000	23%
Health Benefits-Retirees	5,294	5,039	5,294	5,294	5%
Workers Compensation Insurance	2,271	2,995	1,998	4,322	44%
Medicare	3,051	2,981	2,402	4,408	48%
Life Insurance	63	63	38	60	-5%
Long Term Disability	1,751	1,823	570	487	-73%
Retirement	49,292	41,218	33,092	67,035	63%
Unemployment	4,800	6,400	-	-	-100%
SALARIES & BENEFITS	288,057	293,611	201,670	380,796	30%
Computer Maintenance	15,651	17,500	17,525	16,632	-5%
Copier Service	3,583	3,600	4,326	2,866	-20%
Code Enforce Cost Recovery	-	1,000	-	-	-100%
Fuel	221	250	225	250	0%
Insurance-Liability	4,699	4,700	5,143	12,517	166%
Insurance-Property	2,946	3,000	2,580	2,095	-30%
Membership and Dues	703	1,230	-	750	-39%
Mileage	2,297	2,600	388	500	-81%
Noticing	1,246	4,000	3,500	3,500	-13%
Office Supplies	3,693	4,550	3,750	4,220	-7%
Printing	156	290	-	100	-66%
Printing for Planning Commission	-	500	-	-	-100%
Repair & Maintenance-Vehicles	-	200	150	200	0%
Subscriptions and Books	500	800	250	500	-38%
Training	838	1,445	-	1,500	4%
Travel and Meetings	7	970	-	1,400	44%
Utilities-Gas and Electric	2,209	2,100	2,482	2,600	24%
Utilities-Telephone	3,455	3,440	3,783	3,500	2%

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Utilities-Water	364	340	420	450	32%
OPERATING EXPENDITURES	42,568	52,515	44,523	53,580	2%
Plan Checks/Consultations	252,990	255,000	268,580	187,500	-26%
Professional Services	638	30,500	60,000	5,000	-84%
CONTRACTED SERVICES	253,628	285,500	328,580	192,500	-33%
TOTAL DEVELOPMENT EXPENDITURES	\$ 584,253	\$ 631,626	\$ 574,773	\$ 626,876	-1%

GENERAL FUND**DEPARTMENT: PUBLIC WORKS, ENGINEERING DIVISION****SUMMARY OF EXPENDITURES BY TYPE**

Expenditure Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries & Benefits	87,962	84,024	56,430	78,762	-6%
Operating Expenditures	56,362	53,120	59,560	60,086	13%
Contracted Services	98,000	80,000	61,303	80,000	0%
Capital Expenditures	-	-	-	-	-
Total Expenditures	\$ 242,324	\$ 217,144	\$ 177,293	\$ 218,848	1%

ACCOUNT DETAIL FOR THE DEPARTMENT OF PUBLIC WORKS, ENGINEERING DIVISION

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries	52,359	52,836	35,507	43,265	-18%
Overtime	1,974	950	650	500	-47%
Extra Help	9,915	5,000	-	5,000	0%
Health Benefits	6,750	6,750	4,625	5,130	-24%
Health Benefits- Retirees	1,224	1,224	1,224	1,224	0%
Workers Compensation Insurance	2,208	2,911	1,890	2,881	-1%
Medicare	1,500	852	494	941	10%
Life Insurance	55	51	43	11	-78%
Long Term Disability	268	-	129	95	-
Retirement	11,710	13,450	11,867	19,715	47%
SALARIES & BENEFITS	87,962	84,024	56,430	78,762	40%
Computer Maintenance	8,453	9,000	14,249	10,952	22%
Copier Service	2,808	2,700	2,761	2,225	-18%
Development Support	5,055	5,000	2,423	4,000	-20%
Fuel	3,227	2,500	907	2,000	-20%
Insurance- Liability	3,884	3,900	4,268	6,259	60%
Insurance- Property	2,455	2,500	2,150	2,095	-16%
Mileage	290	500	400	400	-20%
Office Supplies	2,958	2,500	2,500	2,200	-12%
Training	103	-	-	-	-
Utilities- Traffic Signal	24,069	21,500	26,749	26,775	25%
Utilities- Telephone	2,605	2,600	2,628	2,630	1%
Utilities- Water	455	420	525	550	31%
OPERATING EXPENDITURES	56,362	53,120	59,560	60,086	1%
Professional Services	98,000	80,000	61,303	80,000	0%
CONTRACTED SERVICES	98,000	80,000	61,303	80,000	30%
TOTAL ENGINEERING EXPENDITURES	\$ 242,324	\$ 217,144	\$ 177,293	\$ 218,848	1%

GENERAL FUND**DEPARTMENT: PUBLIC WORKS, ADMINISTRATION DIVISION****SUMMARY OF EXPENDITURES BY TYPE**

Expenditure Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries & Benefits	36,017	40,279	44,539	135,998	238%
Operating Expenditures	52,656	74,950	82,866	66,449	-11%
Contracted Services	-	-	-	-	-
Capital Expenditures	-	-	-	-	-
Total Expenditures	\$ 88,673	\$ 115,229	\$ 127,406	\$ 202,447	76%

ACCOUNT DETAIL FOR THE DEPARTMENT OF PUBLIC WORKS, ADMINISTRATION DIVISION

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries	21,971	22,107	29,157	84,520	282%
Overtime	9	100	113	50	-50%
Health Benefits	1,916	2,700	1,937	7,560	180%
Workers Compensation Insurance	6,225	6,500	4,134	2,881	-56%
Medicare	347	322	399	1,245	287%
Life Insurance	7	7	10	16	115%
Long Term Disability	237	237	167	136	-43%
Retirement	5,305	8,305	8,622	39,590	377%
SALARIES & BENEFITS	36,017	40,279	44,539	135,998	238%
Advertising	133	500	400	-	-100%
Computer Maintenance	9,098	10,400	11,236	9,338	-10%
Copier Service	4,495	4,300	4,300	4,100	-5%
Damages - Cost Recovery	-	20,000	33,242	20,000	0%
Insurance-Liability	1,438	1,500	1,683	2,503	67%
Insurance-Property	2,455	2,500	2,150	838	-66%
Advertising & Marketing	7,715	5,000	3,500	5,000	0%
Membership and Dues	1,127	1,500	1,416	2,000	33%
Mileage	468	425	331	1,290	204%
Office Supplies	2,833	2,000	2,500	1,400	-30%
Software (minor)	2,820	5,500	5,175	-	-100%
Protective Clothing	10,357	10,000	6,358	8,000	-20%
Repair & Maintenance-Equipment	900	900	1,050	900	0%
Training	801	6,000	5,020	6,000	0%
Travel and Meetings	4,450	950	500	950	0%
Utilities-Gas and Electric	2,209	2,100	2,482	2,600	24%
Utilities-Telephone	1,085	1,100	1,207	1,200	9%
Utilities-Water	273	275	316	330	20%
OPERATING EXPENDITURES	52,656	74,950	82,866	66,449	-11%
TOTAL PW ADMIN EXPENDITURES	\$ 88,673	\$ 115,229	\$ 127,406	\$ 202,447	76%

GENERAL FUND**DEPARTMENT: PUBLIC WORKS, STREETS DIVISION****SUMMARY OF EXPENDITURES BY TYPE**

Expenditure Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries & Benefits	85,412	96,545	102,504	148,635	54%
Operating Expenditures	147,580	134,775	105,973	120,700	-10%
Contracted Services	17,361	109,500	72,112	109,400	0%
Capital Expenditures	-	606,856	604,385	-	-100%
Total Expenditures	\$ 250,353	\$ 947,676	\$ 884,973	\$ 378,735	-60%

ACCOUNT DETAIL FOR THE DEPARTMENT OF PUBLIC WORKS, STREETS DIVISION

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries	62,445	65,825	65,552	95,967	46%
Overtime	4,482	1,000	5,000	5,000	400%
Health Benefits	6,980	14,850	12,816	17,550	18%
Workers Compensation Insurance	-	-	5,500	7,203	0%
Medicare	1,361	1,000	1,099	1,400	-
Life Insurance	71	82	32	40	-51%
Long Term Disability	570	348	380	320	-8%
Retirement	9,502	13,441	12,125	21,155	57%
SALARIES & BENEFITS	85,412	96,545	102,504	148,635	54%
Computer Maintenance	6,112	3,000	3,155	2,176	-27%
Cost Recovery	11,976	-	-	-	-
Equipment Rental	6,580	6,800	5,000	5,000	-26%
Fuel	14,726	12,500	12,107	12,500	0%
Graffiti Cleanup Supplies	2,495	1,800	1,475	1,800	0%
Herbicides/Pesticides	934	900	788	900	0%
Insurance-Liability	3,884	3,900	4,268	6,259	60%
Insurance-Property	2,455	2,500	2,150	2,095	-16%
Medical Examinations	540	-	-	-	-
Membership and Dues	-	450	-	-	-100%
Office Supplies	75	200	100	100	-50%
Pavement Markings	-	-	1,522	-	-
Permit Expenses	469	475	469	470	-1%
Protective Clothing	259	-	-	-	-
Repair and Maintenance-Equipment	19,483	19,000	7,236	16,000	-16%
Repair and Maintenance-Sidewalk	-	4,500	4,800	5,000	11%
ADA Ramp Replacement	-	7,000	7,000	-	-
Repair and Maintenance-Storm Drain	6,470	10,000	10,000	10,000	0%
Repair and Maintenance-Vehicles	15,782	17,500	8,239	16,000	-9%
Tools and Supplies	17,219	10,500	12,519	13,500	29%
Utilities-Gas and Electric	1,336	1,250	1,334	1,400	12%
Utilities-Telephone	2,423	2,500	2,208	2,500	0%
Utilities-Water	34,361	30,000	21,604	25,000	-17%

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
OPERATING EXPENDITURES	147,580	134,775	105,973	120,700	-10%
Contractual Services	2,411	3,100	2,500	3,000	-3%
Professional Services	-	92,400	58,155	92,400	
Street Sweeping	14,950	14,000	11,457	14,000	0%
CONTRACTED SERVICES	17,361	109,500	72,112	109,400	0%
LG Realignment	-	551,856	555,000	-	-100%
St Improvements	-	55,000	49,385	-	-100%
CAPITAL EXPENDITURES	-	606,856	604,385	-	-100%
TOTAL STREETS EXPENDITURES	\$ 250,353	\$ 947,676	\$ 884,973	\$ 378,735	-60%

GENERAL FUND**DEPARTMENT: PUBLIC WORKS, COMMUNITY SERVICES DIVISION****SUMMARY OF EXPENDITURES BY TYPE**

Expenditure Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries & Benefits	202,408	168,097	168,545	181,209	8%
Operating Expenditures	132,274	130,010	128,790	145,143	12%
Contracted Services	-	-	-	-	-
Capital Expenditures	-	-	-	-	-
Total Expenditures	\$ 334,682	\$ 298,107	\$ 297,335	\$ 326,352	9%

ACCOUNT DETAIL FOR THE DEPARTMENT OF PUBLIC WORKS, COMMUNITY SERVICES DIVISION

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries	100,261	66,264	70,810	76,235	15%
Overtime	1,912	5,000	4,000	4,000	-20%
Extra Help	51,390	57,250	58,000	65,000	14%
Health Benefits	13,500	11,700	9,969	13,500	15%
Health Benefits-Retirees	4,590	5,100	4,335	4,335	-15%
Employee Assistance Program	-	40	-	-	-100%
Workers Compensation Insurance	4,977	6,559	4,092	7,203	10%
Medicare	5,542	1,769	5,700	6,138	247%
Life Insurance	37	37	22	30	-20%
Long Term Disability	936	936	300	243	-74%
Retirement	19,263	13,441	11,317	4,525	-66%
SALARIES & BENEFITS	202,408	168,097	168,545	181,209	8%
Computer Maintenance	3,246	3,200	2,514	3,389	6%
Copier Service	688	710	216	200	-72%
Daycamp	25,347	25,000	25,000	25,000	0%
Equipment Rental	1,585	1,500	1,585	-	-100%
Insurance-Liability	1,534	1,550	1,684	6,259	304%
Insurance-Property	536	550	473	2,095	281%
Maintenance-Supplies	-	100	-	-	-100%
Medical Examinations	246	400	-	-	-100%
Membership and Dues	14	100	-	-	-100%
Mileage	118	100	100	100	0%
Office Supplies	419	500	443	1,400	180%
Rental Expense	7,099	5,800	1,714	5,800	0%
Repair and Maintenance-Equipment	-	400	-	-	-100%
Special Events	27,973	30,000	28,000	30,000	0%
Training	69	-	-	-	-
Utilities-Gas and Electric	36,781	34,900	41,952	43,400	24%
Utilities-Telephone	3,942	4,000	4,109	4,000	0%
Utilities-Water	22,676	21,200	21,000	23,500	11%
OPERATING EXPENDITURES	132,274	130,010	128,790	145,143	12%

TOTAL COMMUNITY SERVICES EXP.	\$	334,682	\$	298,107	\$	297,335	\$	326,352	9%
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GENERAL FUND**DEPARTMENT: PUBLIC WORKS, GROUNDS DIVISION****SUMMARY OF EXPENDITURES BY TYPE**

Expenditure Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries & Benefits	2,295	2,300	2,300	2,300	0%
Operating Expenditures	114,959	85,475	93,869	91,960	8%
Contracted Services	143,112	145,000	158,470	160,200	10%
Capital Expenditures	-	-	-	-	-
Total Expenditures	\$ 260,366	\$ 232,775	\$ 254,639	\$ 254,460	9%

ACCOUNT DETAIL FOR THE DEPARTMENT OF PUBLIC WORKS, GROUNDS DIVISION

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Health Benefits-Retirees	2,295	2,300	2,300	2,300	0%
SALARIES & BENEFITS	2,295	2,300	2,300	2,300	0%
Lighting Maintenance	1,889	2,200	4,046	3,000	36%
Maintenance-Supplies	9,630	17,000	5,000	10,000	-41%
Utilities-Gas and Electric	4,883	4,000	6,292	6,560	64%
Utilities-Telephone	2,325	2,275	2,364	2,400	5%
Utilities-Water	96,231	60,000	76,168	70,000	17%
OPERATING EXPENDITURES	114,959	85,475	93,869	91,960	8%
Contractual Services	119,038	120,000	133,470	133,200	11%
Tree Maintenance	24,074	25,000	25,000	27,000	8%
CONTRACTED SERVICES	143,112	145,000	158,470	160,200	10%
TOTAL GROUNDS EXPENDITURES	\$ 260,366	\$ 232,775	\$ 254,639	\$ 254,460	9%

GENERAL FUND**DEPARTMENT: PUBLIC WORKS, FACILITIES DIVISION****SUMMARY OF EXPENDITURES BY TYPE**

Expenditure Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries & Benefits	139,892	170,872	119,790	108,563	-36%
Operating Expenditures	85,099	68,755	102,168	89,336	30%
Contracted Services	1,467	400	400	2,000	400%
Capital Expenditures	-	6,000	6,000	-	-100%
Total Expenditures	\$ 226,458	\$ 246,027	\$ 228,359	\$ 199,899	-19%

ACCOUNT DETAIL FOR THE DEPARTMENT OF PUBLIC WORKS, FACILITIES DIVISION

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries	84,725	107,147	68,017	65,939	-38%
Overtime	9,050	9,062	10,563	10,000	10%
Health Benefits	13,043	18,900	13,116	14,400	-24%
Health Benefits-Retirees	4,488	4,148	4,998	5,000	21%
Workers Compensation Insurance	6,209	8,183	5,529	7,203	-12%
Medicare	1,019	1,685	1,096	960	-43%
Life Insurance	42	41	36	31	-24%
Long Term Disability	616	548	298	260	-53%
Retirement	20,700	21,158	16,138	4,770	-77%
SALARIES & BENEFITS	139,892	170,872	119,790	108,563	-36%
Computer Maintenance	2,116	1,350	1,320	1,088	-19%
Equipment Rental	354	400	(500)	400	0%
Fuel	3,773	2,500	3,524	3,600	44%
Insurance-Liability	2,205	2,210	2,407	6,259	183%
Insurance-Property	982	1,000	860	2,514	151%
Maintenance-Services	18,517	14,550	23,800	20,000	37%
Maintenance-Supplies	46,332	31,000	44,327	38,000	23%
Repair and Maintenance	6,053	8,500	19,518	10,000	18%
Repair and Maintenance-ADA	-	500	-	500	0%
Repair and Maintenance-Equipment	1,662	1,900	1,677	1,900	0%
Tools and Supplies	39	2,000	2,055	2,000	0%
Utilities-Gas and Electric	1,336	1,250	1,334	1,400	12%
Utilities-Telephone	1,660	1,520	1,519	1,600	5%
Utilities-Water	69	75	328	75	0%
OPERATING EXPENDITURES	85,099	68,755	102,168	89,336	30%
Contractual Services	1,467	400	400	2,000	400%
CONTRACTED SERVICES	1,467	400	400	2,000	400%
Park Improvements	-	6,000	6,000	-	-100%
CAPITAL EXPENDITURES	-	6,000	6,000	-	-100%
TOTAL FACILITIES EXPENDITURES	\$ 226,458	\$ 246,027	\$ 228,359	\$ 199,899	-19%

GENERAL FUND**DEPARTMENT: PUBLIC WORKS****SUMMARY OF EXPENDITURES BY TYPE**

Expenditure Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries & Benefits	553,986	562,117	494,108	655,467	17%
Operating Expenditures	588,930	547,085	573,227	573,674	5%
Contracted Services	259,940	334,900	292,285	351,600	5%
Capital Expenditures	-	612,856	610,385	-	-100%
Total Expenditures	\$ 1,402,856	\$ 2,056,958	\$ 1,970,005	\$ 1,580,741	-23.2%

GENERAL FUND**DEPARTMENT: NON-DEPARTMENTAL****SUMMARY OF EXPENDITURES BY TYPE**

Expenditure Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries & Benefits	-	7,000	7,000	7,000	0%
Operating Expenditures	1,500	79,199	68,621	57,000	28%
Contracted Services	-	-	-	-	-
Capital Expenditures	-	-	-	-	-
Total Expenditures	\$ 1,500	\$ 86,199	\$ 75,621	\$ 64,000	-26%

ACCOUNT DETAIL FOR NON-DEPARTMENTAL

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Vacation Payoff	-	7,000	7,000	7,000	0%
SALARIES & BENEFITS	-	7,000	7,000	7,000	0%
General Election	640	18,200	8,542	1,000	95%
General Plan Update- Carryover	-	-	-	50,000	-
Audio Visual Equipment	-	999	-	-	100%
Misc. Expenditures	860	60,000	60,079	1,000	98%
Equip Replacement - IT	-	-	-	5,000	-
OPERATING EXPENDITURES	1,500	79,199	68,621	57,000	-28%
TOTAL NON-DEPARTMENTAL EXPENDITURES	\$ 1,500	\$ 86,199	\$ 75,621	\$ 64,000	-26%

ENDING FUND BALANCE

\$	53,898	\$	(32,047)	\$	72,755	\$	5,725
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STREET CONSTRUCTION CAPITAL FUND**FUND 03**

BEGINNING FUND BALANCE \$ 165,428 \$ 160,416 \$ 138,500 \$ -

REVENUE

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Interest	1,702	500	911	-	-100%
Total Revenue	\$ 1,702	\$ 500	\$ 911	\$ -	-100%

TOTAL RESOURCES \$ 167,130 \$ 160,916 \$ 139,411 \$ -

EXPENSES

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Lemon Grove Realignment	28,630	160,916	139,411	-	-100%
CAPITAL EXPENSES	28,630	160,916	139,411	-	-100%

TOTAL EXPENSES \$ 28,630 \$ 160,916 \$ 139,411 \$ - 100%

ENDING FUND BALANCE \$ 138,500 \$ - \$ - \$ -

PARK LAND DEDICATION ORDINANCE**FUND 05**

BEGINNING FUND BALANCE \$ 86,600 \$ 70,157 \$ 65,716 \$ 72,931

REVENUE

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Interest	914	700	1,600	700	0%
Development Fees	17,451	15,000	15,615	15,000	0%
Total Revenue	\$ 18,365	\$ 15,700	\$ 17,215	\$ 15,700	0%

TOTAL RESOURCES \$ 104,965 \$ 85,857 \$ 82,931 \$ 88,631

EXPENSES

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Park Improvements	39,250	20,000	10,000	20,000	0%
CAPITAL EXPENSES	39,250	20,000	10,000	20,000	0%

TOTAL EXPENSES \$ 39,250 \$ 20,000 \$ 10,000 \$ 20,000 0%

ENDING FUND BALANCE \$ 65,716 \$ 46,601 \$ 72,931 \$ 68,631

GENERAL FUND RESERVE**FUND 06**

BEGINNING FUND BALANCE \$ 760,691 \$ 777,916 \$ 777,916 \$ 792,916

REVENUE

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Other Revenues	9,000	-	-	-	0%
Interest	8,225	6,000	15,000	10,000	67%
Total Revenue	\$ 17,225	\$ 6,000	\$ 15,000	\$ 10,000	67%

TOTAL RESOURCES \$ 777,916 \$ 783,916 \$ 792,916 \$ 802,916

EXPENSES

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
General Expenditures	-	-	-	-	-
Interfund Transfer	-	-	-	-	-
CAPITAL EXPENSES	-	-	-	-	-

TOTAL EXPENSES \$ - \$ - \$ - \$ - -

ENDING FUND BALANCE \$ 777,916 \$ 765,691 \$ 792,916 \$ 802,916

SUPPLEMENTAL LAW ENFORCEMENT SERVICES**FUND 07**

BEGINNING FUND BALANCE \$ 43,899 \$ 43,899 \$ 68,715 \$ 37,462

REVENUE

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Supplemental Law Enforcement Services	139,416	148,000	148,747	100,000	-32%
Total Revenue	\$ 139,416	\$ 148,000	\$ 148,747	\$ 100,000	-32%

TOTAL RESOURCES \$ 183,315 \$ 191,899 \$ 217,462 \$ 137,462

EXPENSES

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Interfund Transfers-Expenditure	114,600	180,000	180,000	130,000	-28%
OPERATING EXPENSE	114,600	180,000	180,000	130,000	-28%

TOTAL EXPENSES \$ 114,600 \$ 180,000 \$ 180,000 \$ 130,000 -28%

ENDING FUND BALANCE \$ 68,715 \$ 11,899 \$ 37,462 \$ 7,462

GRANTS**FUND 08**

BEGINNING FUND BALANCE \$ 75,200 \$ 84,541 \$ 71,359 \$ 53,373

REVENUE

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Interest	489	50	844	750	1400%
Misc Revenue	19,408	-	(3,723)	10,591	-
Beverage Container Recycling	11,511	8,803	6,945	6,945	-21%
Grant Rev - SHSGP 16	694	18,196	19,885	-	-100%
Grant Rev - SHSGP 17	-	-	-	19,293	-
Grant Rev - SHSGP 18	-	-	-	19,136	-
Grant Revenue-UASI	839	-	-	-	-
Grant Revenue-UASI 16	1,199	-	-	-	-
Grant Revenue-UASI 17	-	-	5,290	-	-
Grant Revenue-UASI 18	-	-	-	3,088	-
ADA Transit Plan	-	33,000	-	33,000	0%
Grant Revenue-CHAMPS	20,000	-	-	-	-
Grant Rev - TRL	-	-	-	46,071	-
Total Revenue	\$ 54,140	\$ 60,049	\$ 29,241	\$ 138,874	131%

TOTAL RESOURCES \$ 129,340 \$ 144,590 \$ 100,600 \$ 192,247

EXPENSES

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Dept of Justice JAG	10,850	-	3,518	7,073	-
Beverage Container Recycling	9,671	8,803	6,850	6,945	-21%
SHSGP Expenditures	19,886	-	694	-	-
SHSGP Expenditures 17	-	-	19,293	-	-
SHSGP Expenditures 18	-	-	-	19,136	-
Systemic Safety Analysis	6,004	-	-	-	-
UASI Expenditures	-	-	2,874	-	-
UASI Expenditures 16	-	-	2,038	-	-
UASI Expenditures 17	1,050	-	4,240	-	-
UASI Expenditures 18	-	-	-	3,088	-
Champs Program	10,520	18,243	3,500	4,527	-75%
ADA Transit Plan	-	33,000	-	33,000	0%
Tobacco Retailers License Program	-	-	-	46,071	-
Transfer Out	-	4,221	4,221	-	-100%
CAPITAL EXPENSES	57,981	64,267	47,228	119,840	86%

TOTAL EXPENSES \$ 57,981 \$ 64,267 \$ 47,228 \$ 119,840 86%

ENDING FUND BALANCE \$ 71,359 \$ 52,749 \$ 53,373 \$ 72,407

COMMUNITY DEVELOPMENT BLOCK GRANT (CDBG)

FUND 09

BEGINNING FUND BALANCE \$ - \$ - \$ - \$ -

REVENUE

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
CDBG Funds	-	229,060	229,060	-	-
Total Revenue	\$ -	\$ 229,060	\$ 229,060	\$ -	-

TOTAL RESOURCES \$ - \$ - \$ 229,060 \$ -

EXPENSES

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Golden Avenue Overlay	-	-	-	-	-
Street Rehab & ADA	-	229,060	229,060	-	-
CAPITAL EXPENSES	-	229,060	229,060	-	-

TOTAL EXPENSES \$ - \$ 229,060 \$ 229,060 \$ -

ENDING FUND BALANCE \$ - \$ - \$ - \$ -

LEMON GROVE ROADWAY LIGHTING DISTRICT: GENERAL BENEFIT**FUND 11**

BEGINNING FUND BALANCE \$ 353,285 \$ 487,966 \$ 513,742 \$ 487,966

REVENUE

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Interest	5,163	3,500	9,577	7,000	100%
General Lighting Assessment	196,973	190,000	197,780	195,000	3%
Total Revenue	202,136	193,500	207,357	202,000	4%

TOTAL RESOURCES \$ 555,421 \$ 681,466 \$ 721,099 \$ 689,966

EXPENSES

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries	23,453	23,300	18,726	19,851	-15%
Overtime	66	80	95	100	25%
Health Benefits	2,010	2,575	1,648	2,200	-15%
Health Benefits-Retirees	428	428	428	428	0%
Deferred Comp	58	62	62	62	0%
Medicare	302	339	293	300	-12%
Life Insurance	26	24	25	25	5%
Long Term Disability	186	177	120	50	-72%
Retirement	4,683	6,744	6,020	6,790	1%
SALARIES & BENEFITS	31,212	33,729	27,418	29,806	-12%
Mileage	341	950	322	200	-79%
Repair & Maintenance-St Lights	13,161	9,000	7,861	9,200	2%
Utilities-Telephone	26	25	25	25	0%
Utilities-Street Lights	75,080	80,000	82,118	83,000	4%
Interfund Transfers-Expenditure	9,400	9,400	9,400	9,400	0%
OPERATING EXPENSES	98,008	99,375	99,725	101,825	2%
Professional Services	7,616	9,000	8,061	9,000	0%
CONTRACTED SERVICES	7,616	9,000	8,061	9,000	0%
TOTAL EXPENSES	136,836	142,104	135,204	140,631	-1%
ENDING FUND BALANCE	\$ 513,742	\$ 539,362	\$ 585,895	\$ 549,335	

LEMON GROVE SANITATION DISTRICT: OPERATING FUND 15

BEGINNING FUND BALANCE \$ 6,558,014 \$ 7,690,455 \$ 7,690,455 \$ 7,759,765

REVENUE

Account Description	2017-2018	2018-2019	2018-2019	2019-2020	% Change
	Actual	Budget	Projected	Budget	
Other Revenues	79,768	88,000	90,000	90,000	2%
Interest	98,536	65,000	160,000	100,000	54%
Sewer Service Fee	6,329,914	6,500,000	6,511,000	6,698,000	3%
Sewer Service-LGSD La Mesa SD	43,250	50,000	42,373	42,375	-15%
Transfer from Pure Water Reserve	-	-	-	1,481,014	-
Total Revenue	\$ 6,551,468	\$ 6,703,000	\$ 6,803,373	\$ 8,411,389	25%

TOTAL RESOURCES \$ 13,109,482 \$ 14,393,455 \$ 14,493,827 \$ 16,171,154

EXPENSES

Account Description	2017-2018	2018-2019	2018-2019	2019-2020	% Change
	Actual	Budget	Projected	Budget	
Salaries	828,982	868,677	783,251	724,631	-17%
Overtime	20,588	32,000	26,416	32,000	0%
Extra Help	5,166	27,200	-	-	-100%
Health Benefits	109,971	142,731	119,935	110,000	-23%
Health Benefits-Retirees	16,164	34,884	17,214	18,000	-48%
Deferred Comp	1,673	20,696	1,807	2,000	-90%
Employee Assistance Program	-	380	317	400	5%
Workers Compensation Insurance	18,463	57,050	41,019	36,016	-37%
Medicare	13,601	32,595	12,883	11,500	-65%
Life Insurance	1,222	20,057	1,552	245	-99%
Long Term Disability	6,565	6,200	5,776	2,025	-67%
Retirement	66,751	200,229	187,957	227,615	14%
GASB 75 - OPEB Expense	439,412	-	50,000	50,000	-
GASB 68 - Pension Expense	640,656	-	500,000	400,000	-
SALARIES & BENEFITS	2,169,214	1,442,699	1,748,127	1,614,432	12%

Claims Paid	26,604	40,000	20,000	40,000	0%
Computer Maintenance	37,514	45,000	52,156	44,000	-2%
Equipment Rental	-	5,000	-	5,000	0%
Fuel	8,611	15,000	9,296	12,000	-20%
Industrial Enforcement	110	10,000	-	10,000	0%
Insurance-Liability	26,610	27,750	30,439	31,293	13%
Insurance-Property	18,170	20,350	17,500	10,477	-49%
Medical Examinations	751	600	460	600	0%
Membership and Dues	1,375	1,900	1,254	1,900	0%
Mileage	7,694	8,000	6,351	5,680	-29%
Office Supplies	928	1,900	1,500	1,900	0%
Protective Clothing	5,077	4,000	4,000	4,000	0%
Repairs & Maintenance	-	1,500	119	15,000	900%
Repair & Maint. -Equipment	10,019	13,000	16,484	14,000	8%
Repair & Maint-Vehicles	9,373	10,000	7,908	10,000	0%

Account Description	2017-2018	2018-2019	2018-2019	2019-2020	% Change
	Actual	Budget	Projected	Budget	
Tools and Supplies	10,591	9,000	8,148	59,000	556%
Traffic Safety Equipment	-	500	-	500	0%
Training	900	4,000	2,000	4,000	0%
Travel and Meetings	-	1,900	-	1,900	0%
Utilities-Gas and Electric	1,547	1,500	1,711	1,700	13%
Utilities-Telephone	4,259	4,500	4,168	4,500	0%
Utilities-Water	1,954	2,000	1,536	2,000	0%
Interfund Transfers- GF	489,284	305,073	305,073	-	-100%
OPERATING EXPENSES	661,371	532,473	490,102	279,450	-48%
Contractual Services	37,743	45,000	35,000	200,000	344%
Emergency Callout and Repair	-	5,000	-	5,000	0%
Litigation Services	11,105	30,000	1,876	20,000	-33%
Metro Annual Capacity & Treatment	2,265,065	3,100,000	3,041,884	3,265,112	5%
Sewage Transportation	52,256	45,000	45,536	46,000	2%
Professional Services	188,479	216,000	205,791	210,000	-3%
Professional Svcs-City Atty	-	30,000	-	30,000	0%
Restoration Services	-	10,000	-	10,000	0%
Street Sweeping	20,510	19,000	15,748	19,000	0%
CONTRACTED SERVICES	2,575,158	3,500,000	3,345,834	3,805,112	9%
Metro Pure Water Phase I	-	-	-	1,481,014	-
Transfer to Gas Tax Fund	100,000	100,000	100,000	100,000	0%
Transfer to Sanitation Capital Fund	-	-	-	1,500,000	-
Transfer to Pure Water Fund	-	1,000,000	1,000,000	-	-100%
Transfer to Self-Insured Liability Fund	-	-	50,000	50,000	-
CAPITAL EXPENSES	100,000	1,100,000	1,150,000	3,131,014	185%
TOTAL EXPENSES	\$ 5,505,743	\$ 6,575,172	\$ 6,734,063	\$ 8,830,008	34%
OPERATING RESERVE FUND BALANCE	\$ 2,300,000	\$ 2,300,000	\$ 2,300,000	\$ 2,300,000	
ENDING FUND BALANCE	\$ 5,390,455	\$ 5,518,283	\$ 5,459,765	\$ 5,041,146	

LEMON GROVE SANITATION DISTRICT: CAPITAL**FUND 16**

BEGINNING FUND BALANCE \$ 10,719,426 \$ 10,514,750 \$ 10,514,750 \$ 9,873,964

REVENUE

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Interest	43,734	30,000	67,000	45,000	50%
Interfund Transfers-Revenue	-	-	-	1,500,000	-
Total Revenue	\$ 43,734	\$ 30,000	\$ 67,000	\$ 1,545,000	5050%

TOTAL RESOURCES \$ 10,763,160 \$ 10,544,750 \$ 10,581,750 \$ 11,418,964

EXPENSES

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
CIP-Lemon Grove Realignment	458,460	-	20,234	-	-
FY 16-17 Sewer Main Rehab (Construct)	153,512	-	-	-	-
FY 17-18 Sewer Main Rehab (Design)	69,365	73,000	47,996	-	-100%
FY 17-18 Sewer Main Rehab (Construct)	-	822,000	448,196	-	-100%
FY 18-19 Sewer Main Rehab (Design)	-	341,000	170,505	170,495	-
FY 18-19 Sewer Main Rehab (Construct)	-	-	-	700,000	-
FY19-20 Sewer Main Rehab (Design)	-	-	-	300,000	-
FY19-20 Sewer Main Rehab (Construct)	-	-	-	1,180,000	-
Sewer Maintenance (Contract)	29,045	30,900	20,855	6,000	-81%
CAPITAL EXPENSES	710,382	1,266,900	707,786	2,356,495	86%

TOTAL EXPENSES \$ 710,382 \$ 1,266,900 \$ 707,786 \$ 2,356,495 86%

METRO RESERVE FUND BALANCE \$ 3,100,000 \$ 3,100,000 \$ 3,100,000 \$ 3,100,000

ENDING FUND BALANCE \$ 7,414,750 \$ 6,177,850 \$ 6,773,964 \$ 5,962,469

LEMON GROVE SANITATION DISTRICT: PURE WATER RESERVE**FUND 17**

BEGINNING FUND BALANCE \$ - \$ 3,698,651 \$ 3,698,651 \$ 4,776,310

REVENUE

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Interest	(1,349)	5,000	77,659	50,000	900%
Transfer from Sanitation Operations	3,700,000	1,000,000	1,000,000	-	-100%
Total Revenue	\$ 3,698,651	\$ 1,005,000	\$ 1,077,659	\$ 50,000	-95%

TOTAL RESOURCES \$ 3,698,651 \$ 4,703,651 \$ 4,776,310 \$ 4,826,310

EXPENSES

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Transfer to Sanitation Operations	-	-	-	1,481,014	-
CAPITAL EXPENSES	\$ -	\$ -	\$ -	\$ 1,481,014	-

TOTAL EXPENSES \$ - \$ - \$ - \$ 1,481,014

ENDING FUND BALANCE \$ 3,698,651 \$ 4,703,651 \$ 4,776,310 \$ 3,345,296

SIDEWALK CAPITAL RESERVE**FUND 18**

BEGINNING FUND BALANCE \$ 23,261 \$ 23,261 \$ 23,510 \$ 23,860

REVENUE

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Interest	249	180	350	250	39%
Total Revenue	\$ 249	\$ 180	\$ 350	\$ 250	39%

TOTAL RESOURCES \$ 23,510 \$ 23,441 \$ 23,860 \$ 24,110

ENDING FUND BALANCE \$ 23,510 \$ 23,441 \$ 23,860 \$ 24,110

LEMON GROVE SANITATION DISTRICT: CAPACITY

FUND 19

BEGINNING FUND BALANCE \$ - \$ 16,017 \$ 16,017 \$ 36,522

REVENUE

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Interest	17	-	250	150	-
Sewer Capacity Fee	16,000	16,000	20,255	15,000	-6%
Total Revenue	\$ 16,017	\$ 16,000	\$ 20,505	\$ 15,150	-6%

TOTAL RESOURCES \$ 16,017 \$ 32,017 \$ 36,522 \$ 51,672

ENDING FUND BALANCE \$ 16,017 \$ 32,017 \$ 36,522 \$ 51,672

WILDFLOWER ASSESSMENT DISTRICT**FUND 22**

BEGINNING FUND BALANCE \$ 4,437 \$ 3,366 \$ 1,740 \$ 3,262

REVENUE

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Interest	26	20	35	20	0%
Annual Assessment Revenue	9,758	9,650	10,441	10,750	11%
Total Revenue	9,784	9,670	10,476	10,770	11%

TOTAL RESOURCES \$ 14,221 \$ 13,036 \$ 12,216 \$ 14,032

EXPENSES

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries	5,051	4,578	2,196	2,445	-47%
Health Benefits	285	460	42	200	-57%
Medicare	0	66	91	35	-47%
Life Insurance	1	-	1	1	-
Long Term Disability	661	60	6	5	-92%
Retirement	782	1,696	1,218	1,115	-34%
SALARIES & BENEFITS	6,780	6,860	3,554	3,801	-45%
Utilities-Gas and Electric	104	100	128	130	30%
Utilities-Water	1,908	850	1,583	1,550	82%
Interfund Transfers-Expenditure	100	100	100	100	0%
OPERATING EXPENSES	2,112	1,050	1,812	1,780	70%
Contractual Services	3,588	2,800	3,588	3,600	29%
CONTRACTED SERVICES	3,588	2,800	3,588	3,600	29%
TOTAL EXPENSES	12,480	10,710	8,954	9,181	-14%
ENDING FUND BALANCE	\$ 1,740	\$ 6,092	\$ 3,262	\$ 4,851	

SELF-INSURED WORKERS COMPENSATION RESERVE**FUND 25**

BEGINNING FUND BALANCE \$ 547,879 \$ 527,414 \$ 553,270 \$ 529,021

REVENUE

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Other Revenues	1,846	-	-	-	0%
Interest	6,985	4,000	15,000	10,000	150%
Total Revenue	8,831	4,000	15,000	10,000	150%

TOTAL RESOURCES \$ 556,710 \$ 531,414 \$ 568,270 \$ 539,021

EXPENSES

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Claims Paid	-	-	-	-	-
Credit Card and Bank Fees	165	100	60	60	-40%
Estimated Claims payable	3,275	200	200	200	0%
Interfund Transfers-Expenditure	-	20,000	38,989	40,000	100%
OPERATING EXPENSES	3,440	20,300	39,249	40,260	98%

TOTAL EXPENSES 3,440 20,300 39,249 40,260 98%

ENDING FUND BALANCE \$ 553,270 \$ 511,114 \$ 529,021 \$ 498,761

STORM WATER PROGRAM

FUND 26

BEGINNING FUND BALANCE \$ (6,302) \$ - \$ 265 \$ (0)

REVENUE

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Storm Water Fees/Commercial	48,404	48,000	46,449	46,500	-3%
Storm Water Fees/Discretionary	16,029	13,000	13,538	13,000	0%
Interfund Transfer Revenue	87,393	168,567	62,460	132,304	-22%
Total Revenue	\$ 151,826	\$ 229,567	\$ 122,447	\$ 191,804	-16%

TOTAL RESOURCES \$ 145,524 \$ 229,567 \$ 122,712 \$ 191,804

EXPENSES

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Salaries	28,298	942	863	11,217	1091%
Overtime	352	-	-	-	-
Health Benefits	2,997	569	569	900	58%
Medicare	424	386	20	165	-57%
Life Insurance	8	10	5	2	-80%
Long Term Disability	337	340	100	16	-95%
Retirement	5,522	60	60	3,914	6423%
SALARIES & BENEFITS	37,938	2,307	1,617	16,214	603%

General Expenditure	10,673	15,000	14,230	15,000	0%
Mileage	377	350	-	90	-74%
Training	1,170	1,300	-	500	-62%
Repair & Maintenance - Storm Grates	-	15,000	-	-	-100%
OPERATING EXPENSES	12,220	31,650	14,230	15,590	-51%

Professional Services	54,809	69,745	66,110	70,000	0%
CONTRACTED SERVICES	54,809	69,745	66,110	70,000	0%

MOU Cost Share Agreement	40,292	95,865	40,755	60,000	-37%
Mandated Storm Grates	-	30,000	-	30,000	0%
CAPITAL EXPENSES	40,292	125,865	40,755	90,000	-28%

TOTAL EXPENSES \$ 145,259 \$ 229,567 \$ 122,712 \$ 191,804 -16%

ENDING FUND BALANCE \$ 265 \$ - \$ (0) \$ (0)

REGIONAL TRANSPORTATION CONGESTION IMPROVEMENT PROGRAM**FUND 27**

BEGINNING FUND BALANCE \$ 517,807 \$ 572,390 \$ 574,200 \$ 27

REVENUE

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Interest	5,909	200	2,020	40	-80%
RTCIP Fees	50,484	50,000	52,888	10,000	-80%
Total Revenue	\$ 56,393	\$ 50,200	\$ 54,908	\$ 10,040	-80%

TOTAL RESOURCES \$ 574,200 \$ 622,590 \$ 629,108 \$ 10,067

EXPENSES

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
LG Realignment Project	-	629,081	629,081	-	-
CAPITAL EXPENSES	-	629,081	629,081	-	-

TOTAL EXPENSES \$ - \$ 629,081 \$ 629,081 \$ - -

ENDING FUND BALANCE \$ 574,200 \$ (6,491) \$ 27 \$ 10,067

SUCCESSOR AGENCY FUNDS 60 & 64

BEGINNING FUND BALANCE \$ (14,635,298) \$ (14,425,596) \$ (13,037,347) \$ (11,937,040)

REVENUE

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Other Revenue	-	1,000	-	-	-100%
ROPS Reimbursement	2,000,981	1,932,090	1,826,897	2,265,251	17%
Interest	32,415	6,500	1,786	-	-100%
Total Revenue	\$ 2,033,396	\$ 1,939,590	\$ 1,828,683	\$ 2,265,251	17%

TOTAL RESOURCES \$ (12,601,902) \$ (12,486,006) \$ (11,208,664) \$ (9,671,789)

EXPENSES

Account Description	2017-2018 Actual	2018-2019 Budget	2018-2019 Projected	2019-2020 Budget	% Change
Administrative Reimbursement	-	80,000	60,813	86,700	8%
Interest Expense-2007 Bond	552,264	538,412	538,412	529,084	-2%
Interest Expense-2010 Bond	281,665	265,043	265,043	248,430	-6%
Interest Expense-2014 Bond	213,500	208,636	208,636	204,961	-2%
OPERATING EXPENSES	1,047,430	1,092,091	1,072,904	1,069,175	-2%
Professional Services	2,420	6,000	12,994	13,300	122%
CONTRACTED SERVICES	2,420	6,000	12,994	13,300	122%
CIP-Lemon Grove Realignment	95,595	850,000	464,703	-	-100%
CAPITAL EXPENSES	95,595	850,000	464,703	-	-100%
TOTAL EXPENSES	\$ 1,145,445	\$ 1,948,091	\$ 1,550,601	\$ 1,082,475	-44%

In addition, the following principal payments have or will be made against existing liability accounts:

2007 Tax Allocation Bond - principal	215,000	225,000	225,000	230,000
2010 Tax Allocation Bond - principal	380,000	395,000	395,000	410,000
2014 Tax Allocation Bond - principal	115,000	120,000	120,000	125,000
TOTAL BOND PRINCIPAL PAYMENTS	\$ 710,000	\$ 740,000	\$ 740,000	\$ 765,000

Loan Payable - cash loan from GF	\$ -	\$ 100,000	\$ 82,225	\$ 417,775
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ENDING FUND BALANCE \$ (13,037,347) \$ (13,594,097) \$ (11,937,040) \$ (9,571,489)

SALARY PLAN FY 2019-20

<u>ACCOUNT CLERK</u>	<u>RANGE</u>	A	B	C	D	E	F	G
	17.2							
ANNUAL		29,437.20	30,909.06	32,460.48	34,091.46	35,782.11	36,677.16	37,592.10
MONTHLY		2,453.10	2,575.76	2,705.04	2,840.96	2,981.84	3,056.43	3,132.68
BI-WEEKLY		1,132.20	1,188.81	1,248.48	1,311.21	1,376.24	1,410.66	1,445.85
HOURLY		14.80	15.54	16.32	17.14	17.99	18.44	18.90
<u>ACCOUNTING ANALYST</u>								
	32.7							
ANNUAL		62,733.06	65,875.68	69,157.53	72,618.39	76,258.26	78,167.70	80,116.92
MONTHLY		5,227.76	5,489.64	5,763.13	6,051.53	6,354.86	6,513.98	6,676.41
BI-WEEKLY		2,412.81	2,533.68	2,659.91	2,793.02	2,933.01	3,006.45	3,081.42
HOURLY		31.54	33.12	34.77	36.51	38.34	39.30	40.28
<u>ADMINISTRATIVE ASSISTANT</u>								
	24.2							
ANNUAL		41,430.87	43,499.43	45,687.33	47,954.79	50,361.48	51,614.68	52,907.40
MONTHLY		3,452.57	3,624.95	3,807.28	3,996.23	4,196.79	4,301.22	4,408.95
BI-WEEKLY		1,593.50	1,673.06	1,757.21	1,844.42	1,936.98	1,985.18	2,034.90
HOURLY		20.83	21.87	22.97	24.11	25.32	25.95	26.60
<u>ADMINISTRATIVE ANALYST</u>								
	29.7							
ANNUAL		54,180.36	56,905.29	59,749.56	62,733.06	65,875.68	67,526.68	69,217.20
MONTHLY		4,515.03	4,742.11	4,979.13	5,227.76	5,489.64	5,627.22	5,768.10
BI-WEEKLY		2,083.86	2,188.67	2,298.06	2,412.81	2,533.68	2,597.18	2,662.20
HOURLY		27.24	28.61	30.04	31.54	33.12	33.95	34.80
<u>ADMINISTRATIVE SERVICES DIRECTOR</u>								

ANNUAL		97,858.80	102,751.74	107,883.36	113,273.55	118,942.20	121,925.70	124,969.00
MONTHLY		8,154.90	8,562.65	8,990.28	9,439.46	9,911.85	10,160.48	10,414.08
BI-WEEKLY		3,763.80	3,951.99	4,149.36	4,356.68	4,574.70	4,689.45	4,806.50
HOURLY		49.20	51.66	54.24	56.95	59.80	61.30	62.83
<u>ASSISTANT CITY MANAGER/PUBLIC WORKS DIRECTOR</u>								
	52.2							
ANNUAL		127,276.11	133,621.02	140,304.06	147,325.23	154,684.53	158,543.32	162,501.30
MONTHLY		10,606.34	11,135.09	11,692.01	12,277.10	12,890.38	13,211.94	13,541.78
BI-WEEKLY		4,895.24	5,139.27	5,396.31	5,666.36	5,949.41	6,097.82	6,250.05
HOURLY		63.99	67.18	70.54	74.07	77.77	79.71	81.70
<u>ASSISTANT ENGINEER</u>								
	32.7							
ANNUAL		62,733.06	65,875.68	69,157.53	72,618.39	76,258.26	78,167.70	80,116.92
MONTHLY		5,227.76	5,489.64	5,763.13	6,051.53	6,354.86	6,513.98	6,676.41
BI-WEEKLY		2,412.81	2,533.68	2,659.91	2,793.02	2,933.01	3,006.45	3,081.42
HOURLY		31.54	33.12	34.77	36.51	38.34	39.30	40.28
<u>ASSISTANT PLANNER</u>								
	32.7							
ANNUAL		62,733.06	65,875.68	69,157.53	72,618.39	76,258.26	78,167.70	80,116.92
MONTHLY		5,227.76	5,489.64	5,763.13	6,051.53	6,354.86	6,513.98	6,676.41
BI-WEEKLY		2,412.81	2,533.68	2,659.91	2,793.02	2,933.01	3,006.45	3,081.42
HOURLY		31.54	33.12	34.77	36.51	38.34	39.30	40.28
<u>ASSOCIATE ACCOUNTANT</u>								
	29.7							
ANNUAL		54,180.36	56,905.29	59,749.56	62,733.06	65,875.68	67,526.68	69,217.20
MONTHLY		4,515.03	4,742.11	4,979.13	5,227.76	5,489.64	5,627.22	5,768.10
BI-WEEKLY		2,083.86	2,188.67	2,298.06	2,412.81	2,533.68	2,597.18	2,662.20
HOURLY		27.24	28.61	30.04	31.54	33.12	33.95	34.80

ASSOCIATE CIVIL ENGINEER

	36.5	A	B	C	D	E	F	G
ANNUAL		74,030.58	77,750.01	81,628.56	85,706.01	90,002.25	92,249.82	94,557.06
MONTHLY		6,169.22	6,479.17	6,802.38	7,142.17	7,500.19	7,687.49	7,879.76
BI-WEEKLY		2,847.33	2,990.39	3,139.56	3,296.39	3,461.63	3,548.07	3,636.81
HOURLY		37.22	39.09	41.04	43.09	45.25	46.38	47.54

ASSOCIATE PLANNER

	33.4	A	B	C	D	E	F	G
ANNUAL		64,920.96	68,163.03	71,564.22	75,144.42	78,903.63	80,872.74	82,901.52
MONTHLY		5,410.08	5,680.25	5,963.69	6,262.04	6,575.30	6,739.40	6,908.46
BI-WEEKLY		2,496.96	2,621.66	2,752.47	2,890.17	3,034.76	3,110.49	3,188.52
HOURLY		32.64	34.27	35.98	37.78	39.67	40.66	41.68

BATTALION CHIEF

	36.2	A	B	C	D	76.5 SHIFT Y	
ANNUAL		89,652.68	95,633.20	102,054.68	108,999.80	115,476.48	
MONTHLY		7,471.06	7,969.43	8,504.56	9,083.32	9,623.04	
BI-WEEKLY (106 hrs)		3,448.18	3,678.20	3,925.18	4,192.30	4,440.83	
HOURLY (2,756 hrs/yr)		32.53	34.70	37.03	39.55	58.05	
MONTHLY (56 hrs/wk. RATE) (53 regular + 3 sch'd OT)		8,105.40	8,646.08	9,226.65	9,854.55		

CITY CLERK

	33.6	A	B	C	D	E	F	G
ANNUAL		70,868.07	74,408.49	78,127.92	82,026.36	86,143.59	88,291.84	90,499.50
MONTHLY		5,905.67	6,200.71	6,510.66	6,835.53	7,178.63	7,357.65	7,541.63
BI-WEEKLY		2,725.70	2,861.87	3,004.92	3,154.86	3,313.22	3,395.84	3,480.75
HOURLY		35.63	37.41	39.28	41.24	43.31	44.39	45.50

CITY MANAGER

CONTRACT								
ANNUAL						175,000.00		
MONTHLY						14,583.33		
BI-WEEKLY						6,730.77		
HOURLY						87.98		

CODE ENFORCEMENT OFFICER

	26.2	A	B	C	D	E	F	G
HOURLY		22.97	24.11	25.32	26.59	27.92	28.62	29.34

CODE ENFORCEMENT OFFICER/WATER QUALITY INSPECTOR

	29.7	A	B	C	D	E	F	G
ANNUAL		54,180.36	56,905.29	59,749.56	62,733.06	65,875.68	67,526.68	69,217.20
MONTHLY		4,515.03	4,742.11	4,979.13	5,227.76	5,489.64	5,627.22	5,768.10
BI-WEEKLY		2,083.86	2,188.67	2,298.06	2,412.81	2,533.68	2,597.18	2,662.20
HOURLY		27.24	28.61	30.04	31.54	33.12	33.95	34.80

COMMUNITY DEVELOPMENT MANAGER

	---	A	B	C	D	E	F	G
ANNUAL		96,117.98	100,923.88	105,970.07	111,268.57	116,832.00	119,757.82	121,958.72
MONTHLY		8,009.83	8,410.32	8,830.84	9,272.38	9,736.00	9,979.82	10,163.23
BI-WEEKLY		3,696.85	3,881.69	4,075.77	4,279.56	4,493.54	4,606.07	4,690.72
HOURLY		48.32	50.74	53.28	55.94	58.74	60.21	61.72

COMMUNITY SERVICES ASSISTANT

	19.1	A	B	C	D	E	F	G
ANNUAL		32,301.36	33,912.45	35,622.99	37,393.10	39,262.86	40,237.60	41,251.86
MONTHLY		2,691.78	2,826.04	2,968.58	3,116.10	3,271.91	3,353.13	3,437.66
BI-WEEKLY		1,242.36	1,304.33	1,370.12	1,438.20	1,510.11	1,547.60	1,586.61
HOURLY		16.24	17.05	17.91	18.80	19.74	20.23	20.74

COMMUNITY SERVICES SPECIALIST

	---	A	B	C	D	E	F	G
ANNUAL		32,875.19	34,518.95	36,244.90	38,057.14	39,960.00	40,953.64	41,967.90
MONTHLY		2,739.60	2,876.58	3,020.41	3,171.43	3,330.00	3,412.80	3,497.33
BI-WEEKLY		1,264.43	1,327.65	1,394.03	1,463.74	1,536.92	1,575.14	1,614.15
HOURLY		16.53	17.35	18.22	19.13	20.09	20.59	21.10

COMMUNITY SERVICES SUPERINTENDENT

	36.1	A	B	C	D	E	F	G
ANNUAL		74,030.58	77,750.01	81,628.56	85,706.01	90,002.25	92,249.82	94,557.06
MONTHLY		6,169.22	6,479.17	6,802.38	7,142.17	7,500.19	7,687.49	7,879.76
BI-WEEKLY		2,847.33	2,990.39	3,139.56	3,296.39	3,461.63	3,548.07	3,636.81
HOURLY		37.22	39.09	41.04	43.09	45.25	46.38	47.54

DEVELOPMENT SERVICES DIRECTOR

	42.2	A	B	C	D	E	F	G
ANNUAL		99,708.57	104,700.96	109,932.03	115,441.56	121,209.66	124,232.94	127,335.78
MONTHLY		8,309.05	8,725.08	9,161.00	9,620.13	10,100.81	10,352.75	10,611.32
BI-WEEKLY		3,834.95	4,026.96	4,228.16	4,440.06	4,661.91	4,778.19	4,897.53
HOURLY		50.13	52.64	55.27	58.04	60.94	62.46	64.02

DEVELOPMENT SERVICES TECHNICIAN II

	29.7	A	B	C	D	E	F	G
ANNUAL		54,180.36	56,905.29	59,749.56	62,733.06	65,875.68	67,526.68	69,217.20
MONTHLY		4,515.03	4,742.11	4,979.13	5,227.76	5,489.64	5,627.22	5,768.10
BI-WEEKLY		2,083.86	2,188.67	2,298.06	2,412.81	2,533.68	2,597.18	2,662.20
HOURLY		27.24	28.61	30.04	31.54	33.12	33.95	34.80

ENGINEERING INSPECTOR

	29.7	A	B	C	D	E	F	G
ANNUAL		54,180.36	56,905.29	59,749.56	62,733.06	65,875.68	67,526.68	69,217.20
MONTHLY		4,515.03	4,742.11	4,979.13	5,227.76	5,489.64	5,627.22	5,768.10
BI-WEEKLY		2,083.86	2,188.67	2,298.06	2,412.81	2,533.68	2,597.18	2,662.20
HOURLY		27.24	28.61	30.04	31.54	33.12	33.95	34.80

ENGINEERING TECH III

	29.7	A	B	C	D	E	F	G
ANNUAL		54,180.36	56,905.29	59,749.56	62,733.06	65,875.68	67,526.68	69,217.20
MONTHLY		4,515.03	4,742.11	4,979.13	5,227.76	5,489.64	5,627.22	5,768.10
BI-WEEKLY		2,083.86	2,188.67	2,298.06	2,412.81	2,533.86	2,597.18	2,662.20
HOURLY		27.24	28.61	30.04	31.54	33.12	33.95	34.80

EXECUTIVE ASSISTANT

	22.6	A	B	C	D	E	F	G
ANNUAL		41,430.87	43,499.43	45,687.33	47,954.79	50,361.48	51,614.68	52,907.40
MONTHLY		3,452.57	3,624.95	3,807.28	3,996.23	4,196.79	4,301.22	4,408.95
BI-WEEKLY		1,593.50	1,673.06	1,757.21	1,844.42	1,936.98	1,985.18	2,034.90
HOURLY		20.83	21.87	22.97	24.11	25.32	25.95	26.60

FACILITY TECH I

	15.4	A	B	C	D	E	F	G
ANNUAL		30,610.71	32,142.24	33,753.33	35,443.98	37,194.30	38,129.26	39,083.98
MONTHLY		2,550.89	2,678.52	2,812.78	2,953.67	3,099.53	3,177.44	3,257.00
BI-WEEKLY		1,177.34	1,236.24	1,298.21	1,363.23	1,430.55	1,466.51	1,503.23
HOURLY		15.39	16.16	16.97	17.82	18.70	19.17	19.65

FACILITY TECH II

	19.4	A	B	C	D	E	F	G
ANNUAL		37,214.19	39,063.96	41,033.07	43,081.74	45,229.86	46,363.72	47,517.34
MONTHLY		3,101.18	3,255.33	3,419.42	3,590.15	3,769.16	3,863.64	3,959.78
BI-WEEKLY		1,431.32	1,502.46	1,578.20	1,656.99	1,739.61	1,783.22	1,827.59
HOURLY		18.71	19.64	20.63	21.66	22.74	23.31	23.89

FINANCE MANAGER

	36.1	A	B	C	D	E	F	G
ANNUAL		74,030.58	77,750.01	81,628.56	85,706.01	90,002.25	92,249.82	94,557.06
MONTHLY		6,169.22	6,479.17	6,802.38	7,142.17	7,500.19	7,687.49	7,879.76
BI-WEEKLY		2,847.33	2,990.39	3,139.56	3,296.39	3,461.63	3,548.07	3,636.81
HOURLY		37.22	39.09	41.04	43.09	45.25	46.38	47.54

FIRE CAPTAIN

	38.45	A	B	C	D
ANNUAL		84,967.48	90,644.84	96,735.60	103,294.88
MONTHLY		7,080.62	7,553.74	8,061.30	8,607.91
BI-WEEKLY (106 hrs)		3,267.98	3,486.34	3,720.60	3,972.88
HOURLY (2,756 hrs/yr)		30.83	32.89	35.10	37.48

**MONTHLY (56 hrs/wk. RATE)
(53 regular + 3 sch'd OT)**

7,681.81 8,195.10 8,745.75 9,338.77

FIRE DIVISION CHIEF

	43.75	A	B	C	D	E		
ANNUAL		107,585.01	112,955.31	118,623.96	124,531.29	130,776.75		
MONTHLY		8,965.42	9,412.94	9,885.33	10,337.61	10,898.06		
BI-WEEKLY		4,137.89	4,344.44	4,562.46	4,789.67	5,029.88		
HOURLY		54.09	56.79	59.64	62.61	65.75		

FIRE ENGINEER

	34.25	A	B	C	D		
ANNUAL		69,230.72	73,860.80	78,821.60	84,140.68		
MONTHLY		5,769.23	6,155.07	6,568.47	7,011.72		
BI-WEEKLY (106 hrs)		2,662.72	2,840.80	3,031.60	3,236.18		
HOURLY (2,756 hrs/yr)		25.12	26.80	28.60	30.53		
MONTHLY (56 hrs/wk. RATE) (53 regular + 3 sch'd OT)		6,259.07	6,677.67	7,126.17	7,607.06		

FIRE INSPECTOR

	25.9	A	B	C	D	E	F	G
ANNUAL		45,906.12	48,193.47	50,620.05	53,146.08	55,851.12	57,243.42	58,675.50
MONTHLY		3,825.51	4,016.12	4,218.34	4,428.84	4,654.26	4,770.29	4,889.63
BI-WEEKLY		1,765.62	1,853.60	1,946.93	2,044.08	2,148.12	2,201.67	2,256.75
HOURLY		23.08	24.23	25.45	26.72	28.08	28.78	29.50

FIRE PREVENTION/PUBLIC EDUCATION SPECIALIST

	24.5	A	B	C	D	E	F	G
HOURLY		23.08	24.23	25.45	26.72	28.08	28.78	29.5

FIREFIGHTER/PARAMEDIC

	30.1	A	B	C	D	E	
ANNUAL		66,557.40	68,817.32	71,049.68	75,817.56	80,971.28	
MONTHLY		5,546.45	5,734.78	5,920.81	6,318.13	6,747.61	
BI-WEEKLY (106 hrs)		2,559.90	2,646.82	2,732.68	2,916.06	3,114.28	
HOURLY (2,756 hrs/yr)		24.15	24.97	25.78	27.51	29.38	
MONTHLY (56 hrs/wk. RATE) (53 regular + 3 sch'd OT)		6,017.38	6,221.70	6,423.52	6,854.58	7,320.52	

HUMAN RESOURCES MANAGER

	36.1	A	B	C	D	E	F	G
ANNUAL		74,030.58	77,750.01	81,628.56	85,706.01	90,002.25	92,249.82	94,557.06
MONTHLY		6,169.22	6,479.17	6,802.38	7,142.17	7,500.19	7,687.49	7,879.76
BI-WEEKLY		2,847.33	2,990.39	3,139.56	3,296.39	3,461.63	3,548.07	3,636.81
HOURLY		37.22	39.09	41.04	43.09	45.25	46.38	47.54

LICENSE CLERK

	21.0	A	B	C	D	E	F	G
ANNUAL		35,443.98	37,214.19	39,063.96	41,033.07	43,081.74	44,155.80	45,269.64
MONTHLY		2,953.67	3,101.18	3,255.33	3,419.42	3,590.15	3,679.65	3,772.47
BI-WEEKLY		1,363.23	1,431.32	1,502.46	1,578.20	1,656.99	1,698.30	1,741.14
HOURLY		17.82	18.71	19.64	20.63	21.66	22.20	22.76

MAINTENANCE SERVICE WORKER

Until Jan 1, 2020	21.0	A	B	C	D	E	F	G
ANNUAL		23,291.19	24,464.70	25,697.88	26,970.84	28,323.36	29,039.40	29,775.46
MONTHLY		1,940.93	2,038.73	2,141.49	2,247.57	2,360.28	2,419.95	2,481.29
BI-WEEKLY		895.82	940.95	988.38	1,037.34	1,089.36	1,116.90	1,145.21
HOURLY		11.71	12.30	12.92	13.56	14.24	14.60	14.97

MAINTENANCE SERVICE WORKER

Beginning Jan 1, 2020	21.0	A	B	C	D	E	F	G
ANNUAL		25,857.00	27,149.85	28,502.37	29,934.45	31,426.20	32,221.80	33,037.29
MONTHLY		2,154.75	2,262.49	2,375.20	2,494.54	2,618.85	2,685.15	2,753.11
BI-WEEKLY		994.50	1,044.23	1,096.25	1,151.33	1,208.70	1,239.30	1,270.67
HOURLY		13.00	13.65	14.33	15.05	15.80	16.20	16.61

MANAGEMENT ANALYST

	33.2	A	B	C	D	E	F	G
ANNUAL		64,284.48	67,486.77	70,868.07	74,408.49	78,127.92	80,077.14	82,086.16
MONTHLY		5,357.04	5,623.90	5,905.67	6,200.71	6,510.66	6,673.10	6,840.51
BI-WEEKLY		2,472.48	2,595.65	2,725.70	2,861.87	3,004.92	3,079.89	3,157.16
HOURLY		32.32	33.93	35.63	37.41	39.28	40.26	41.27

OFFICE AID

Until Jan 1, 2020	10.8	A	B	C	D	E	F	G
HOURLY		12.00	12.60	13.23	13.89	14.58	14.94	15.31
Beginning Jan 1, 2020	10.8	A	B	C	D	E	F	G
HOURLY		13.00	13.65	14.33	15.05	15.80	16.20	16.61

PARK RANGER

	19.6	A	B	C	D	E	F	G
HOURLY		16.65	17.48	18.35	19.27	20.23	20.74	21.26

PRINCIPAL PLANNER

	36.1	A	B	C	D	E	F	G
ANNUAL		74,030.58	77,750.01	81,628.01	85,706.01	90,002.25	92,249.82	94,557.06
MONTHLY		6,169.22	6,479.17	6,802.38	7,142.17	7,500.19	7,687.49	7,879.76
BI-WEEKLY		2,847.33	2,990.39	3,139.56	3,296.39	3,461.63	3,548.07	3,636.81
HOURLY		37.22	39.09	41.04	43.09	45.25	46.38	47.54

PUBLIC WORKS SECRETARY

	21.0	A	B	C	D	E	F	G
ANNUAL		35,443.98	37,214.19	39,063.96	41,033.07	43,081.74	44,155.80	45,269.64
MONTHLY		2,953.67	3,101.18	3,255.33	3,419.42	3,590.15	3,679.65	3,772.47
BI-WEEKLY		1,363.23	1,431.32	1,502.46	1,578.20	1,656.99	1,698.30	1,741.14
HOURLY		17.82	18.71	19.64	20.63	21.66	22.20	22.76

PUBLIC WORKS OPERATIONS & ADMINISTRATION MANAGER

	---	A	B	C	D	E	F	G
ANNUAL		96,117.98	100,923.88	105,970.07	111,268.57	116,832.00	119,757.82	121,958.72
MONTHLY		8,009.83	8,410.32	8,830.84	9,272.38	9,736.00	9,979.82	10,163.23
BI-WEEKLY		3,696.85	3,881.69	4,075.77	4,279.56	4,493.54	4,606.07	4,690.72
HOURLY		48.32	50.74	53.28	55.94	58.74	60.21	61.72

PUBLIC WORKS SUPERINTENDENT

	36.1	A	B	C	D	E	F	G
ANNUAL		74,030.58	77,750.01	81,628.56	85,706.01	90,002.25	92,249.82	94,557.06
MONTHLY		6,169.22	6,479.17	6,802.38	7,142.17	7,500.19	7,687.49	7,879.76
BI-WEEKLY		2,847.33	2,990.39	3,139.56	3,296.39	3,461.63	3,548.07	3,636.81
HOURLY		37.22	39.09	41.04	43.09	45.25	46.38	47.54

RECREATION LEADER I

Until Jan 1, 2020	10	A	B	C	D	E	F	G
HOURLY		12.00	12.60	13.23	13.89	14.58	14.94	15.31
Beginning Jan 1, 2020	10	A	B	C	D	E	F	G
HOURLY		13.00	13.65	14.33	15.05	15.80	16.20	16.61

RECREATION LEADER II

Until Jan 1, 2020	10	A	B	C	D	E	F	G
HOURLY		12.30	12.92	13.56	14.24	14.95	15.32	15.70
Beginning Jan 1, 2020	10	A	B	C	D	E	F	G
HOURLY		13.56	14.24	14.95	15.70	16.49	16.90	17.32

SANITATION SUPERVISOR

	27.5	A	B	C	D	E	F	G
ANNUAL		48,670.83	51,117.30	53,663.22	56,348.37	59,172.75	60,644.74	62,156.38
MONTHLY		4,055.90	4,259.78	4,471.94	4,695.70	4,931.06	5,053.73	5,179.70
BI-WEEKLY		1,871.96	1,966.05	2,063.97	2,167.25	2,275.88	2,332.49	2,390.63
HOURLY		24.47	25.70	26.98	28.33	29.75	30.49	31.25

SENIOR MANAGEMENT ANALYST

	---	A	B	C	D	E	F	G
ANNUAL		69,097.86	72,558.72	76,178.70	79,997.58	83,995.60	86,103.94	88,252.06
MONTHLY		5,758.16	6,046.56	6,348.23	6,666.47	6,999.63	7,175.33	7,354.34
BI-WEEKLY		2,657.61	2,790.72	2,929.95	3,076.83	3,230.60	3,311.69	3,394.31
HOURLY		34.74	36.48	38.30	40.22	42.23	43.29	44.37

SENIOR PLANNER

	34.4	A	B	C	D	E	F	G
ANNUAL		68,163.03	71,564.22	75,144.42	78,903.63	82,841.85	84,910.54	87,038.64
MONTHLY		5,680.25	5,963.69	6,262.04	6,575.30	6,903.49	7,075.88	7,253.22
BI-WEEKLY		2,621.66	2,752.47	2,890.17	3,034.76	3,186.23	3,265.79	3,347.64
HOURLY		34.27	35.98	37.78	39.67	41.65	42.69	43.76

STREET SUPERVISOR

	27.5	A	B	C	D	E	F	G
ANNUAL		48,670.83	51,117.30	53,663.22	56,348.37	59,172.75	60,644.74	62,156.38
MONTHLY		4,055.90	4,259.78	4,471.94	4,695.70	4,931.06	5,053.73	5,179.70
BI-WEEKLY		1,871.96	1,966.05	2,063.97	2,167.25	2,275.88	2,332.49	2,390.63
HOURLY		24.47	25.70	26.98	28.33	29.75	30.49	31.25

STREET TECHNICIAN I

	18	A	B	C	D	E	F	G
ANNUAL		30,610.71	32,142.24	33,753.33	35,443.98	37,194.30	38,129.26	39,083.98
MONTHLY		2,550.89	2,678.52	2,812.78	2,953.67	3,099.53	3,177.44	3,257.00
BI-WEEKLY		1,177.34	1,236.24	1,298.21	1,363.23	1,430.55	1,466.51	1,503.23
HOURLY		15.39	16.16	16.97	17.82	18.70	19.17	19.65

STREET TECHNICIAN II

	22	A	B	C	D	E	F	G
ANNUAL		37,214.19	39,063.96	41,033.07	43,081.74	45,229.86	46,363.72	47,517.34
MONTHLY		3,101.18	3,255.33	3,419.42	3,590.15	3,769.16	3,863.64	3,959.78
BI-WEEKLY		1,431.32	1,502.46	1,578.20	1,656.99	1,739.61	1,783.22	1,827.59
HOURLY		18.71	19.64	20.63	21.66	22.74	23.31	23.89

TECHNICIAN I

	18	A	B	C	D	E	F	G
ANNUAL		30,610.71	32,142.24	33,753.33	35,443.98	37,194.30	38,129.26	39,083.98
MONTHLY		2,550.89	2,678.52	2,812.78	2,953.67	3,099.53	3,177.44	3,257.00
BI-WEEKLY		1,177.34	1,236.24	1,298.21	1,363.23	1,430.55	1,466.51	1,503.23
HOURLY		15.39	16.16	16.97	17.82	18.70	19.17	19.65

TECHNICIAN II

	22	A	B	C	D	E	F	G
ANNUAL		37,214.19	39,063.96	41,033.07	43,081.74	45,229.86	46,363.72	47,517.34
MONTHLY		3,101.18	3,255.33	3,419.42	3,590.15	3,769.16	3,863.64	3,959.78
BI-WEEKLY		1,431.32	1,502.46	1,578.20	1,656.99	1,739.61	1,783.22	1,827.59
HOURLY		18.71	19.64	20.63	21.66	22.74	23.31	23.89

CLASSIFICATION SUMMARY

FY 2019-20

CLASS TITLE/GROUP/STATUS	RANGE NO.	SALARY RANGE	# OF AUTHORIZED EMPLOYEES**
CLASSIFIED			
CLERICAL / ADMIN SUPPORT GROUP			
		MONTHLY	
Account Clerk	17.2	2,453 - 3,133	1
Administrative Assistant	24.2	3,453 - 4,409	1
Community Services Specialist	---	2,740 - 3,497	1
Community Services Assistant	19.1	2,692 - 3,438	1
Executive Assistant	24.2	3,453 - 4,409	1
License Clerk	21	2,954 - 3,772	1
Public Works Secretary	21	2,954 - 3,772	1
			<hr/> 7
OPERATIONS / MAINTENANCE GROUP			
Facility Tech I	18	2,551 - 3,257	1
Facility Tech II	22	3,101 - 3,960	1
Public Works Operations & Administration Manager	---	8,010 - 10,163	1
Sanitation Supervisor	27.5	4,056 - 5,180	1
Street Supervisor	27.5	4,056 - 5,180	1
Street Technician I	18	2,551 - 3,257	2
Street Technician II	22	3,101 - 3,960	3
Technician I	18	2,551 - 3,257	2
Technician II	22	3,101 - 3,960	2
			<hr/> 14
PUBLIC SAFETY GROUP			
Fire Captain	38.5	6,925 - 8,420	6
Fire Engineer	34.3	5,642 - 6,858	6
Firefighter/Paramedic	33.5	5,608 - 6,597	6
			<hr/> 18
PROFESSIONAL / TECHNICAL GROUP			
Accounting Analyst	32.7	5,228 - 6,676	1
Administrative Analyst	29.7	4,515 - 5,768	1
Assistant Engineer	32.7	5,228 - 6,676	0
Assistant Planner	32.7	5,228 - 6,676	1
Associate Accountant	29.7	4,515 - 5,768	1
Associate Civil Engineer	36.5	6,169 - 7,880	0
Associate Planner	33.4	5,410 - 6,908	1
City Clerk	35.2	5,906 - 7,542	1
Code Enforcement Officer/Water Quality Inspector	29.7	4,515 - 5,768	1
Community Development Manager	---	8,010 - 10,163	1
Development Services Technician II	29.7	4,515 - 5,768	0
Engineering Inspector	29.7	4,515 - 5,768	1
Engineering Tech III	29.7	4,515 - 5,768	0
Finance Manager	36.1	6,169 - 7,880	0
Fire Inspector	26.3	3,826 - 4,890	1
Human Resources Manager	36.1	6,169 - 7,880	1
Management Analyst	33.2	5,357 - 6,841	1
Principal Planner	36.1	6,169 - 7,880	0
Sr. Management Analyst	---	5,758 - 7,354	1
Senior Planner	34.4	5,680 - 7,253	0
			<hr/> 13

CLASS TITLE/GROUP/STATUS	RANGE NO.	SALARY RANGE	# OF AUTHORIZED EMPLOYEES**
UNCLASSIFIED			
MANAGEMENT GROUP			
Administrative Services Director	---	8,155 - 10,414	1
Assistant City Manager/Public Works Director	52.2	10,606 - 13,542	1
Battalion Chief	40.6	7,306 - 9,623	1
City Manager (contract)	---	14,583 - 14,583	1
Fire Division Chief	43.8	8,965 - 10,898	0
			4
PART-TIME/TEMPORARY/SEASONAL/OTHER		HOURLY	
Class Instructor * (other)	---	12 - 25	0.5
Code Enforcement Officer	26.2	22.97 - 29.34	0
Engineer (other)	---	15.02 - 18.26	0
Fire Prevention/Public Education Specialist *	26.3	23.08 - 29.50	0.5
Intern*	---	15 - 15	2
Office Aid*	10.8	12 - 15.31	2
Maintenance Service Worker*	12.4	11.71 - 14.97	3.5
Park Ranger	19.6	16.65 - 21.26	0.5
Recreation Leader I *	10	12 - 15.31	2.25
Recreation Leader II *	12.4	12.3 - 15.70	2.25
*Full Time Equivalent (fte)			13.5
TOTAL EMPLOYEES:			69.5

RESOLUTION NO. 2019-

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LEMON GROVE, CALIFORNIA, APPROVING THE CITY OF LEMON GROVE BUDGET FOR FISCAL YEAR 2019-2020 AND AUTHORIZING EXPENDITURES THERETO

WHEREAS, the City of Lemon Grove administers 23 individual funds to fulfill the mission and objectives of the City, including funds related to the Successor Agency to the Lemon Grove Community Development Agency; and

WHEREAS, each year the City Council of the City of Lemon Grove adopts an operating budget for anticipated revenues and expenditures for the upcoming year; and

WHEREAS, the City Council desires to make provision for a level of service commensurate with the needs of the City; and

WHEREAS, the City of Lemon Grove budget for Fiscal Year 2019-2020 was prepared by City staff and reviewed by the City Manager; and

WHEREAS, the City of Lemon Grove General Fund budget for Fiscal Year 2019-2020 were reviewed by the City Council at its regular meetings held on June 4, 2019, and June 18, 2019; and

WHEREAS, the City Council finds it in the public interest to approve the Fiscal Year 2019-2020 City Budget.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Lemon Grove, California, hereby:

1. Approves the City of Lemon Grove Budget for Fiscal Year 2019-2020 (Exhibit 1); and
2. Authorizes expenditures thereto.

PASSED AND ADOPTED on June 18, 2019, the City Council of the City of Lemon Grove, California, adopted Resolution No. _____, passed by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

Racquel Vasquez, Mayor

Attest: Shelley Chapel, MMC, City Clerk

Approved as to Form: Kristen Steinke, City Attorney

RESOLUTION NO. 2019-

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LEMON GROVE,
CALIFORNIA, APPROVING A SALARY PLAN AND CLASSIFICATION
SUMMARY

WHEREAS, on June 18, 2019, the City Council adopted a resolution approving the City Budget for Fiscal Year 2019-2020; and

WHEREAS, the Salary Plan and Classification Summary identifies the positions included in the budget, as well as salary ranges for each position and the number of employees per position; and

WHEREAS, the City Council finds it in the public interest to approve the attached Salary Plan and Classification summary.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Lemon Grove, California, hereby approves the Fiscal Year 2019-2020 Salary Plan and Classification Summary (Exhibit 1).

PASSED AND ADOPTED on June 18, 2019, the City Council of the City of Lemon Grove, California, adopted Resolution No. _____, passed by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Racquel Vasquez, Mayor

Attest: Shelley Chapel, MMC, City Clerk

Approved as to Form: Kristen Steinke, City Attorney

RESOLUTION NO. 2019-

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LEMON GROVE, CALIFORNIA, ESTABLISHING THE APPROPRIATIONS LIMIT FOR FISCAL YEAR 2019-2020

WHEREAS, Constitutional Article XIII-B (Propositions 4 and 111) places an appropriations limitation on State and Local Government; and

WHEREAS, this appropriations limitation is based on proceeds of taxes adjusted annually from the base year 1986-1987 by either the population growth factor for the City of Lemon Grove or for the County of San Diego, and by either the change in the California Per Capita Personal Income or the change in Non-Residential Construction for the City of Lemon Grove; and

WHEREAS, the City has received inflation and population data from the State Department of Finance to calculate the Fiscal Year 2018-2019 Appropriations Limit; and

WHEREAS, the City Council of the City of Lemon Grove wishes to select those options providing the greatest rate of change as shown below:

Per Capita Personal Income Change (inflation factor)	Population Change (population factor)	Total Factor
1.0385	1.0047	1.0434

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Lemon Grove, California, hereby establishes the Fiscal Year 2019-2020 Appropriations Limit at \$52,074,933.

PASSED AND ADOPTED on June 18, 2019, the City Council of the City of Lemon Grove, California, adopted Resolution No. _____, passed by the following vote:

- AYES:
- NOES:
- ABSENT:
- ABSTAIN:

Racquel Vasquez, Mayor

Attest: *Shelley Chapel, MMC, City Clerk*

Approved as to Form: *Kristen Steinke, City Attorney*

RESOLUTION NO. 2019-

A RESOLUTION OF THE LEMON GROVE ROADWAY LIGHTING DISTRICT BOARD APPROVING THE LEMON GROVE ROADWAY LIGHTING DISTRICT BUDGET FOR FISCAL YEAR 2019-2020 AND AUTHORIZING EXPENDITURES THERETO

WHEREAS, the Roadway Lighting District operates with two separate funds: the General Benefit Fund (Fund 11) and the Local Benefit Assessment (Fund 12); and

WHEREAS, each year the Lemon Grove Roadway Lighting District Board of Directors (District Board) adopts an Operating Budget for revenues and expenditures for the upcoming year; and

WHEREAS, the District Board desires to make provision for a level of service commensurate with the needs of the District; and

WHEREAS, the District Board has reviewed the proposed Fiscal Year 2019-2020 Budget.

NOW, THEREFORE, BE IT RESOLVED that the Board of the Lemon Grove Roadway Lighting District hereby:

1. Approves the Lemon Grove Roadway Lighting District Budget for Fiscal Year 2019-2020 (Exhibit 1); and
2. Authorizes expenditures thereto.

PASSED AND ADOPTED on June 18, 2019, the District Board of the Lemon Grove Roadway Lighting District, adopted Resolution No. _____, passed by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

Racquel Vasquez, Mayor

Attest: Shelley Chapel, MMC, City Clerk

Approved as to Form: Kristen Steinke, City Attorney

RESOLUTION NO. 2019-

A RESOLUTION OF THE LEMON GROVE SANITATION DISTRICT BOARD
APPROVING THE LEMON GROVE SANITATION DISTRICT BUDGET FOR
FISCAL YEAR 2019-2020 AND AUTHORIZING EXPENDITURES THERETO

WHEREAS, the Sanitation District operates with four separate funds: the Operation Fund (Fund 15), the Capital Funds (16 & 19), and the Reserve Fund (Fund 17); and

WHEREAS, each year the Lemon Grove Sanitation District Board of Directors (District Board) adopts an Operating Budget for revenues and expenditures for the upcoming year; and

WHEREAS, the District Board desires to make provision for a level of service commensurate with the needs of the District; and

WHEREAS, the District Board has reviewed the proposed Fiscal Year 2019-2020 Budget.

NOW, THEREFORE, BE IT RESOLVED that the Board of the Lemon Grove Sanitation District hereby:

1. Approves the Lemon Grove Sanitation District Budget for Fiscal Year 2019-2020 (Exhibit 1); and
2. Authorizes expenditures thereto.

PASSED AND ADOPTED on June 18, 2019, the District Board of the Lemon Grove Sanitation District, adopted Resolution No. _____, passed by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

Racquel Vasquez, Mayor

Attest: Shelley Chapel, MMC, City Clerk

Approved as to Form: Kristen Steinke, City Attorney



CITY OF LEMON GROVE

CITY COUNCIL STAFF REPORT

Item No. 3

Meeting Date: June 18, 2019

Submitted to: Honorable Mayor and Members of the City Council

Department: City Manager's Office

Staff Contact: Mike James, Assistant City Manager

mjames@lemongrove.ca.gov

Item Title: San Miguel Avenue Traffic Analysis

Recommended Action: That the City Council receives the report and provides direction.

Summary: On May 7, 2019, the City Council directed staff to research, analyze and present a traffic analysis and concept plan to the City Council for San Miguel Avenue from Federal Boulevard east to Massachusetts Avenue. This report is the first step in the traffic analysis and was created to receive feedback regarding the initial concept plan. The next report will incorporate traffic data gathered from the field that was not available at the time this report was prepared. Staff requests that the City Council review the concept plan and provide feedback to staff that will be taken into consideration into a final concept based on the results of the traffic analysis.

Discussion: San Miguel Avenue from Federal Boulevard east to Massachusetts Avenue has a functional roadway classification of a Class III Collector. Per the City's General Plan - Mobility Element, a Class III Collector is:

“a two-lane undivided road which primarily distributes traffic to and from major roads and higher class collectors, and allows access to adjacent properties and residential streets. Class III Collectors accommodate low volumes and should be designed to discourage through traffic in residential areas. Parking is typically allowed, and may be denied at critical locations (e.g. intersections, fire hydrants, utilities)”.

While referencing the 2018 Pavement Management Program and 2016 Speed Zone Update, the portion of San Miguel Avenue that was analyzed has the following characteristics:

- It is approximately 4,300 feet in length,
- Has an average street width of 30 feet,
- Has a pavement condition index of 58, which is a fair condition,
- 30 miles per hour speed limit, and
- 14,560 average daily traffic volume.

When this project was discussed at the City Council meeting on May 7th, staff was directed to complete a comprehensive traffic analysis to determine if there are traffic calming measures that may be constructed to assist with the traffic concerns in the area. Since that time, staff ordered the field analysis but due to the contractor’s workload the data could not be gathered in time for this report. However, staff has prepared a concept plan (**Attachment A**) for infrastructure improvements on San Miguel Avenue based on the residential traffic management program as well as the professional experience of the traffic division of Rick Engineering Company.

Staff requests that the City Council review the concept plan and provide feedback that will be taken into consideration into a final site plan that also encompasses the traffic data received from the field and traffic analysis findings

Environmental Review:

- Not subject to review
 Negative Declaration
 Categorical Exemption, Section | | Mitigated Negative Declaration

Fiscal Impact: None.

Public Notification: None.

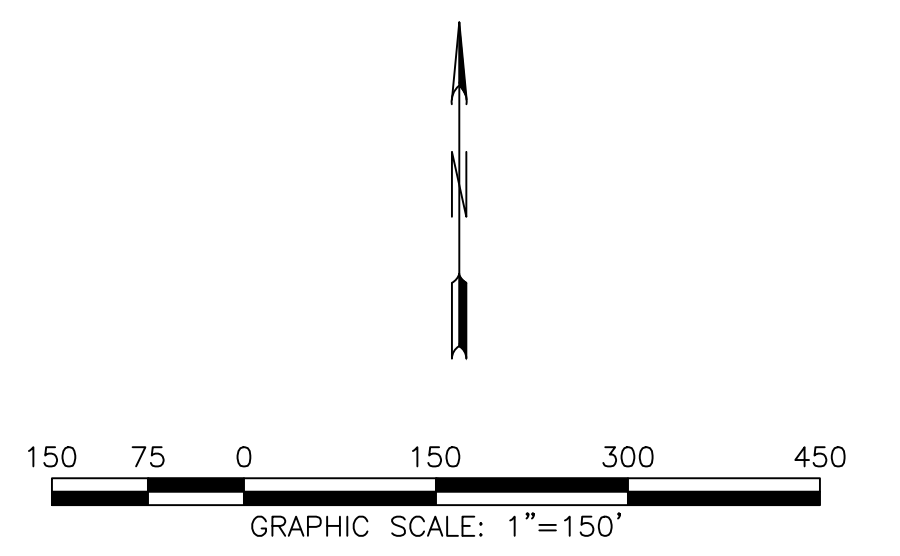
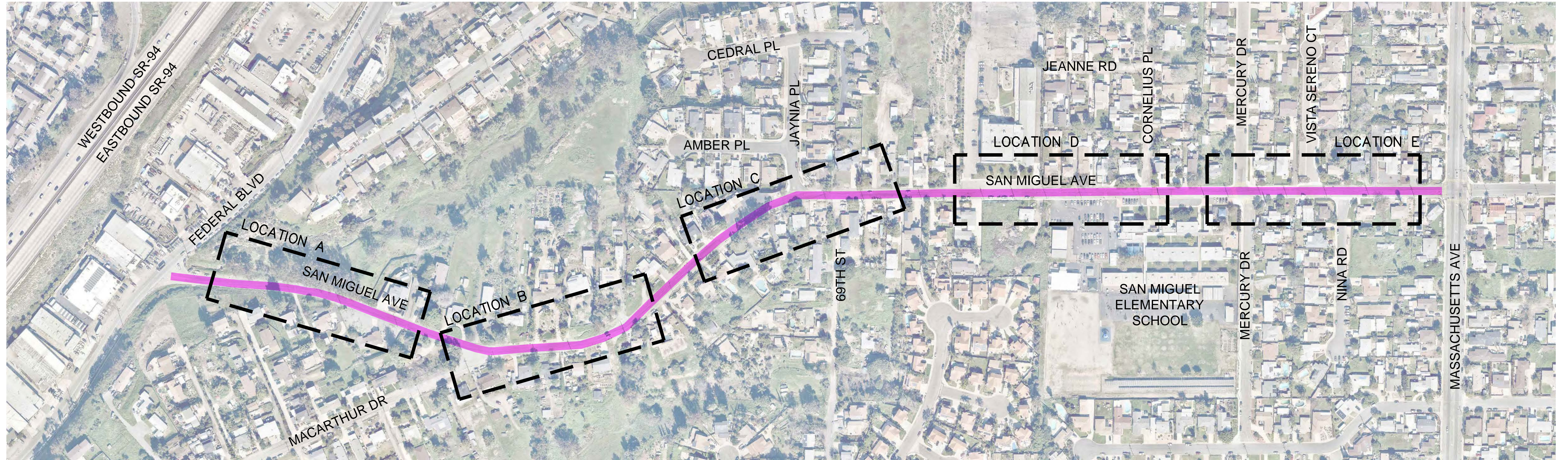
Staff Recommendation: That the City Council receives the report and provides direction.

Attachments:

Attachment A – Concept Plan

Attachment A

SAN MIGUEL AVENUE TRAFFIC CALMING CONCEPTUAL EXHIBIT



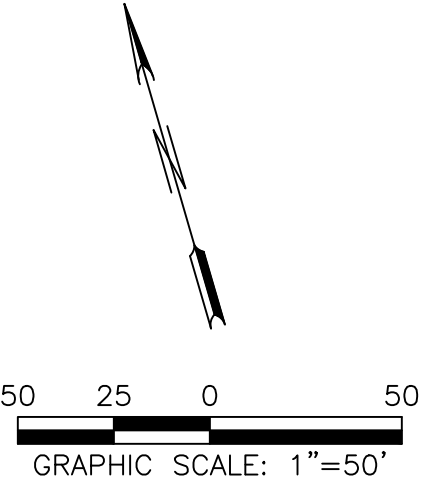
LOCATION A



1 SPEED CUSHIONS



2 ADVANCED CURVE WARNING SIGN



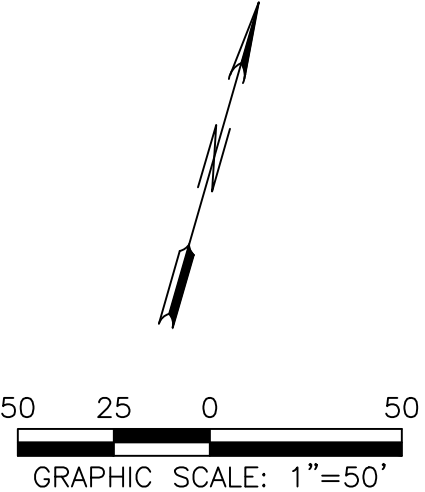
LOCATION B



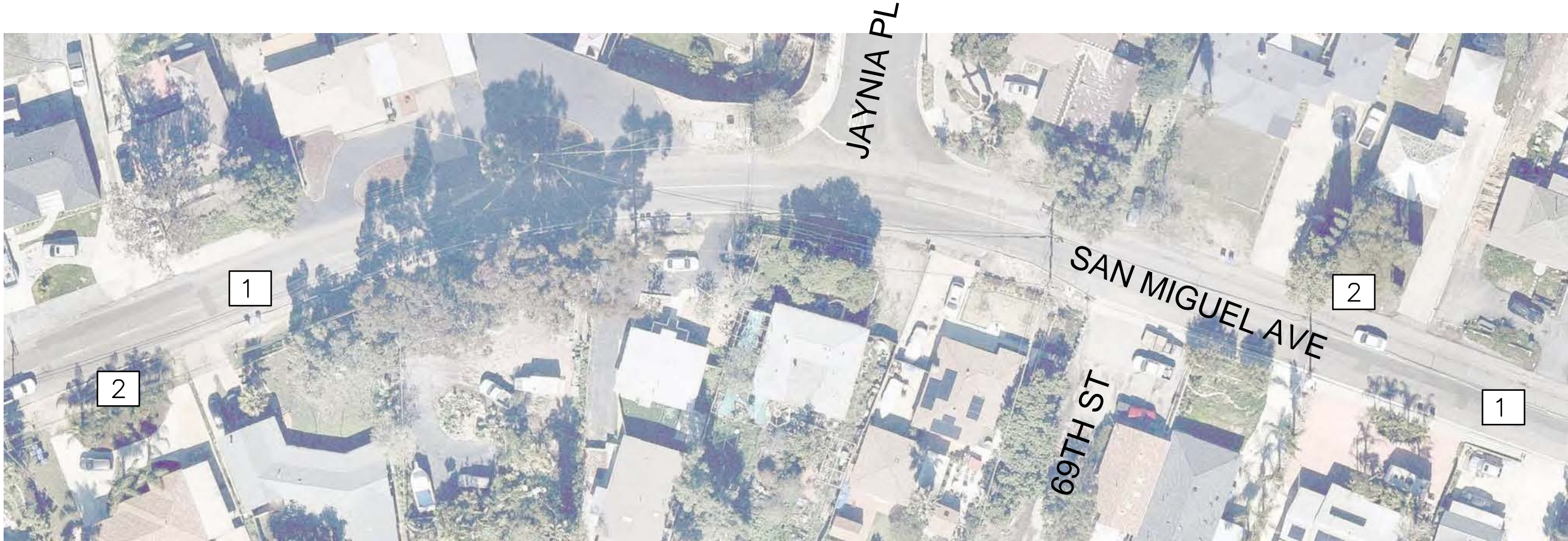
1 SPEED CUSHIONS



2 ADVANCED CURVE WARNING SIGN



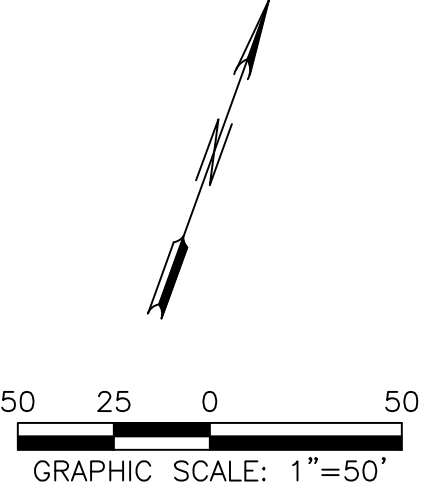
LOCATION C



1 SPEED CUSHIONS



2 ADVANCED CURVE WARNING SIGN



LOCATION D



1 CHOKER

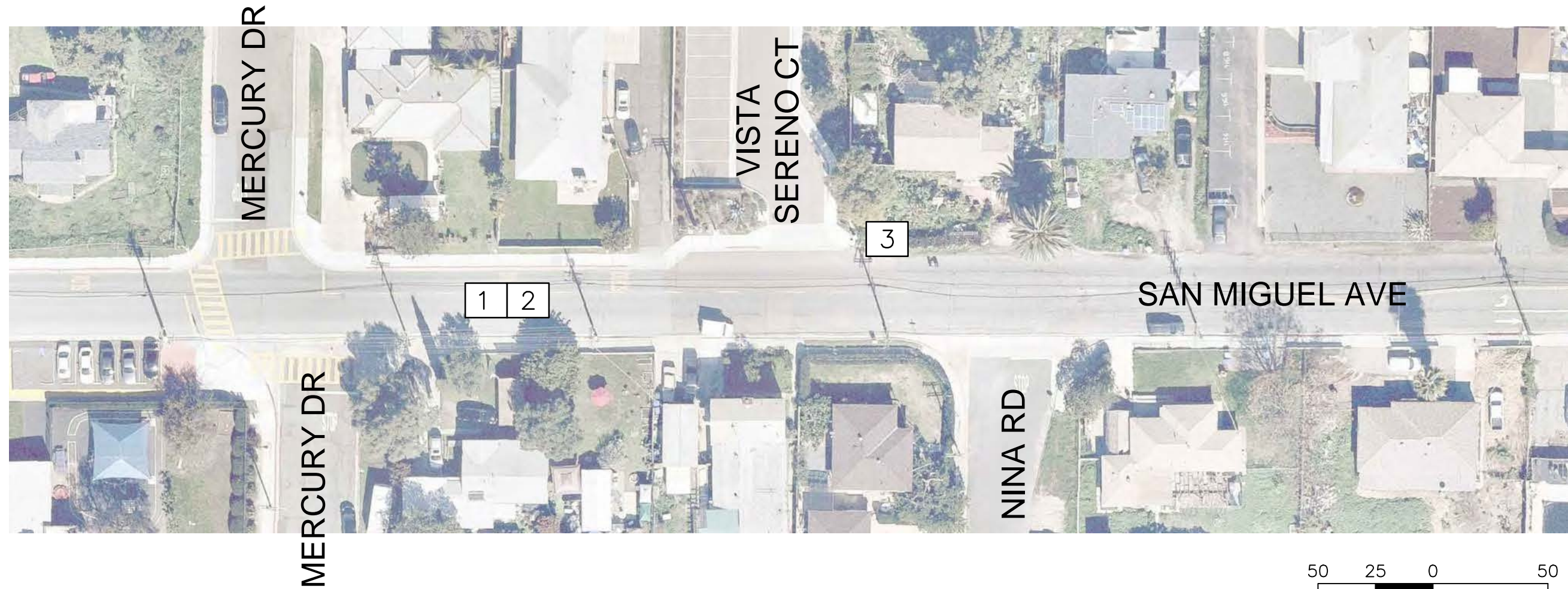


2 SPEED CUSHIONS



3 RAISED MID-BLOCK CROSSING

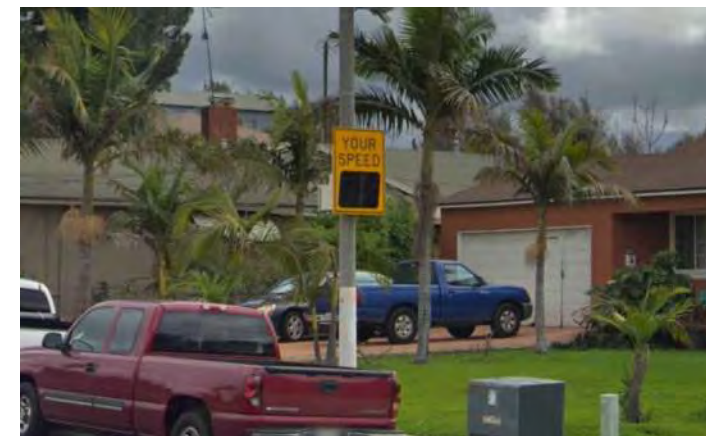
LOCATION E



1 CHOKER



2 SPEED CUSHIONS



3 SPEED FEEDBACK SIGN



CITY OF LEMON GROVE

CITY COUNCIL STAFF REPORT

Item No. 4

Meeting Date: June 18, 2019

Submitted to: Honorable Mayor and Members of the City Council

Department: Public Works Department

Staff Contact: Mike James, Assistant City Manager

mjames@lemongrove.ca.gov

Item Title: **Drainage Master Plan Update**

Recommended Action: That the City Council adopts a resolution (**Attachment A**) approving the Drainage Master Plan Update.

Summary: On November 6, 2018, the City awarded a professional services agreement to Rick Engineering Company to update the Citywide Drainage Master Plan (DMP). The DMP was created in 1997 with the purpose to serve as a planning document to evaluate the existing drainage collection system, determine what the deficiencies were in the system, and propose system improvements and program costs as well as a proposed capital improvement program. In May 2018, Rick Engineering completed a draft report. Since that time, city and Rick Engineering staff have worked together to revise the draft report to produce the final product (**Attachment B**).

The remaining portion of this report highlights key objectives in the report, provides additional information about updating the DMP, and describes next steps for the DMP moving forward.

Discussion: The final report is a comprehensive plan and a useful tool to highlight existing storm water conveyance system deficiencies along with a condition assessment of the corrugated metal pipe (CMP) storm drains throughout the City in order to inform future decisions pertaining to public storm drain infrastructure improvements.

The City is responsible for managing the public storm drain system within the City limits (approximately 3.9 square miles) and ensuring that an adequate level of service is provided to protect the public from excessive surface flooding conditions. To this end, the need for a comprehensive and high-resolution hydrologic and hydraulic (H&H) analysis to evaluate the existing storm water conveyance system level of service citywide was identified. The intent of this study and final report is to build off of past micro-studies

and provide a holistic understanding of the City's storm water infrastructure allowing the City to prioritize its maintenance and repairs efforts.

The report consists of four primary areas:

1. Regulatory Framework: The City must be responsive to a number of regulatory drivers that apply to drainage, storm water infrastructure management, and water quality specific to each storm drain outfall system. These drivers focus on addressing one particular storm water related component, each with different compliance metrics, timelines, and monitoring requirements. All of these nuances are critical to develop any DMP.
2. High Resolution Geospatial Data: A high resolution geospatial dataset is essential to perform the detailed hydrologic and hydraulic drainage and water quality analyses. Geospatial data necessary for these modeling efforts include: an accurate topographic representation of the study area, ground cover/land use information, and existing storm drain inventory. This section focused on receiving and evaluating raw data layers, adjusting the data and making corrections as needed, and summarizing the revised dataset for future modeling with field verification.
3. Drainage Assessment: The assessment was accomplished using an integrated 1-D/2-D H&H model that combines surface and sub-surface drainage patterns within the study area to provide a high-resolution surface inundation and storage of storm water flow for the duration of a design storm. This study considers the 2-year, 10-year and 100-year storm events in order to understand the performance of the drainage conveyance system during storms with a higher probability of occurrence.
4. Recommended Improvements: The CMP systems were televised using closed-circuit television (CCTV) and the results were used to create a condition rating from very poor to good. With each condition a recommended repair technique was provided that include the following options:
 - a. Cured in place pipe (CIPP) lining,
 - b. CIPP sectional repairs,
 - c. Top Hat (TH) in lateral/main connection sealing,
 - d. Pressurized hydrophilic grout and urethane sealant,
 - e. Hydro-scouring, and
 - f. Pipe removal and replacement.

A summary of the pipe segments rating and quantity is provided in the report. Additionally, all repair techniques and number of repairs necessary were included.

Lastly, ten regional improvement opportunities were included in the report that could provide detention or water quality benefits. The list of each location, the size and parcel ownership (in addition to the City) were included in the report.

As mentioned, when the original scope of work with Rick Engineering was approved for work, there were optional tasks that remained after this first phase of the DMP update was completed. Those tasks, described below, were included in the Fiscal Year 2019-2020 budget document and are funded from Fund 02 – Gas Tax Fund (SB-1 Roadway Maintenance and Rehabilitation Act).

1. Probable Construction Costs: Research available unit costs for project construction based on historical bid history or other readily available sources. Unit costs will be provided to the City. Additionally, a generalized order of magnitude opinion of probable construction cost for each of the recommended facilities will be provided to aid in the prioritization of projects.
2. Bundling and Prioritization of Recommended Improvements: Provide prioritization scores for each recommended facility to assist in ranking the benefit of each potential improvement. A matrix will consider modeling results as well as relevant fields from the existing GIS data. Areas will be bundled into relevant project areas and forecasted for a ten-year period.

Staff will return to the City Council in FY 2019-2020 to recommend this next project be awarded to Rick Engineering Company to be completed before June 30, 2020.

Environmental Review:

- Not subject to review Negative Declaration
 Categorical Exemption, Section | | Mitigated Negative Declaration

Fiscal Impact: \$250,000 was allocated in the Fiscal Year 2018-2019 budget from Fund 02 – Gas Tax Fund (SB-1 Roadway Maintenance and Rehabilitation Act). Staff does not anticipate this project will exceed \$249,855. |

Public Notification: None.

Staff Recommendation: That the City Council adopts a resolution (**Attachment B**) approving the Drainage Master Plan Update.

Attachments:

- Attachment A – Resolution
- Attachment B – Drainage Master Plan Update

RESOLUTION NO. 2019 -

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LEMON GROVE,
CALIFORNIA, APPROVING THE DRAINAGE MASTER PLAN**

WHEREAS, in 1997, the city contracted with ASL Consulting Engineers to create a drainage master plan (master plan); and

WHEREAS, there was a need to perform and update to the master plan that will include data collection and compilation, CCTV of the corrugated metal pipe storm drain system, existing condition hydrologic and hydraulic analysis, recommend improvements, identifying regional improvement opportunities, and develop a final drainage master plan update; and

WHEREAS, in order to complete this update in an economically efficient process the expertise of a consulting firm that possess the knowledge, skills and abilities in completing master plans will be needed; and

WHEREAS, Rick Engineering Company was identified by city staff as a consulting firm that has a positive experience in creating and updating master plans in the County; and

WHEREAS, in May 2019, Rick Engineering Company created a drainage master plan and submitted the final report to the City; and

WHEREAS, the City Council reviewed and accepted the final report. |

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Lemon Grove hereby:

1. Accepts the citywide drainage master plan update prepared by Rick Engineering Company; and
2. Authorizes the City Manager, or her designee, to manage the project close out process. |

PASSED AND ADOPTED on _____, 2019, the City Council of the City of Lemon Grove, California, adopted Resolution No. _____, passed by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

Racquel Vasquez, Mayor

Attest: Shelley Chapel, MMC, City Clerk

Approved as to Form: Kristen Steinke, City Attorney

City of Lemon Grove Drainage Master Plan

May 24, 2019

Presented To

City of Lemon Grove Public Works Department
3232 Main Street
Lemon Grove, California 91945

Presented By

**Rick Engineering
Company**
5620 Friars Road
San Diego, CA 92110

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F +1-619-291-4165
rickengineering.com



Prepared by:

Name _____ Date _____
Title _____

Reviewed by:

Name _____ Date _____
Title _____

Authorized by:

Name _____ Date _____
Title _____

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- A. H&H BACKUP**
- B. CCTV DATA**
- C. GIS DATASET EXHIBITS**
- D. INUNDATION MAPS**
- E. SUMMARY TABLES**

Acronyms/Abbreviations

Acronym/Abbreviation	Definition
BMP	best management practice
cfs	cubic feet per second
DEM	digital elevation model
DMP	drainage master plan
ft	foot, feet
GIS	geographic information system
H&H	hydrology and hydraulics
LF	linear foot, linear feet
LIDAR	Light Detection and Ranging
LOS	level of service
NOAA	National Oceanic and Atmospheric Administration
NWP	nationwide permits
RCB	reinforced concrete box
RCP	reinforced concrete pipe
ROW	right-of-way
SANDAG	San Diego Association of Governments
SanGIS	San Diego Geographic Information Source
sq. mi.	square miles
SSURGO	Soil Survey Geographic Database
SWMM	Storm Water Management Model
TMDL	total maximum daily load

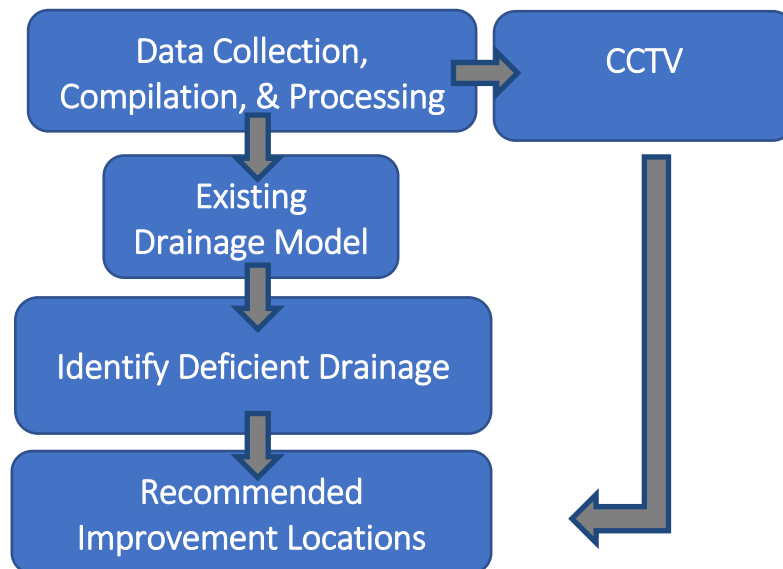
Limitations:

The City of Lemon Grove Drainage Master Plan is a comprehensive plan for existing drainage needs within the City of Lemon Grove. This report has been prepared for master planning purposes only, as a guide for engineers, planners, developers, and City staff. Detailed engineering calculations and investigations should be prepared for the implementation of any of the facilities outlined in this study. In addition, coordination with adjacent municipalities or state agencies may be required to coordinate drainage improvement efforts that cross jurisdictional boundaries.

1.0 Introduction

The *Drainage Master Plan* (DMP) has been prepared for the City of Lemon Grove (City) as a useful tool to highlight existing storm water conveyance system deficiencies along with a condition assessment of the CMP storm drains throughout the City in order to inform future decisions pertaining to public storm drain infrastructure improvements. The City is responsible for managing the public storm drain system within the City limits, and ensuring that an adequate level of service is provided to protect the public from excessive surface flooding conditions. To this end, the need for a comprehensive and high-resolution hydrologic and hydraulic (H&H) analysis to evaluate the existing storm water conveyance system level of service citywide was identified. The City has undergone multiple studies to address the known “hot spots” of the City. The intent of this project is to build off of these past efforts and provide a holistic understanding of the City’s storm water infrastructure allowing the City to prioritize their efforts.

The City of Lemon Grove study area limit is approximately 3.9 square miles in area. However, the entire watershed area tributary to the City of Lemon Grove study area covers approximately 5.5 square miles due to areas draining into and out of the City from the City of San Diego, La Mesa, and Spring Valley. The majority of the City is within the Chollas Sub-basin draining to the West through South Las Chollas Creek, Radio Drive Branch, Encanto Branch, and Jamacha Branch going from the north of the City to the South respectively. The remaining portion to the east of the City drains to the east to the La Nacion Sub-basin through Brookside Branch and Spring Valley Creek from north to south respectively.



The first component in the DMP framework is the data collection regarding the existing storm drain infrastructure and drainage conditions, including corrections to a Geographic Information System (GIS) inventory of structure and conveyance features within the study area. The second process in the DMP framework is modeling the existing drainage condition to establish a baseline and identify existing drainage issues within the study area. Results from the analysis of existing drainage conditions can then be used to visually review locations with problematic drainage patterns, and assist in informing solutions.

1.1 Regulatory Framework

When evaluating potential infrastructure improvements, the City must be responsive to a number of regulatory drivers that apply to drainage, storm water infrastructure management, and water quality specific to each storm drain outfall system. These regulatory drivers are typically focused on addressing one particular storm water-related component, each with different compliance metrics, timelines, and monitoring requirements. Understanding the nuances inherent in meeting the overall regulatory framework in the watershed was a critical component in developing the DMP and is summarized in the sections below.

1.1.1 Drainage Infrastructure Requirements

The County of San Diego maintains certain regulatory standards for storm water improvements as stipulated in the *San Diego County Hydraulic Design Manual*, dated September 2014. One of this study's objectives was to assess the existing drainage infrastructure to determine the current Level of Service (LOS) relative to the County's policies for drainage design. Based on the 2014 *San Diego County Hydraulic Design Manual*, the storm water conveyance system shall be designed so that the combination of storm drain system capacity and overflow (streets and gutter) will be able to carry the 100-year frequency storm without damage to or flooding of adjacent existing buildings or potential building sites. Therefore this DMP modeled the 100-year storm event to assess LOS.

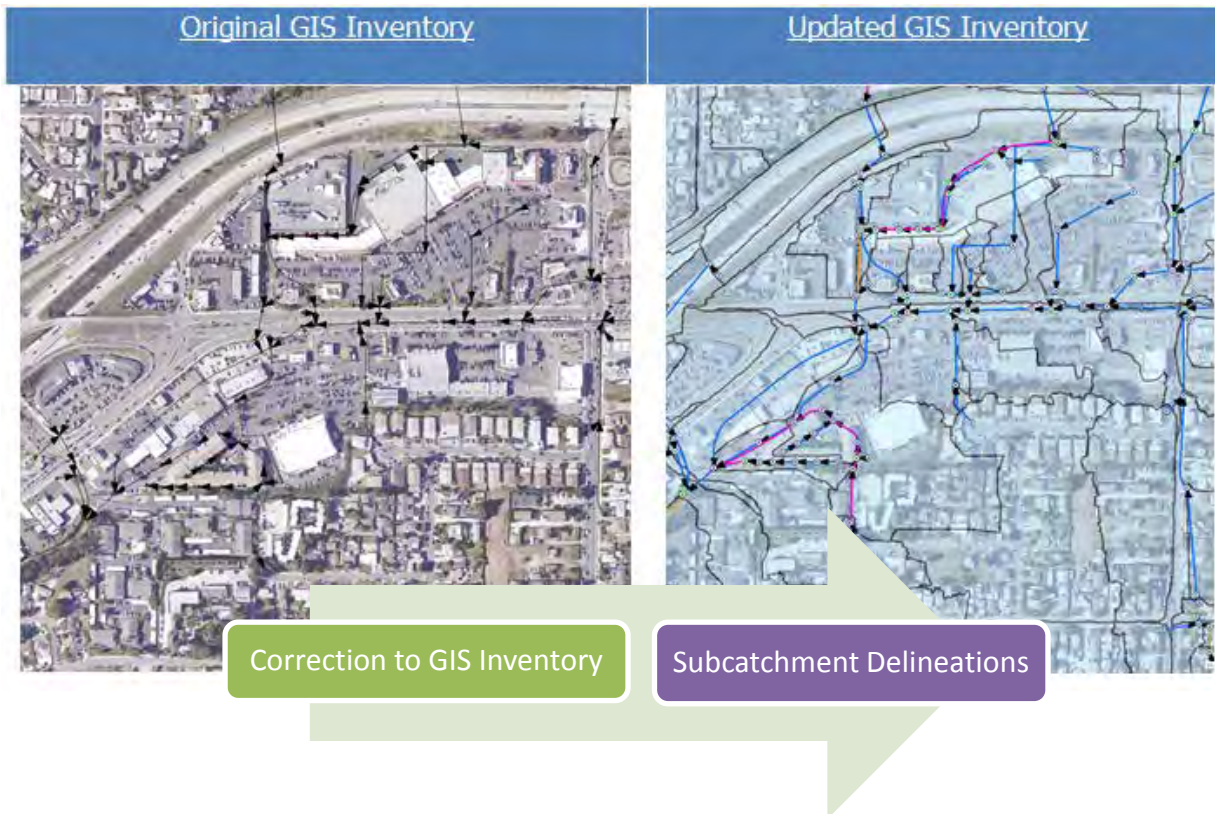
The computer modeling approach utilized has the capability to quantify the shallow surface attenuation (aka – detention) occurring in the ROW and its effect to the peak flows entering the storm drain system (peak flow rates entering the system are attenuated, which reduces the size of required improvements).

2.0 High Resolution Geospatial Data

A high resolution geospatial dataset is essential to perform the detailed hydrologic and hydraulic drainage and water quality analyses. Geospatial data necessary for these modeling efforts include: an accurate topographic representation of the study area, ground cover/land use information, and existing storm drain inventory. While evaluating the data initially collected, it was determined that certain data components (such as the storm drain inventory junction points and line work) did not accurately reflect the field conditions and/or did not align spatially when compared against the aerial imagery of the study area. An effort to correct and compile the data from various sources into one comprehensive dataset was undertaken. Of particular focus during this effort was to ensure a correct spatial representation of the storm drain infrastructure, and collect any missing information. A revised dataset will also be useful for any future projects that the City or other consultants undertake within the study area.

Figure 2-1 displays a snapshot of the changes that were made to the GIS inventory, which demonstrates the amount of new information that was compiled in a representative portion of the study area.

Figure 2-1: Snapshot of New Storm Drain Information Added to GIS Inventory



The following sections of this report describe the geospatial data received, the process of correcting and compiling certain data sets, and the resultant data from the correction process.

This section presents:

- Raw data layers received and sources (Section 2.1)
- Data adjustment and correction process (Section 2.2)
- Summary of the revised dataset (Section 2.3)

2.1 Raw Geospatial Data

Rick Engineering Company (RICK) used several additional data sets for this DMP. All utilized data sets are summarized in Table 2-1 with their associated version dates.

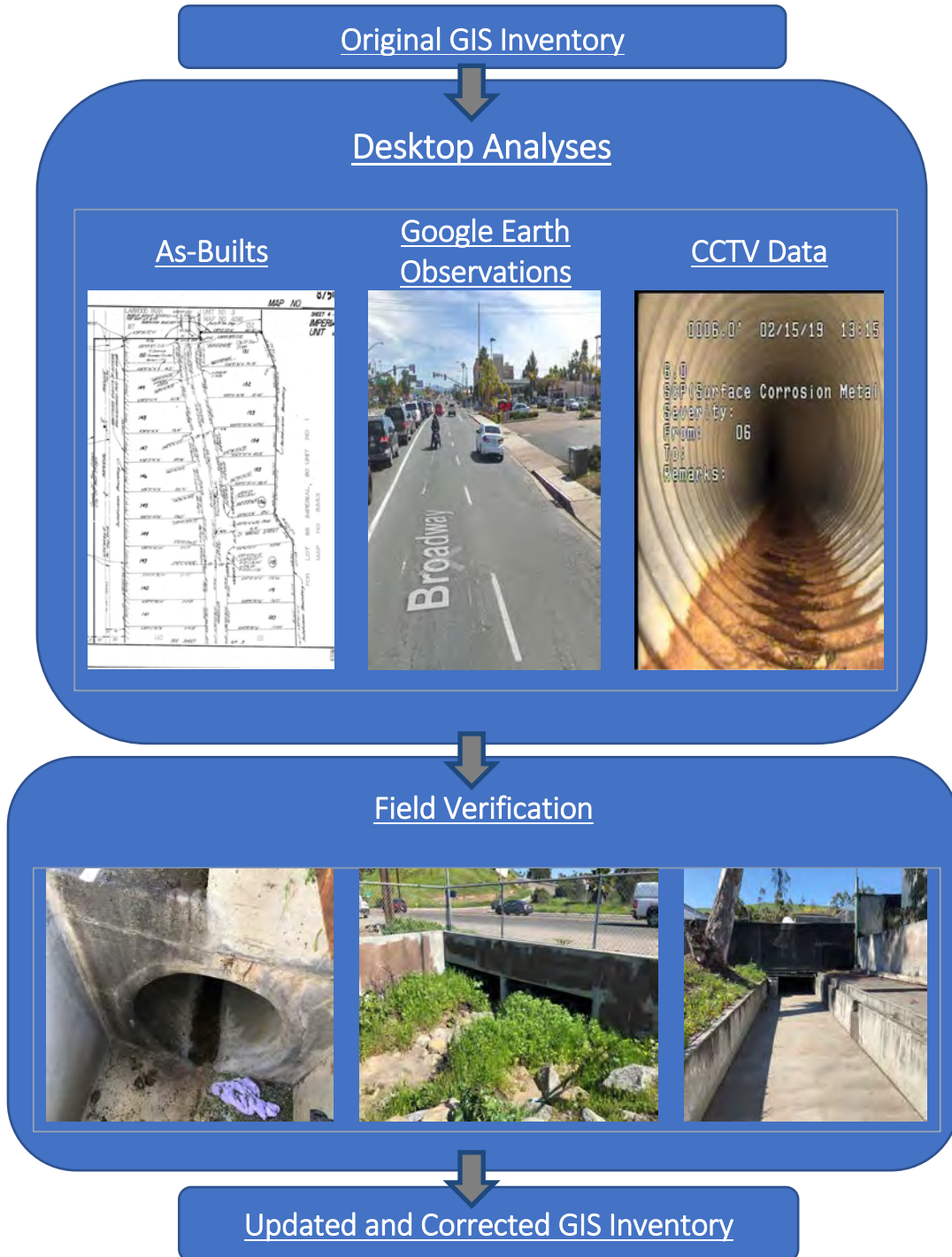
Table 2-1: Geospatial data inventory

Data Layer	Version Date	Source (Agency)
LIDAR	2014	SanGIS, SANDAG, NGA, LECC, Regional Public Safety GIS, 18 Incorporated Cities
Aerial Imagery	2017	County of San Diego,
Topography	2014	SANGIS
Storm Drain Network Files (Drain Conveyance, Drain Structures)	September 7, 2018	City of Lemon Grove, SanGIS, SANDAG
Land Use	January 1, 2017	SanGIS, SANDAG
Hydrologic Soil Groups (SSURGO)	November 11, 2013	National Resources Conservation Service
Parcel Layer	February 15, 2018	SanGIS, SANDAG, Assessor/Recorder/County Clerk
Floodplain Layers	April 7, 2016	Federal Emergency Management Agency
Municipal Boundaries	July 25, 2011	SanGIS, SANDAG

2.2 Corrections to GIS Inventory

Corrections to the GIS storm drain inventory were required to model the existing conditions of the City of Lemon Grove. The completeness of storm drain inventory data was critical in ensuring the effectiveness and practicality of subsequent modeling analyses. RICK was tasked with revising the storm drain inventory to more accurately reflect the current existing condition of the study area. For the purposes of preparing a DMP, the storm drain data necessary for this study consists of the horizontal layout of the existing storm drain system, size and material of conduits, and flowline elevations (if feasible). As displayed in Figure 2-2 storm drain inventory revisions were conducted in a two-step process; (1) desktop analyses and (2) field verification.

Figure 2-2: Corrections to GIS Inventory Flowchart.



2.2.1 Desktop Analyses

Desktop analyses involved revising the storm drain structures and conveyance information based on past-survey data, as-built drawings, aerial imagery, reviewing CCTV data, and Google Earth observations. The horizontal location of drainage structures in the inventory was corrected to match the aerial imagery. RICK utilized survey data from previous projects to assist in assigning invert elevations to drainage structures. For structures in which invert elevations were not accessible on site and survey or as-built drawing data was not available, engineering judgment was used to assign an invert elevation based on upstream and downstream drainage connections. A Digital Elevation Model (DEM) was utilized to update rim elevations for drainage structures not previously identified in the received data. Google Earth and Street View were used to update the location and type of each drainage structure.

2.2.2 Field Verification

Several field visits were conducted as part of the DMP effort to supplement the desktop analyses in correcting the GIS inventory. These assessments included storm drain system inventory verification to assess the status of assets including inlet locations and sizes, storm drain diameters and materials, structure depths, connectivity, and drainage patterns.

Figure 2-3: CMP conduit in the northern portion of Lemon Grove (Left). Spillway in the northern portion of Lemon Grove (Right).



2.3 Revised Geospatial Data

The main objective of the GIS storm drain data revisions were to ensure that a complete and accurate representation of the existing drainage system was reflected on the GIS shapefiles. The revisions incorporated into the GIS shapefiles will be provided back to the City for use outside of this DMP.

Table 2-2 provides a summary of the changes to the original storm drain inventory received from the City of Lemon Grove. The existing inventory was updated for storm drains that were larger than 36 inches in diameter (or considered part of the primary backbone system). The inventory was also updated to add missing drainage structures such as inlets, pipe segments, cleanouts, and outlets. As shown, multiple structures and conveyance segments were added to the inventory.

Table 2-2: Data Source of Drainage Asset Properties

	Desktop Analyses				Field Verification
	Surveying Data	As-built Data	DEM	Google Earth/Street View Observations	
Structures					
Location	X	X		X	X
Type of Structures	X	X		X	X
Rim Elevation	X	X	X		X
Invert Elevation	X	X	X		X
Depth			X		X
Conveyance					
Location / Orientation	X	X		X	X
Type of Conveyance	X	X		X	X
Material	X	X			X
Diameter	X	X		X	X
Pipe Offsets					X

Table 2-3 provides a summary of the changes to the original storm drain inventory received from the City. The existing inventory was updated for storm drains that were larger than 36 inches in diameter (or considered part of the primary backbone system). The inventory was also updated to add missing drainage structures such as inlets, pipe segments, cleanouts, and outlets.

Table 2-3: Summary of original and existing (revised) storm drain inventory

Asset Type	Original Data Set Provided	Existing Condition Revised Data	Change in Features	Percent Change
Structure				
Fitting	7	0	-7	-100%
Inlet	703	782	79	11%
Manhole	85	103	18	21%
Clean out	14	44	30	214%
Discharge	173	18	-155	-90%
Channel confluence	0	77	77	100%
Conduit connection	0	90	90	100%
Downstream headwall	0	152	152	100%
Flowline connection	0	21	21	100%
Headwall	0	112	112	100%
Not present	0	1	1	100%
Outlet	0	21	21	100%
Outlet, D-25	0	57	57	100%
Spillway	0	31	31	100%
Unimproved	0	37	37	100%
Total	982	1546	564	57%
Conveyance				
Culvert	3	0	-3	-100%
Ditch	51	89	38	75%
Drainage facility	698	1058	360	52%
Earthen channel	46	57	11	24%
Earthen ditch	13	13	0	0%
Open channel	52	131	79	152%
Surface flow/flowline	0	193	193	100%
swGravity Main	860	0	-860	-100%
Total	1723	1541	-182	-11%

3.0 Drainage Assessment

Drainage assessment was accomplished using an integrated 1-D/2-D hydrologic and hydraulic (H&H) model that combines surface and sub-surface drainage patterns within the study area. One of the most beneficial aspects of integrated 1-D/2-D modeling is the ability to render high-resolution surface inundation and storage of storm water flow for the duration of a design storm. An existing condition model was prepared, which presented a high resolution visual rendering of the combined surface and sub-surface drainage patterns within the study area. For the purposes of this study, the 100-year storm event was used to evaluate the storm drain infrastructure to inform infrastructure improvements. Other storm events (2-year and 10-year) were also modeled in order to understand the performance of the drainage conveyance system during storms with a higher probability of occurrence.

The existing condition H&H model highlighted several areas where the existing drainage infrastructure (i.e., inlets, storm drains, and surface street conveyance) is considered deficient in terms of storm water conveyance during a 100-year storm event. These deficiencies include locations with storm water ponding above the curb and extending onto the sidewalk and into private property.

The 2-D component of the analysis allowed for the evaluation of the benefit provided to surface conveyance capacity after the addition of storm drain infrastructure. A reasonable objective for future drainage improvements is to reduce flood depths in the right-of-way (ROW) to 6 inches or less, (i.e., flood depths would be less than the standard curb height per San Diego Regional Standard Drawings – 2018 and storm water conveyance would be contained within the ROW). Additional information regarding the specific drainage H&H methodology used in this study can be found in a memo located in Appendix A.

This section presents the following:

- Overview of the existing drainage patterns (Section 3.1)
- Model Setup Methodology (Section 3.2)
- Modeling Results (Section 3.3)

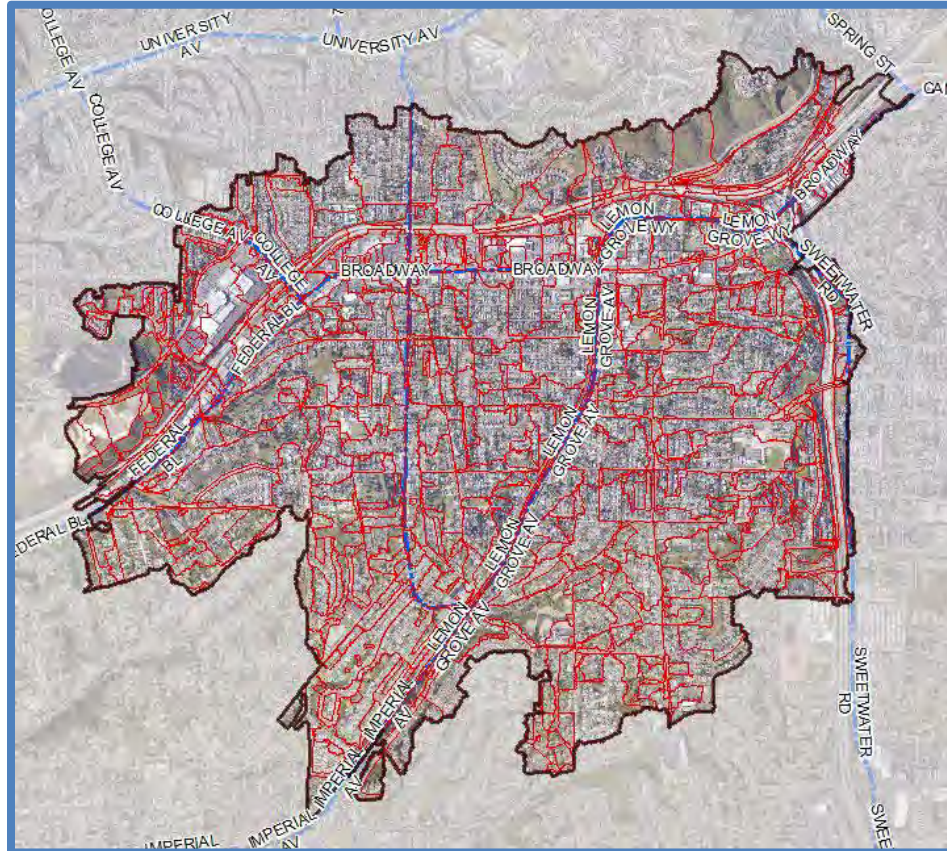
3.1 Drainage Patterns

The total drainage area in the study is approximately 3,508 acres and drains in a south westerly direction. The topography of the city is characterized by relatively flat to mild slopes in developed areas, and steeper slopes on the edge of the city boundary and the valleys formed primarily around Lemon Grove Avenue and Federal Boulevard. The drainage infrastructure is a combination of pipes and culverts that are more prevalent along main streets, and open channels and ditches that are present more in the residential areas.

3.1.1 Subcatchment Delineations

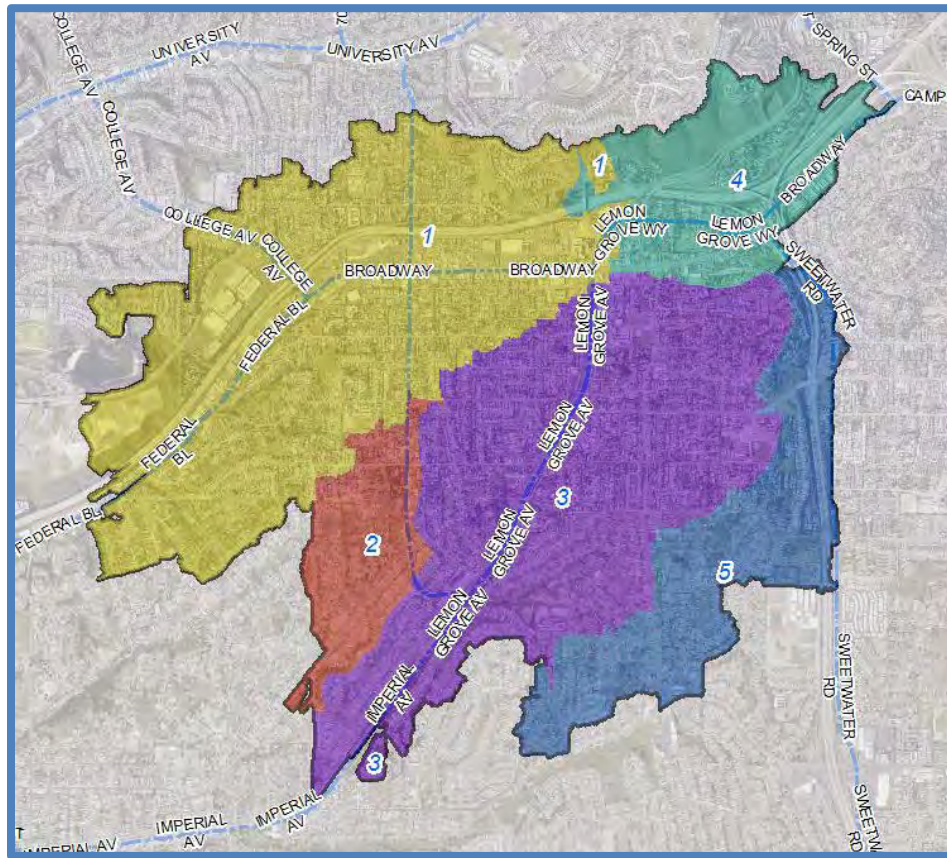
RICK utilized a semi-automated delineation tools in GIS to create initial delineations of subcatchments and flow paths for each inlet. After the initial delineation, RICK modified the subcatchment areas during the QA/QC process and ended with 861 subcatchments, as seen in Figure 3-1. Due to the high resolution of the topographic data, the GIS delineation tools were able to identify flow paths along curbed roadways, through backyards, and across driveways, establishing an effective baseline for delineations and reducing the time required to QA/QC the initial delineations.

Figure 3-1: Drainage areas of existing condition



These subcatchments were then combined to create five (5) overall subwatershed systems labeled 1-5 based on their location west to east. These systems, as seen in Figure 3-2, can be identified by their major street or drainage path. System 1 contains Broadway and Federal Boulevard, System 2 contains Massachusetts Avenue, System 3 contains Lemon Grove Avenue, System 4 contains part of Broadway and Sweetwater Road, and System 5 contains some of Sweetwater Road and consists of the rest of the drainage areas that do not drain to Systems 1-4.

Figure 3-2: Systems of existing condition



3.1.2 Surface Conveyance

An important component of the storm water conveyance system in the Lemon Grove study area is the multitude of channels and ditches connecting the conveyance behind and around buildings. The City of Lemon Grove is an urbanized system with undersized facilities and the 2-D mesh provided a way to visualize the surface conveyance.

There are a few open channels of note in the study area. These main channels run behind buildings, adjacent to railroad tracks, and are main portions of the backbone drainage system in their respective drainage area system. System 1 has large channels behind the commercial buildings on Federal Boulevard. System 3 has large channels next to the railroad tracks on Lemon Grove Avenue.

Some of these channels are smaller than the resolution of the 2-D mesh and proved to be a challenge to represent in a 2-D model. In order to properly analyze the geometry and conveyance of these open channels, they were modeled as 1-D conduits with a 2-D mesh overlay. Larger channels that could be defined solely by the DEM were modeled just with 2-D mesh.

Refer to the existing condition maps located in Appendix A for a visual overview of the surface conveyance conditions modeled.

3.2 Model Setup

3.2.1 Existing Condition Model Methodology

The corrected GIS storm drain inventory discussed in section 2.0 was imported into PCSWMM and formed the basis of the 1-D conveyance portion of the study area model. Storm drain networks were visually inspected horizontally with reference to aerial imagery and vertically by viewing the storm drain profiles generated within the program to correct any erroneous data.

A DEM was also critical in developing the 2-D model surface to represent storm water flows in streets, alleys, and open space areas. A directional 2-D mesh was applied in these areas to represent the preferential direction of flow. This surface was coupled to the 1-D storm drain inventory to match the rim elevations at points of connection to the storm drain conveyance system.

Table 3-1 below shows a breakdown of the storm drain pipes analyzed in the existing condition model.

Table 3-1: Existing Conditions Storm Drain Pipe Diameters and Lengths Modeled

Diameter (in)	Length (ft)	Pipe and Culvert Count	%
4	614	2	0.5%
6	984	5	0.7%
8	667	4	0.5%
10	73	1	0.1%
11	62	1	0%
12	4683	58	3.6%
15	2,147	21	1.6%
18	33,514	329	25.5%
20	425	2	0.3%
21	754	5	0.6%
24	30,791	246	23.5%
27	178	3	0.1%
30	17,432	95	13.3%
33	1,378	4	1.1%
36	15,748	82	12.0%
39	98	1	0.1%
42	5,117	22	3.9%
48	6,039	46	4.6%
54	757	5	0.6%
57	735	6	0.6%
60	2,835	12	2.2%
66	292	2	0.2%
72	4,447	20	3.4%
78	1,484	5	1.1%
Total	131,255	977	100%

See Appendix A for a summary of the hydrologic results of the single-storm model simulations at each storm drain outfall modeled within the study area.

3.3 Existing Condition Results

Model results were obtained for the 24-hour storms at the 2-, 10-, and 100-year return period from the precipitation data obtained from NOAA Atlas 14 PFDS as discussed in the memo located in Appendix A of this report. The 24-hour storm events were judged to be the most pertinent storm events due to the volume of runoff generated and the peak flows generated at the main outfall of each storm drain system.

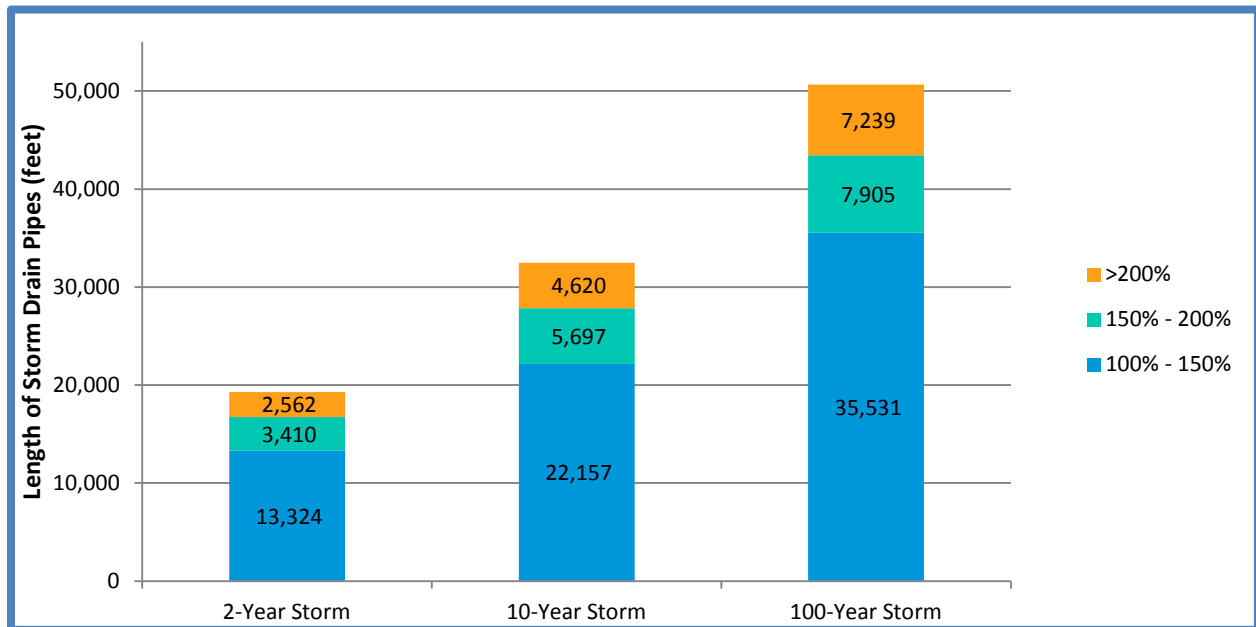
Modeling results highlighted deficiencies in the LOS of the conveyance system within the study area and full results can be found in Appendix E.

Table 3-2 provides an overview of the results observed in the 100-year, 24-hour storm event and the capacity of the storm drain network.

Table 3-2: Existing Condition Storm Drain Conveyance Capacity Summary

Conveyance Capacity (%)	2-Year Storm Pipe Length (feet)	10-Year Storm Pipe Length (feet)	100-Year Storm Pipe Length (feet)
< 100	111,960	98,780	80,580
100 - 150	13,324	22,157	35,531
150 - 200	3,410	5,697	7,905
> 200	2,562	4,620	7,239
Total	131,255	131,255	131,255

Figure 3-3: Existing Condition Storm Drain Conveyance Capacity



This undersized conveyance capacity storm drain caused a significant amount of storm water to become ponded on the street surfaces which are at very low elevations. The result is that the storm drain pipes become full and the storm water ponds in excess of 1 foot on the surface at the low points. Table 3-3 provides a summary overview of the peak storm water stored on the 2-D surface and the overall corresponding ponding depth greater than 1 inch.

Table 3-3: Existing Condition 2-D Cell Peak Storage Volume 24-HR Storm Events

Ponding Depth (inches)	2-Year Storm		10-Year Storm		100-Year Storm	
	Volume (Ac.-Ft.)	Structures (#)	Volume (Ac.-Ft.)	Structures (#)	Volume (Ac.-Ft.)	Structures (#)
0 - 6	11.42	-	43.85	-	21.99	-
6 - 12	9.83	-	13.44	-	22.34	-
> 12	34.85	-	29.84	-	105.34	-
Total	56.10	-	87.14	-	149.67	-

Refer to the existing condition maps located in Appendix C for a visual representation of the depths and limits of surface inundation within the study area.

Table 3-4 presents a summary table of peak flow rate results at the storm drain outfall locations obtained from the modeling efforts.

Table 3-4: Existing Condition Storm Drain Outfall Summary

System ID	Drainage Area (Ac.)	Peak Flow Rates (cfs)		
		2-YR	10-YR	100-YR
1	1317.2	563.2	967.2	1724.3
2	245.4	132.08	196.5	353.6
3	1120.3	523.5	912	1604
4	600.2	345.4	551	1021.6
5	457.6	357.9	614.6	987.8

4.0 Recommended Improvements

4.1 Interim Solution for CMP Assessment

Field surveying was prepared for the CMP portion of the five (5) identified systems. Refer to Appendix B for backup information from the field survey. Refer to Attachment C for exhibits showing each CMP section.

Based on the results of the field survey, the CMP systems were televised using closed-circuit television (CCTV) by Affordable Pipeline Services.

There are 149 segments that were surveyed, and a rating system was used by Affordable Pipeline. Grades were assigned and they are as follows:

- 5 – Most severe
- 4 – Severe
- 3 – Moderate
- 2 – Minor to Moderate
- 1 – Minor
- 0 – Minor or No Televising Available

According to results from the televised survey, CMP conditions range from very poor to good. Many sections are classified as severe by way of debris accumulation and damage through corrosion where: the bottom half of the pipes are missing, large diameter holes are prevalent, or severe corrosion has made many small holes throughout a particular segment. Other segments are classified as severely damaged by way of deformation and deformation is characterized as severe if it restricts flow and/or the structural integrity of the pipe and prevents repair. Segments classified as moderate have light corrosion and/or debris accumulation and segments classified as minor are in good condition with no or minor corrosion and no or minor debris accumulation.

The repair techniques can be summarized into six (6) methods and they are as follows:

- Cured in Place Pipe (CIPP) Lining
- Cured in Place Pipe Sectional Repairs
- Top Hat (TH) in Lateral/Main Connection Sealing
- Pressurized Hydrophilic Grout and Urethane Sealant
- Hydro-Scouring
- Pipe Removal and Replacement

Refer to Appendix B for definitions of each of these repair techniques. The more urgent and least costly repairs are those that are fully clogged with sediment and debris and they can be repaired by hydro-scour. The next least costly of the more urgent repairs are those with severe corrosion and multiple holes that are less than one (1)-foot diameter and these can be repaired with CIPP lining. The other set or more urgent repairs that are most costly are those that are severely deformed or corroded with sections of pipe missing or large diameter holes (greater than one(1)-foot diameter) and these will require pipe removal and replacement. Below is a summary of the CMP condition and the amount of each type of recommended repair.

Table 4-1: Summary of Pipe Segment Rating and Quantity

Grade/Rating	Quantity
5 – Most Severe	56
4 - Severe	14
3 - Moderate	56
2 – Minor to Moderate	5
0 – Minor or No Televising Available	17

Table 4-2: Summary of Repair Technique, Quantity, and Length

Repair Technique	Segment Quantity	Segment Length (ft)
1 - Cured in Place Pipe (CIPP) Lining	20	1,860
2 - Cured in Place Pipe Sectional Repairs	1	430
3 - Top Hat (TH) in Lateral/Main Connection Sealing	1	--
4 - Pressurized Hydrophilic Grout and Urethane Sealant	4	895
5 - Hydro-Scouring	47	4,915
6 - Pipe Removal and Replacement	28	1,043

About one third or 49 of the inspected CMP's require rehabilitation or replacement. Twenty-eight (28) pipes are either fully clogged with debris or have significant debris and need hydro-scouring. The remaining pipes have minor to moderated severity and do not require significant repair or maintenance.

Refer to Appendix B for backup information from the televised survey (CCTV), results, maps, and summary tables.

4.2 Regional Locations of Interest

Regional Improvement Opportunities that could provide detention or water quality benefits were identified through visual inspection. The size of the contributing drainage areas and land parcel ownership were the major contributing factors for identifying regional opportunities. A conscious effort was made to limit the identification of regional opportunities to parcels owned by the City of Lemon Grove; however, some locations on private parcels were identified as well in certain circumstances due to constraints.

In total ten (10) locations are currently identified as potentially viable regional improvement opportunities. The locations are listed below in Table 4-3 and refer to Appendix C for an exhibit of the locations.

Table 4-3: Regional Improvement Opportunities

Regional Improvement Opportunities			
ID	Contributing Area (ac)	Impervious Area (ac)	Parcel Ownership
1	57.8	45.3	Thaidigsman Family Trust
2	324.4	201.2	Lemon Grove Alano Club
3	33.2	20.4	Retail Portfolio 30-1 LLC
4	14.4	7.5	Lemon Grove School District
5	54.6	33.4	Erickson Linda R
6	62.2	34.4	Shra Crockett Inc
7	124.3	74.1	Caltrans
8	208.5	128.2	City of Lemon Grove
9	35.3	17.1	Union Pacific Railroad Co.
10	32.8	19.9	Senior Community Centers/Communitiy Health Partnerships

4.3 Drainage Recommendations

To be completed in future efforts.

4.4 CMP Recommendations

To be completed in future efforts.

5.0 Conclusions

This DMP successfully utilized high-resolution data with an integrated PCSWMM modeling approach to determine existing deficiencies and identify recommended improvements for drainage infrastructure. The results from the project provide the City of Lemon Grove with the tools necessary to move into the recommended infrastructure phase of drainage master planning and prioritize their stormwater infrastructure needs.

The 1-D/2-D H&H model provides a visual representation of surface drainage in the City of Lemon Grove during different storm events. During the 2-, 10-, and 100-year, 24-hour storms, significant flooding occurs along Federal Boulevard and Lemon Grove Avenue. Additionally, during the 100-year, 24-hour storm a section of Broadway and the intersection of Broadway and Sweetwater Way experience significant flooding. The modeling also provides a list of deficient systems. In the 2-, 10, and 100-year, 24-hour storm events there are 135, 227, and 347 deficient conduits, respectively.

This study also provides ten (10) potential regional locations for future water quality BMPs. The delineations created for the entire watershed created the opportunity to calculate the contributing areas to each of these regional improvement opportunities. These locations were chosen based on the surrounding space and the contributing area.

6.0 References

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A. H&H Backup

1.0 Hydrologic Methodology and Modeling

PCSWMM uses EPA's SWMM Version 5 (SWMM5) engine, which uses the nonlinear reservoir model methodology to estimate the rainfall-runoff relationship for a subarea. Nonlinear reservoir modeling uses a combination of mass conservation and the Manning Equation to determine the volumetric flow rate from a subcatchment. SWMM5 requires several parameters to calculate runoff from each subcatchment. The parameters include area (in acres), characteristic width of the subcatchment, slope, percent impervious, Manning's "n" values for pervious and impervious overland surfaces, depression storage for pervious and impervious surfaces, percent of impervious area with no depression storage, and infiltration parameters.

1.1 Rainfall

Point precipitation data for the City of Lemon Grove study area was obtained from the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Precipitation Frequency Data Server (PFDS) (NOAA 2011). This data was selected because it has a longer period of record than the data presented in the *County of San Diego Hydrology Manual* (2003) to best reflect the historical rainfall and flooding events specific to the study area. Point rainfall data (total rainfall depth) was obtained for two rain gages nearest to the study area: Chollas Reservoir and La Mesa to compare with precipitation data obtained at the centroid of the study area (See Table 1-1).

Table 1-1: San Diego County local 24-Hour NOAA precipitation depth (inches)

Gage	Lat.	Long.	2-YR, 24-HR Precip. (in.)	10-YR, 24-HR Precip. (in.)	100-YR, 24-HR Precip. (in.)
Chollas Reservoir	32.7333	-117.0667	1.85	2.95	4.55
La Mesa	32.7675	-117.0233	1.97	3.19	5.03
City of Lemon Grove Study Area	32.7333	-117.0344	1.89	2.97	4.11

Source: NOAA 2011.

Notes: in. = inches; Lat. = latitude; Long. = longitude.

Based on this comparison, the rainfall precipitation depth data obtained at the centroid of the City of Lemon Grove study area is within range of nearby rain gages for the 2-, 10-, and 100-year storm events.

1.1.1 Rainfall Pattern

Setting up a storm simulation in EPA's Storm Water Management Model (SWMM) requires a hyetograph to distribute rainfall over time throughout the storm duration. Two options were considered:

- (2/3, 1/3) distribution as presented in the *County of San Diego Drainage Design Manual* (2003).

- Center distribution, (1/2, 1/2), based on USACE's HEC TD-15 guidance, *Hydrologic Analysis of Ungaged Watersheds Using HEC-1* (USACE 1982).

The 24-hour storm duration was selected for the study. The center storm distribution was selected because it meets this study's goals. The center storm distribution provides the peak intensities necessary to assess drainage infrastructure at the inlet scale (up to 5-minute rainfall intensities) while preserving the total volume of runoff generated from the storm duration. The two options generate the same precipitation volume however the (2/3, 1/3) storm distribution generates a greater volume leading up to the peak of the storm.

1.1.2 Rainfall Hyetograph Development

To develop the unit intensity duration relationship for the City of Lemon Grove study area, NOAA precipitation depth data from three rain gage stations within the study area were obtained for the 2-, 10-, and 100-year, 24-hour storm events. The point rainfall depth data obtained from the NOAA PFDS was used to generate intensity-duration pairs for the given durations. These intensity-duration pairs are incorporated into the rainfall intensity hyetographs. The 100-year precipitation depth data from these rain gages and the City of Lemon Grove study area are shown in Figure 1-1 (NOAA 2011).

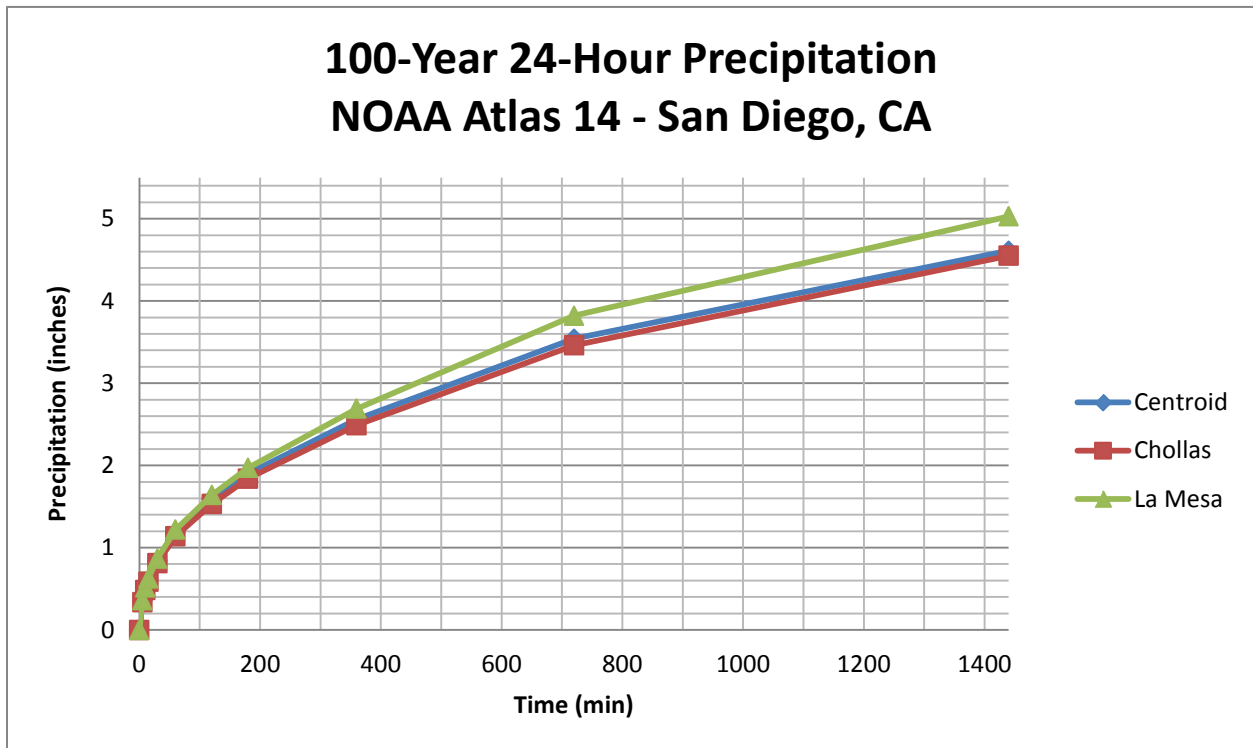


Figure 1-1: 100-year, 24-hour precipitation depth

The resulting rainfall intensity-duration data points generated from the NOAA precipitation depth data were reviewed and plotted for comparison (NOAA 2011). This was done to visually identify any discrepancy in the intensity-duration pairs when plotted. The intensity-duration pairs will appear linear on a log-log scale. The graphs showed that the rainfall intensity-duration relationship yielded a linear relationship for the rainfall data collected at the rain gages, and the precipitation data for the centroid of

the study area was within range of the 2 nearby rain gages (Figure 1-2). This comparison provides a check to verify that the rainfall data obtained directly at the centroid of the City of Lemon Grove study area from the NOAA PFDS correlates with the data at the nearest rain gages in the vicinity of the study area.

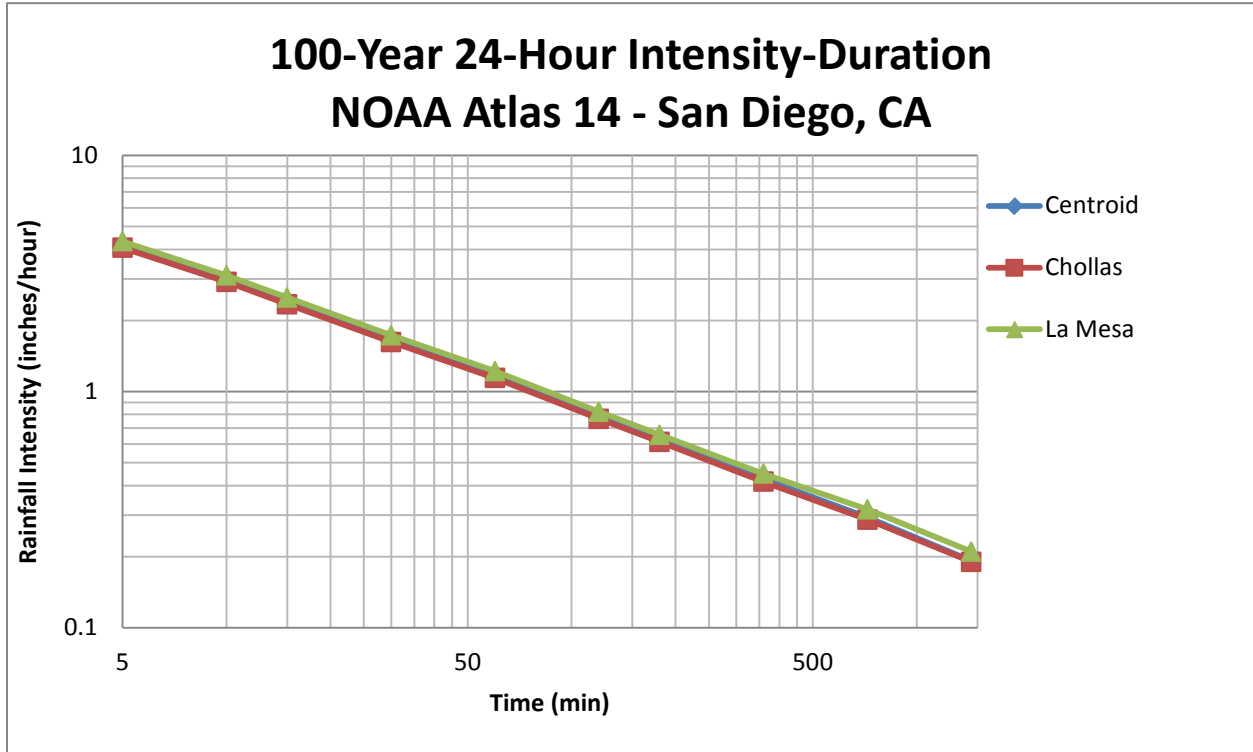


Figure 1-2: 100-year intensity-duration relationship

Since the intensities plotted showed similar patterns for the two gages and the data for the City of Lemon Grove area within range of the data obtained at the rain gages, it was determined that the rainfall data aggregated for the study area would be appropriate for modeling purposes. The precipitation was entered in 5-minute increments. Precipitation depths at certain durations were obtained directly from NOAA Atlas 14 as seen in the rainfall data shown in Appendix A (NOAA 2011). Precipitation depths bounded by the given values were determined by log-log interpolation at 5 minute increments.

The incremental precipitation data was then arranged into a center-distributed rainfall intensity hyetograph with the peak of the storm centered at 12 hours, as seen in Figure 1-3. A (2/3, 1/3) rainfall distribution with the storm peak occurring at 16 hours, as described in the 2003 *San Diego County Hydrology Manual* was considered and ultimately not selected for this study. This approach delivers a greater volume of rainfall prior to the peak of the storm, which has a significant impact on storage volumes on street surfaces and storm drain facilities, compared to the center-distributed balanced storm (1/2, 1/2 distribution). A storm distribution with the peak rainfall intensity arranged at 12 hours generates the necessary peak flows while delivering the full rainfall volume with a symmetric distribution during the 24-hour storm event.

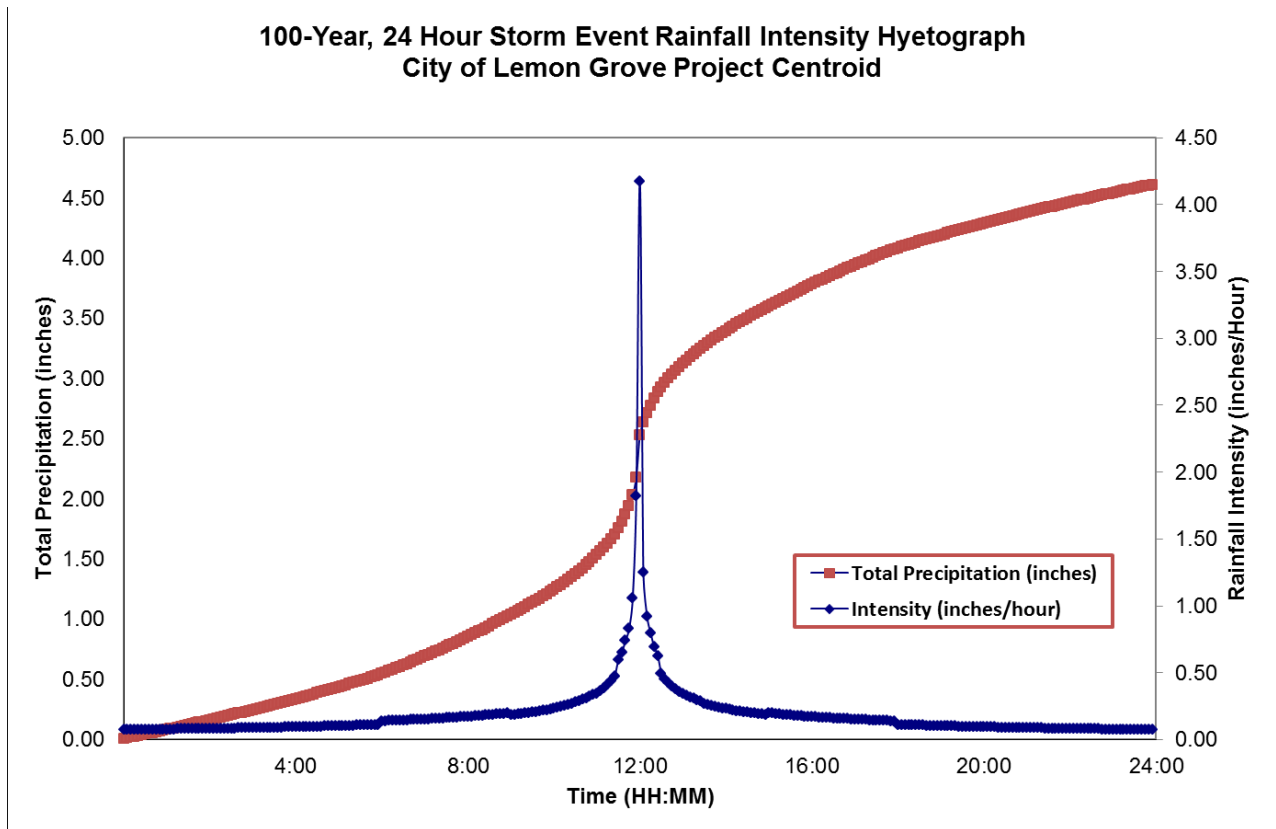


Figure 1-3: 100-year, 24-hour intensity hyetograph

1.1.3 Rainfall Losses

The Green-Ampt Method was used to estimate infiltration potential, which requires the following parameters: soil capillary suction head, soil saturated hydraulic conductivity, and initial moisture deficit (i.e., the difference between soil porosity and initial moisture content). This method is consistent with the guidance presented in the *County of San Diego BMP Design Manual (2019)* for hydromodification management SWMM modeling efforts in San Diego, and further documented in the *Storm Water Management Model User's Manual Version 5.1* (Rossman & Huber, 2015).

Soil parameters were obtained using the listed values in table G.1-4, from Appendix G of the 2019 *County of San Diego BMP Design Manual*. These Green-Ampt soil parameters listed in the table were established by the manual for use in the San Diego Region, and are within the acceptable ranges specified in Tables A.2 and A.3 of the SWMM User's Manual. The distribution of hydrologic soil groups within the City of Lemon Grove study area is based on SANDAG's ArcGIS feature class for National Resources Conservation Service hydrologic soil groups (refer to Appendix A-4 for an exhibit documenting the mapped NRCS hydrologic soil groups within the study area). Areas with an "unknown" soil classification were assumed to be type D soils for this analysis.

The land cover feature class was used to determine the percentage of impervious area for each subcatchment based on assigned impervious percentages to each land use. The land use shapes were intersected with the inlet drainage area delineations to perform an area-weighting analysis of the average impervious cover using GIS tools. Refer to Appendix C for a map which documents the land uses throughout the study area and the assigned impervious percentage for each land use.

To determine the overland Manning's "n" values and percent impervious parameters, the guidance in Appendix G of the 2019 *County of San Diego BMP Design Manual* was followed. The "n" values are: 0.012 for impervious cover, and 0.15 for pervious cover. These values were established by the BMP Design Manual for use in the San Diego region, and are within the acceptable ranges documented in Table 3-5 of the *Storm Water Management Model Reference Manual Volume I – Hydrology* (Rossman 2016).

1.2 Hydrologic Routing

Each subcatchment is connected via a conveyance node and link network (inlets and storm drain pipes), which routes runoff generated towards the storm drain system outfall. Refer to Section 2.0 for more information regarding the hydraulic analysis methodology and modeling procedures.

2.0 Hydraulic Methodology and Modeling

2.1 Flow Routing

The PCSWMM platform uses SWMM5 to perform hydraulic calculations and presents the same flow routing options as the EPA SWMM computer application. This ensures that the input parameters and results obtained are directly compatible between the proprietary PCSWMM program and the public domain EPA SWMM program. Flow routing is governed by the equations of continuity, mass, and momentum—also known as the St. Venant Flow equations—with flexibility offered to the modeler regarding the complexity of the terms considered in the equations. The program allows the modeler to select from the Steady Flow, Kinematic Wave, and Dynamic Wave routing options. The normal depth equation is used in all routing options to relate flow depth, flow rate, and surface friction.

Steady Flow routing was judged to be inappropriate for modeling this study area as it does not actually represent flow routing per a defined time step during the simulation. It is the simplest computation method that translates the inflow hydrographs directly downstream without any change in shape and simply uses the normal depth equations to relate flow rates, depths, and cross-sectional areas of the conveyance network. This method does not represent any backwater effects or pressurized flow, and does not take into account the user-defined computational time steps during the storm simulation.

Kinematic Wave routing was not selected for this study as it was incompatible with the 2-D analysis. It employs a simplified form of the momentum equation but does not take into account all of the equation's terms. This routing method does not account for any backwater effects or pressurized flow.

Dynamic Wave routing was the option selected for all analyses performed in this study. The purpose of this study was to produce a model that would most closely relate the actual conditions of the dynamic relationship between surface and subsurface conveyance, and potential flooding concerns. This routing option considers all terms of the St. Venant Flow equations and presents the most theoretically correct results accounting for backwater effects, pressurized flow, flow attenuation, and reversal of flow. The caveat in selecting this routing option, however, was maintaining numerical stability in the model by using extremely small computational time steps that resulted in significant simulation times for 2-D analyses.

2.2 Conveyance Material and Manning's Roughness Coefficients

The study area was mainly comprised of Reinforced Concrete Pipe (RCP) and cast-in-place concrete pipe (CIPCP) storm drain systems, although a few other storm drain materials (asbestos cement, corrugated metal, and polyvinyl chloride) were also present in the existing inventory. This was determined through examination of the GIS storm drain inventory provided by the City, which was reviewed and updated during the course of the data collection and compilation process described in Section 2 of the DMP.

In PCSWMM (and EPA SWMM), the Manning roughness values are associated with a conveyance material database. Each channel, pipe, and conduit in the 1-D portion of the model must have a material code assigned to it; in that way, the resistance to flow and energy losses along the conduit length can be calculated.

Table 2-1 lists all the material types present within the study area and the associated Manning's "n" value assigned to each material code in the models.

Table 2-1: Conveyance material abbreviations and Manning's roughness coefficients

Material Code	Material Description	Roughness Coefficient
ABS	Acrylonitrile butadiene styrene	0.013
ACP	Asbestos Cement Pipe	0.013
CIPCP	Cast-in-Place Concrete Pipe	0.019
CMP	Corrugated Metal Pipe	0.024
HDPE	High-density polyethylene	0.013
PVC	Polyvinyl Chloride	0.013
RCP/RCB	Reinforced Concrete Pipe/Box	0.013
SP	Steel Pipe	0.024
VCP	Vitrified clay pipe	0.014

The Manning's conduit roughness values were assigned based on Chapter 3 of the *San Diego Hydraulic Design Manual* (2014).

2.3 Storm Water Inlet Modeling

The GIS storm water conveyance dataset which was revised and updated during the course of the data collection and compilation process includes 23 inlet or catch basin structures for the collection of surface runoff from streets, ditches, swales, and overland flow. Undersized storm water inlets can limit the efficiency of the existing conveyance infrastructure to collect and convey runoff during storm events. The flow interception capacity of each inlet type was estimated based on the inlet structure type, location, street slope, and structure dimensions, following the 2014 *County of San Diego Hydraulic Design Manual* guidance (CSDDPW 2014). Note that the 50-percent clogging reduction factor was not applied for grated catch basin inlets. Flow interception at each inlet was included in the PCSWMM model with inflow rating curves as a function of street flow depth. The portion of storm water flows exceeding the capacity of the inlet was bypassed to the street conveyance in the 2-D models.

2.4 Coupled 1-D/2-D Model

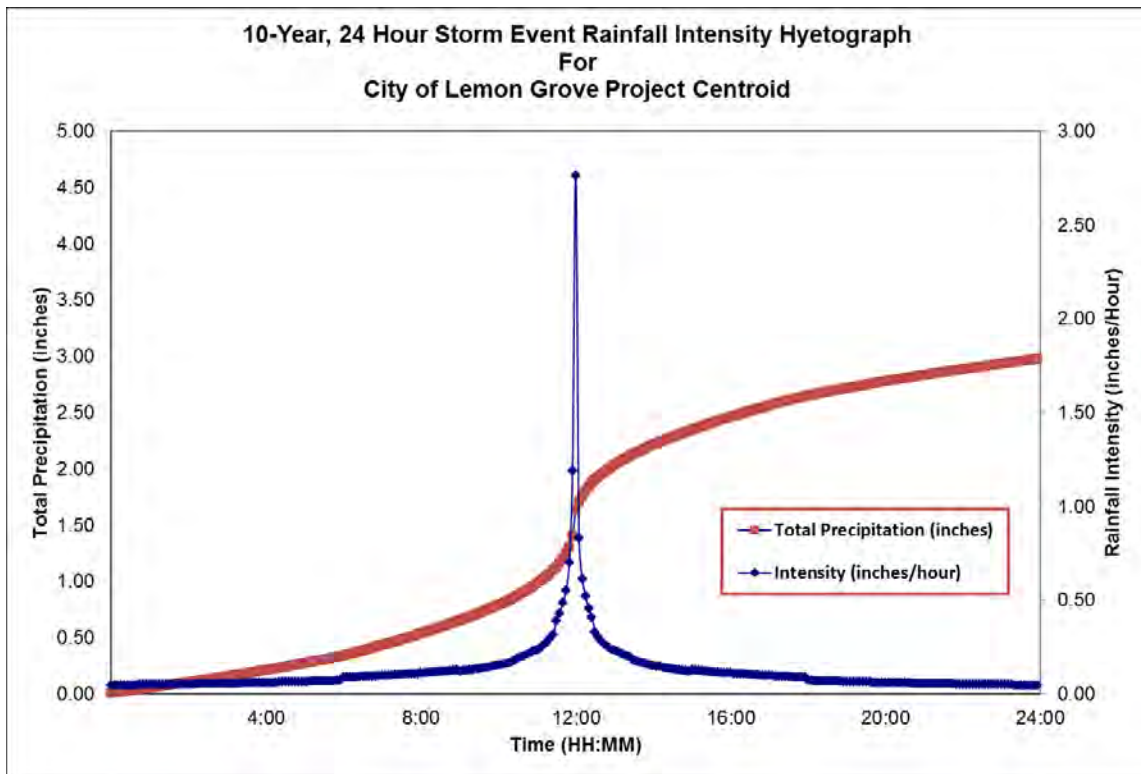
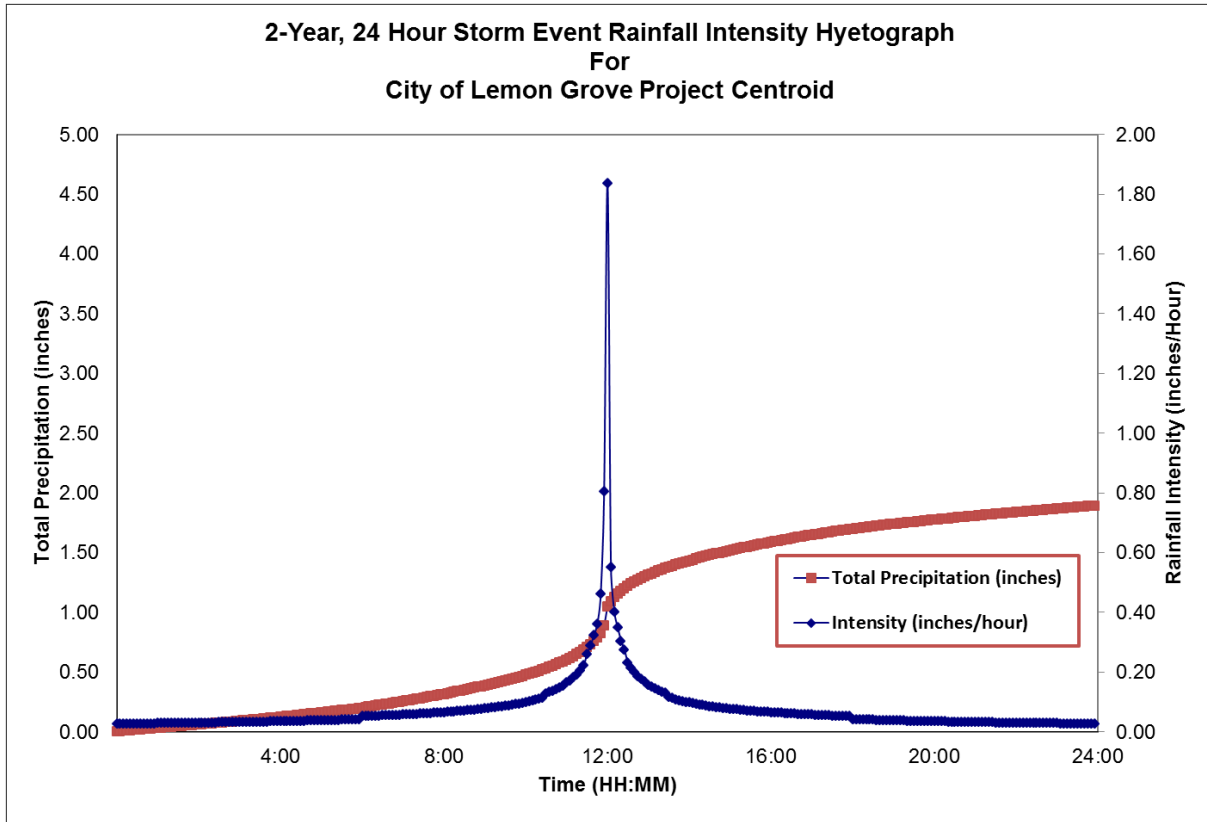
The development of the 1-D hydraulic model includes the pipe/open channel drainage network for all pipes 36 inches and larger. Pertinent pipes having less than 36-inch diameters also were included in the model if they were considered part of the primary backbone storm drain systems. Key hydraulic structures that control the flow entering or discharging from the primary system such as inlets, culverts, outfalls, and pipes also were included in the 1-D model.

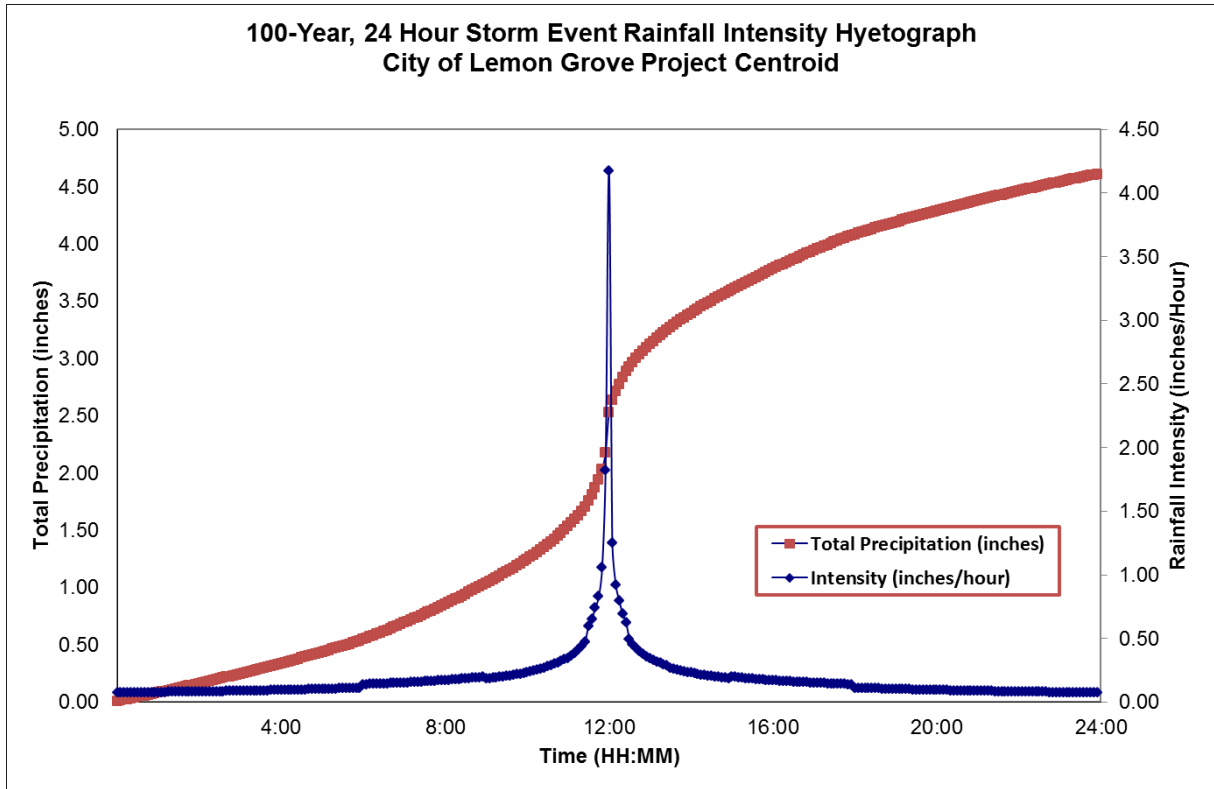
The surface storage and conveyance represented by the streets and other surfaces are accounted for in the 2-D hydraulic model of the City of Lemon Grove study area. The 2-D model was generated from an array of mesh (or grids) with a 10-ft. and 30 ft. resolutions to represent the surface conveyance. A 10-ft. resolution directional mesh was used to define the drainage patterns of streets and roads, and a 30-ft. resolution hexagonal mesh was applied globally to the remaining sections of the study area. The directional mesh generates 2-D surface cells which are forced along a defined preferential flow path, such as a street gutter flowline or alleyway centerline. This is useful for streets and channels. The hexagonal mesh generates 2-D surface cells which have six (6) defined flow directions in order to represent more possible flow directions across surfaces with less defined flow paths. This option is useful for flatter areas that do not have clearly defined flow paths.

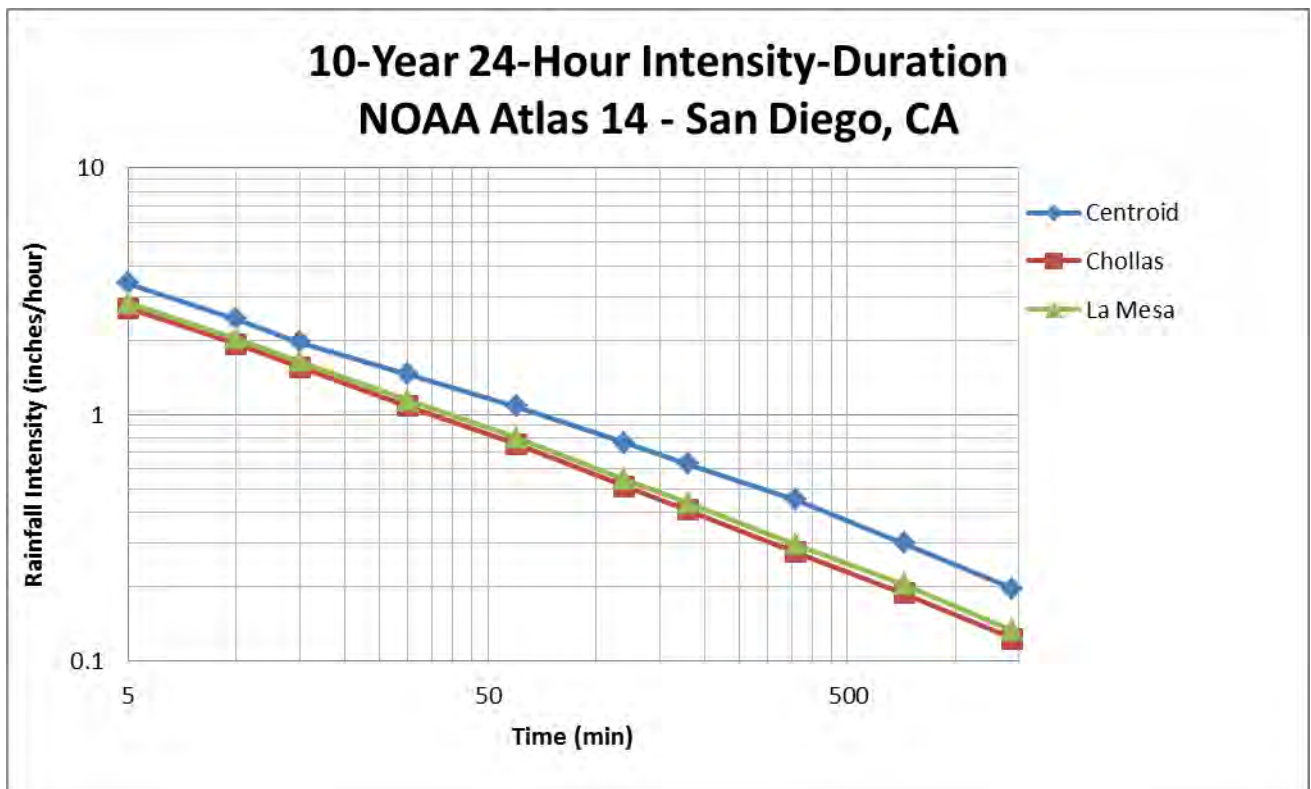
The overall 2-D mesh was developed from a high-resolution DEM data set by sampling elevation data at points with a 10-ft. or 30-ft. spatial resolution and was used to preserve the preferential flow paths and street conveyance that are part of the overall storm water conveyance system.

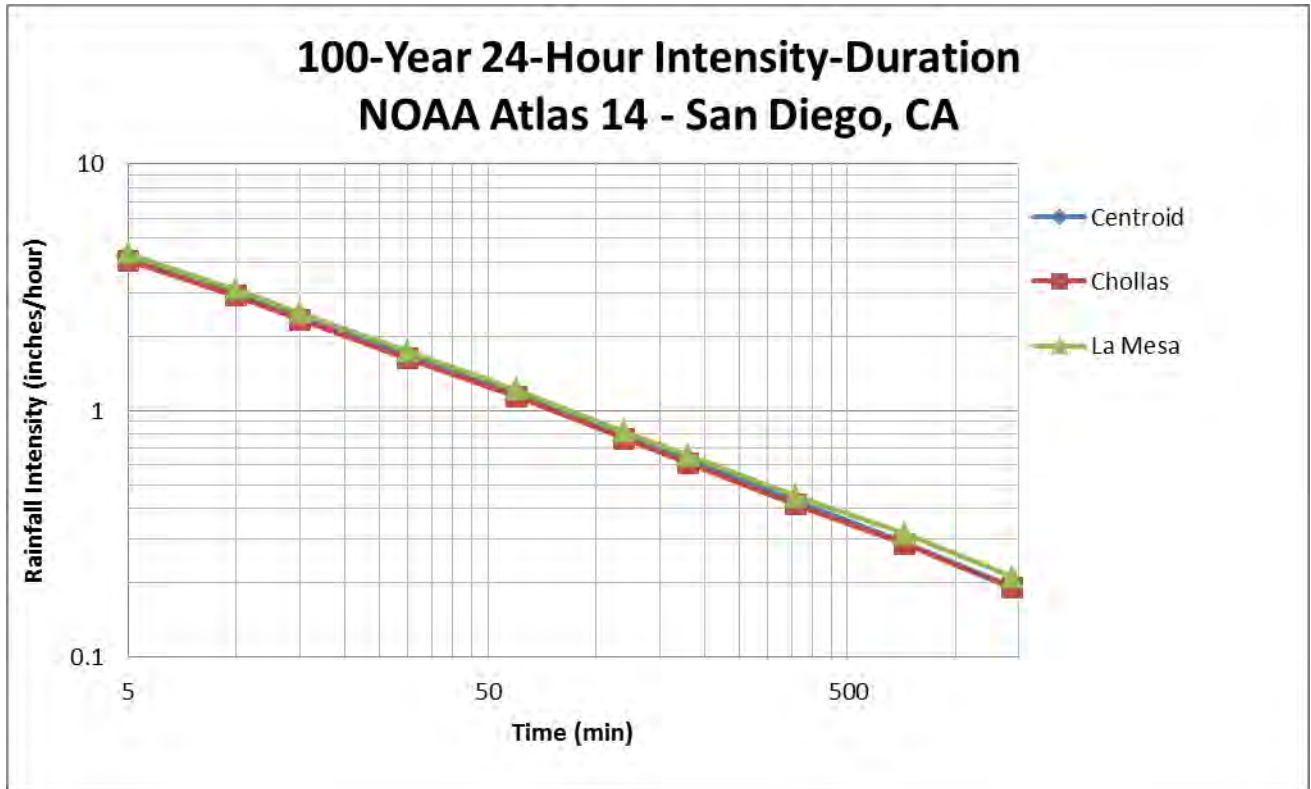
The two systems were coupled together at points where exchange of storm water between the surface conveyance system and the engineered storm water conveyance system could occur—typically at storm drain inlets, and outlet structures. The models were linked between nodes in the 1-D minor system (subsurface) and the 2-D major system (surface). The coupled models were then run and solved simultaneously, representing the storm water conveyance and storage on the street and in the storm water collection and conveyance system. The coupling of the 1-D and 2-D models allowed for bidirectional exchange of volume between the 2-D surface conveyance system and the engineered 1-D storm water system. By coupling the models together and solving the hydraulics simultaneously, the dynamic exchange of runoff between the surface flow and storm water conveyance system facilities is described.

The coupled 1-D/2-D model was executed using the runoff hydrographs resulting from NOAA rainfalls for the 2-, 10-, and 100-year storm events based on existing land uses to assess the current system's deficiencies.









APPENDIX A

Centroid Data



NOAA Atlas 14, Volume 6, Version 2
Location name: Lemon Grove, California, USA*
Latitude: 32.7333°, Longitude: -117.0344°
Elevation: 420.08 ft**



* source: ESRI Maps
 ** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps & aeriels](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.121 (0.101-0.146)	0.153 (0.128-0.185)	0.195 (0.163-0.236)	0.230 (0.190-0.280)	0.276 (0.221-0.349)	0.312 (0.244-0.403)	0.348 (0.266-0.462)	0.386 (0.286-0.527)	0.437 (0.309-0.622)	0.476 (0.326-0.703)
10-min	0.173 (0.145-0.209)	0.220 (0.184-0.265)	0.280 (0.234-0.339)	0.329 (0.273-0.402)	0.396 (0.317-0.501)	0.447 (0.350-0.578)	0.500 (0.381-0.662)	0.553 (0.409-0.755)	0.626 (0.444-0.892)	0.682 (0.467-1.01)
15-min	0.210 (0.176-0.253)	0.266 (0.222-0.320)	0.339 (0.283-0.410)	0.398 (0.330-0.486)	0.479 (0.383-0.605)	0.541 (0.423-0.699)	0.604 (0.460-0.801)	0.669 (0.495-0.913)	0.757 (0.536-1.08)	0.825 (0.564-1.22)
30-min	0.291 (0.244-0.350)	0.368 (0.308-0.445)	0.470 (0.392-0.569)	0.553 (0.457-0.674)	0.664 (0.531-0.840)	0.751 (0.587-0.970)	0.838 (0.639-1.11)	0.928 (0.687-1.27)	1.05 (0.744-1.50)	1.15 (0.783-1.69)
60-min	0.409 (0.343-0.493)	0.518 (0.434-0.625)	0.661 (0.552-0.800)	0.777 (0.643-0.949)	0.935 (0.747-1.18)	1.06 (0.825-1.36)	1.18 (0.898-1.56)	1.31 (0.966-1.78)	1.48 (1.05-2.11)	1.61 (1.10-2.38)
2-hr	0.565 (0.474-0.681)	0.710 (0.595-0.857)	0.900 (0.751-1.09)	1.05 (0.872-1.29)	1.26 (1.01-1.60)	1.42 (1.11-1.84)	1.59 (1.21-2.10)	1.75 (1.30-2.39)	1.98 (1.40-2.82)	2.16 (1.48-3.19)
3-hr	0.678 (0.568-0.816)	0.851 (0.713-1.03)	1.08 (0.900-1.31)	1.26 (1.05-1.54)	1.51 (1.21-1.91)	1.70 (1.33-2.20)	1.90 (1.45-2.52)	2.10 (1.55-2.87)	2.37 (1.68-3.38)	2.58 (1.76-3.81)
6-hr	0.894 (0.749-1.08)	1.13 (0.947-1.37)	1.44 (1.20-1.74)	1.69 (1.40-2.07)	2.03 (1.63-2.57)	2.29 (1.79-2.96)	2.56 (1.95-3.39)	2.83 (2.09-3.86)	3.20 (2.27-4.55)	3.48 (2.38-5.14)
12-hr	1.16 (0.971-1.40)	1.50 (1.26-1.81)	1.95 (1.63-2.36)	2.31 (1.91-2.82)	2.79 (2.23-3.53)	3.16 (2.47-4.09)	3.54 (2.69-4.69)	3.92 (2.90-5.35)	4.43 (3.14-6.32)	4.83 (3.30-7.14)
24-hr	1.42 (1.25-1.65)	1.89 (1.65-2.19)	2.49 (2.17-2.90)	2.97 (2.58-3.49)	3.62 (3.05-4.39)	4.11 (3.40-5.08)	4.61 (3.73-5.82)	5.12 (4.03-6.63)	5.80 (4.40-7.81)	6.33 (4.65-8.79)
2-day	1.75 (1.54-2.04)	2.34 (2.05-2.73)	3.10 (2.71-3.62)	3.71 (3.22-4.37)	4.53 (3.81-5.49)	5.15 (4.25-6.36)	5.77 (4.66-7.28)	6.40 (5.04-8.29)	7.24 (5.49-9.74)	7.89 (5.80-11.0)
3-day	1.98 (1.74-2.30)	2.66 (2.33-3.09)	3.52 (3.08-4.11)	4.22 (3.66-4.96)	5.15 (4.33-6.23)	5.85 (4.83-7.22)	6.55 (5.29-8.27)	7.26 (5.72-9.40)	8.21 (6.23-11.0)	8.94 (6.56-12.4)
4-day	2.16 (1.90-2.51)	2.90 (2.54-3.38)	3.85 (3.37-4.50)	4.61 (4.00-5.42)	5.63 (4.74-6.82)	6.39 (5.28-7.90)	7.16 (5.79-9.04)	7.94 (6.25-10.3)	8.98 (6.81-12.1)	9.77 (7.18-13.6)
7-day	2.55 (2.24-2.97)	3.42 (3.00-3.98)	4.54 (3.97-5.29)	5.43 (4.72-6.39)	6.63 (5.58-8.03)	7.54 (6.23-9.31)	8.45 (6.83-10.7)	9.38 (7.39-12.2)	10.6 (8.06-14.3)	11.6 (8.51-16.1)
10-day	2.82 (2.47-3.27)	3.77 (3.30-4.39)	5.00 (4.37-5.83)	5.98 (5.19-7.03)	7.30 (6.15-8.84)	8.30 (6.86-10.2)	9.31 (7.52-11.8)	10.3 (8.14-13.4)	11.7 (8.87-15.7)	12.8 (9.37-17.7)
20-day	3.45 (3.03-4.01)	4.62 (4.05-5.38)	6.12 (5.35-7.14)	7.31 (6.35-8.60)	8.90 (7.50-10.8)	10.1 (8.35-12.5)	11.3 (9.13-14.3)	12.5 (9.86-16.2)	14.1 (10.7-19.0)	15.4 (11.3-21.4)
30-day	4.14 (3.63-4.81)	5.53 (4.84-6.43)	7.29 (6.38-8.51)	8.70 (7.55-10.2)	10.6 (8.89-12.8)	11.9 (9.87-14.8)	13.3 (10.8-16.8)	14.7 (11.6-19.1)	16.6 (12.6-22.3)	18.0 (13.2-25.0)
45-day	4.88 (4.28-5.67)	6.48 (5.68-7.54)	8.50 (7.43-9.92)	10.1 (8.76-11.9)	12.2 (10.3-14.8)	13.7 (11.4-17.0)	15.3 (12.3-19.3)	16.8 (13.3-21.8)	18.9 (14.3-25.4)	20.4 (15.0-28.3)
60-day	5.69 (5.00-6.62)	7.52 (6.59-8.75)	9.80 (8.57-11.4)	11.6 (10.1-13.6)	13.9 (11.7-16.9)	15.6 (12.9-19.3)	17.3 (14.0-21.9)	19.0 (15.0-24.6)	21.2 (16.1-28.6)	22.9 (16.8-31.8)

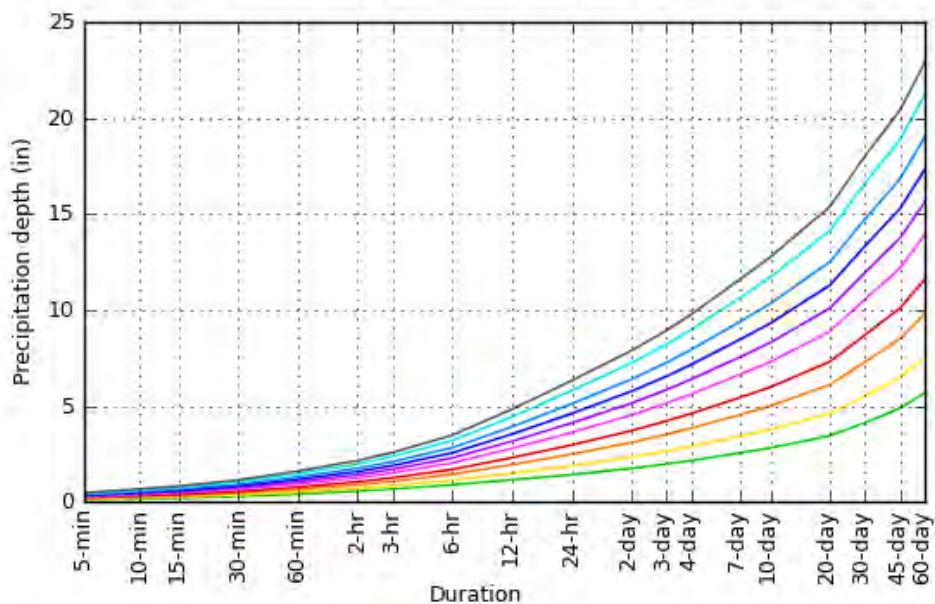
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

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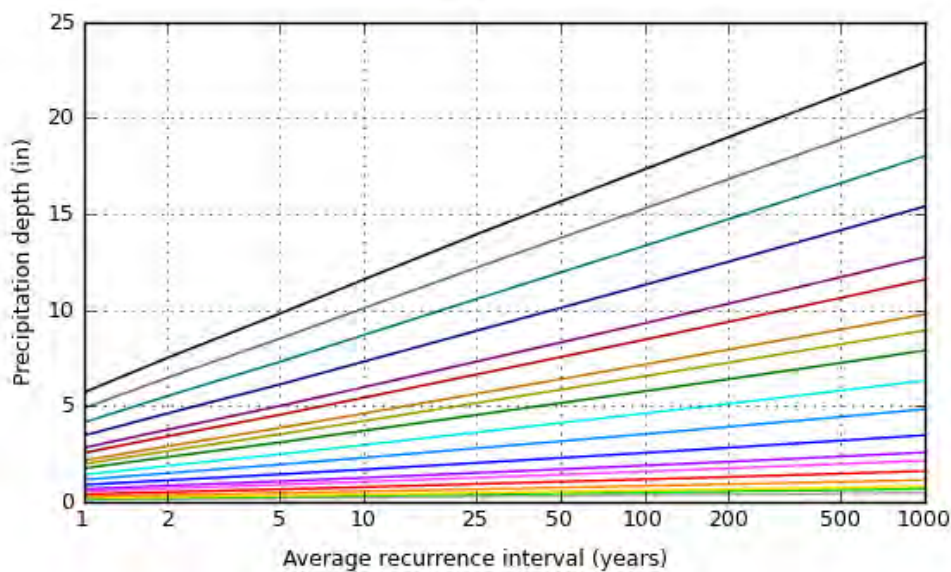
PF graphical

PDS-based depth-duration-frequency (DDF) curves

Latitude: 32.7333°, Longitude: -117.0344°



Average recurrence interval (years)
1
2
5
10
25
50
100
200
500
1000



Duration	
5-min	2-day
10-min	3-day
15-min	4-day
30-min	7-day
60-min	10-day
2-hr	20-day
3-hr	30-day
6-hr	45-day
12-hr	60-day
24-hr	

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Maps & aerials

Small scale terrain



Large scale terrain



Large scale map



Large scale aerial



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1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

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NOAA Atlas 14, Volume 6, Version 2
Location name: Lemon Grove, California, USA*
Latitude: 32.7333°, Longitude: -117.0344°
Elevation: 420.08 ft**



* source: ESRI Maps
 ** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps & aeriels](#)

PF tabular

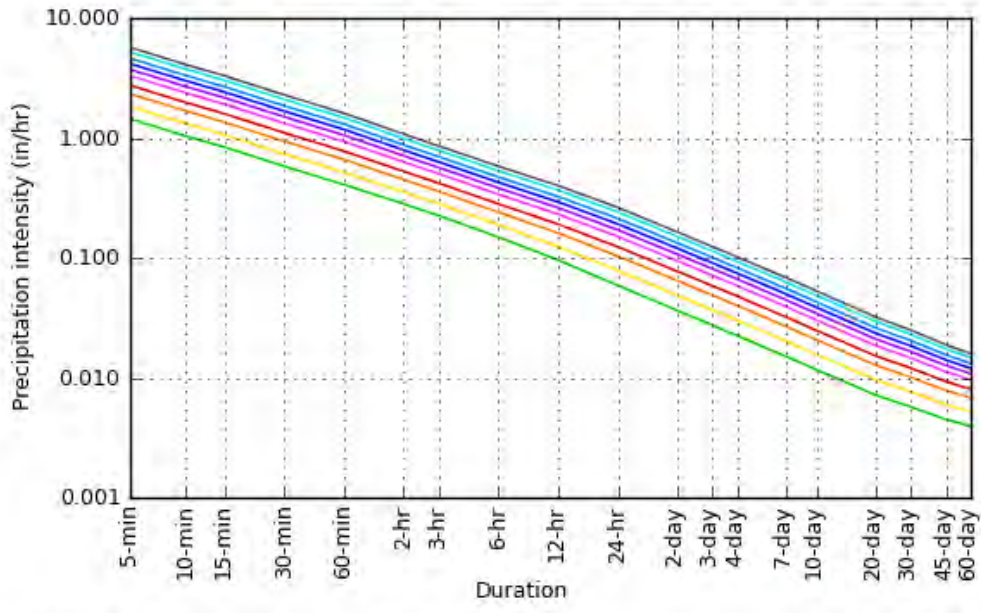
PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	1.45 (1.21-1.75)	1.84 (1.54-2.22)	2.34 (1.96-2.83)	2.76 (2.28-3.36)	3.31 (2.65-4.19)	3.74 (2.93-4.84)	4.18 (3.19-5.54)	4.63 (3.43-6.32)	5.24 (3.71-7.46)	5.71 (3.91-8.44)
10-min	1.04 (0.870-1.25)	1.32 (1.10-1.59)	1.68 (1.40-2.03)	1.97 (1.64-2.41)	2.38 (1.90-3.01)	2.68 (2.10-3.47)	3.00 (2.29-3.97)	3.32 (2.45-4.53)	3.76 (2.66-5.35)	4.09 (2.80-6.05)
15-min	0.840 (0.704-1.01)	1.06 (0.888-1.28)	1.36 (1.13-1.64)	1.59 (1.32-1.94)	1.92 (1.53-2.42)	2.16 (1.69-2.80)	2.42 (1.84-3.20)	2.68 (1.98-3.65)	3.03 (2.14-4.32)	3.30 (2.26-4.88)
30-min	0.582 (0.488-0.700)	0.736 (0.616-0.890)	0.940 (0.784-1.14)	1.11 (0.914-1.35)	1.33 (1.06-1.68)	1.50 (1.17-1.94)	1.68 (1.28-2.22)	1.86 (1.37-2.53)	2.10 (1.49-2.99)	2.29 (1.57-3.38)
60-min	0.409 (0.343-0.493)	0.518 (0.434-0.625)	0.661 (0.552-0.800)	0.777 (0.643-0.949)	0.935 (0.747-1.18)	1.06 (0.825-1.36)	1.18 (0.898-1.56)	1.31 (0.966-1.78)	1.48 (1.05-2.11)	1.61 (1.10-2.38)
2-hr	0.282 (0.237-0.340)	0.355 (0.298-0.428)	0.450 (0.376-0.544)	0.527 (0.436-0.643)	0.632 (0.504-0.798)	0.712 (0.556-0.919)	0.793 (0.604-1.05)	0.877 (0.649-1.20)	0.990 (0.702-1.41)	1.08 (0.738-1.59)
3-hr	0.226 (0.189-0.272)	0.283 (0.237-0.342)	0.359 (0.300-0.435)	0.421 (0.348-0.513)	0.504 (0.403-0.637)	0.567 (0.444-0.733)	0.632 (0.482-0.838)	0.699 (0.517-0.954)	0.789 (0.559-1.13)	0.859 (0.587-1.27)
6-hr	0.149 (0.125-0.180)	0.189 (0.158-0.228)	0.241 (0.201-0.291)	0.283 (0.234-0.345)	0.340 (0.271-0.429)	0.383 (0.299-0.495)	0.427 (0.325-0.566)	0.472 (0.350-0.645)	0.534 (0.378-0.761)	0.581 (0.397-0.859)
12-hr	0.096 (0.081-0.116)	0.125 (0.104-0.150)	0.162 (0.135-0.196)	0.191 (0.159-0.234)	0.232 (0.185-0.293)	0.262 (0.205-0.339)	0.293 (0.224-0.389)	0.325 (0.241-0.444)	0.368 (0.261-0.524)	0.401 (0.274-0.592)
24-hr	0.059 (0.052-0.069)	0.079 (0.069-0.091)	0.104 (0.091-0.121)	0.124 (0.107-0.146)	0.151 (0.127-0.183)	0.171 (0.142-0.212)	0.192 (0.155-0.243)	0.213 (0.168-0.276)	0.242 (0.183-0.325)	0.264 (0.194-0.366)
2-day	0.036 (0.032-0.042)	0.049 (0.043-0.057)	0.065 (0.057-0.075)	0.077 (0.067-0.091)	0.094 (0.079-0.114)	0.107 (0.089-0.132)	0.120 (0.097-0.152)	0.133 (0.105-0.173)	0.151 (0.114-0.203)	0.164 (0.121-0.228)
3-day	0.028 (0.024-0.032)	0.037 (0.032-0.043)	0.049 (0.043-0.057)	0.059 (0.051-0.069)	0.071 (0.060-0.087)	0.081 (0.067-0.100)	0.091 (0.073-0.115)	0.101 (0.079-0.131)	0.114 (0.086-0.153)	0.124 (0.091-0.172)
4-day	0.023 (0.020-0.026)	0.030 (0.027-0.035)	0.040 (0.035-0.047)	0.048 (0.042-0.056)	0.059 (0.049-0.071)	0.067 (0.055-0.082)	0.075 (0.060-0.094)	0.083 (0.065-0.107)	0.094 (0.071-0.126)	0.102 (0.075-0.141)
7-day	0.015 (0.013-0.018)	0.020 (0.018-0.024)	0.027 (0.024-0.032)	0.032 (0.028-0.038)	0.039 (0.033-0.048)	0.045 (0.037-0.055)	0.050 (0.041-0.064)	0.056 (0.044-0.072)	0.063 (0.048-0.085)	0.069 (0.051-0.096)
10-day	0.012 (0.010-0.014)	0.016 (0.014-0.018)	0.021 (0.018-0.024)	0.025 (0.022-0.029)	0.030 (0.026-0.037)	0.035 (0.029-0.043)	0.039 (0.031-0.049)	0.043 (0.034-0.056)	0.049 (0.037-0.066)	0.053 (0.039-0.074)
20-day	0.007 (0.006-0.008)	0.010 (0.008-0.011)	0.013 (0.011-0.015)	0.015 (0.013-0.018)	0.019 (0.016-0.022)	0.021 (0.017-0.026)	0.024 (0.019-0.030)	0.026 (0.021-0.034)	0.029 (0.022-0.040)	0.032 (0.024-0.045)
30-day	0.006 (0.005-0.007)	0.008 (0.007-0.009)	0.010 (0.009-0.012)	0.012 (0.010-0.014)	0.015 (0.012-0.018)	0.017 (0.014-0.020)	0.019 (0.015-0.023)	0.020 (0.016-0.026)	0.023 (0.017-0.031)	0.025 (0.018-0.035)
45-day	0.005 (0.004-0.005)	0.006 (0.005-0.007)	0.008 (0.007-0.009)	0.009 (0.008-0.011)	0.011 (0.010-0.014)	0.013 (0.011-0.016)	0.014 (0.011-0.018)	0.016 (0.012-0.020)	0.017 (0.013-0.024)	0.019 (0.014-0.026)
60-day	0.004 (0.003-0.005)	0.005 (0.005-0.006)	0.007 (0.006-0.008)	0.008 (0.007-0.009)	0.010 (0.008-0.012)	0.011 (0.009-0.013)	0.012 (0.010-0.015)	0.013 (0.010-0.017)	0.015 (0.011-0.020)	0.016 (0.012-0.022)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

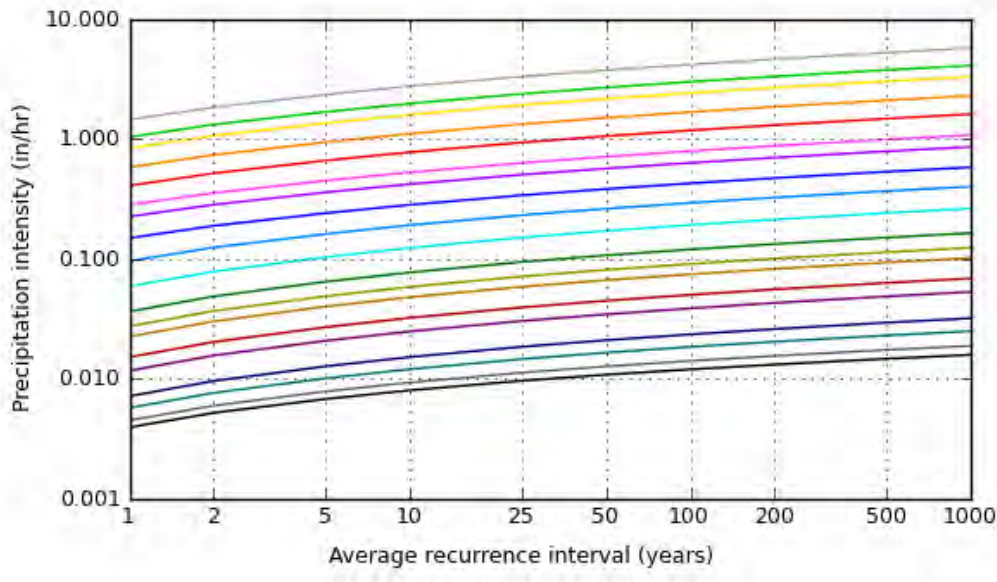
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PF graphical

PDS-based intensity-duration-frequency (IDF) curves
Latitude: 32.7333°, Longitude: -117.0344°



Average recurrence interval (years)
1
2
5
10
25
50
100
200
500
1000



Duration
5-min
10-min
15-min
30-min
60-min
2-hr
3-hr
6-hr
12-hr
24-hr
2-day
3-day
4-day
7-day
10-day
20-day
30-day
45-day
60-day

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Maps & aerials

Small scale terrain



Large scale terrain



Large scale map



Large scale aerial



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Silver Spring, MD 20910
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Chollas Data

NOAA Atlas 14, Volume 6, Version 2 CHOLLAS RESERVOIR



Station ID: 92-0510
Location name: San Diego, California, USA*
Latitude: 32.7333°, Longitude: -117.0667°
Elevation:
Elevation (station metadata): 430 ft**
* source: ESRI Maps
** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

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PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.120 (0.101-0.145)	0.152 (0.127-0.183)	0.192 (0.160-0.232)	0.225 (0.186-0.275)	0.269 (0.215-0.341)	0.304 (0.237-0.392)	0.338 (0.258-0.448)	0.374 (0.277-0.510)	0.422 (0.299-0.601)	0.459 (0.314-0.678)
10-min	0.173 (0.145-0.208)	0.217 (0.182-0.262)	0.275 (0.230-0.333)	0.322 (0.267-0.394)	0.386 (0.309-0.488)	0.435 (0.340-0.562)	0.485 (0.369-0.643)	0.536 (0.396-0.731)	0.604 (0.428-0.861)	0.657 (0.449-0.972)
15-min	0.209 (0.175-0.252)	0.263 (0.220-0.317)	0.333 (0.278-0.403)	0.390 (0.323-0.476)	0.467 (0.373-0.591)	0.526 (0.411-0.680)	0.586 (0.447-0.777)	0.648 (0.479-0.884)	0.731 (0.518-1.04)	0.795 (0.544-1.18)
30-min	0.289 (0.242-0.349)	0.364 (0.304-0.439)	0.461 (0.385-0.558)	0.540 (0.447-0.659)	0.647 (0.517-0.818)	0.729 (0.570-0.942)	0.812 (0.619-1.08)	0.897 (0.664-1.23)	1.01 (0.717-1.44)	1.10 (0.753-1.63)
60-min	0.407 (0.341-0.490)	0.511 (0.428-0.617)	0.648 (0.541-0.785)	0.759 (0.628-0.927)	0.910 (0.727-1.15)	1.02 (0.801-1.33)	1.14 (0.870-1.51)	1.26 (0.934-1.72)	1.42 (1.01-2.03)	1.55 (1.06-2.29)
2-hr	0.562 (0.471-0.677)	0.699 (0.585-0.843)	0.878 (0.733-1.06)	1.02 (0.847-1.25)	1.22 (0.977-1.55)	1.38 (1.08-1.78)	1.53 (1.17-2.03)	1.69 (1.25-2.31)	1.91 (1.36-2.73)	2.08 (1.42-3.08)
3-hr	0.673 (0.564-0.811)	0.837 (0.700-1.01)	1.05 (0.878-1.27)	1.23 (1.02-1.50)	1.47 (1.17-1.86)	1.65 (1.29-2.13)	1.84 (1.40-2.44)	2.03 (1.50-2.77)	2.29 (1.63-3.27)	2.50 (1.71-3.69)
6-hr	0.884 (0.741-1.07)	1.11 (0.931-1.34)	1.41 (1.18-1.71)	1.65 (1.37-2.02)	1.98 (1.58-2.50)	2.23 (1.74-2.88)	2.49 (1.90-3.30)	2.75 (2.04-3.75)	3.11 (2.20-4.43)	3.38 (2.31-5.00)
12-hr	1.13 (0.950-1.37)	1.48 (1.24-1.78)	1.92 (1.60-2.32)	2.27 (1.88-2.77)	2.74 (2.19-3.47)	3.10 (2.42-4.01)	3.46 (2.64-4.59)	3.82 (2.83-5.22)	4.31 (3.05-6.14)	4.68 (3.20-6.92)
24-hr	1.37 (1.20-1.60)	1.85 (1.63-2.16)	2.47 (2.16-2.88)	2.95 (2.56-3.47)	3.59 (3.03-4.36)	4.07 (3.37-5.03)	4.55 (3.67-5.74)	5.03 (3.96-6.51)	5.65 (4.29-7.61)	6.13 (4.50-8.52)
2-day	1.68 (1.47-1.95)	2.29 (2.00-2.66)	3.06 (2.67-3.57)	3.67 (3.18-4.32)	4.47 (3.77-5.42)	5.08 (4.19-6.27)	5.67 (4.58-7.16)	6.27 (4.93-8.12)	7.05 (5.35-9.49)	7.65 (5.62-10.6)
3-day	1.90 (1.67-2.21)	2.59 (2.27-3.02)	3.47 (3.03-4.04)	4.16 (3.61-4.89)	5.07 (4.27-6.15)	5.75 (4.75-7.11)	6.43 (5.19-8.12)	7.11 (5.60-9.21)	8.00 (6.06-10.8)	8.67 (6.37-12.0)
4-day	2.08 (1.82-2.42)	2.83 (2.48-3.30)	3.79 (3.31-4.42)	4.54 (3.94-5.34)	5.54 (4.67-6.72)	6.29 (5.20-7.77)	7.03 (5.68-8.88)	7.77 (6.12-10.1)	8.75 (6.64-11.8)	9.49 (6.97-13.2)
7-day	2.46 (2.16-2.86)	3.33 (2.92-3.88)	4.44 (3.88-5.19)	5.33 (4.62-6.27)	6.50 (5.48-7.88)	7.39 (6.10-9.12)	8.26 (6.68-10.4)	9.15 (7.21-11.9)	10.3 (7.83-13.9)	11.2 (8.24-15.6)
10-day	2.72 (2.38-3.16)	3.67 (3.21-4.27)	4.88 (4.26-5.69)	5.85 (5.07-6.87)	7.13 (6.00-8.64)	8.10 (6.69-10.00)	9.06 (7.32-11.4)	10.0 (7.90-13.0)	11.3 (8.59-15.2)	12.3 (9.04-17.1)
20-day	3.34 (2.93-3.89)	4.49 (3.93-5.23)	5.95 (5.20-6.94)	7.11 (6.17-8.36)	8.64 (7.27-10.5)	9.78 (8.08-12.1)	10.9 (8.82-13.8)	12.1 (9.51-15.6)	13.6 (10.3-18.3)	14.7 (10.8-20.5)
30-day	4.01 (3.52-4.66)	5.36 (4.70-6.24)	7.07 (6.18-8.25)	8.41 (7.30-9.89)	10.2 (8.57-12.3)	11.5 (9.50-14.2)	12.8 (10.3-16.2)	14.1 (11.1-18.3)	15.8 (12.0-21.3)	17.1 (12.6-23.8)
45-day	4.73 (4.15-5.50)	6.26 (5.49-7.29)	8.19 (7.16-9.56)	9.70 (8.42-11.4)	11.7 (9.83-14.1)	13.1 (10.8-16.2)	14.6 (11.8-18.4)	16.0 (12.6-20.7)	17.8 (13.5-24.0)	19.2 (14.1-26.7)
60-day	5.55 (4.87-6.45)	7.28 (6.38-8.48)	9.45 (8.26-11.0)	11.1 (9.66-13.1)	13.3 (11.2-16.1)	14.9 (12.3-18.4)	16.5 (13.3-20.8)	18.0 (14.2-23.3)	20.0 (15.2-26.9)	21.5 (15.8-29.9)

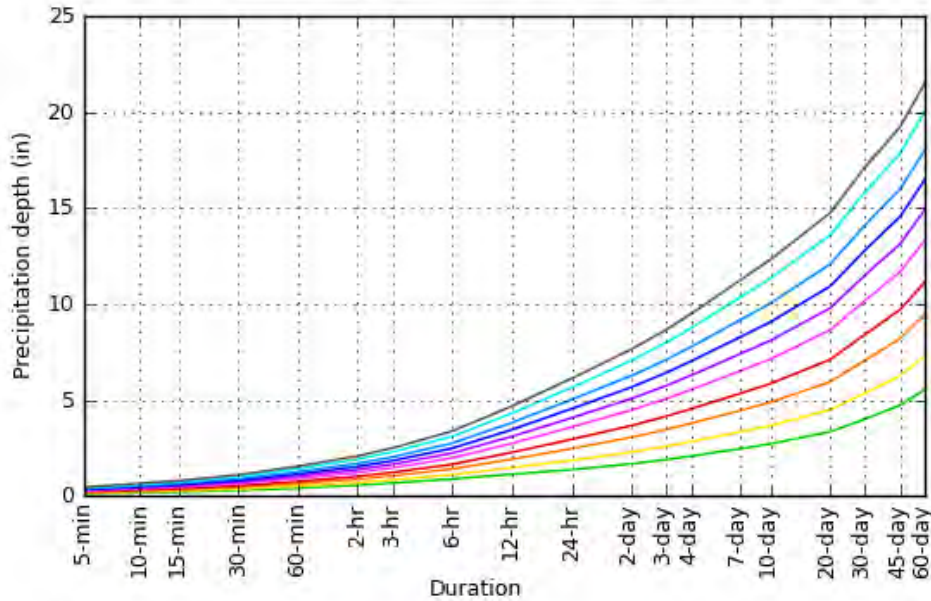
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

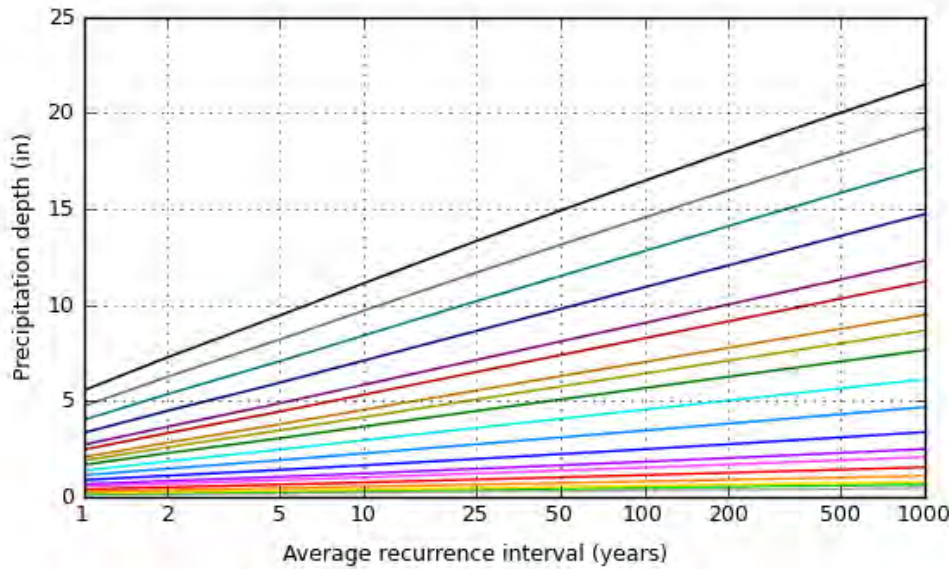
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PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 32.7333°, Longitude: -117.0667°



Average recurrence interval (years)
1
2
5
10
25
50
100
200
500
1000



Duration
5-min
10-min
15-min
30-min
60-min
2-hr
3-hr
6-hr
12-hr
24-hr
2-day
3-day
4-day
7-day
10-day
20-day
30-day
45-day
60-day

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Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

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NOAA Atlas 14, Volume 6, Version 2
Location name: San Diego, California, USA*
Latitude: 32.7333°, Longitude: -117.0667°
Elevation: 445.15 ft**



* source: ESRI Maps
 ** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps & aeriels](#)

PF tabular

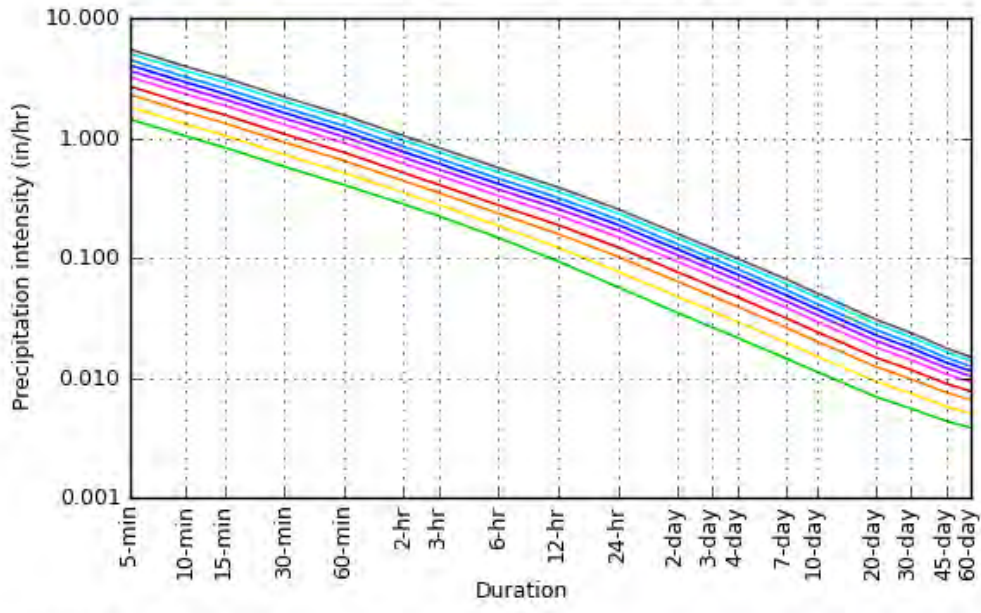
PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	1.44 (1.21-1.74)	1.82 (1.52-2.20)	2.30 (1.92-2.78)	2.70 (2.23-3.30)	3.23 (2.58-4.09)	3.65 (2.84-4.70)	4.06 (3.10-5.38)	4.49 (3.32-6.12)	5.06 (3.59-7.21)	5.51 (3.77-8.14)
10-min	1.04 (0.870-1.25)	1.30 (1.09-1.57)	1.65 (1.38-2.00)	1.93 (1.60-2.36)	2.32 (1.85-2.93)	2.61 (2.04-3.37)	2.91 (2.21-3.86)	3.22 (2.38-4.39)	3.62 (2.57-5.17)	3.94 (2.69-5.83)
15-min	0.836 (0.700-1.01)	1.05 (0.880-1.27)	1.33 (1.11-1.61)	1.56 (1.29-1.90)	1.87 (1.49-2.36)	2.10 (1.64-2.72)	2.34 (1.79-3.11)	2.59 (1.92-3.54)	2.92 (2.07-4.17)	3.18 (2.18-4.70)
30-min	0.578 (0.484-0.698)	0.728 (0.608-0.878)	0.922 (0.770-1.12)	1.08 (0.894-1.32)	1.29 (1.03-1.64)	1.46 (1.14-1.88)	1.62 (1.24-2.15)	1.79 (1.33-2.45)	2.02 (1.43-2.89)	2.20 (1.51-3.25)
60-min	0.407 (0.341-0.490)	0.511 (0.428-0.617)	0.648 (0.541-0.785)	0.759 (0.628-0.927)	0.910 (0.727-1.15)	1.02 (0.801-1.33)	1.14 (0.870-1.51)	1.26 (0.934-1.72)	1.42 (1.01-2.03)	1.55 (1.06-2.29)
2-hr	0.281 (0.236-0.338)	0.350 (0.292-0.422)	0.439 (0.366-0.532)	0.512 (0.424-0.625)	0.612 (0.488-0.773)	0.688 (0.538-0.890)	0.766 (0.584-1.02)	0.847 (0.627-1.16)	0.956 (0.678-1.36)	1.04 (0.712-1.54)
3-hr	0.224 (0.188-0.270)	0.279 (0.233-0.336)	0.350 (0.292-0.424)	0.409 (0.338-0.499)	0.489 (0.390-0.618)	0.550 (0.430-0.710)	0.612 (0.466-0.812)	0.676 (0.500-0.923)	0.764 (0.541-1.09)	0.832 (0.569-1.23)
6-hr	0.148 (0.124-0.178)	0.186 (0.155-0.224)	0.235 (0.196-0.285)	0.276 (0.228-0.337)	0.331 (0.264-0.418)	0.373 (0.291-0.482)	0.415 (0.316-0.551)	0.459 (0.340-0.627)	0.519 (0.367-0.739)	0.565 (0.386-0.834)
12-hr	0.094 (0.079-0.113)	0.123 (0.103-0.148)	0.159 (0.133-0.193)	0.188 (0.156-0.230)	0.228 (0.182-0.288)	0.257 (0.201-0.333)	0.287 (0.219-0.381)	0.317 (0.235-0.433)	0.358 (0.253-0.510)	0.389 (0.266-0.574)
24-hr	0.057 (0.050-0.067)	0.077 (0.068-0.090)	0.103 (0.090-0.120)	0.123 (0.107-0.145)	0.150 (0.126-0.182)	0.170 (0.140-0.210)	0.190 (0.153-0.239)	0.209 (0.165-0.271)	0.236 (0.179-0.317)	0.255 (0.188-0.355)
2-day	0.035 (0.031-0.041)	0.048 (0.042-0.055)	0.064 (0.056-0.074)	0.076 (0.066-0.090)	0.093 (0.078-0.113)	0.106 (0.087-0.131)	0.118 (0.095-0.149)	0.131 (0.103-0.169)	0.147 (0.111-0.198)	0.159 (0.117-0.221)
3-day	0.026 (0.023-0.031)	0.036 (0.032-0.042)	0.048 (0.042-0.056)	0.058 (0.050-0.068)	0.070 (0.059-0.085)	0.080 (0.066-0.099)	0.089 (0.072-0.113)	0.099 (0.078-0.128)	0.111 (0.084-0.150)	0.120 (0.088-0.167)
4-day	0.022 (0.019-0.025)	0.029 (0.026-0.034)	0.039 (0.034-0.046)	0.047 (0.041-0.056)	0.058 (0.049-0.070)	0.066 (0.054-0.081)	0.073 (0.059-0.092)	0.081 (0.064-0.105)	0.091 (0.069-0.123)	0.099 (0.073-0.137)
7-day	0.015 (0.013-0.017)	0.020 (0.017-0.023)	0.026 (0.023-0.031)	0.032 (0.028-0.037)	0.039 (0.033-0.047)	0.044 (0.036-0.054)	0.049 (0.040-0.062)	0.054 (0.043-0.071)	0.061 (0.047-0.083)	0.067 (0.049-0.093)
10-day	0.011 (0.010-0.013)	0.015 (0.013-0.018)	0.020 (0.018-0.024)	0.024 (0.021-0.029)	0.030 (0.025-0.036)	0.034 (0.028-0.042)	0.038 (0.030-0.048)	0.042 (0.033-0.054)	0.047 (0.036-0.064)	0.051 (0.038-0.071)
20-day	0.007 (0.006-0.008)	0.009 (0.008-0.011)	0.012 (0.011-0.014)	0.015 (0.013-0.017)	0.018 (0.015-0.022)	0.020 (0.017-0.025)	0.023 (0.018-0.029)	0.025 (0.020-0.033)	0.028 (0.021-0.038)	0.031 (0.023-0.043)
30-day	0.006 (0.005-0.006)	0.007 (0.007-0.009)	0.010 (0.009-0.011)	0.012 (0.010-0.014)	0.014 (0.012-0.017)	0.016 (0.013-0.020)	0.018 (0.014-0.022)	0.020 (0.015-0.025)	0.022 (0.017-0.030)	0.024 (0.017-0.033)
45-day	0.004 (0.004-0.005)	0.006 (0.005-0.007)	0.008 (0.007-0.009)	0.009 (0.008-0.011)	0.011 (0.009-0.013)	0.012 (0.010-0.015)	0.013 (0.011-0.017)	0.015 (0.012-0.019)	0.017 (0.013-0.022)	0.018 (0.013-0.025)
60-day	0.004 (0.003-0.004)	0.005 (0.004-0.006)	0.007 (0.006-0.008)	0.008 (0.007-0.009)	0.009 (0.008-0.011)	0.010 (0.009-0.013)	0.011 (0.009-0.014)	0.013 (0.010-0.016)	0.014 (0.011-0.019)	0.015 (0.011-0.021)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

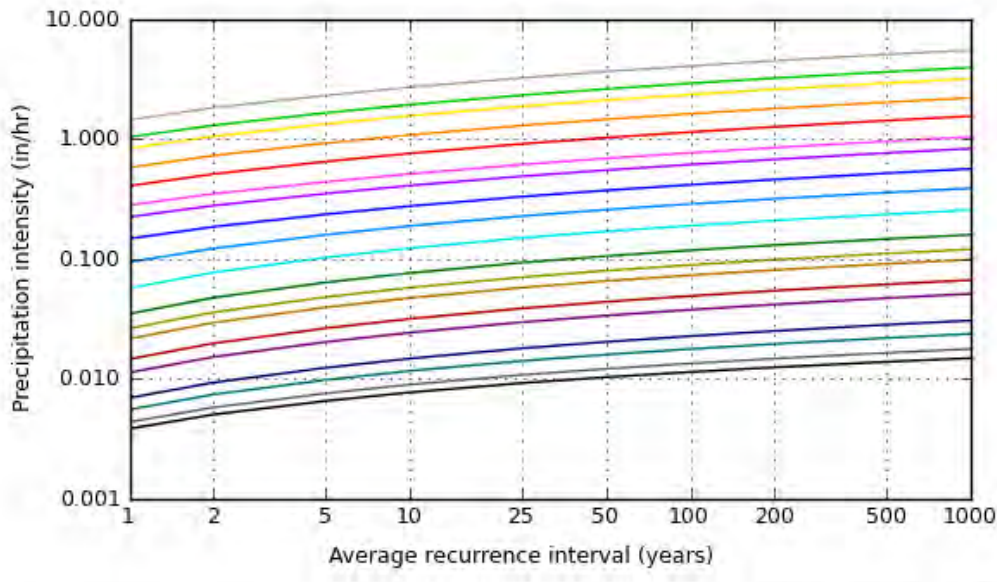
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PF graphical

PDS-based intensity-duration-frequency (IDF) curves
Latitude: 32.7333°, Longitude: -117.0667°



Average recurrence interval (years)
1
2
5
10
25
50
100
200
500
1000



Duration
5-min
10-min
15-min
30-min
60-min
2-hr
3-hr
6-hr
12-hr
24-hr
2-day
3-day
4-day
7-day
10-day
20-day
30-day
45-day
60-day

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Large scale terrain



Large scale map



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La Mesa Data



NOAA Atlas 14, Volume 6, Version 2
Location name: La Mesa, California, USA*
Latitude: 32.7675°, Longitude: -117.0233°
Elevation: 533.01 ft**



* source: ESRI Maps
 ** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

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PF tabular

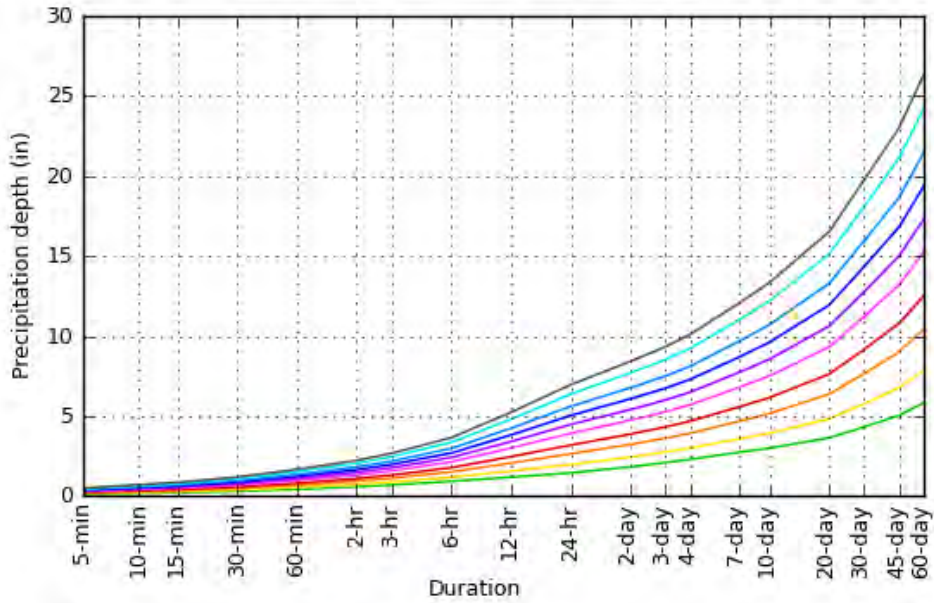
PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.123 (0.103-0.148)	0.157 (0.132-0.189)	0.201 (0.168-0.243)	0.237 (0.196-0.289)	0.286 (0.229-0.361)	0.323 (0.253-0.417)	0.360 (0.275-0.478)	0.399 (0.295-0.544)	0.451 (0.320-0.643)	0.491 (0.336-0.725)
10-min	0.176 (0.148-0.212)	0.225 (0.189-0.271)	0.289 (0.241-0.349)	0.340 (0.282-0.415)	0.410 (0.328-0.517)	0.463 (0.362-0.598)	0.517 (0.394-0.685)	0.572 (0.423-0.780)	0.646 (0.458-0.921)	0.704 (0.481-1.04)
15-min	0.213 (0.179-0.257)	0.272 (0.228-0.328)	0.349 (0.292-0.422)	0.411 (0.341-0.502)	0.495 (0.396-0.626)	0.560 (0.438-0.723)	0.625 (0.476-0.828)	0.692 (0.512-0.944)	0.782 (0.554-1.11)	0.851 (0.582-1.26)
30-min	0.296 (0.248-0.356)	0.378 (0.316-0.455)	0.484 (0.404-0.585)	0.571 (0.473-0.696)	0.687 (0.550-0.868)	0.777 (0.608-1.00)	0.867 (0.661-1.15)	0.960 (0.710-1.31)	1.08 (0.769-1.55)	1.18 (0.807-1.75)
60-min	0.417 (0.350-0.502)	0.532 (0.446-0.642)	0.682 (0.570-0.825)	0.804 (0.666-0.981)	0.969 (0.775-1.22)	1.09 (0.856-1.41)	1.22 (0.931-1.62)	1.35 (1.00-1.85)	1.53 (1.08-2.18)	1.66 (1.14-2.46)
2-hr	0.577 (0.484-0.694)	0.730 (0.611-0.880)	0.929 (0.776-1.12)	1.09 (0.903-1.33)	1.31 (1.05-1.65)	1.47 (1.15-1.90)	1.64 (1.25-2.17)	1.81 (1.34-2.48)	2.05 (1.45-2.92)	2.22 (1.52-3.29)
3-hr	0.691 (0.580-0.833)	0.875 (0.733-1.06)	1.12 (0.931-1.35)	1.31 (1.08-1.60)	1.57 (1.25-1.98)	1.77 (1.38-2.28)	1.97 (1.50-2.61)	2.18 (1.61-2.97)	2.45 (1.74-3.50)	2.67 (1.82-3.94)
6-hr	0.916 (0.769-1.10)	1.17 (0.982-1.41)	1.50 (1.26-1.82)	1.77 (1.47-2.16)	2.13 (1.71-2.69)	2.41 (1.88-3.11)	2.69 (2.05-3.56)	2.97 (2.20-4.05)	3.35 (2.38-4.78)	3.65 (2.49-5.39)
12-hr	1.18 (0.989-1.42)	1.56 (1.31-1.89)	2.06 (1.72-2.49)	2.46 (2.04-3.00)	3.00 (2.40-3.79)	3.41 (2.66-4.40)	3.82 (2.91-5.06)	4.24 (3.14-5.78)	4.80 (3.40-6.84)	5.23 (3.58-7.73)
24-hr	1.44 (1.27-1.68)	1.97 (1.72-2.29)	2.64 (2.31-3.08)	3.19 (2.77-3.74)	3.92 (3.30-4.74)	4.47 (3.70-5.52)	5.03 (4.07-6.35)	5.60 (4.42-7.26)	6.37 (4.83-8.57)	6.96 (5.11-9.67)
2-day	1.82 (1.60-2.12)	2.43 (2.13-2.83)	3.22 (2.82-3.76)	3.87 (3.36-4.54)	4.74 (3.99-5.74)	5.40 (4.47-6.67)	6.07 (4.91-7.67)	6.76 (5.33-8.76)	7.69 (5.84-10.4)	8.41 (6.18-11.7)
3-day	2.09 (1.83-2.43)	2.75 (2.41-3.20)	3.61 (3.16-4.21)	4.32 (3.75-5.07)	5.27 (4.44-6.38)	6.00 (4.96-7.40)	6.74 (5.45-8.51)	7.50 (5.91-9.71)	8.53 (6.47-11.5)	9.33 (6.85-13.0)
4-day	2.29 (2.01-2.66)	3.00 (2.63-3.49)	3.93 (3.44-4.58)	4.68 (4.07-5.50)	5.71 (4.81-6.91)	6.49 (5.37-8.02)	7.29 (5.90-9.21)	8.12 (6.40-10.5)	9.24 (7.00-12.4)	10.1 (7.42-14.0)
7-day	2.72 (2.39-3.17)	3.56 (3.13-4.14)	4.66 (4.08-5.43)	5.56 (4.83-6.53)	6.78 (5.71-8.20)	7.71 (6.38-9.52)	8.67 (7.01-10.9)	9.65 (7.61-12.5)	11.0 (8.33-14.8)	12.0 (8.84-16.7)
10-day	2.99 (2.63-3.47)	3.92 (3.44-4.57)	5.15 (4.51-6.00)	6.15 (5.34-7.22)	7.50 (6.32-9.08)	8.54 (7.06-10.5)	9.60 (7.76-12.1)	10.7 (8.43-13.9)	12.2 (9.24-16.4)	13.3 (9.79-18.5)
20-day	3.63 (3.19-4.22)	4.82 (4.23-5.60)	6.36 (5.57-7.42)	7.62 (6.62-8.95)	9.32 (7.85-11.3)	10.6 (8.78-13.1)	11.9 (9.65-15.1)	13.3 (10.5-17.2)	15.1 (11.5-20.3)	16.5 (12.1-22.9)
30-day	4.31 (3.79-5.01)	5.76 (5.05-6.70)	7.64 (6.69-8.91)	9.16 (7.96-10.8)	11.2 (9.44-13.6)	12.8 (10.5-15.8)	14.3 (11.6-18.1)	15.9 (12.6-20.6)	18.1 (13.7-24.3)	19.7 (14.5-27.4)
45-day	5.04 (4.42-5.85)	6.77 (5.94-7.87)	9.00 (7.88-10.5)	10.8 (9.37-12.7)	13.2 (11.1-16.0)	15.0 (12.4-18.5)	16.8 (13.6-21.2)	18.6 (14.7-24.2)	21.1 (16.0-28.4)	23.0 (16.9-31.9)
60-day	5.83 (5.12-6.77)	7.85 (6.89-9.13)	10.4 (9.13-12.2)	12.5 (10.9-14.7)	15.3 (12.9-18.5)	17.3 (14.3-21.4)	19.4 (15.7-24.5)	21.5 (16.9-27.8)	24.2 (18.4-32.6)	26.3 (19.4-36.6)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

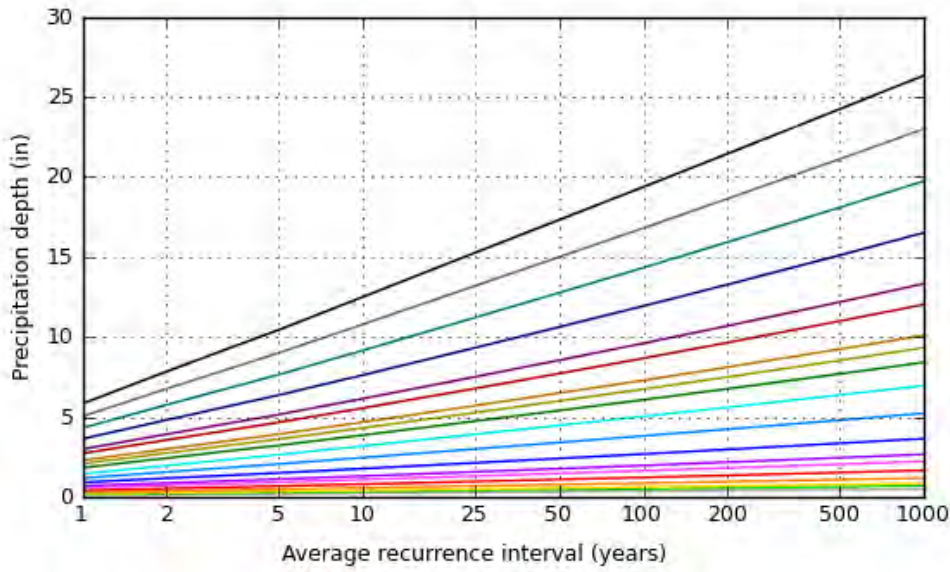
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PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 32.7675°, Longitude: -117.0233°



Average recurrence interval (years)
1
2
5
10
25
50
100
200
500
1000



Duration
5-min
10-min
15-min
30-min
60-min
2-hr
3-hr
6-hr
12-hr
24-hr
2-day
3-day
4-day
7-day
10-day
20-day
30-day
45-day
60-day

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Large scale terrain



Large scale map



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Silver Spring, MD 20910
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NOAA Atlas 14, Volume 6, Version 2 LA MESA

Station ID: 04-4735

Location name: La Mesa, California, USA*

Latitude: 32.7675°, Longitude: -117.0233°

Elevation:

Elevation (station metadata): 530 ft**

* source: ESRI Maps

** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

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PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	1.48 (1.24-1.78)	1.88 (1.58-2.27)	2.41 (2.02-2.92)	2.84 (2.35-3.47)	3.43 (2.75-4.33)	3.88 (3.04-5.00)	4.32 (3.30-5.74)	4.79 (3.54-6.53)	5.41 (3.84-7.72)	5.89 (4.03-8.70)
10-min	1.06 (0.888-1.27)	1.35 (1.13-1.63)	1.73 (1.45-2.09)	2.04 (1.69-2.49)	2.46 (1.97-3.10)	2.78 (2.17-3.59)	3.10 (2.36-4.11)	3.43 (2.54-4.68)	3.88 (2.75-5.53)	4.22 (2.89-6.24)
15-min	0.852 (0.716-1.03)	1.09 (0.912-1.31)	1.40 (1.17-1.69)	1.64 (1.36-2.01)	1.98 (1.58-2.50)	2.24 (1.75-2.89)	2.50 (1.90-3.31)	2.77 (2.05-3.78)	3.13 (2.22-4.46)	3.40 (2.33-5.03)
30-min	0.592 (0.496-0.712)	0.756 (0.632-0.910)	0.968 (0.808-1.17)	1.14 (0.946-1.39)	1.37 (1.10-1.74)	1.55 (1.22-2.01)	1.73 (1.32-2.30)	1.92 (1.42-2.62)	2.17 (1.54-3.09)	2.36 (1.61-3.49)
60-min	0.417 (0.350-0.502)	0.532 (0.446-0.642)	0.682 (0.570-0.825)	0.804 (0.666-0.981)	0.969 (0.775-1.22)	1.09 (0.856-1.41)	1.22 (0.931-1.62)	1.35 (1.00-1.85)	1.53 (1.08-2.18)	1.66 (1.14-2.46)
2-hr	0.288 (0.242-0.347)	0.365 (0.306-0.440)	0.464 (0.388-0.562)	0.545 (0.452-0.664)	0.654 (0.523-0.826)	0.737 (0.576-0.952)	0.821 (0.626-1.09)	0.907 (0.672-1.24)	1.02 (0.725-1.46)	1.11 (0.760-1.64)
3-hr	0.230 (0.193-0.277)	0.291 (0.244-0.352)	0.371 (0.310-0.449)	0.436 (0.361-0.531)	0.523 (0.418-0.660)	0.589 (0.461-0.761)	0.656 (0.500-0.869)	0.725 (0.536-0.989)	0.817 (0.579-1.16)	0.888 (0.607-1.31)
6-hr	0.153 (0.128-0.184)	0.196 (0.164-0.236)	0.251 (0.210-0.304)	0.296 (0.245-0.361)	0.356 (0.285-0.450)	0.402 (0.315-0.519)	0.449 (0.342-0.594)	0.496 (0.367-0.677)	0.560 (0.397-0.798)	0.609 (0.416-0.900)
12-hr	0.098 (0.082-0.118)	0.130 (0.109-0.156)	0.171 (0.143-0.207)	0.204 (0.169-0.249)	0.249 (0.199-0.314)	0.283 (0.221-0.365)	0.317 (0.242-0.420)	0.352 (0.260-0.480)	0.398 (0.282-0.568)	0.434 (0.297-0.641)
24-hr	0.060 (0.053-0.070)	0.082 (0.072-0.095)	0.110 (0.096-0.128)	0.133 (0.115-0.156)	0.163 (0.138-0.198)	0.186 (0.154-0.230)	0.210 (0.170-0.265)	0.234 (0.184-0.302)	0.265 (0.201-0.357)	0.290 (0.213-0.403)
2-day	0.038 (0.033-0.044)	0.051 (0.044-0.059)	0.067 (0.059-0.078)	0.081 (0.070-0.095)	0.099 (0.083-0.119)	0.113 (0.093-0.139)	0.127 (0.102-0.160)	0.141 (0.111-0.182)	0.160 (0.122-0.216)	0.175 (0.129-0.243)
3-day	0.029 (0.025-0.034)	0.038 (0.034-0.044)	0.050 (0.044-0.059)	0.060 (0.052-0.070)	0.073 (0.062-0.089)	0.083 (0.069-0.103)	0.094 (0.076-0.118)	0.104 (0.082-0.135)	0.118 (0.090-0.159)	0.130 (0.095-0.180)
4-day	0.024 (0.021-0.028)	0.031 (0.027-0.036)	0.041 (0.036-0.048)	0.049 (0.042-0.057)	0.059 (0.050-0.072)	0.068 (0.056-0.083)	0.076 (0.061-0.096)	0.085 (0.067-0.110)	0.096 (0.073-0.129)	0.105 (0.077-0.146)
7-day	0.016 (0.014-0.019)	0.021 (0.019-0.025)	0.028 (0.024-0.032)	0.033 (0.029-0.039)	0.040 (0.034-0.049)	0.046 (0.038-0.057)	0.052 (0.042-0.065)	0.057 (0.045-0.074)	0.065 (0.050-0.088)	0.072 (0.053-0.099)
10-day	0.012 (0.011-0.014)	0.016 (0.014-0.019)	0.021 (0.019-0.025)	0.026 (0.022-0.030)	0.031 (0.026-0.038)	0.036 (0.029-0.044)	0.040 (0.032-0.051)	0.045 (0.035-0.058)	0.051 (0.038-0.068)	0.056 (0.041-0.077)
20-day	0.008 (0.007-0.009)	0.010 (0.009-0.012)	0.013 (0.012-0.015)	0.016 (0.014-0.019)	0.019 (0.016-0.024)	0.022 (0.018-0.027)	0.025 (0.020-0.031)	0.028 (0.022-0.036)	0.031 (0.024-0.042)	0.034 (0.025-0.048)
30-day	0.006 (0.005-0.007)	0.008 (0.007-0.009)	0.011 (0.009-0.012)	0.013 (0.011-0.015)	0.016 (0.013-0.019)	0.018 (0.015-0.022)	0.020 (0.016-0.025)	0.022 (0.017-0.029)	0.025 (0.019-0.034)	0.027 (0.020-0.038)
45-day	0.005 (0.004-0.005)	0.006 (0.005-0.007)	0.008 (0.007-0.010)	0.010 (0.009-0.012)	0.012 (0.010-0.015)	0.014 (0.011-0.017)	0.016 (0.013-0.020)	0.017 (0.014-0.022)	0.020 (0.015-0.026)	0.021 (0.016-0.030)
60-day	0.004 (0.004-0.005)	0.005 (0.005-0.006)	0.007 (0.006-0.008)	0.009 (0.008-0.010)	0.011 (0.009-0.013)	0.012 (0.010-0.015)	0.013 (0.011-0.017)	0.015 (0.012-0.019)	0.017 (0.013-0.023)	0.018 (0.013-0.025)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

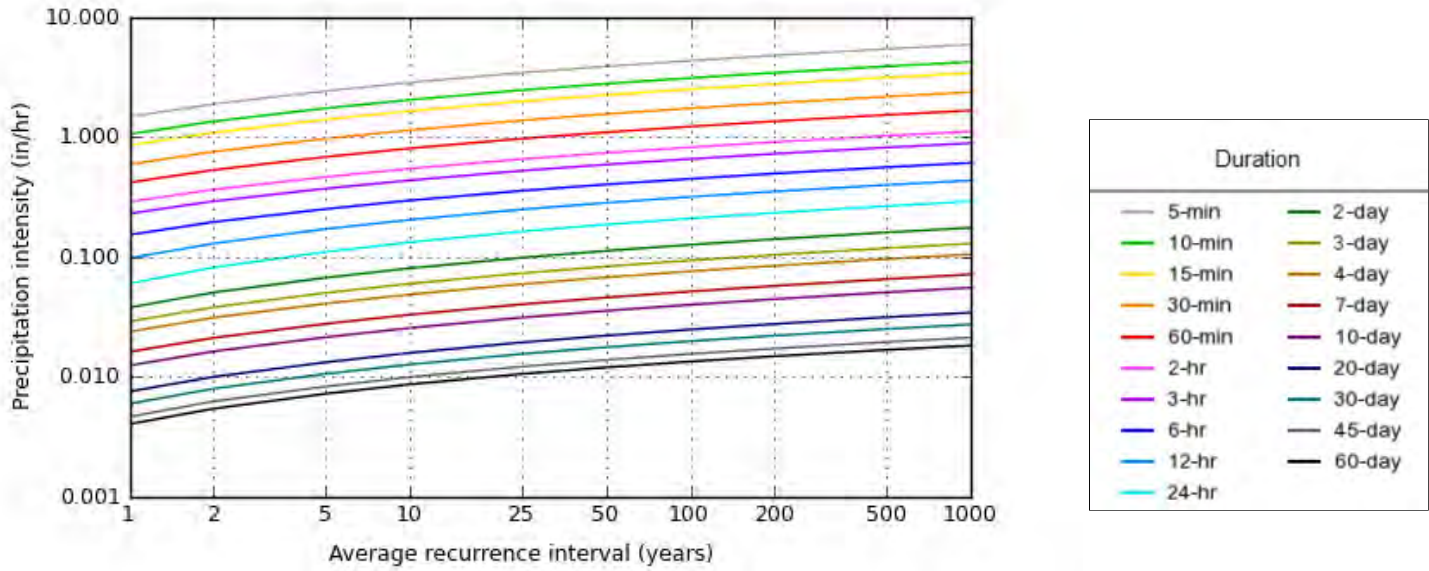
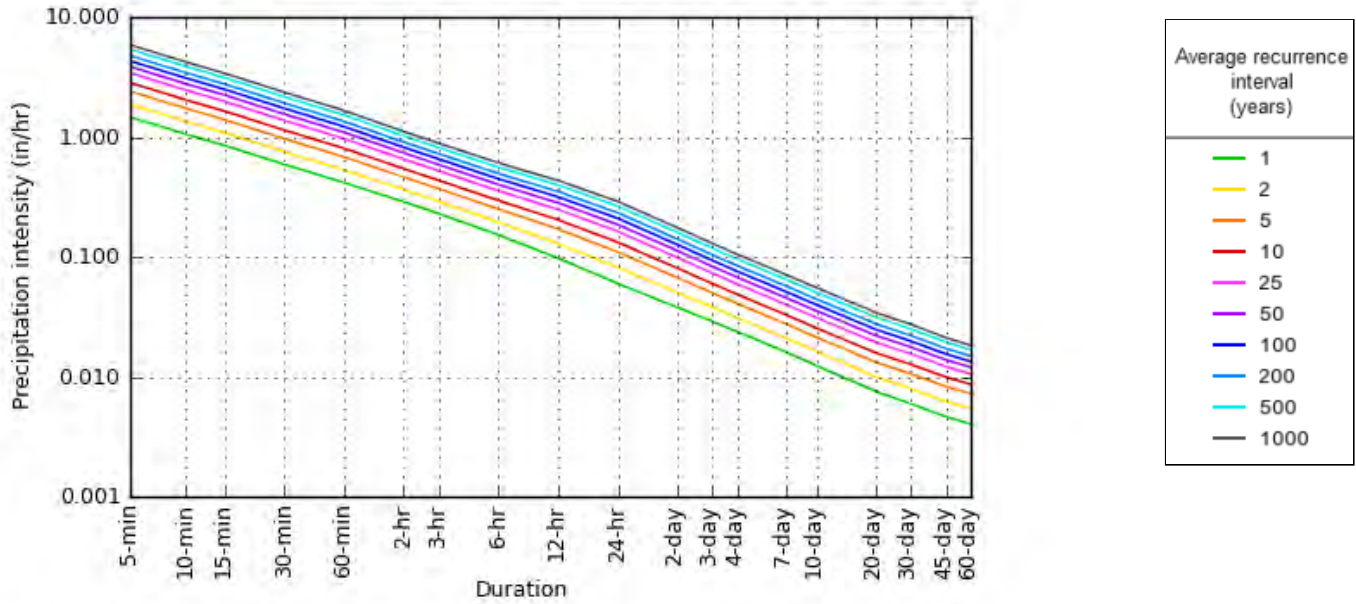
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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PF graphical

PDS-based intensity-duration-frequency (IDF) curves
Latitude: 32.7675°, Longitude: -117.0233°



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Maps & aerials

Small scale terrain



Large scale terrain



Large scale map



Large scale aerial



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B. CCTV Data

CCTV PACP Rating and Repair Recommendation Summary Table

Item	Setup	PSR	From MH	To MH	Length (ft)	Diameter (in)	Structural Rating	Operation & Maintenance Rating	Overall Rating	* Recommended Repair (See repair technique form for numerical definitions)	Notes/Comments/Recommendations
1	115	ST-STR-871	ST-STR-871	ST-STR-973	204.5	42	573G	3222	573G	5,1	Pipe in bad condition, rehabilitation is recommended.
2	120	ST-STR-1047	ST-STR-1430	ST-STR-1047	155.7	18	523E	0	523E	6	Large hole in pipe, so replacement is recommended.
3	77	ST-STR-373	ST-STR-373	ST-STR-61	117.7	30	523C	3122	523C	5,1	
4	1	ST-STR-849	ST-STR-851	ST-STR-849	233.7	24	3600	5131	513H	6	Large hole in pipe, so replacement is recommended.
5	93	ST-STR-609	ST-STR-609	ST-STR-612	222	24	513H	3121	513H	5,1	
6	92	ST-STR-610	ST-STR-610	ST-STR-609	188.4	24	513F	2100	513F	5,1	Medium sized hole at end of pipe.
7	85	ST-STR-993	ST-STR-993	ST-STR-311	103.9	30	3C00	5131	513C	5	Remove large debris. Visible portions of pipe look good.
8	80	ST-STR-321	ST-STR-320	ST-STR-321	29.1	18	513A	0	513A	5,1	
9	156	ST-STR-781	ST-STR-781	ST-STR-159	103.8	18	5738	0	5738	5,1	
10	81	ST-STR-320	ST-STR-320	ST-STR-45	11.2	18	5532	5100	5632	6	Large holes in pipe, so replacement is recommended.
11	67	ST-STR-64	ST-STR-390	ST-STR-64	65.1	18	553A	4121	5541	6	Large holes in pipe, so replacement is recommended.
12	142	ST-STR-558	ST-STR-558	ST-STR-557	26.1	18	5400	3221	5432	6	Replace pipe, entire bottom half of pipe is missing.
13	171	ST-STR-393	ST-STR-393	ST-STR-394	65.2	20	5338	3100	5338	6	Large holes in pipe, so replacement is recommended.
14	83	ST-STR-346	ST-STR-346	ST-STR-347	17.9	18	5334	0	5334	6	Large holes in pipe, so replacement is recommended.
15	148	ST-STR-479	ST-STR-479	ST-STR-213	17	18	5333	0	5333	6	Replace pipe, entire bottom half of pipe is missing.
16	35	ST-STR-603	ST-STR-593	ST-STR-603	6.0	18	5331	2100	5331	6	Replace pipe, entire bottom half of pipe is missing.
17	21	ST-STR-936	ST-STR-936	ST-STR-1021	8.9	18	5241	0	5241	6	Large hole in pipe, so replacement is recommended.
18	34	ST-STR-593	ST-STR-593	ST-STR-591	2.0	18	5241	0	5241	6	Pipe deformed, therefore replacement recommended.
19	61	ST-STR-496	ST-STR-496	ST-STR-498	220.4	36	523G	4131	5241	5,1	Remove large debris at downstream end, and CIPP line entire pipe.
20	43	ST-STR-697	ST-STR-697	ST-STR-698	38.4	30	5239	0	5239	6	Large hole in pipe, so replacement is recommended.
21	63	ST-STR-774	ST-STR-774	ST-STR-775	69.4	18	5238	0	5238	5,1	
22	70	ST-STR-195	ST-STR-195	ST-STR-390	21.9	30	5234	0	5234	6	Large hole in pipe, so replacement is recommended.
23	150	ST-STR-213	ST-STR-213	ST-STR-93	21.2	18	5234	0	5234	6	Large holes in pipe, so replacement is recommended.
24	30	ST-STR-598	ST-STR-598	ST-STR-118	8.0	18	5231	3100	5232	5,1	Remove large debris at downstream end, and CIPP line entire pipe.
25	60	ST-STR-738	ST-STR-147	ST-STR-738	9.7	18	5232	2100	5232	6	Replace pipe, entire bottom half of pipe is missing.
26	158	ST-STR-773	ST-STR-773	ST-STR-157	3	18	5231	3100	5232	5,1	Remove large debris at downstream end, re-establish pipe outfall, and CIPP line entire pipe.
27	39	ST-STR-592	ST-STR-592	ST-STR-588	1	18	5231	2100	5231	6	Replace pipe, entire bottom half of pipe is missing.
28	145	ST-STR-198	ST-STR-198	ST-STR-199	3	18	5231	0	5231	6	Replace pipe, entire bottom half of pipe is missing.
29	161	ST-STR-994	ST-STR-358	ST-STR-994	3	18	5131	5100	5231	5,1 or 6	Half full of debris and can't see condition of bottom of pipe.
30	40	ST-STR-1029	ST-STR-1029	ST-STR-692	450.8	24	3Q00	5142	5142	5,2	CIPP line CMP portion of pipe for 430-feet.
31	76	ST-STR-254	ST-STR-254	ST-STR-203	70	18	5132	4200	5142	4	Pipe overall in good condition, a couple small holes and medium deformation blocking 20% of flow area.
32	17	ST-STR-656	ST-STR-658	ST-STR-656	206.0	18	513G	4100	5141	5,1	Remove large debris. Corrosion and medium sized hole at end of pipe.
33	32	ST-STR-1018	ST-STR-1017	ST-STR-1018	174.5	24	5130	4131	5141	5,1	Remove large debris, and CIPP line entire pipe.
34	84	ST-STR-346	ST-STR-347	ST-STR-346	3	18	5131	4100	5141	6	Large holes in pipe, so replacement is recommended.
35	136	ST-STR-701	ST-STR-701	ST-STR-135	1.1	15	5100	4100	5141	5	Inspection abandoned, pipe full of debris, clean and re-inspect.
36	13	ST-STR-868	ST-STR-868	ST-STR-976	30.9	18	3800	5131	5139	5,3,1	Lateral protruding into mainline and will need to be made flush in order to rehabilitate entire pipe.
37	87	ST-STR-311	ST-STR-313	ST-STR-311	47.6	24	5139	2900	5139	5,1	Remove large debris, and CIPP line entire pipe.
38	124	ST-STR-201	ST-STR-201	ST-STR-927	74.1	16	5138	3121	5138	6	Pipe deformed, replacement is recommended.
39	53	ST-STR-714	ST-STR-714	ST-STR-715	33.9	18	5137	0	5137	5,1	Remove large debris, and CIPP line entire pipe.
40	14	ST-STR-867	ST-STR-867	ST-STR-975	26.6	18	5135	0	5135	5,1	Corrosion and medium size hole.
41	15	ST-STR-659	ST-STR-659	ST-STR-660	27.2	18	5134	0	5134	6	Pipe collapsing and deformed, replacement is recommended.
42	126	ST-STR-202	ST-STR-202	ST-STR-201	16.4	12	5132	3121	5133	6	Pipe collapsing, replacement is recommended.
43	19	ST-STR-626	ST-STR-626	ST-STR-936	12.3	18	5132	0	5132	5,1	Pipe heavily corroded, and medium deformation blocking 20% of flow area.
44	38	ST-STR-591	ST-STR-592	ST-STR-591	8.4	18	5131	2100	5131	6	Large hole in pipe, so replacement is recommended.
45	119	ST-STR-432	ST-STR-431	ST-STR-432	53.3	18	0	5131	5131	5	Pipe completely clogged with sediment.
46	134	ST-STR-710	ST-STR-710	ST-STR-138	2.0	12	5131	2100	5131	6	Large holes in pipe, so replacement is recommended.
47	162	ST-STR-359	ST-STR-359	ST-STR-58	2.8	18	5131	0	5131	6	Large hole in pipe, so replacement is recommended.
48	166	ST-STR-370	ST-STR-371	ST-STR-370	74.0	18	5131	0	5131	6	Large hole in pipe, so replacement is recommended.
49	5	ST-STR-850	ST-STR-850	ST-STR-849	127.4	21	5130	0	5130	6	Corrosion and large hole in pipe, so replacement is recommended.
50	105	ST-STR-1045	ST-STR-813	ST-STR-1045	136.4	60	5130	2200	5130	4	Pipe in ok condition and is too large to CIPP line. Hydrophilic grout and urethane sealant is recommended to repair several small holes.
51	147	ST-STR-482	ST-STR-199	ST-STR-482	18.2	18	5100	2200	5122	5	Significant amount of debris and sediment. Pipe in ok condition.
52	28	ST-STR-410	ST-STR-410	ST-STR-409	47.6	18	5100	0	5100	5	Pipe in good to ok condition.
53	65	ST-STR-387	ST-STR-387	ST-STR-386	1.0	18	0	5100	5100	5	Pipe full of debris, clean and re-inspect, signs of corrosion present.
54	69	ST-STR-390	ST-STR-390	ST-STR-94	3.0	30	5100	0	5100	6	Large hole in pipe, so replacement is recommended.
55	90	ST-STR-779	ST-STR-779	ST-STR-778	1	18	0	5100	5100	5	Inspection abandoned, pipe full of debris, clean and re-inspect.
56	143	ST-STR-502	ST-STR-502	ST-STR-1009	2.0	12	5100	0	5100	5	Inspection abandoned, pipe has water and debris, corrosion can be seen, at minimum CIPP lining will be required, however, condition of bottom of pipe is unknown, clean and re-inspect.
57	97	ST-STR-617	ST-STR-617	ST-STR-122	258.6	52	0	4238	4238	5	Pipe in overall good condition, some debris and standing water.
58	7	ST-STR-864	ST-STR-864	ST-STR-865	291.2	30	0	4231	4231	5	Pipe appears in good condition, remove sediment and debris.
59	99	ST-STR-413	ST-STR-413	ST-STR-68	140.2	24	0	4200	4200	5	Pipe in overall good condition.
60	130	ST-STR-272	ST-STR-272	ST-STR-271	2.0	12	0	4200	4200	5	Pipe appears in ok condition, remove sediment and debris.
61	50	ST-STR-715	ST-STR-715	ST-STR-713	148.7	24	3400	4100	4134	1	Pipe has some corrosion and small holes.
62	12	ST-STR-881	ST-STR-873	ST-STR-881	208.4	48	3100	4131	4132	5	Pipe appears in good condition, remove sediment and debris.
63	139	ST-STR-560	ST-STR-560	ST-STR-559	9.5	12	3200	4100	4132	5,1	Pipe has some corrosion and small holes. Remove sediment and debris.
64	6	ST-STR-863	ST-STR-864	ST-STR-863	57.6	30	0	4131	4131	5	Pipe in good condition, remove sediment and debris.
65	123	ST-STR-927	ST-STR-1013	ST-STR-927	119.4	15	0	4131	4131	5	Pipe in ok condition, remove sediment and debris.
66	4	ST-STR-815	ST-STR-815	ST-STR-1044	28.7	24	0	4100	4100	5	Pipe in overall good condition.
67	74	ST-STR-203	ST-STR-203	ST-STR-204	227.1	30	0	4100	4100	5	Standing water in pipe. Remove sediment and debris and locate downstream manhole.
68	100	ST-STR-405	ST-STR-405	ST-STR-406	1	14	0	4100	4100	5	Pipe over half full of sediment and debris. Clean and re-inspect to see condition of pipe.
69	167	ST-STR-382	ST-STR-215	ST-STR-382	1.0	18	0	4100	4100	5	Pipe over half full of sediment and debris. From what can be seen, pipe in poor condition. Clean and re-inspect to see condition of rest of pipe.
70	168	ST-STR-215	ST-STR-215	ST-STR-63	1.0	18	0	4100	4100	5	Pipe over half full of sediment and debris. Clean and re-inspect to see condition of pipe.
71	101	ST-STR-977	ST-STR-977	ST-STR-872	354.8	48	3MOO	3100	3MOO	5,4	Pipe in ok condition. Consider hydrophilic grout on bottom of pipe.
72	114	ST-STR-986	ST-STR-972	ST-STR-986	333.2	36	3LOO	0	3LOO	5,4	Pipe in ok condition. Consider hydrophilic grout on bottom of pipe.
73	102	ST-STR-872	ST-STR-872	ST-STR-870	297.5	36	3KOO	2100	3K21	5	Pipe in ok condition and doesn't need any rehabilitation at this time.

Item	Setup	PSR	From MH	To MH	Length (ft)	Diameter (in)	Structural Rating	Operation & Maintenance Rating	Overall Rating	* Recommended Repair (See repair technique form for numerical definitions)	Notes/Comments/Recommendations
74	95	ST-STR-613	ST-STR-613	ST-STR-614	234.1	36	3H00	3100	3H00	5	Some sediment and debris, pipe in ok condition.
75	128	ST-STR-955	ST-STR-955	ST-STR-142	181.0	29	3FO0	3200	3FO0	5	Some sediment and debris, pipe in ok condition.
76	44	ST-STR-693	ST-STR-693	ST-STR-948	162.3	20	3E00	0	3E00		The remaining segments with overall scores of 3 and 2 broadly represent minor maintenance and/or repair that may require hydroscour and/or grout. An in-depth review of the inspection of these segments is not done at this time. More emphasis and focus should be geared towards the above segments with overall ratings of 4's and 5's and those segments include recommendations to rehabilitate or replace.
77	107	ST-STR-1052	ST-STR-961	ST-STR-1052	156	57	3E00	0	3E00		
78	25	ST-STR-612	ST-STR-612	ST-STR-611	97.3	24	3CO0	0	3CO0		
79	113	ST-STR-972	ST-STR-854	ST-STR-972	100.3	57	3CO0	0	3CO0		
80	153	ST-STR-754	ST-STR-754	ST-STR-155	118.7	24	3CO0	0	3CO0		
81	51	ST-STR-718	ST-STR-718	ST-STR-717	178.8	24	3CO0	3121	3C21		
82	23	ST-STR-210	ST-STR-211	ST-STR-210	56.2	18	3AO0	0	3AO0		
83	56	ST-STR-952	ST-STR-952	ST-STR-953	182.0	30	3AO0	0	3AO0		
84	62	ST-STR-497	ST-STR-496	ST-STR-497	49.6	18	3900	3100	3AO0		
85	118	ST-STR-431	ST-STR-431	ST-STR-77	68.9	18	3AO0	0	3AO0		
86	27	ST-STR-192	ST-STR-614	ST-STR-192	56.6	36	3AO0	2100	3A21		
87	52	ST-STR-716	ST-STR-716	ST-STR-717	34.6	18	3900	0	3900		
88	103	ST-STR-870	ST-STR-870	ST-STR-871	97.2	36	3800	2300	3823		
89	46	ST-STR-688	ST-STR-688	ST-STR-687	36.8	18	3800	0	3800		
90	106	ST-STR-961	ST-STR-1045	ST-STR-961	42.3	57	3800	0	3800		
91	109	ST-STR-1053	ST-STR-1052	ST-STR-1053	92.8	57	3800	0	3800		
92	111	ST-STR-1055	ST-STR-971	ST-STR-1055	80.9	57	3800	0	3800		
93	8	ST-STR-865	ST-STR-865	ST-STR-974	41.0	24	3700	0	3700		
94	18	ST-STR-1021	ST-STR-1021	ST-STR-625	32.6	30	3700	0	3700		
95	24	ST-STR-628	ST-STR-628	ST-STR-210	34.6	18	3700	0	3700		
96	117	ST-STR-422	ST-STR-74	ST-STR-422	32.4	24	3600	3100	3700		
97	47	ST-STR-947	ST-STR-132	ST-STR-947	13.7	22	3500	2100	3521		
98	151	ST-STR-750	ST-STR-752	ST-STR-750	22.6	15	3500	2100	3521		
99	64	ST-STR-383	ST-STR-383	ST-STR-384	40.4	14	3500	0	3500		
100	94	ST-STR-609	ST-STR-612	ST-STR-609	23.8	24	3500	0	3500		
101	96	ST-STR-616	ST-STR-617	ST-STR-616	25	52	3500	0	3500		
102	86	ST-STR-311	ST-STR-313	ST-STR-311	13.2	24	3300	3123	3423		
103	157	ST-STR-764	ST-STR-765	ST-STR-764	21.2	12	3400	2100	3421		
104	29	ST-STR-998	ST-STR-998	ST-STR-913	150.2	42	3400	0	3400		
105	42	ST-STR-699	ST-STR-697	ST-STR-699	8.4	30	3400	0	3400		
106	82	ST-STR-321	ST-STR-321	ST-STR-320	2.2	18	3300	3100	3400		
107	59	ST-STR-738	ST-STR-738	ST-STR-147	11.4	18	3300	2100	3321		
108	138	ST-STR-677	ST-STR-678	ST-STR-677	14.3	18	3300	2100	3321		
109	2	ST-STR-851	ST-STR-851	ST-STR-1052	24.2	18	3300	0	3300		
110	3	ST-STR-1046	ST-STR-1046	ST-STR-815	117.7	24	3200	3100	3300		
111	71	ST-STR-395	ST-STR-395	ST-STR-995	15.1	18	3300	0	3300		
112	55	ST-STR-713	ST-STR-713	ST-STR-952	207.9	30	3200	2100	3221		
113	89	ST-STR-778	ST-STR-778	ST-STR-957	61.7	18	0	3200	3200		
114	116	ST-STR-823	ST-STR-823	ST-STR-1051	3	18	3100	3100	3200		
115	125	ST-STR-202	ST-STR-201	ST-STR-202	2	12	3100	3100	3200		
116	9	ST-STR-866	ST-STR-974	ST-STR-866	43.4	18	3100	2100	3121		
117	49	ST-STR-718	ST-STR-717	ST-STR-718	56.9	24	0	3121	3121		
118	78	ST-STR-372	ST-STR-373	ST-STR-372	206	18	3100	2100	3121		
119	146	ST-STR-198	ST-STR-199	ST-STR-198	7.5	18	3100	2100	3121		
120	11	ST-STR-873	ST-STR-1056	ST-STR-873	39.5	48	0	3100	3100		
121	48	ST-STR-717	ST-STR-715	ST-STR-717	390.1	24	3100	0	3100		
122	73	ST-STR-985	ST-STR-995	ST-STR-985	169	30	3100	0	3100		
123	110	ST-STR-971	ST-STR-1053	ST-STR-971	263	57	3100	3100	3100		
124	57	ST-STR-806	ST-STR-806	ST-STR-173	124.8	18	3000	2100	3021		
125	22	ST-STR-211	ST-STR-211	ST-STR-627	120.3	18	3000	0	3000		
126	112	ST-STR-854	ST-STR-1055	ST-STR-854	138.5	57	3000	0	3000		
127	10	ST-STR-1056	ST-STR-977	ST-STR-1056	38.4	48	0	2100	2100		
128	122	ST-STR-451	ST-STR-450	ST-STR-451	12.5	12	0	2100	2100		
129	137	ST-STR-677	ST-STR-677	ST-STR-678	21.2	18	0	2100	2100		
130	144	ST-STR-481	ST-STR-198	ST-STR-481	29.0	18	0	2100	2100		
131	163	ST-STR-369	ST-STR-369	ST-STR-368	8.2	18	0	2100	2100		
132	26	ST-STR-619	ST-STR-618	ST-STR-619	16.5	18	0	0	0		Pipe in good condition.
133	45	ST-STR-948	ST-STR-948	ST-STR-690	3.3	18	0	0	0		Pipe in good condition.
134	58	ST-STR-739	ST-STR-738	ST-STR-739	42.3	18	0	0	0		Pipe in good condition.
135	72	ST-STR-995	ST-STR-203	ST-STR-995	30.3	30	0	0	0		Pipe in good condition.
136	79	ST-STR-376	ST-STR-376	ST-STR-374	9.9	24	0	0	0		Pipe in good condition.
137	104	ST-STR-814	ST-STR-813	ST-STR-814	18	24	P 0000	0	0		Pipe in good condition.
138	121	ST-STR-78	ST-STR-433	ST-STR-78	0.1	18	0	0	0		Drop connection, unable to video pipe.
139	127	ST-STR-726	ST-STR-726	ST-STR-955	27.7	29	0	0	0		Pipe in good condition.
140	131	ST-STR-720	ST-STR-720	ST-STR-722	1.0	18	0	0	0	5	Pipe underwater, outfall not found, clean and re-inspect.
141	132	ST-STR-721	ST-STR-721	ST-STR-720	1.0	18	0	0	0	5	Pipe underwater, clean and re-inspect.
142	135	ST-STR-701	ST-STR-135	ST-STR-701	1.0	15	0	0	0	6	Collapsed pipe, repair or replace.
143	141	ST-STR-553	ST-STR-553	ST-STR-928	25.5	16	0	0	0		Pipe in good condition.
144	152	ST-STR-751	ST-STR-751	ST-STR-754	83.7	24	0	0	0		Pipe in good condition.
145	154	ST-STR-295	ST-STR-294	ST-STR-295	1	18	0	0	0	5	Pipe full of debris, clean and re-inspect.
146	155	ST-STR-340	ST-STR-341	ST-STR-340	1	12	0	0	0	5	Pipe full of sediment and debris, clean and re-inspect.
147	160	ST-STR-53	ST-STR-896	ST-STR-53	1	12	0	0	0		Pipe in good condition.
148	164	ST-STR-369	ST-STR-368	ST-STR-369	1.0	18	0	0	0	5	Camera blocked by sediment and debris. Pipe in ok condition.
149	165	ST-STR-368	ST-STR-368	ST-STR-190	1.0	15	0	0	0		Pipe in good condition.



PACP© Condition Grading System

The Pipeline Assessment and Certification Program (PACP) developed by NASSCO provides a mechanism for creating reliable descriptions of pipe conditions. NASSCO has also developed a system based on the PACP codes to assign a condition rating to pipelines. Requirements of the grading system were as follows:

1. Like the PACP, the grading system should be direct and objective.
2. Provide the ability to qualitatively identify differences in pipe condition between one inspection and subsequent inspections, and to prioritize based on the significance of the defects different pipe segments.

Many other approaches to sewer pipe grading have been used in the United States as well as in other parts of the World. These approaches generally use some type of defect grading that is then used to calculate an overall pipe rating.

It is problematic to develop a single pipe segment rating that fully describes all of the important aspects of a pipe. Therefore the PACP Condition Grading System uses more than one method of rating pipe segment condition including a rating that considers the number of total defects within the pipe segment and a rating that considers the most severe defects within the pipe segment.

The PACP Condition Grading System only considers internal pipe conditions obtained from TV inspection. While other factors such as pipe material, depth, soils, and surface conditions also affect pipe survivability, those factors have not been included in the PACP Condition Grading System. The PACP Condition Grading System should be used only as a tool for screening pipe segment inspections, allowing the User to quickly determine which pipe segments have significant defects. It is expected that as the PACP further develops the PACP Condition Grading System will expand to include other factors.

The PACP Condition Grading System provides condition ratings for Structural Defects and Operation and Maintenance Defects.

Approach

Using the PACP Code Matrix, Each PACP defect code is assigned a condition grade of from 1 to 5. Grades are assigned based on the significance of the defect, extent of



damage, percentage of flow capacity restriction, or the amount of wall loss due to deterioration.

The PACP Condition Grading System alone is inadequate for determining if a pipe segment should be rehabilitated or replaced. Many other factors in addition to the internal condition of the segment should be considered. The fact that a segment has significant Grade 4 or Grade 5 defects does not necessarily mean the pipe segment should be immediately rehabilitated. Recent experience by PACP Users has shown that pipe segments with serious defects such as hinge failures may remain largely unchanged for many decades if no deterioration factors such as surcharging, roots, or groundwater are present.

What is needed is improved estimates of remaining life or mean time before failure that are based on close monitoring of pipe segments over time. Once we know how much change occurs in pipe segments we can better understand the relationship between defects, deterioration factors, and pipe segment life expectancy. PACP continues to be an excellent tool for benchmarking pipe condition between one inspection and subsequent inspections of the same pipe.

Grades are assigned for two categories, Structural, and O&M defects.

Grades are as follows;

- 5** - Most significant defect grade
- 4** - Significant
- 3** - Moderate defect grade
- 2** - Minor to Moderate
- 1** - Minor defect grade

The PACP Condition Grading System results are entirely dependent on the quality of the PACP defect coding. Errors in the coding will directly result in errors in the Grading. All utilities, engineers, and contractors should make sure the data they are using was coded by experienced technicians who have successfully demonstrated their competence through a formal or informal apprenticeship program. PACP data from inexperienced technicians should be checked and corrected as needed. Errors found in coding should be corrected and the errors brought to the attention of the technician.



Grading of Continuous Defects

The PACP continuous defect feature is used to denote where long portions of a sewer pipe are affected by the same defect, without the User having to repetitively enter point defects. However to develop a grade for the pipe segment, a mechanism is needed to translate a continuous defect into an equivalent number of point defects.

The equivalent number (quantity) of "uninterrupted" and "joint repeating" continuous defects is calculated by dividing the length of the continuous defect by 5. Example, a 6-meter long continuous defect, grade 3, should equate to four Grade 3 defects. Fractions are rounded to the nearest whole number.

Pipe Ratings

The pipe rating is based on the number of occurrences for each condition grade. Ratings are calculated separately for **Structural Defects** and **O&M Defects**. Several ways of expressing pipe segment condition are used by the PACP Condition Grading System as follows.

Segment Grade Scores - Each pipe segment will have a Segment Grade Score for each of the five grades. The number of occurrences of each pipe grade is multiplied by the pipe grade to calculate the segment grade score. Example, six Grade 5 defects would be 6 times 5 and equates to a Segment Grade 5 Score of 30. If a pipe segment had no defects of a particular grade, then the Segment Grade Score for that grade would be 0.

Overall Pipe Rating –The five Segment Grade Scores are added together to calculate the **Overall Pipe Rating**. **Structural Pipe Ratings** are calculated using only Structural Defect grades, while **O&M Pipe Ratings** are calculated using only O&M Defect grades.



PACP Quick Rating – The PACP Quick Rating is a shorthand way of expressing the number of occurrences for the two highest severity grades. The PACP Quick Rating is a four character score as follows:

1. The first character is the highest severity grade occurring along the pipe length.
2. The second character is the total number of occurrences of the highest severity grade. If the total number exceeds 9, then alphabetic characters are used as follows- 10 to 14 – A; 15 to 19 – B; 20 to 24 – C; etc.
3. The third character is the next highest severity grade occurring along the pipe length.
4. The fourth character is the total number of the second highest severity grade occurrences, derived as in item 2 above.

For Example

4B27

This immediately shows that no grade 5 defects or grade 3 defects, however 15 to 19 grade 4 defects and seven grade 2 defects were found.

Another Example

3224

Two grade 3 defects and four grade 2 defects, however no grade 5 or grade 4 defects were found.

If a pipe segment only has defects of one grade, the first two characters are the grade and the quantity of defects, and the last two characters are 00 (denoting no other defect grades). A pipe segment with no defects would have a Quick Score of 0000 (all zeros).

The PACP Quick Rating provides the ability to summarize the number and severity of defects found within a pipe segment. As with the Pipe Rating, Quick Structural Ratings



are calculated using only Structural Defect Grades, and Quick O&M Ratings are calculated using only O&M Defect Grades.

The Quick Rating is an excellent screening tool to determine which pipe segments require closer scrutiny. If a pipe has not defects greater than Grade 1 or 2, then the pipe segment probably does not need any further investigation.

Pipe Ratings Index – This is an indicator of the distribution of defect severity. The Pipe Ratings Index is calculated by dividing the Pipe Rating by the number of defects. For example, the Structural Pipe Ratings Index would be the Structural Pipe Rating divided by the number of structural defects. Pipe Ratings Indexes are calculated for Structural, O&M, and Overall. A pipe segment with a Pipe Rating of zero (0) would have a Pipe Rating Index of zero (0).

Summary

The following procedures are used to calculate pipe segment ratings using the PACP Condition Grading System:

1. Determine the number of occurrences for each condition grade within the pipe segment. Calculate separately for Structural Defect Grades and O&M Defect Grades.
2. Calculate the Segment Grade Score by multiplying the number of occurrences by the respective grade 1 through 5. Calculate the Structural Segment Grade Score and the O&M Segment Grade Score separately, and then add together for the Overall Segment Grade Score.
3. Calculate the Pipe Rating for the pipe segment by adding the Segment Grade Scores. Add all five Structural Segment Grade Scores for the Structural Pipe Rating, and add all five O&M Segment Grade Scores for the O&M Pipe Rating. Add all five Overall Segment Grade Scores for the Overall Pipe Rating.
4. Determine the PACP Quick Rating by calculating the number of occurrences of the two highest severity grades.



5. Calculate the Pipe Ratings Index by dividing the Pipe Rating by the number of defects. If the pipe has no defects, the Pipe Ratings Index is zero.
6. Verify the PACP defect data used is accurate. The grading is a direct calculation from the defect data, and coding errors will be reflected in grading errors.

NASSCO PACP Condition Grading System Code Matrix

Family	Group	Descriptor	Modifier	Code	Structural Grade	O&M Grade			
Structural	Crack (C)	Circumferential (C)		CC	1				
			Longitudinal (L)	CL	2				
			Multiple (M)	CM	3				
			Hinge (CH2)	CH2	4				
			Hinge (CH3)	CH3	5				
			Hinge (CH4)	CH4	5				
			Spiral (S)	CS	2				
			Structural	Fracture (F)	Circumferential (C)	Longitudinal (L)	FC	2	
						Multiple (M)	FL	3	
						Hinge (H2)	FM	4	
Hinge (H3)	FH2	4							
			Hinge (H4)	FH3	5				
			Spiral (S)	FH4	5				
				FS	3				
Structural	Pipe Failures (Silent)	Broken (B)	Broken (B)	B	1 clock pos - 3, 2 clock pos - 4, >=3 clock pos - 5				
			Broken (B)	BSV	5				
			Broken (B)	BVV	5				
					1 clock pos - 3, 2 clock pos - 4, >=3 clock pos - 5				
					H				
					HSV	5			
					HVV	5			
					XP	5			
					XB	5			
					D	<=10% - 4, >10% - 5			
Structural	Deformed (D)	(Pipe)	Horizontal (H)	DH	5				
			Vertical (V)	DV	5				
			Offset (displaced) (O)	JOM	1				
			Separated (open) (S)	JOL	2				
			Angular (A)	JSM	1				
				JSL	2				
				JAM	1				
				JAL	2				
					JAM	1			
					JAL	2			
Structural	Joint (J)	Surface Damage Chemical (S)	Roughness Increased (RI)	SRIC	1				
			Surface Spalling (SS)	SSSC	2				
			Aggregate Visible (AV)	SAVC	3				
			Aggregate Projecting (AP)	SAPC	3				
			Aggregate Missing (AM)	SAMC	4				
					3				
					3				
					3				
					3				
					3				

NASSCO PACP Condition Grading System Code Matrix

Family	Group	Descriptor	Modifier	Code	Structural Grade	O&M Grade
Structural	Surface Damage Mechanical (M)	Reinforcement Visible (RV)	C	SRVC	5	
		Reinforcement Projecting (RP)	C	SRPC	3	
		Reinforcement Corroded (RC)	C	SRCC	5	
		Missing Wall (MW)	C	SMWC	5	
		Other (Z)	C	SZC		
		Roughness Increased (RI)	M	SRIM	1	
		Surface Spalling (SS)	M	SSSM	1	
		Aggregate Visible (AV)	M	SAVM	2	
		Aggregate Projecting (AP)	M	SAPM	3	
		Aggregate Missing (AM)	M	SAMM	4	
		Reinforcement Visible (RV)	M	SRVM	5	
		Reinforcement Projecting (RP)	M	SRPM	3	
		Reinforcement Corroded (RC)	M	SRCM	5	
		Missing Wall (MW)	M	SMWM	5	
		Other (Z)	M	SZM	N/A	
Structural	Surface Damage Not Evident (Z)	Roughness Increased (RI)	Z	SRIZ	1	
		Surface Spalling (SS)	Z	SSSZ	2	
		Aggregate Visible (AV)	Z	SAVZ	3	
		Aggregate Projecting (AP)	Z	SAPZ	3	
		Aggregate Missing (AM)	Z	SAMZ	4	
		Reinforcement Visible (RV)	Z	SRVZ	5	
		Reinforcement Projecting (RP)	Z	SRPZ	3	
		Reinforcement Corroded (RC)	Z	SRCZ	5	
		Missing Wall (MW)	Z	SMWZ	5	
		Other (Z)	Z	SZZ	N/A	
		Corrosion (CP)		SCP	3	
		Detached (D)		LFD	3	
		Defective End (DE)		LFDE	3	
		Blistered (B)		LFB	3	
		Service Cut Shifted (CS)		LFCS	3	
Abandoned Connection (AC)		LFAC	3			
Overcut Service (OC)		LFOC	3			
Undercut Service (UC)		LFUC	3			
Buckled (BK)		LFBK	3			
Annular Space (AS)		LFAS	3			
Bulges (BU)		LFBU	3			
Discoloration (DC)		LFDC	3			
Delamination (DL)		LFDL	3			
Pinholes (PH)		LFPH	3			
Resin Slug (RS)		LFRS	3			
Wrinkled (W)		LFW	3			
Other (Z)		LFZ	N/A			
Circumferential (C)		WFC	2			
Longitudinal (L)		WFL	2			
Structural	Weld Failure (WF)					

NASSCO PACP Condition Grading System Code Matrix

Family	Group	Descriptor	Modifier	Code	Structural Grade	O&M Grade
Structural	Point Repair (RP)	Multiple (M)		WFM	3	<=10% - 2, <=20% - 3,
		Spiral (S)		WFS	2	<=30% - 4, >30% - 5
		Localized Pipeliner (L)		RPL		
		Localized Pipeliner (L)	Defective (D)	RPLD	4	<=10% - 2, <=20% - 3,
		Patch Repair (P)		RPP		<=30% - 4, >30% - 5
		Patch Repair (P)	Defective (D)	RPPD	4	<=10% - 2, <=20% - 3,
		Pipe Replaced (R)		RPR		<=30% - 4, >30% - 5
		Pipe Replaced (R)	Defective (D)	RPRD	4	<=10% - 2, <=20% - 3,
		Other (Z)		RPZ		<=30% - 4, >30% - 5
		Other (Z)	Defective (D)	RPZD		<=10% - 2, <=20% - 3,
Structural	Brickwork (Sient)	Displaced (DB)		DB	3	<=10% - 2, <=20% - 3,
		Missing (MB)		MB	4	<=30% - 4, >30% - 5
		Dropped Invert (DI)		DI	5	<=10% - 2, <=20% - 3,
		Missing Mortar		MMS	2	<=30% - 4, >30% - 5
			Small	MMM	3	<=10% - 2, <=20% - 3,
			Medium	MMM	3	<=30% - 4, >30% - 5
			Large	MML	3	<=10% - 2, <=20% - 3,
						<=30% - 4, >30% - 5
						<=10% - 2, <=20% - 3,
						<=30% - 4, >30% - 5
O&M	Deposits (D)	Deposits Attached (DA)	Encrustation (E)	DAE		<=10% - 2, <=20% - 3,
			Grease (G)	DAGS		<=30% - 4, >30% - 5
			Ragging (R)	DAR		<=10% - 2, <=20% - 3,
			Other (Z)	DAZ		<=30% - 4, >30% - 5
			Hard/Compacted (C)	DSC		<=10% - 2, <=20% - 3,
			Fine silt/sand (F)	DSF		<=30% - 4, >30% - 5
			Gravel (G)	DSGV		<=10% - 2, <=20% - 3,
			Other (Z)	DSZ		<=30% - 4, >30% - 5
			Fine silt/sand (F)	DNF		<=10% - 2, <=20% - 3,
			Deposits Ingress (DN)	DNGV		<=30% - 4, >30% - 5

NASSCO PACP Condition Grading System Code Matrix

Family	Group	Descriptor	Modifier	Code	Structural Grade	O&M Grade
			Other (Z)	DNZ		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
O&M	Roots (R)	Fine (F)	Barrel (B) Lateral (L) Connection (C)	RFB RFL RFC		2 1 1
	Roots (R) at a Joint	Tap (T)	N/A Barrel (B) Lateral (L) Connection (C)	RFJ RTB RTL RTC RTJ RMB RML RMC RMJ	in software with a J	1 3 2 2 2 4 3 3 3
	Roots (R) at a Joint	Medium (M)	N/A Barrel (B) Lateral (L) Connection (C)	RBB RBL RBC RBJ IW ID IR IG IS		5 4 4 4 2 2 3 4 5
O&M	Roots (R) at a Joint	Ball (B)	N/A	RBB RBL RBC RBJ		5 4 4 4
	Roots (R) at a Joint	Weeper (W) Dripper (D) Runner (R) Gusher (G) Stain (S)		IW ID IR IG IS		2 2 3 4 5
O&M	Obstacles/Obstructions (OB)	Brick or Masonry (B)		OBB		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
		Pipe Material in Invert (M)		OBM		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
		Object Intruding Thru Wall (I)		OBI		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
		Object Wedged in Joint (J)		OBJ		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
		Object Thru Connection (C)		OBC		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
		External Pipe or Cable In Sewer (P)		OBP		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
		Built Into Structure (S)		OBS		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5

NASSCO PACP Condition Grading System Code Matrix

Family	Group	Descriptor	Modifier	Code	Structural Grade	O&M Grade
		Construction Debris (N)		OBN		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
		Rocks (R)		OBR		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
		Other Objects (Z)		OBZ		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
O&M	Vermis (V)	Rat (R)		VR		2
		Cockroach (C)		VC		1
		Other (Z)		VZ		1
O&M	Grout Test and Seal (G)	Grout Test Pass (GTP)	Joint (J)	GTRJ		
			Lateral (L)	GTRL		
		Grout Test Fail (GTF)	Joint (J)	GTRJ		
			Lateral (L)	GTRL		
		Grout Test Unable to Test (GTU)	Joint (J)	GTUJ		
			Lateral (L)	GTUL		
		Grout at a Location (not a joint) (GRT)		GRT		
Construction Features	Tap (T)	Factory Made (F)	Capped (C)	TF		
			Abandoned (B)	TFC		
			Defective (D)	TFB		2
			Intruding (I)	TFD		
			Activity (A)	TFI		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
		Break-In/Hammer (B)	Capped (C)	TFA		
			Abandoned (B)	TB		2
			Defective (D)	TBC		
			Intruding (I)	TBB		
			Activity (A)	TBD		3
			Saddle (S)	TBI		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
			Capped (C)	TBA		
			Abandoned (B)	TS		
				TSC		
				TSB		

NASSCO PACP Condition Grading System Code Matrix

Family	Group	Descriptor	Modifier	Code	Structural Grade	O&M Grade
			Defective (D)	TSD		2
			Intruding (I)	TSI		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
		Rehabilitated (R)	Activity (A)	TSA TR		
			Defective (D)	TRD		2
			Intruding (I)	TRI		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
Construction Features	Intruding Seal Material (IS)			IS		
		Sealing Ring (SR)		ISSR		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
			Hanging (H)	ISSRH		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
			Broken (B)	ISSRB		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
		Loose, Poorly Fitting (SRL)		ISSRL		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
		Grout (GT)		ISGT		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
		Other (Z)		ISZ		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
Construction Features	Line (L)			LL		<=10 Deg - 1, <=20 Deg 2, >20 Deg - 4
		Left (L)		LL		<=10 Deg - 1, <=20 Deg 2, >20 Deg - 4
		Left/Up (LU)		LLU		<=10 Deg - 1, <=20 Deg 2, >20 Deg - 4
		Left/Down (LD)		LLD		<=10 Deg - 1, <=20 Deg 2, >20 Deg - 4
		Right (R)		LR		<=10 Deg - 1, <=20 Deg 2, >20 Deg - 4

NASSCO PACP Condition Grading System Code Matrix

Family	Group	Descriptor	Modifier	Code	Structural Grade	O&M Grade
		Right/Up (RU)		LRU		<=10 Deg - 1, <=20 Deg 2, >20 Deg - 4
		Right/Down (RD)		LRD		<=10 Deg - 1, <=20 Deg 2, >20 Deg - 4
		Up (U)		LU		<=10 Deg - 1, <=20 Deg 2, >20 Deg - 4
		Down (D)		LD		<=10 Deg - 1, <=20 Deg 2, >20 Deg - 4
Construction	Access Points (A)	Cleanout (CO)		ACO		
			Mainline (M)	ACOM		
			Property (P)	ACOP		
			House (H)	ACOH		
		Discharge Point (DP)		ADP		
		Junction Box (JB)		AJB		
		Meter (M)		AM		
		Manhole (MH)		AMH		
		Other Special Chamber (OC)		AOC		
		Tee Connection (TC)		ATC		
		WW Access Device (WA)		AWA		
		Wet Well (WW)		AWW		
		Catch Basin (CB)		ACB		
		End of Pipe (EP)		AEP		
Other	Miscellaneous (M)	Camera Underwater (CU)		MCU		4
		Dimension/Diam/Shape Change (SC)		MSC		
		General Observation (GO)		MGO		
		General Photograph (GP)		MGP		
		Material Change (MC)		MMC		
		Lining Change (LC)		MLC		
		Pipe Joint Length Change (JL)		MJL		
		Survey Abandoned (SA)		MSA		
		Water Level (WL)		MWL		
		Water Mark (WM)	Sag (S)	MWLS	<=30% - 2, <=50% - 3, >50% - 4	>=50% 4, >=75% 5
		Dye Test (Y)	Visible (V)	MWM		
			Not Visible (N)	MYV		5
				MYN		3

REPAIR TECHNIQUES

1. Cured In Place Pipe (CIPP) Lining

The CIPP lining process involves inserting a resin-saturated flexible lining into the existing pipe. The lining looks like a very large sock or flexible tube. Air or water under pressure is forced into the tube, which turns the lining inside out and causes it to fit tightly to the existing pipe walls. Hot air or water is circulated throughout the tube to harden the resin, completing the curing process. When the curing process is completed, a new pipe has been created that is free of cracks and holes that allow rainwater and roots to enter the pipe and cause operational problems such as stoppages and overflows. The finished product has a 50-year design life, the same as that of a brand new pipe.

2. Cured In Place Pipe (CIPP) Sectional Repairs

Sectional CIPP repairs apply to facilities that do not require the entire pipe to be rehabilitated. If a particular pipe is damaged in isolated locations, then CIPP sectional repairs can typically be applied and the repairs range from three to thirty feet in length with diameters ranging from six inches to forty-eight inches. Unlike full-length liners, a sectional repair may be any distance from the manhole.

3. Top Hat (TH) In Lateral/Main Connection Sealing

This utilizes a specially shaped liner, which looks just like a Top Hat (TH) or inverted 'T'. The stem of the TH forms the section of liner that is placed into the lateral pipe while the TH crossbar sits against the inner wall of the main. Resin impregnation of the liner material allows it to be positioned using a specially designed remote control robotic installer and held in position for curing of the resin. Once cured, the robot and retention system are removed leaving the 'T'-shaped liner forming a seal across the lateral/main joint. The TH stem can be made to pass as deep into the lateral if necessary.

4. Pressurized Hydrophilic Chemical Grout and Urethane Sealant

Pressurized hydrophilic grout is primarily used for the repair of defects in water environments. The grout is typically injected under pressure, as a liquid into and/or around a leak. Once in contact with water, the grout reacts, filling voids and sealing defects. Hydrophilic grout requires water for the reaction to occur and creates flexible, resilient repairs. It can bond to wet surfaces, and has the ability to expand or contract within the voids.

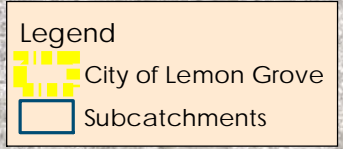
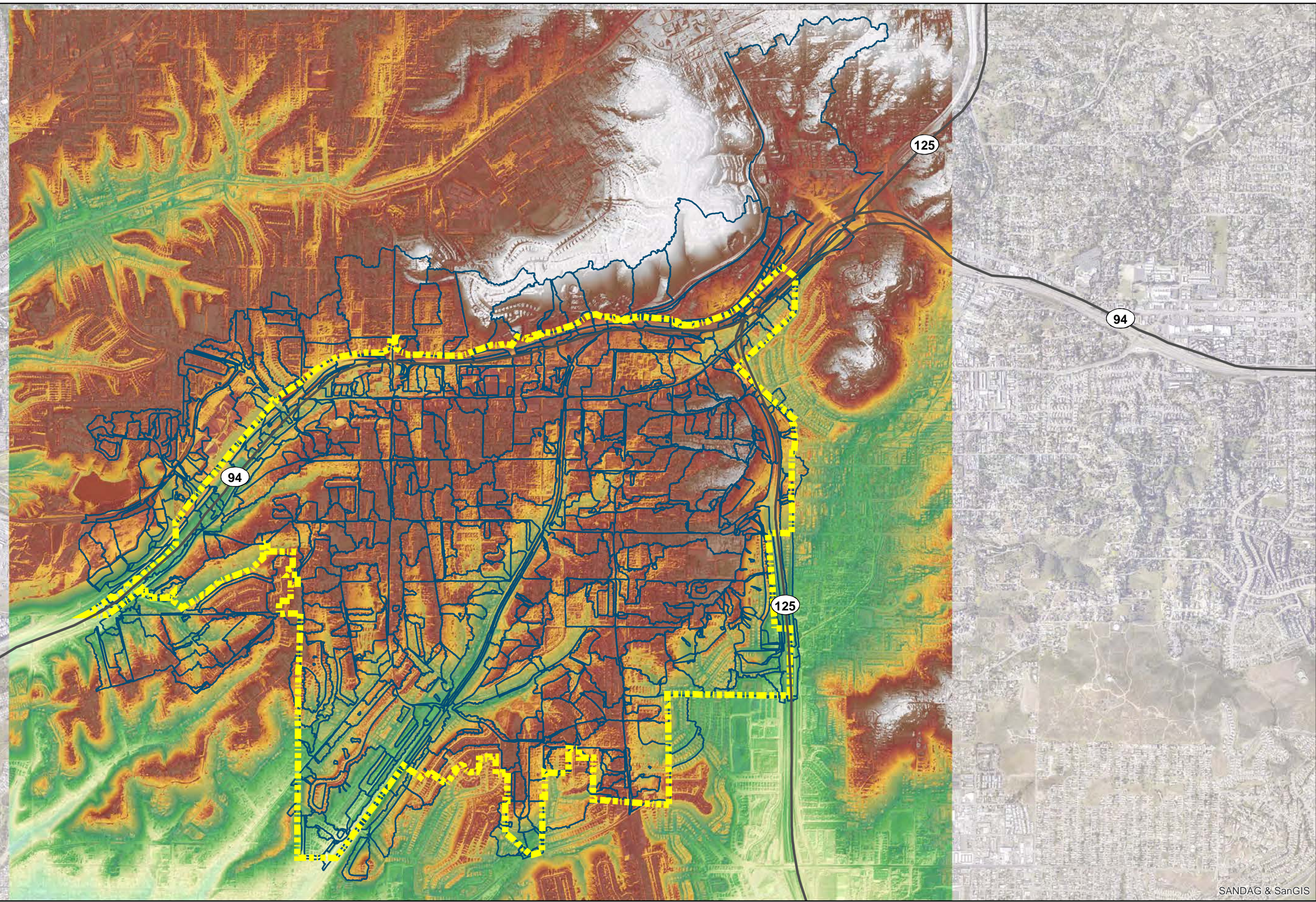
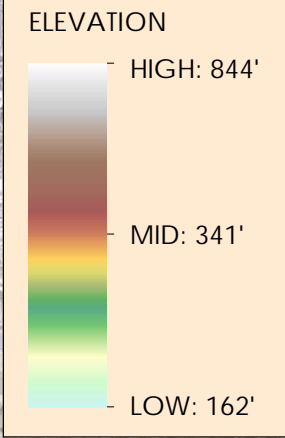
5. Hydro-Scouring

The hydro scouring method effectively removes grit and grease accumulation from sewer lines. High water pressure scours the inside of the sewer pipelines, restoring the hydraulic capacity.

6. Pipe Removal and Replacement

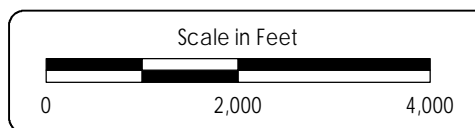
Removal and replacement is recommended if the pipe cannot be rehabilitated.

C. GIS Dataset Exhibits



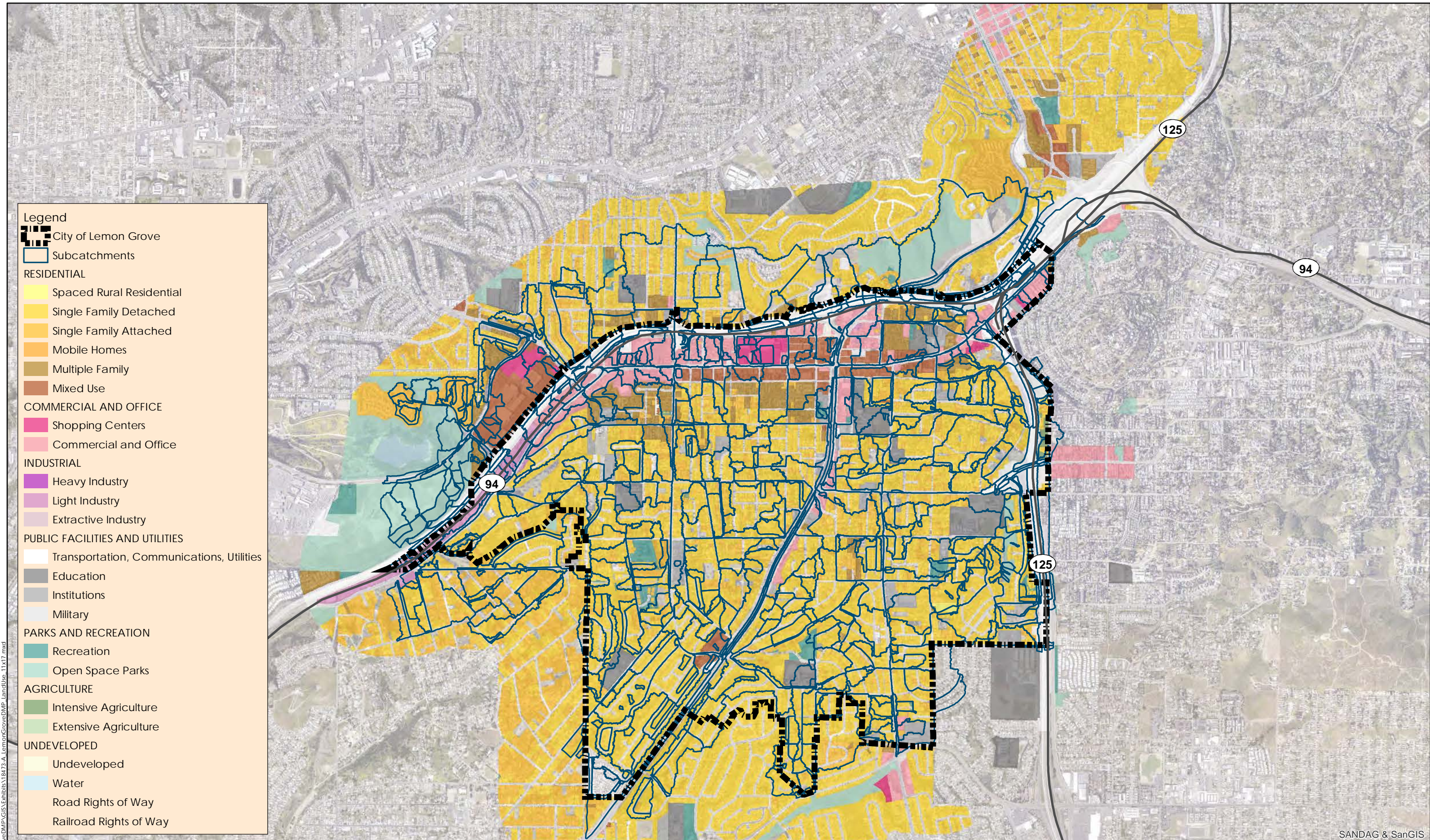
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SANDAG & SanGIS



Date of Exhibit: 5/23/2019
Data Sources:
City of Lemon Grove: Storm Drain
SANGIS/SANDAG: Aerial Imagery, DEM, Topography

City of Lemon Grove DMP
Digital Elevation Model

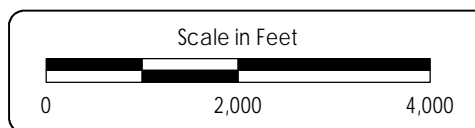


Legend

- City of Lemon Grove
- Subcatchments
- RESIDENTIAL**
- Spaced Rural Residential
- Single Family Detached
- Single Family Attached
- Mobile Homes
- Multiple Family
- Mixed Use
- COMMERCIAL AND OFFICE**
- Shopping Centers
- Commercial and Office
- INDUSTRIAL**
- Heavy Industry
- Light Industry
- Extractive Industry
- PUBLIC FACILITIES AND UTILITIES**
- Transportation, Communications, Utilities
- Education
- Institutions
- Military
- PARKS AND RECREATION**
- Recreation
- Open Space Parks
- AGRICULTURE**
- Intensive Agriculture
- Extensive Agriculture
- UNDEVELOPED**
- Undeveloped
- Water
- Road Rights of Way
- Railroad Rights of Way

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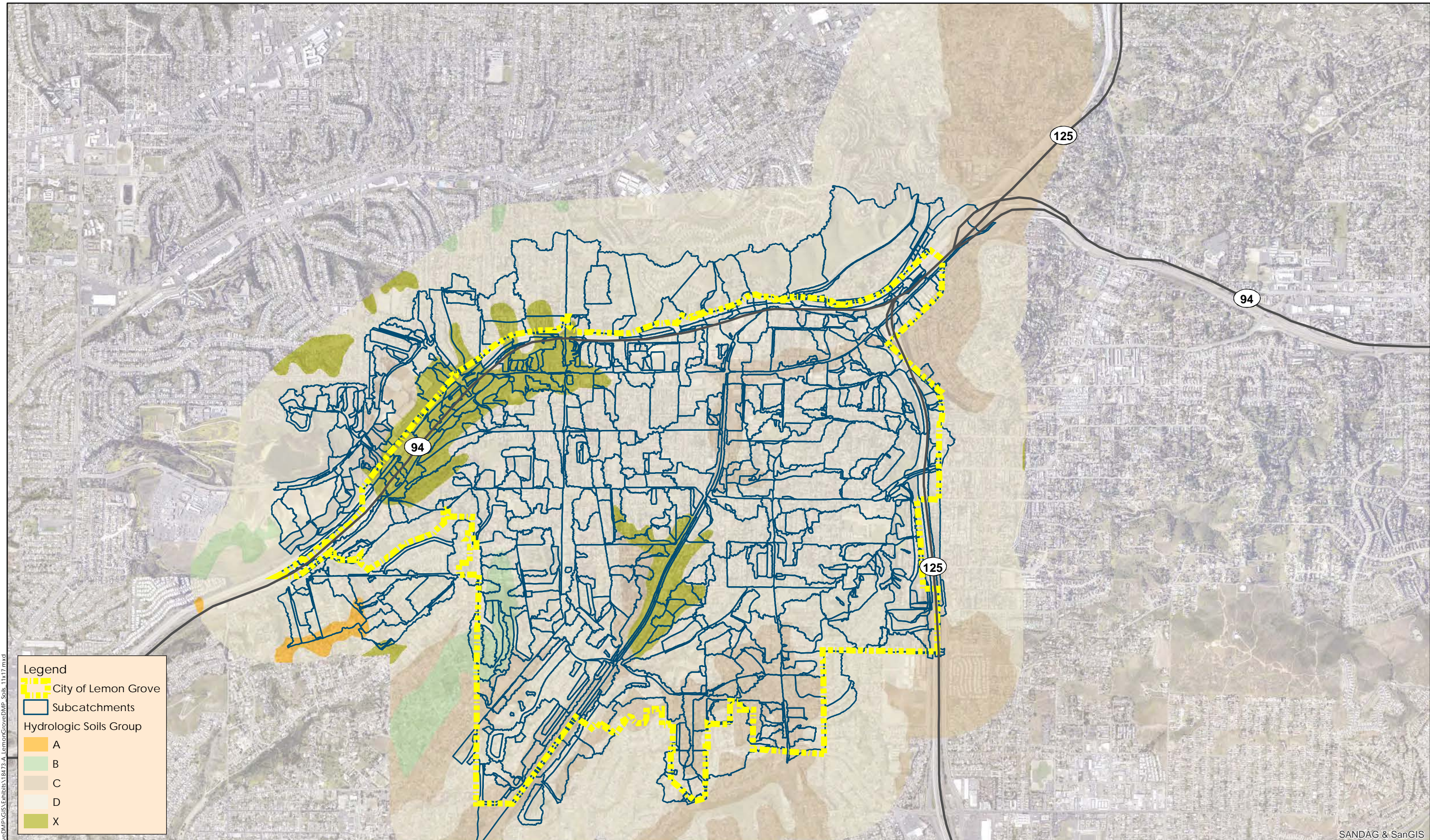
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Date of Exhibit: 5/23/2019
 Data Sources:
 City of Lemon Grove: Storm Drain
 SANGIS Planned Land Use
 SANGIS/SANDAG: Aerial Imagery, DEM, Topography

City of Lemon Grove DMP Land Use Map






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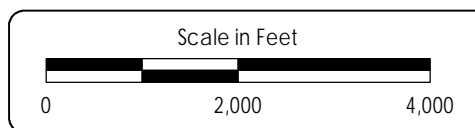


Legend

-  City of Lemon Grove
-  Subcatchments

Hydrologic Soils Group

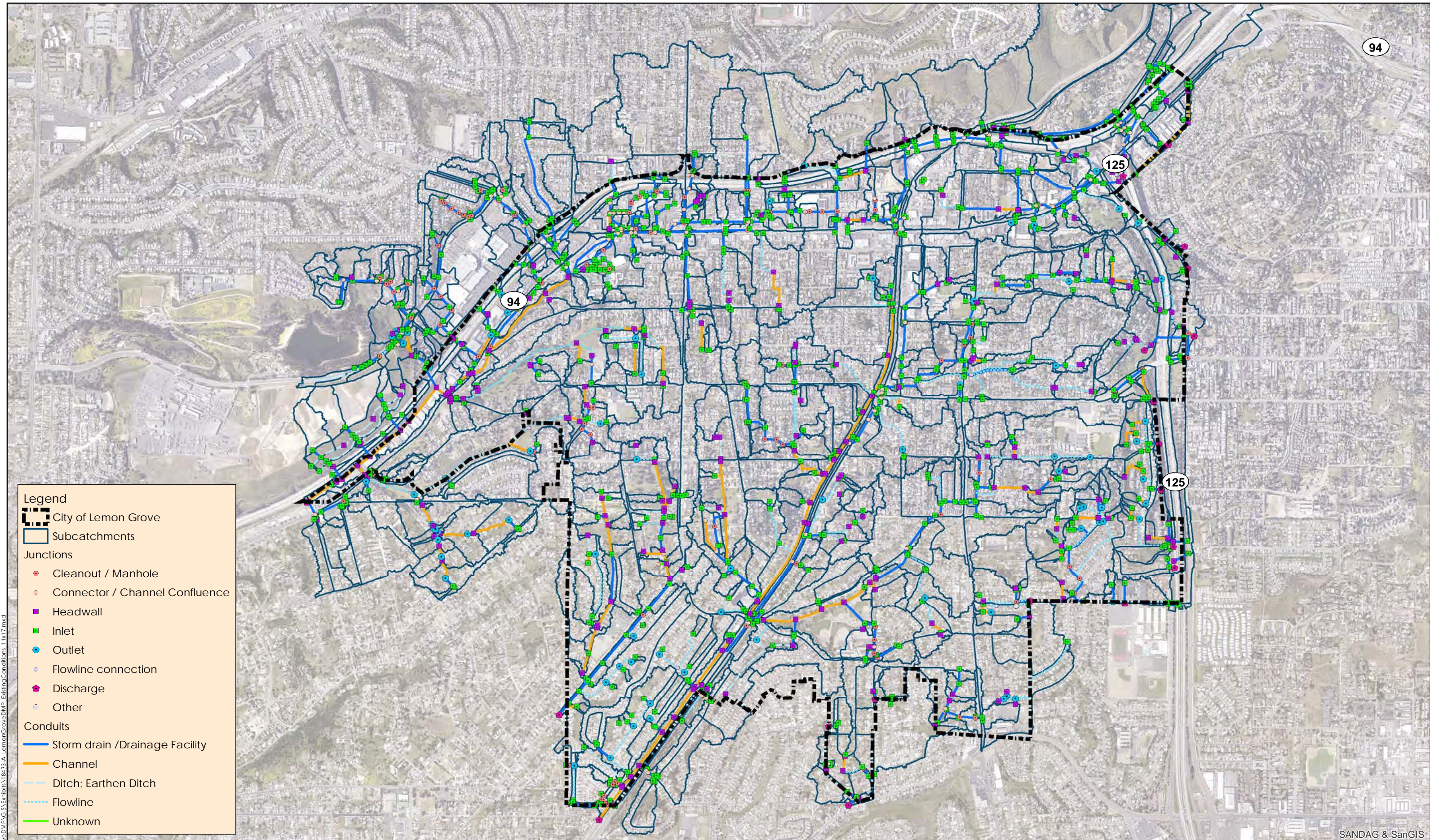
-  A
-  B
-  C
-  D
-  X



Date of Exhibit: 5/23/2019
 Data Sources:
 City of Lemon Grove: Storm Drain
 Hydrologic Soils: SSURGO
 SANGIS/SANDAG: Aerial Imagery, DEM, Topography

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City of Lemon Grove DMP
 Hydrologic Soils Group



Legend

- City of Lemon Grove
- Subcatchments

Junctions

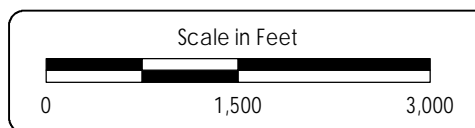
- Cleanout / Manhole
- Connector / Channel Confluence
- Headwall
- Inlet
- Outlet
- Flowline connection
- Discharge
- Other

Conduits

- Storm drain / Drainage Facility
- Channel
- Ditch; Earthen Ditch
- Flowline
- Unknown

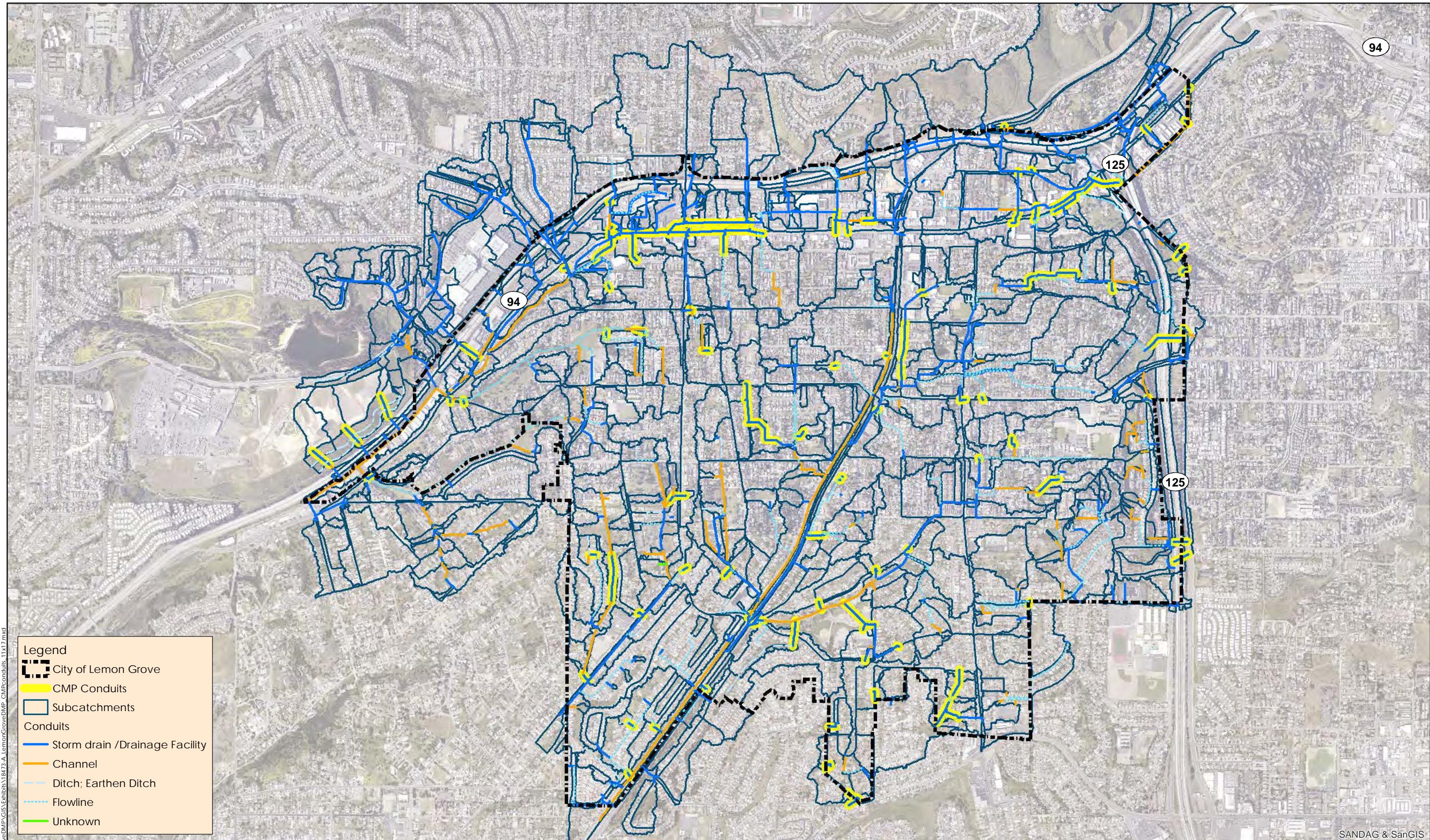
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Date of Exhibit: 5/23/2019
 Data Sources:
 City of Lemon Grove: Storm Drain
 SANGIS/SANDAG: Aerial Imagery, DEM, Topography

City of Lemon Grove DMP
 Existing Conditions



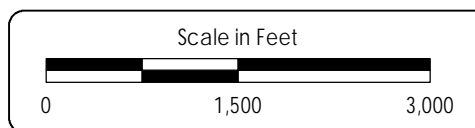
Legend

- City of Lemon Grove
- CMP Conduits
- Subcatchments

Conduits

- Storm drain / Drainage Facility
- Channel
- Ditch; Earthen Ditch
- Flowline
- Unknown

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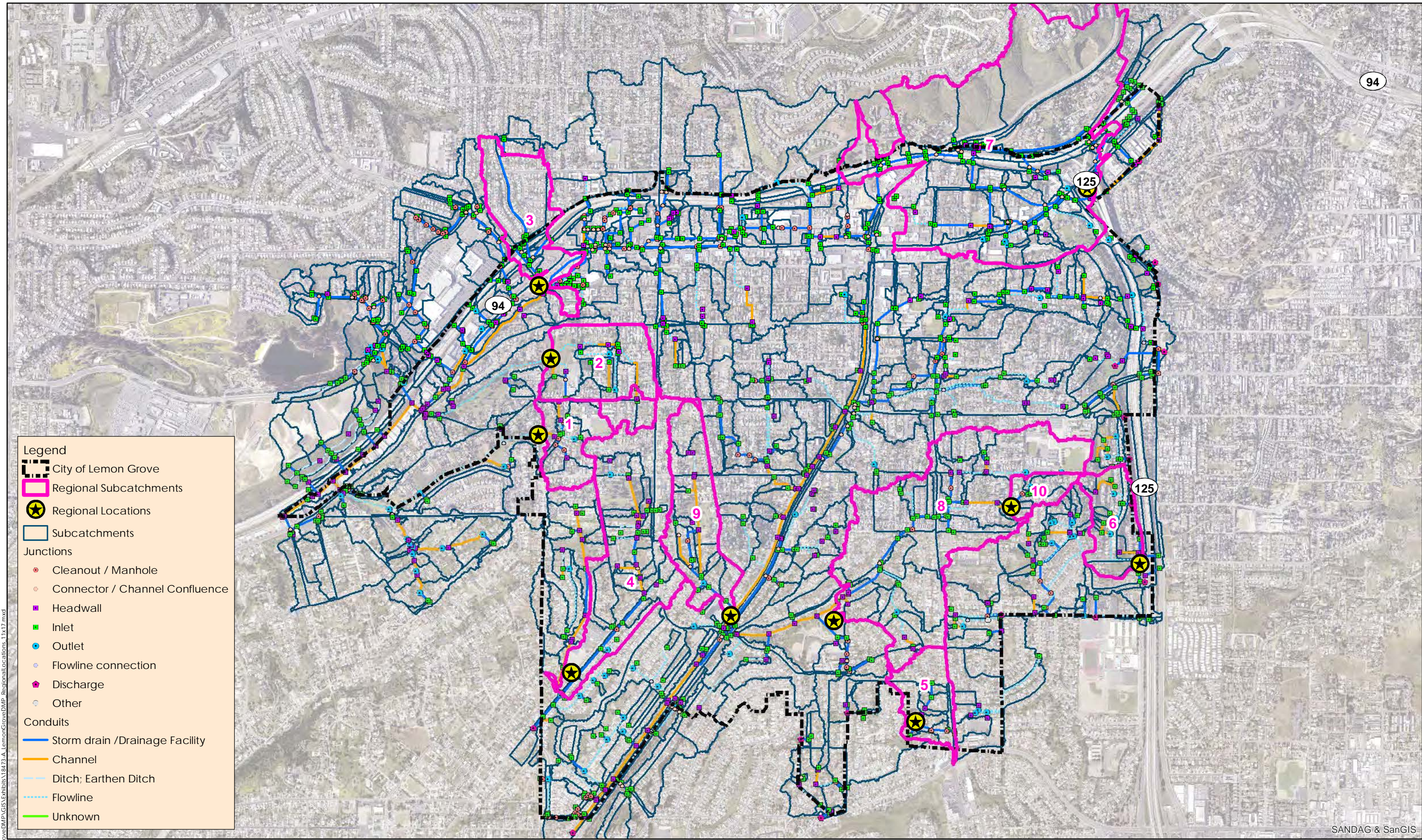


Date of Exhibit: 5/24/2019
 Data Sources:
 City of Lemon Grove: Storm Drain
 SANGIS/SANDAG: Aerial Imagery, DEM, Topography

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City of Lemon Grove DMP
 CMP Conduits Map

J-18473 A



Legend

- City of Lemon Grove
- Regional Subcatchments
- Regional Locations
- Subcatchments

Junctions

- Cleanout / Manhole
- Connector / Channel Confluence
- Headwall
- Inlet
- Outlet
- Flowline connection
- Discharge
- Other

Conduits

- Storm drain / Drainage Facility
- Channel
- Ditch; Earthen Ditch
- Flowline
- Unknown

D. Inundation Maps

Legend

City of Lemon Grove

Junctions

- Cleanout / Manhole
- Connector / Channel Confluence
- Headwall
- Inlet
- Outlet
- Flowline connection
- Discharge
- Other

Conduits

- Storm drain / Drainage Facility
- Channel
- Ditch: Earthen Ditch
- Flowline
- Unknown

Subcatchments

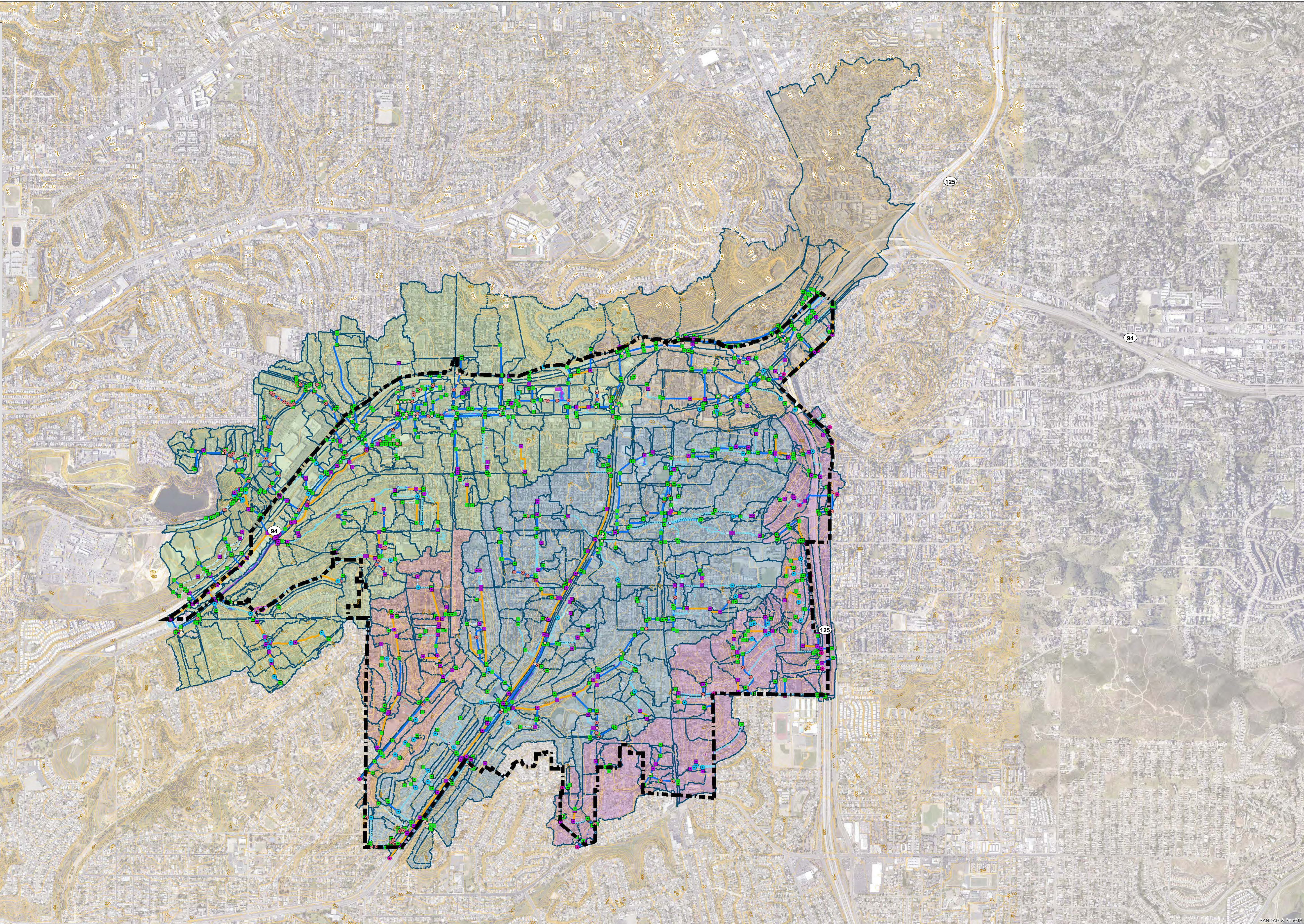
- Subcatchments

Subcatchment System

- 1A
- 2A
- 3
- 4
- 5

Inundation 2-Year

- 0.08 - 0.5 Ft
- 0.5 - 1.0 Ft
- > 1 Ft



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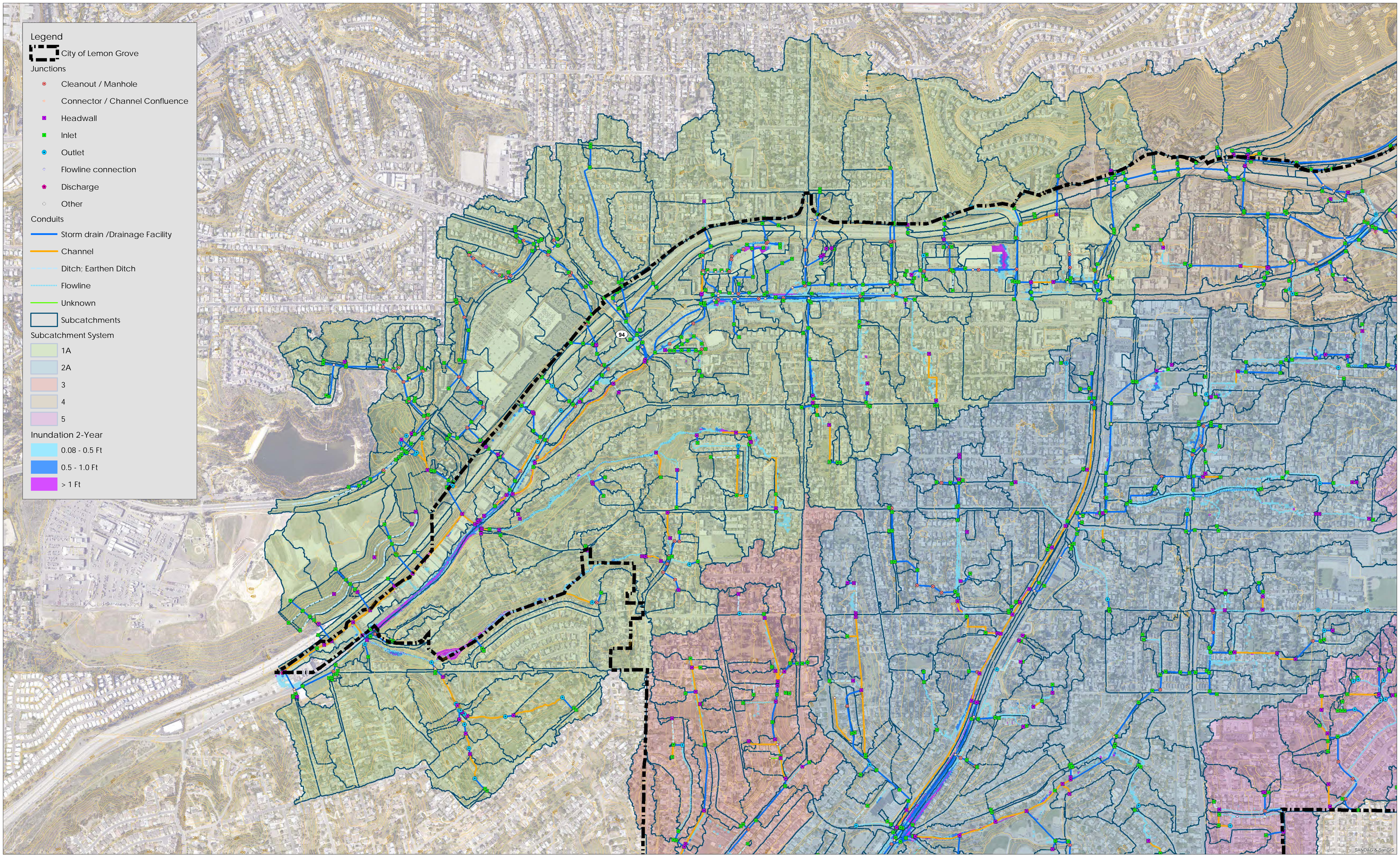
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North

Date of Exhibit: 5/23/2019
Data Sources:
City of Lemon Grove: Storm Drain
SANGIS/SANDAG: Aerial Imagery, DEM, Topography

City of Lemon Grove DMP

2-Year Inundation - Overview Map



Legend

City of Lemon Grove

Junctions

- Cleanout / Manhole
- Connector / Channel Confluence
- Headwall
- Inlet
- Outlet
- Flowline connection
- Discharge
- Other

Conduits

- Storm drain / Drainage Facility
- Channel
- Ditch: Earthen Ditch
- Flowline
- Unknown

Subcatchments

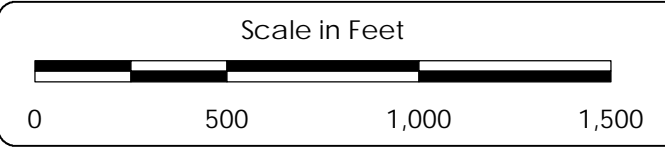
Subcatchment System

- 1A
- 2A
- 3
- 4
- 5

Inundation 2-Year

- 0.08 - 0.5 Ft
- 0.5 - 1.0 Ft
- > 1 Ft

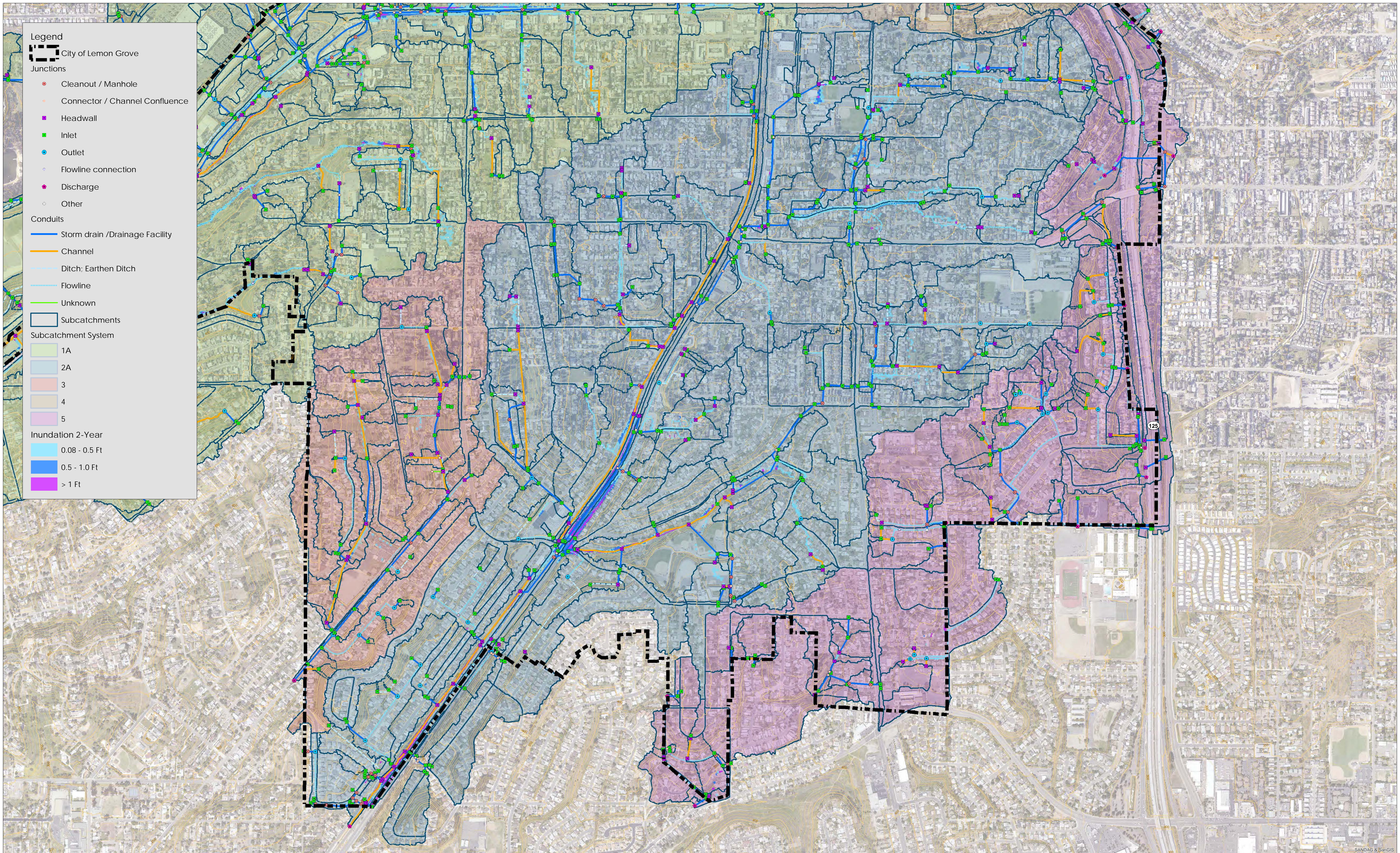
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Date of Exhibit: 5/23/2019
Data Sources:
City of Lemon Grove: Storm Drain
SANGIS/SANDAG: Aerial Imagery, DEM, Topography

City of Lemon Grove DMP

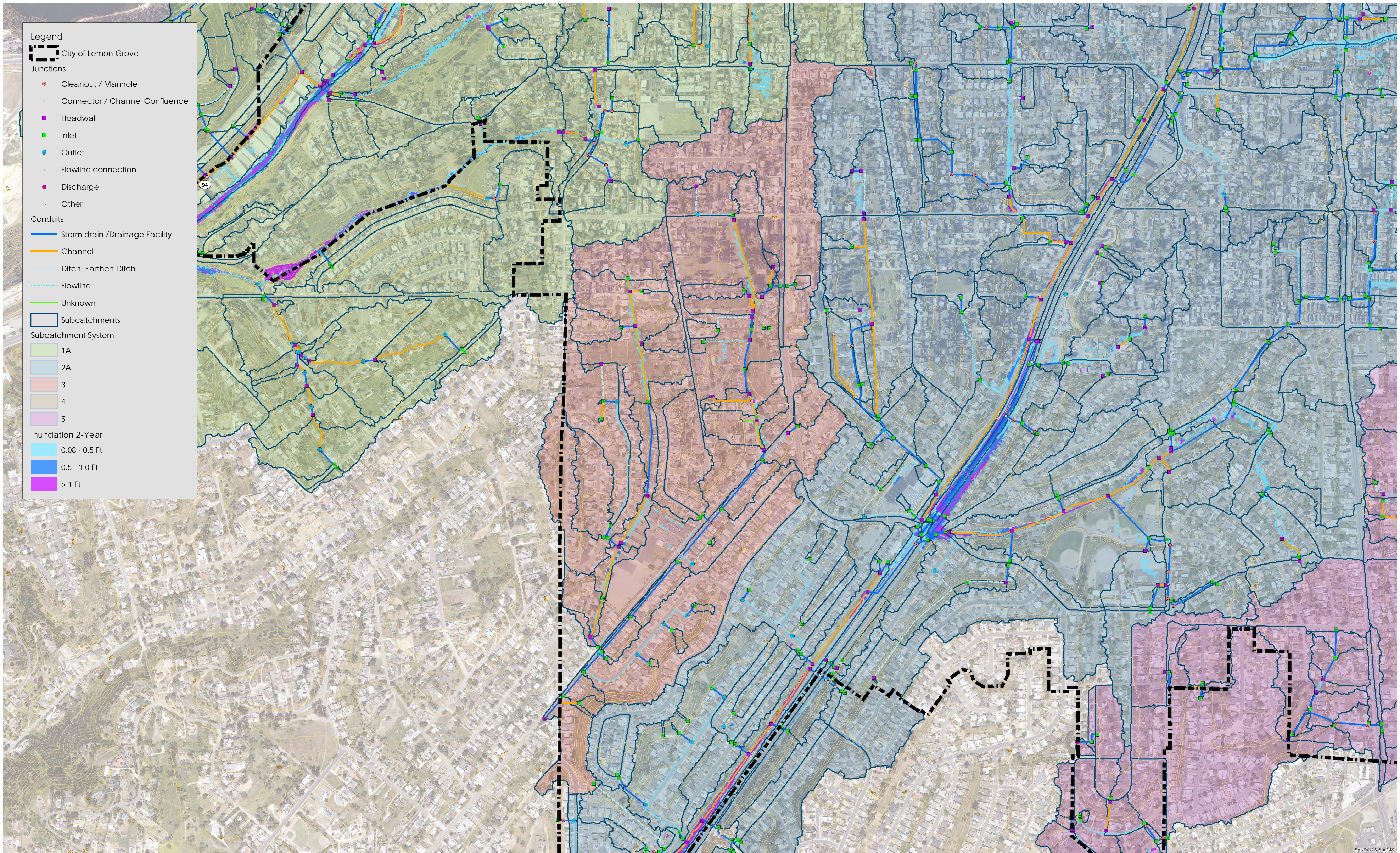
2-Year Inundation - System 1A



- Legend**
- City of Lemon Grove**
- Junctions**
- Cleanout / Manhole
 - Connector / Channel Confluence
 - Headwall
 - Inlet
 - Outlet
 - Flowline connection
 - Discharge
 - Other
- Conduits**
- Storm drain / Drainage Facility
 - Channel
 - Ditch: Earthen Ditch
 - Flowline
 - Unknown
- Subcatchments**
- 1A
 - 2A
 - 3
 - 4
 - 5
- Inundation 2-Year**
- 0.08 - 0.5 Ft
 - 0.5 - 1.0 Ft
 - > 1 Ft

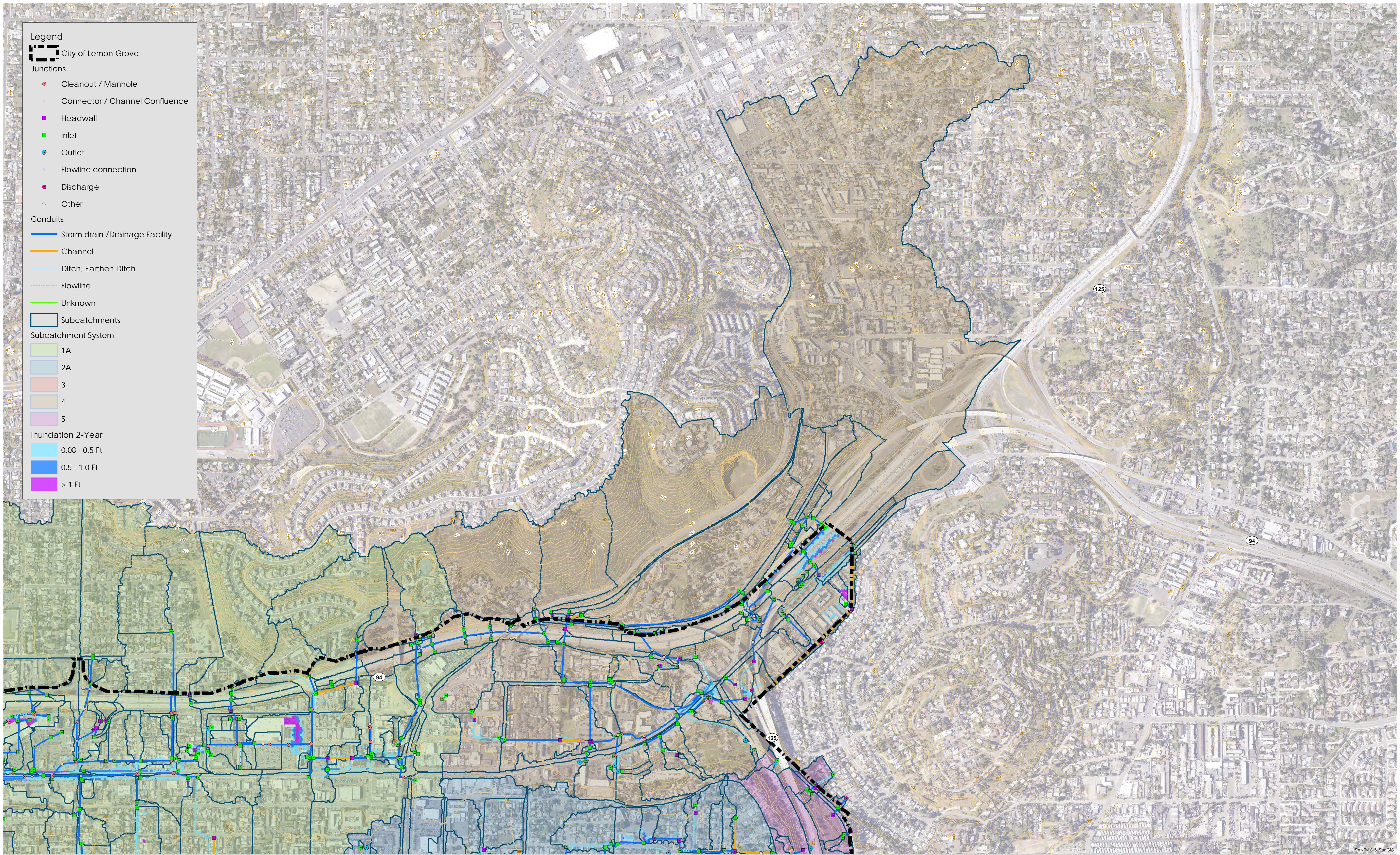
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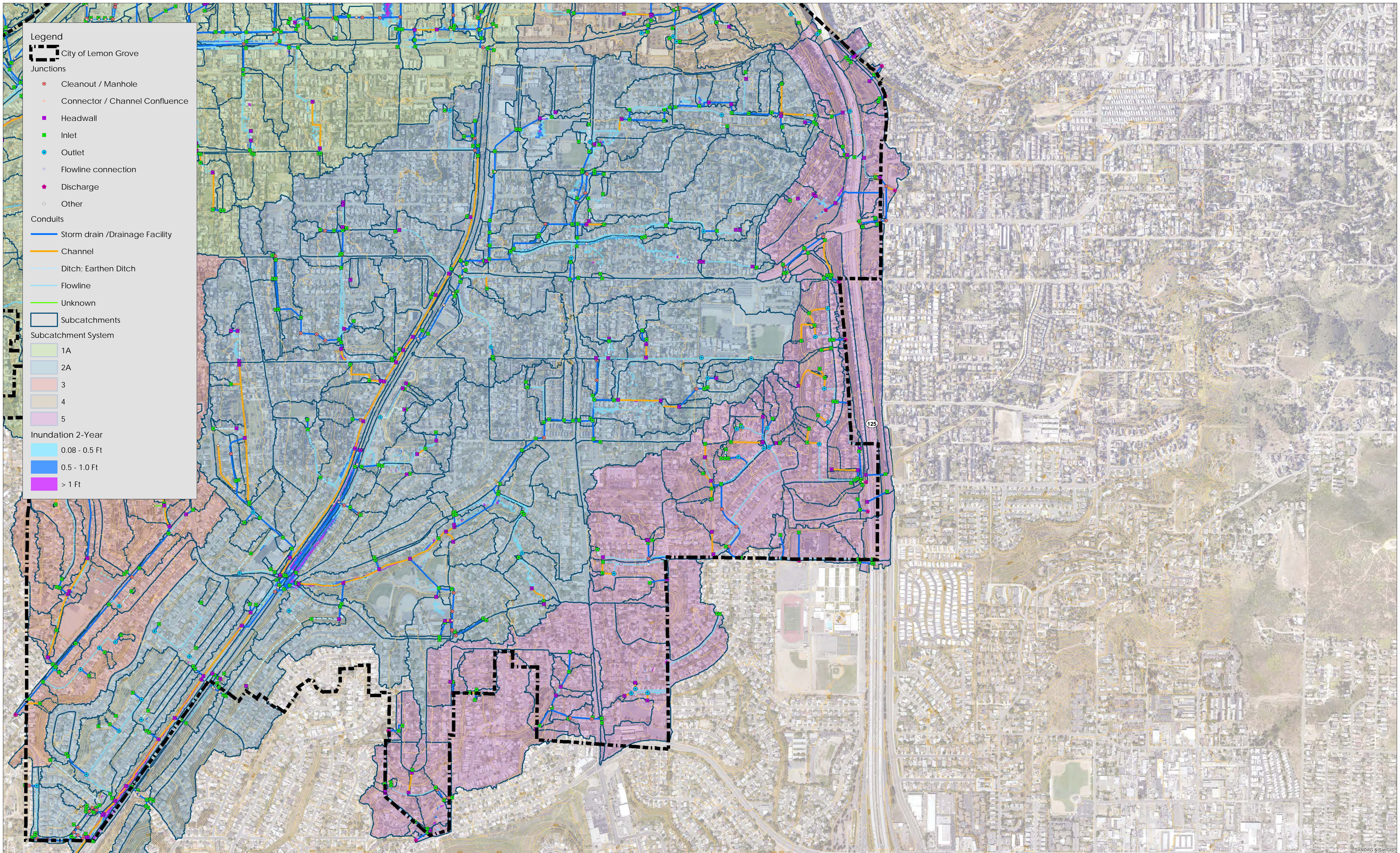


- Legend**
- City of Lemon Grove
 - Junctions**
 - Cleanout / Manhole
 - Connector / Channel Confluence
 - Headwall
 - Inlet
 - Outlet
 - Flowline connection
 - Discharge
 - Other
 - Conduits**
 - Storm drain / Drainage Facility
 - Channel
 - Ditch: Earthen Ditch
 - Flowline
 - Unknown
 - Subcatchments**
 - Subcatchment System**
 - 1A
 - 2A
 - 3
 - 4
 - 5
 - Inundation 2-Year**
 - 0.08 - 0.5 Ft
 - 0.5 - 1.0 Ft
 - > 1 Ft

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- Legend**
- City of Lemon Grove
 - Junctions**
 - Cleanout / Manhole
 - Connector / Channel Confluence
 - Headwall
 - Inlet
 - Outlet
 - Flowline connection
 - Discharge
 - Other - Conduits**
 - Storm drain / Drainage Facility
 - Channel
 - Ditch: Earthen Ditch
 - Flowline
 - Unknown - Subcatchments**
 - 1A
 - 2A
 - 3
 - 4
 - 5 - Inundation 2-Year**
 - 0.08 - 0.5 Ft
 - 0.5 - 1.0 Ft
 - > 1 Ft

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Legend

City of Lemon Grove

Junctions

- Cleanout / Manhole
- Connector / Channel Confluence
- Headwall
- Inlet
- Outlet
- Flowline connection
- Discharge
- Other

Conduits

- Storm drain / Drainage Facility
- Channel
- Ditch: Earthen Ditch
- Flowline
- Unknown

Subcatchments

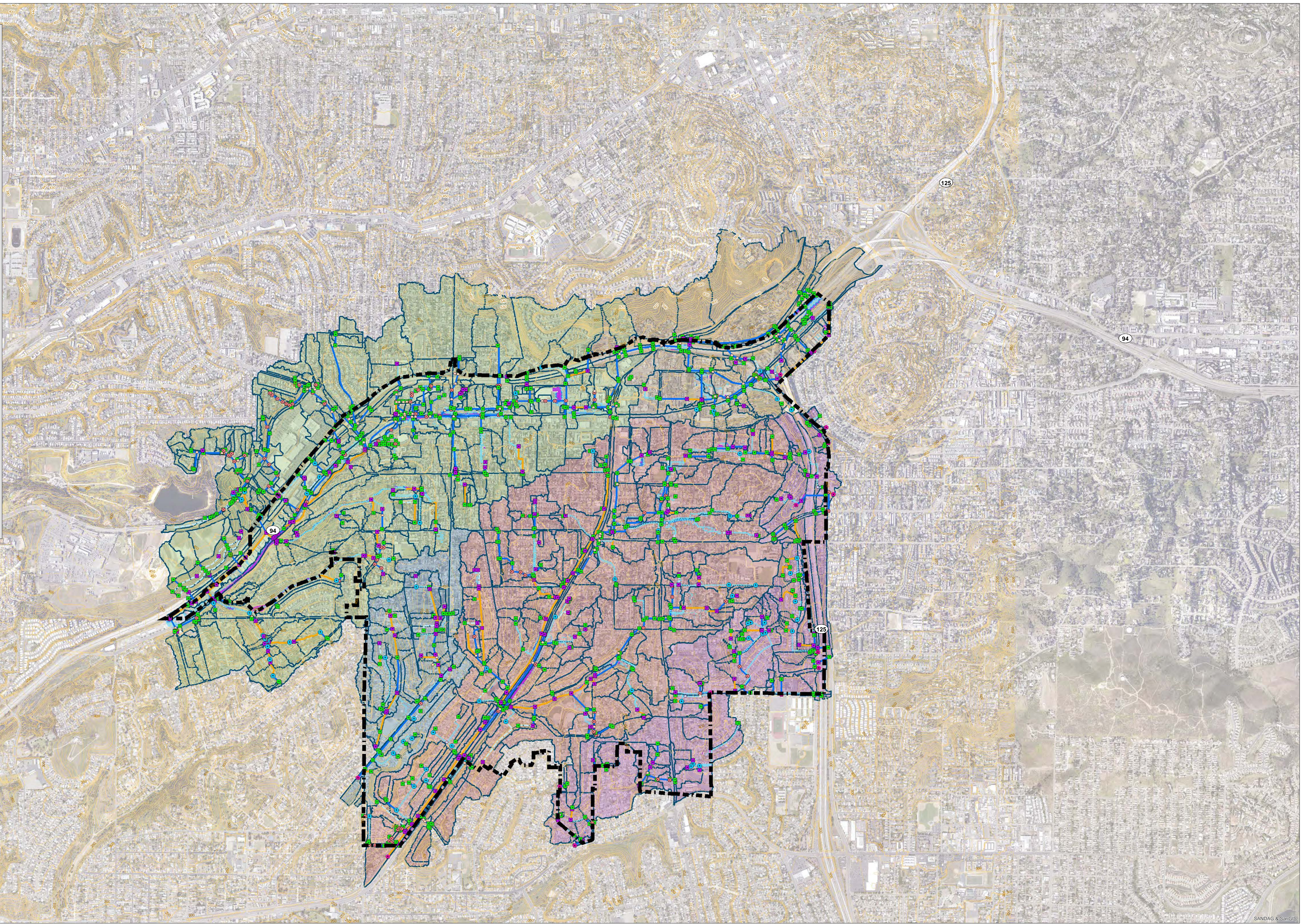
- Subcatchments

Subcatchment System

- 1
- 2
- 3
- 4
- 5

Inundation 10-Year

- 0.08 - 0.5 Ft
- 0.5 - 1.0 Ft
- > 1 Ft



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Legend

City of Lemon Grove

Junctions

- Cleanout / Manhole
- Connector / Channel Confluence
- Headwall
- Inlet
- Outlet
- Flowline connection
- Discharge
- Other

Conduits

- Storm drain / Drainage Facility
- Channel
- Ditch: Earthen Ditch
- Flowline
- Unknown

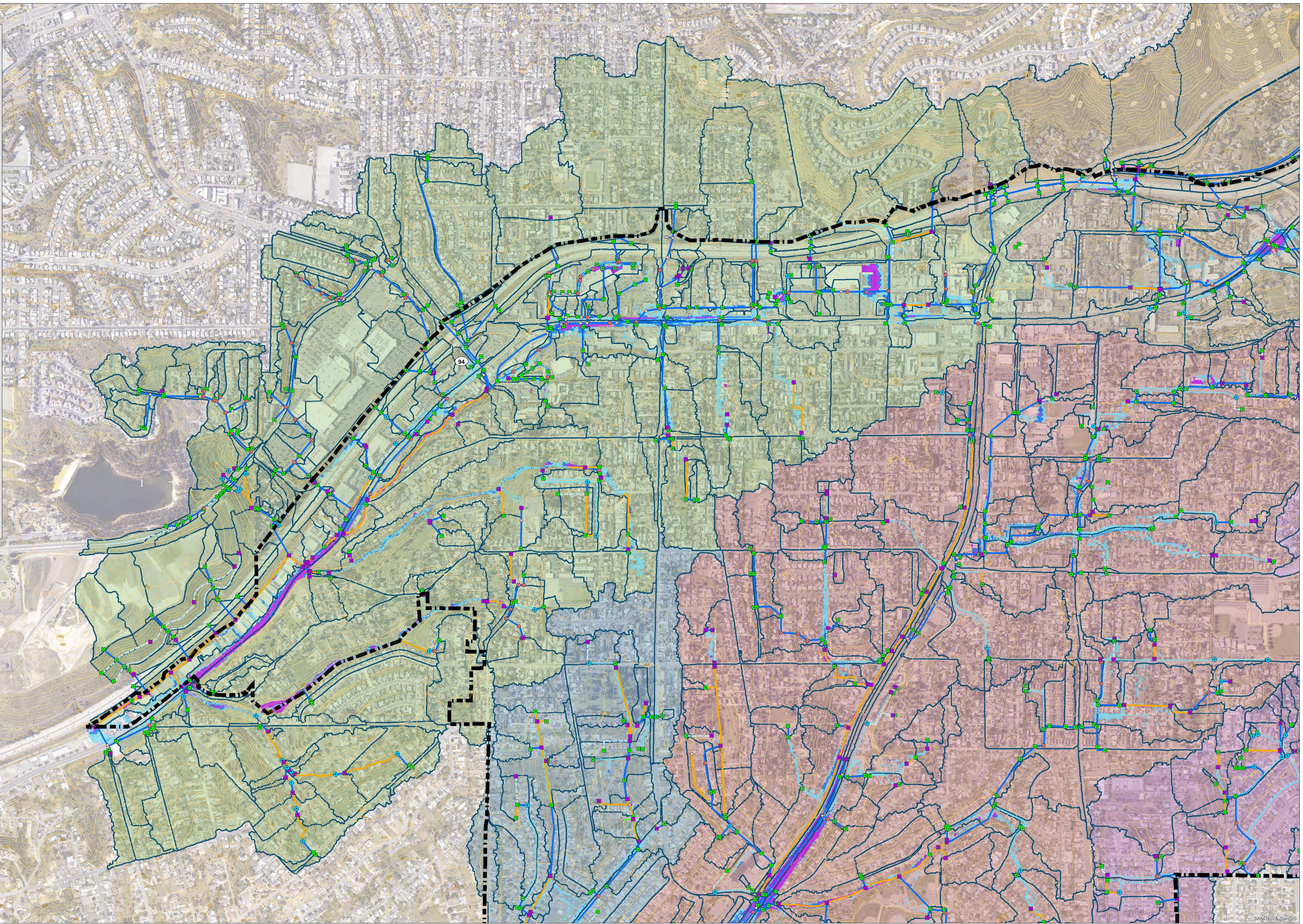
Subcatchments

Subcatchment System

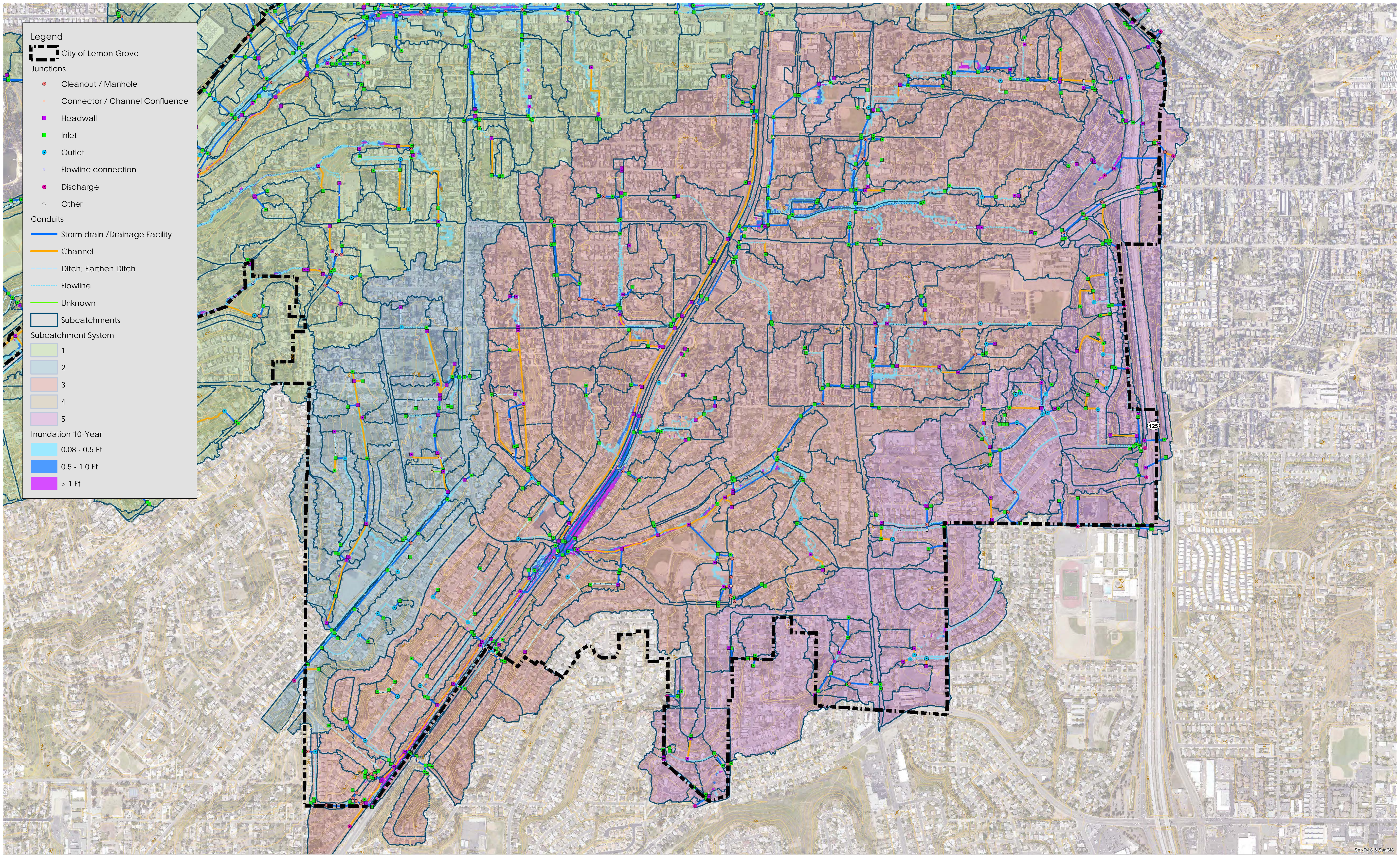
- 1
- 2
- 3
- 4
- 5

Inundation 10-Year

- 0.08 - 0.5 Ft
- 0.5 - 1.0 Ft
- > 1 Ft



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- Legend**
- City of Lemon Grove
 - Junctions**
 - Cleanout / Manhole
 - Connector / Channel Confluence
 - Headwall
 - Inlet
 - Outlet
 - Flowline connection
 - Discharge
 - Other - Conduits**
 - Storm drain / Drainage Facility
 - Channel
 - Ditch: Earthen Ditch
 - Flowline
 - Unknown - Subcatchments**
 - 1
 - 2
 - 3
 - 4
 - 5 - Inundation 10-Year**
 - 0.08 - 0.5 Ft
 - 0.5 - 1.0 Ft
 - > 1 Ft

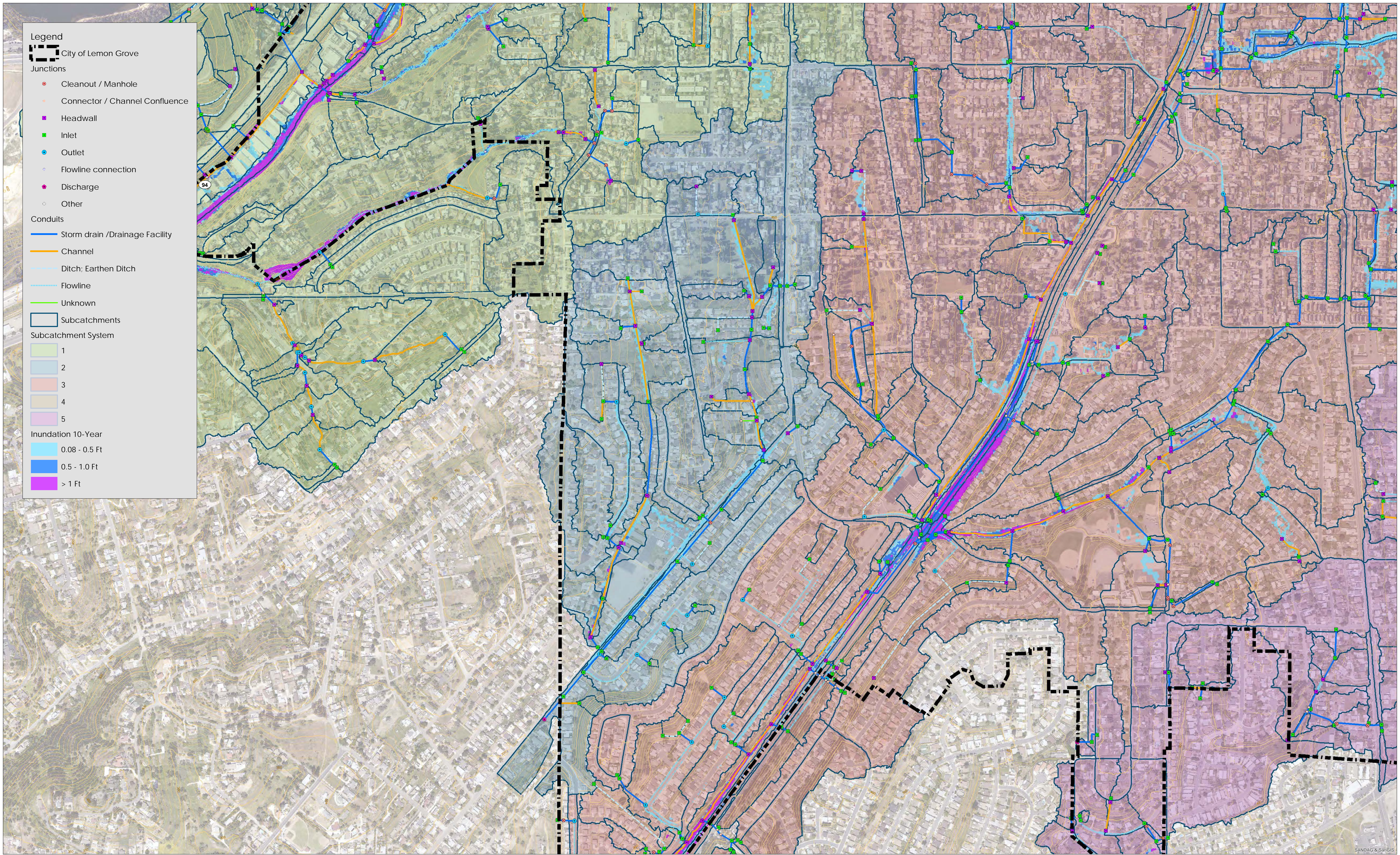
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Scale in Feet
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North

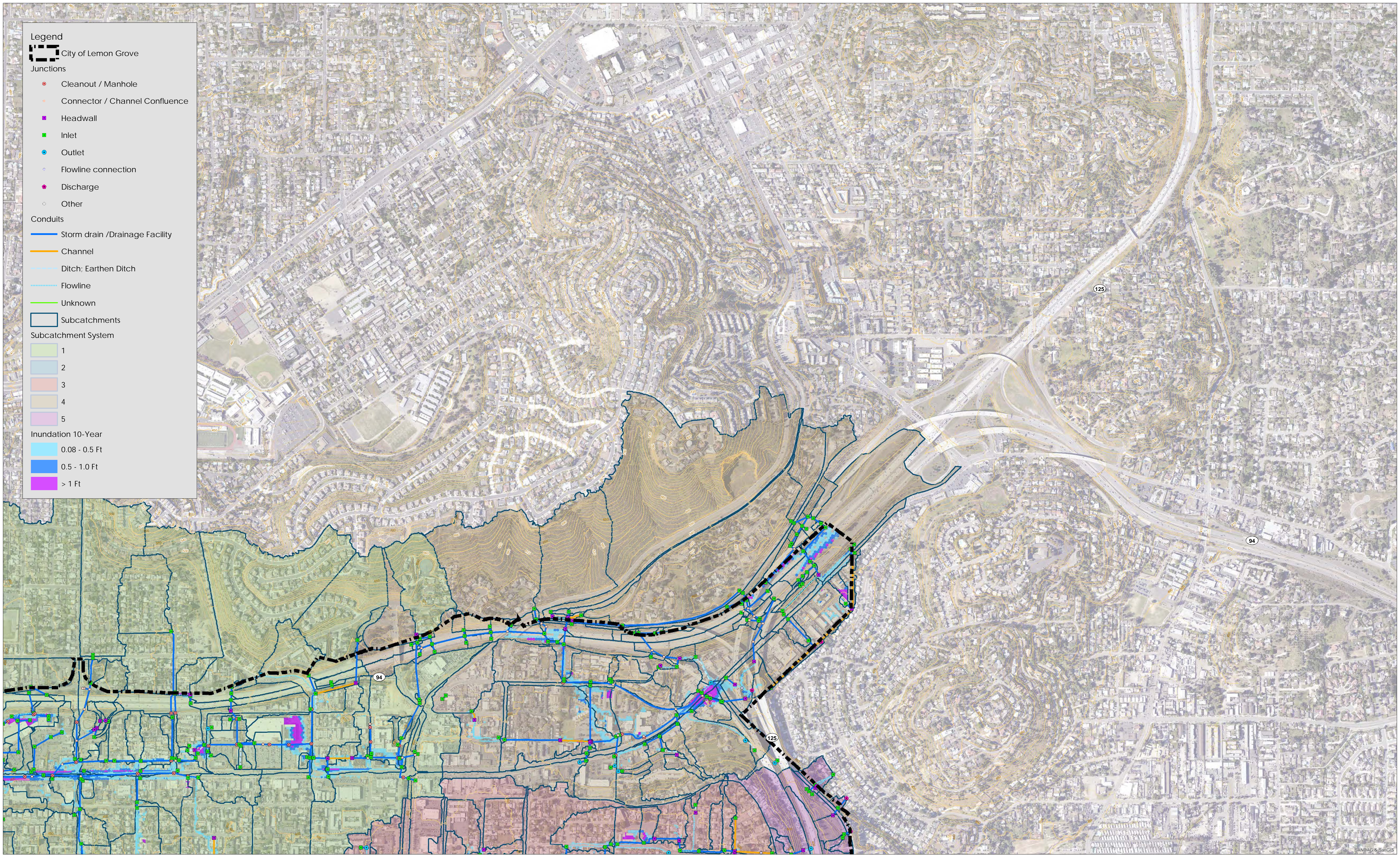
Date of Exhibit: 5/24/2019
Data Sources:
City of Lemon Grove: Storm Drain
SANGIS/SANDAG: Aerial Imagery, DEM, Topography



- Legend**
- City of Lemon Grove
 - Junctions**
 - Cleanout / Manhole
 - Connector / Channel Confluence
 - Headwall
 - Inlet
 - Outlet
 - Flowline connection
 - Discharge
 - Other
 - Conduits**
 - Storm drain / Drainage Facility
 - Channel
 - Ditch: Earthen Ditch
 - Flowline
 - Unknown
 - Subcatchments**
 - Subcatchment System**
 - 1
 - 2
 - 3
 - 4
 - 5
 - Inundation 10-Year**
 - 0.08 - 0.5 Ft
 - 0.5 - 1.0 Ft
 - > 1 Ft

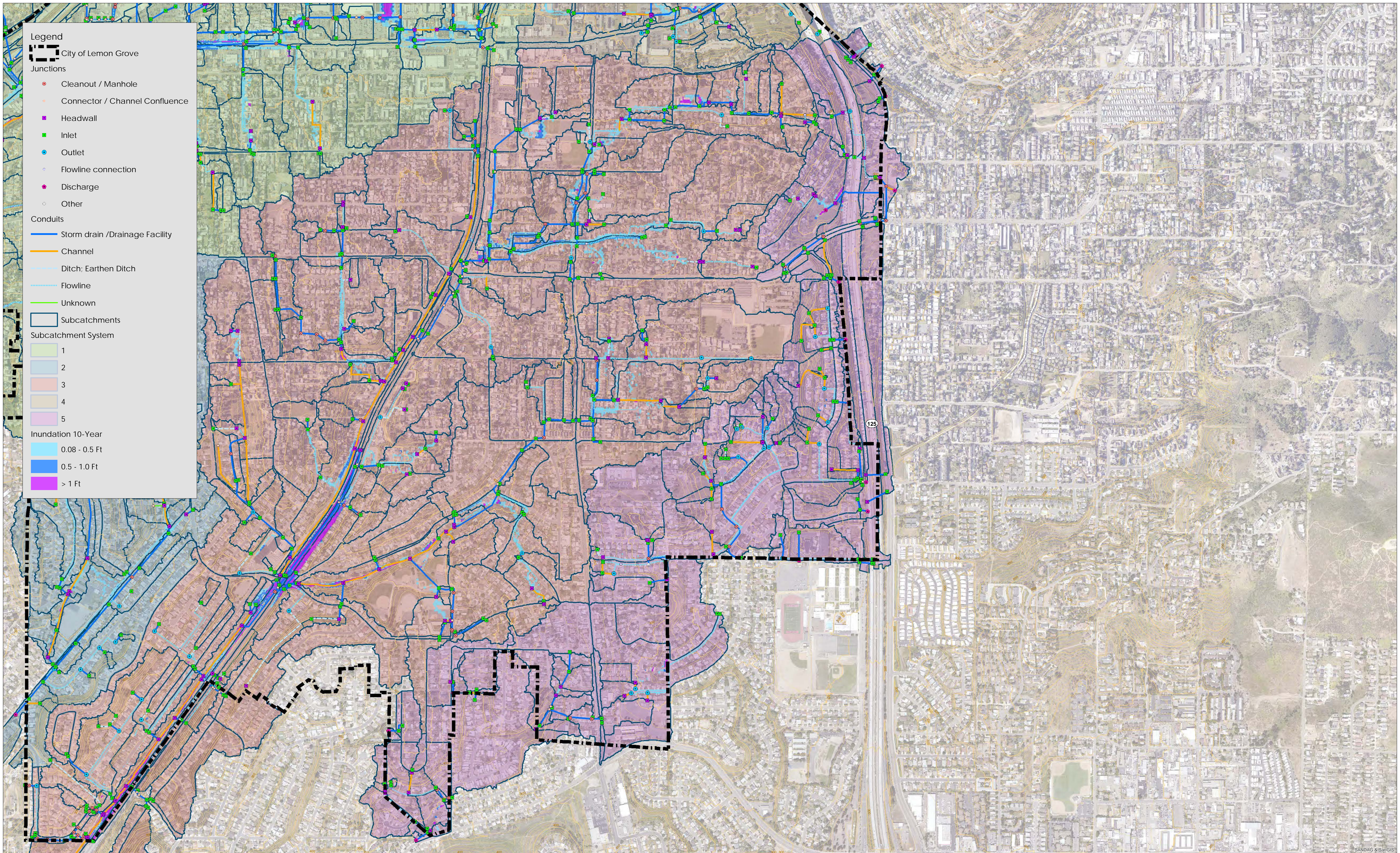
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- Legend**
- City of Lemon Grove
- Junctions**
- Cleanout / Manhole
 - Connector / Channel Confluence
 - Headwall
 - Inlet
 - Outlet
 - Flowline connection
 - Discharge
 - Other
- Conduits**
- Storm drain / Drainage Facility
 - Channel
 - Ditch: Earthen Ditch
 - Flowline
 - Unknown
- Subcatchment System**
- 1
 - 2
 - 3
 - 4
 - 5
- Inundation 10-Year**
- 0.08 - 0.5 Ft
 - 0.5 - 1.0 Ft
 - > 1 Ft

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Legend

City of Lemon Grove

Junctions

- Cleanout / Manhole
- Connector / Channel Confluence
- Headwall
- Inlet
- Outlet
- Flowline connection
- Discharge
- Other

Conduits

- Storm drain / Drainage Facility
- Channel
- Ditch: Earthen Ditch
- Flowline
- Unknown

Subcatchments

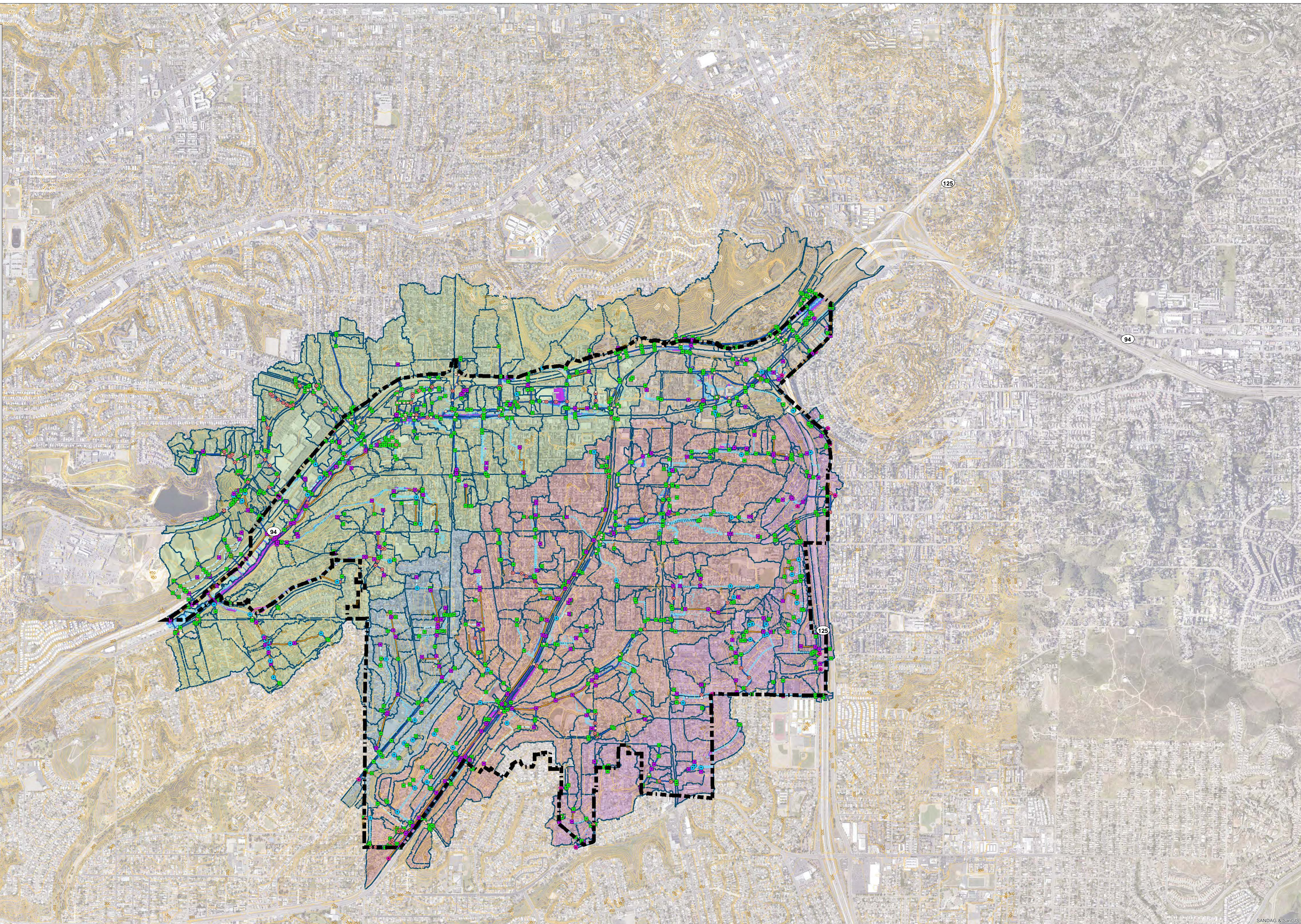
- 1
- 2
- 3
- 4
- 5

Subcatchment System

- 1
- 2
- 3
- 4
- 5

Inundation 100-Year

- 0.08 - 0.5 Ft
- 0.5 - 1.0 Ft
- > 1 Ft



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Legend

City of Lemon Grove

Junctions

- Cleanout / Manhole
- Connector / Channel Confluence
- Headwall
- Inlet
- Outlet
- Flowline connection
- Discharge
- Other

Conduits

- Storm drain / Drainage Facility
- Channel
- Ditch: Earthen Ditch
- Flowline
- Unknown

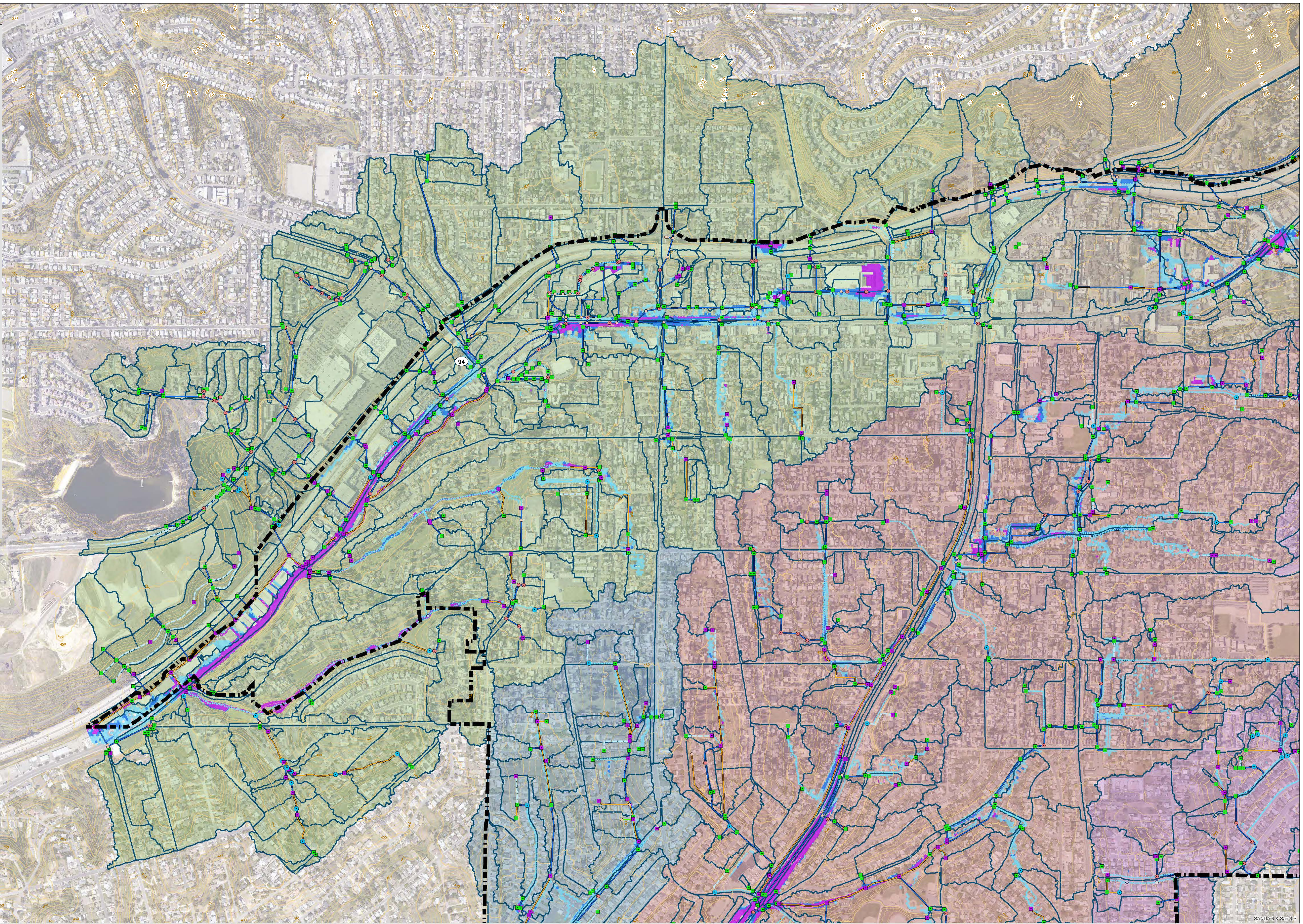
Subcatchments

Subcatchment System

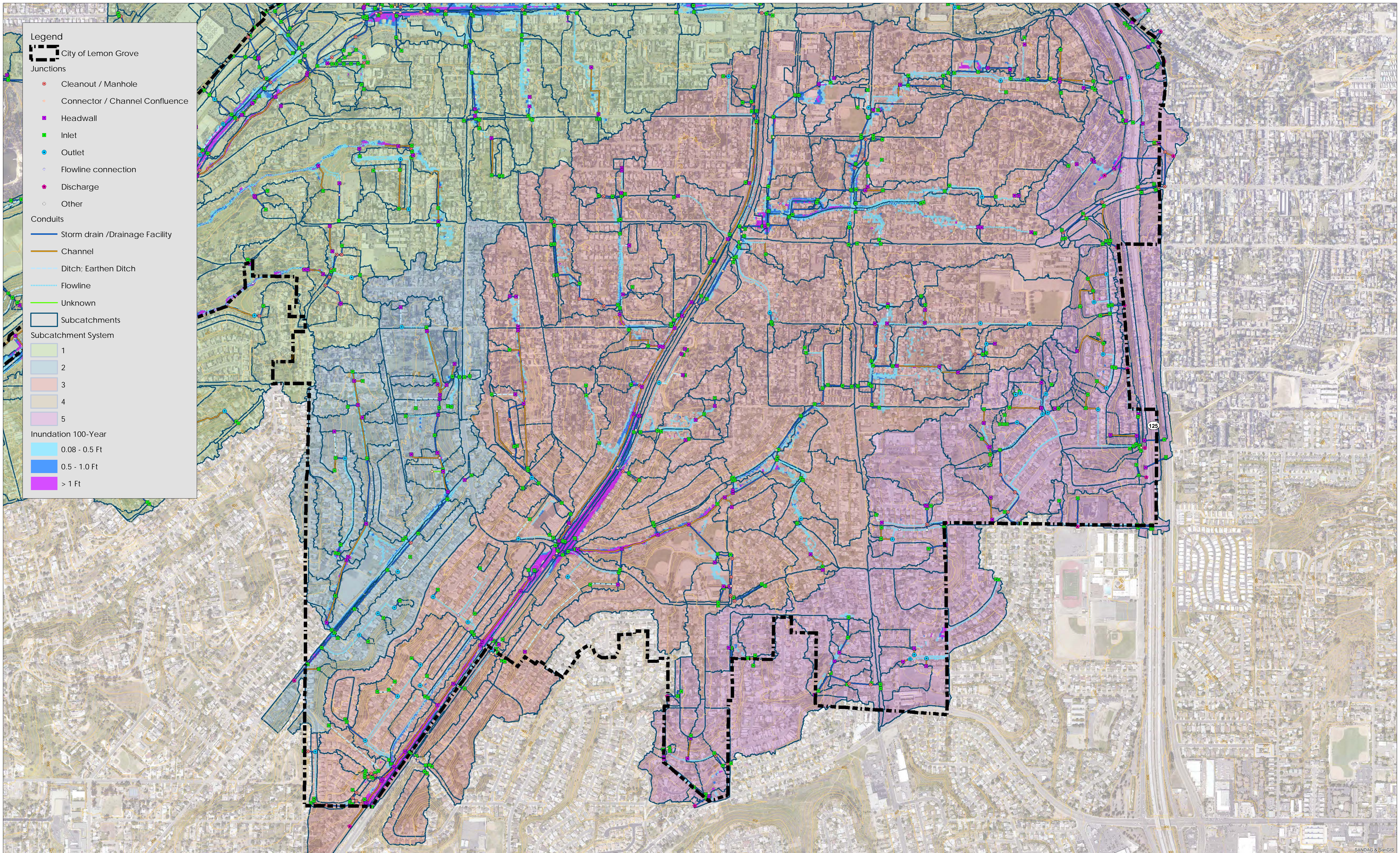
- 1
- 2
- 3
- 4
- 5

Inundation 100-Year

- 0.08 - 0.5 Ft
- 0.5 - 1.0 Ft
- > 1 Ft



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Legend

Junctions

- Cleanout / Manhole
- Connector / Channel Confluence
- Headwall
- Inlet
- Outlet
- Flowline connection
- Discharge
- Other

Conduits

- Storm drain / Drainage Facility
- Channel
- Ditch: Earthen Ditch
- Flowline
- Unknown

Subcatchments

- 1
- 2
- 3
- 4
- 5

Inundation 100-Year

- 0.08 - 0.5 Ft
- 0.5 - 1.0 Ft
- > 1 Ft

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RICK
ENGINEERING COMPANY
www.rickengineering.com

Scale in Feet
0 500 1,000 1,500

North

Date of Exhibit: 5/24/2019
Data Sources:
City of Lemon Grove: Storm Drain
SANGIS/SANDAG: Aerial Imagery, DEM, Topography

City of Lemon Grove DMP
100-Year Inundation - System 2

Legend

City of Lemon Grove

Junctions

- Cleanout / Manhole
- Connector / Channel Confluence
- Headwall
- Inlet
- Outlet
- Flowline connection
- Discharge
- Other

Conduits

- Storm drain / Drainage Facility
- Channel
- Ditch: Earthen Ditch
- Flowline
- Unknown

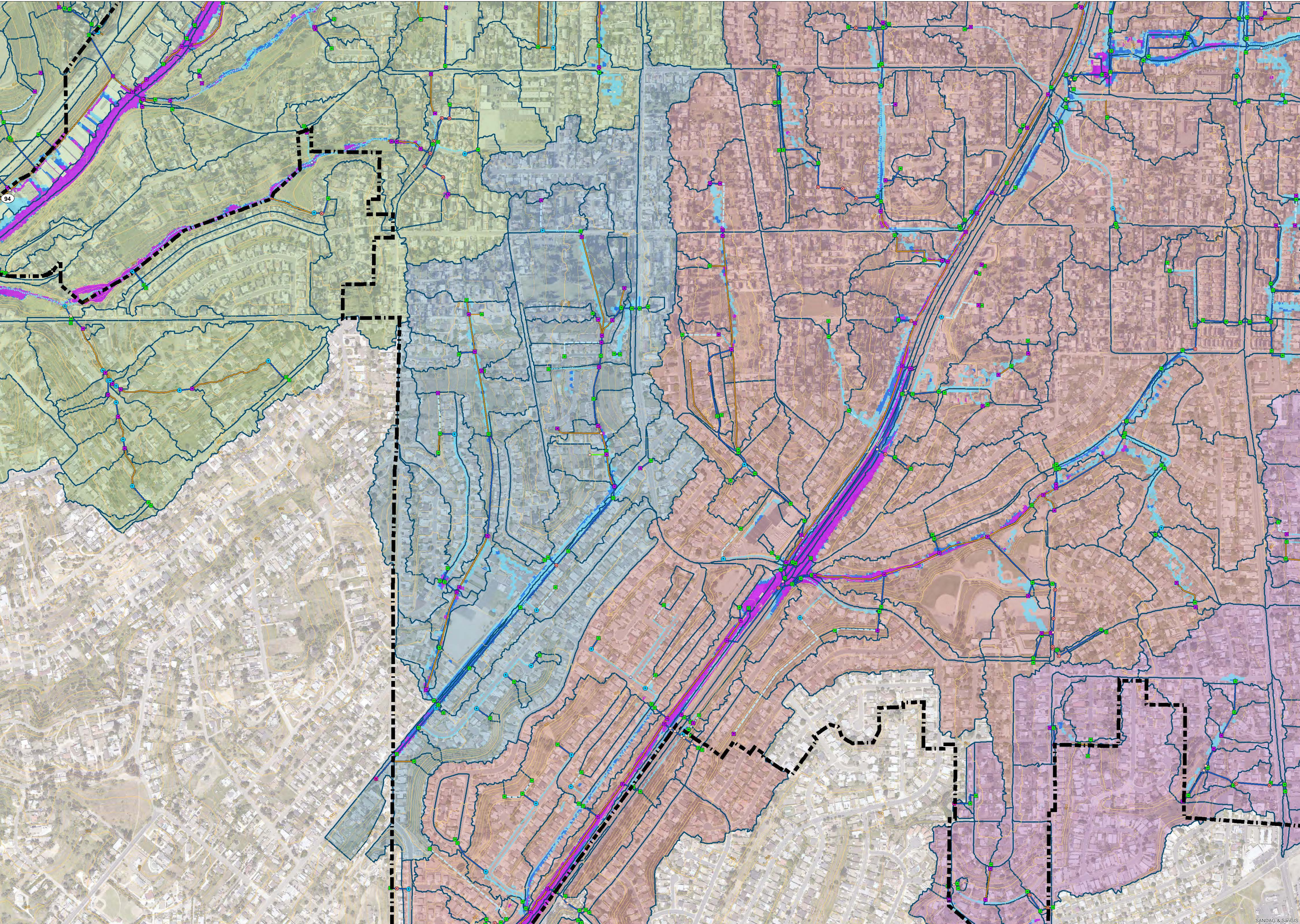
Subcatchments

Subcatchment System

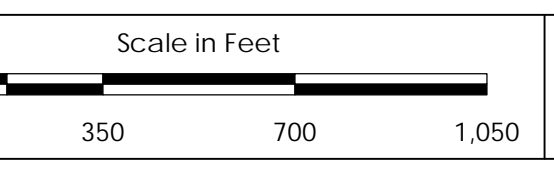
- 1
- 2
- 3
- 4
- 5

Inundation 100-Year

- 0.08 - 0.5 Ft
- 0.5 - 1.0 Ft
- > 1 Ft

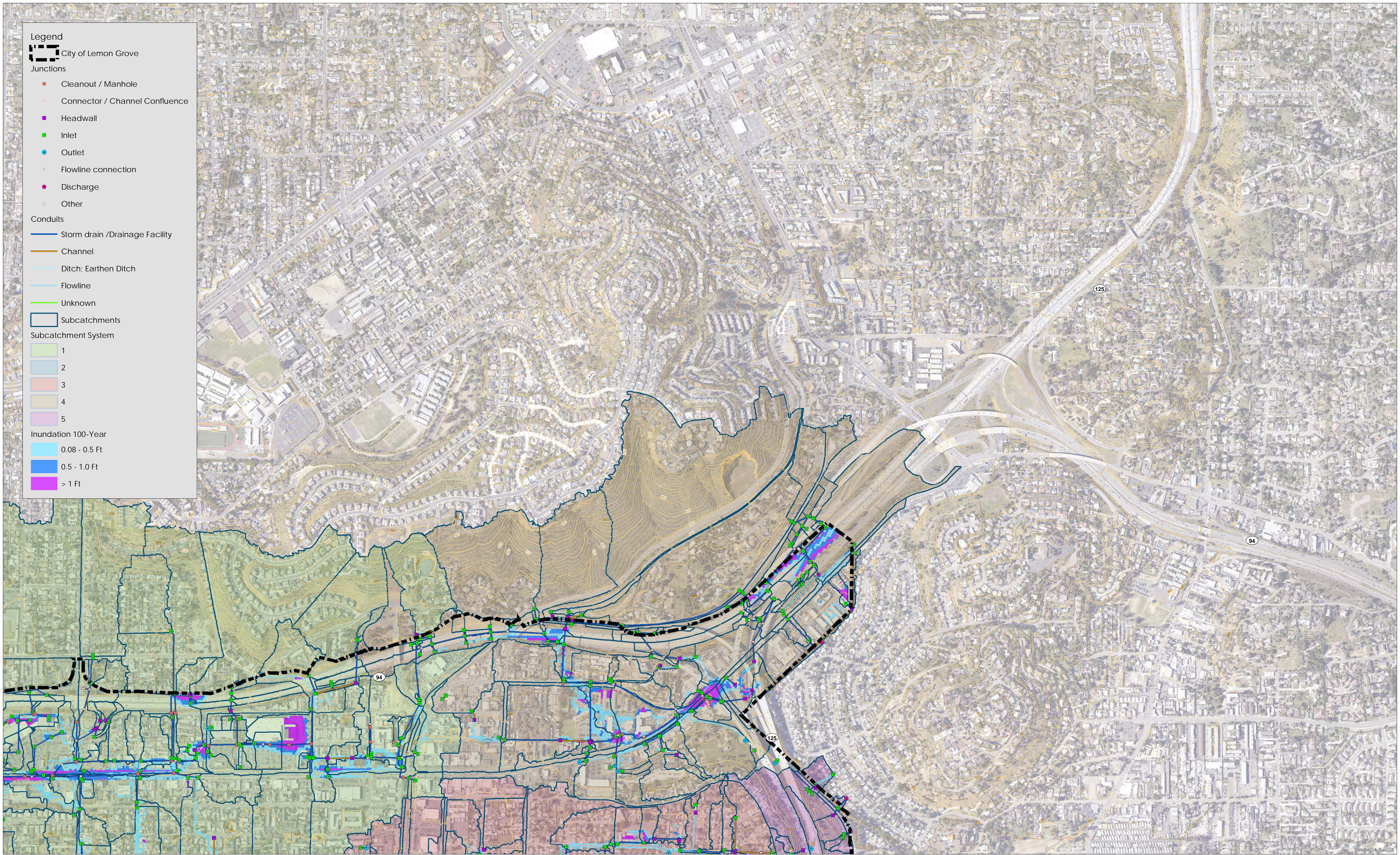


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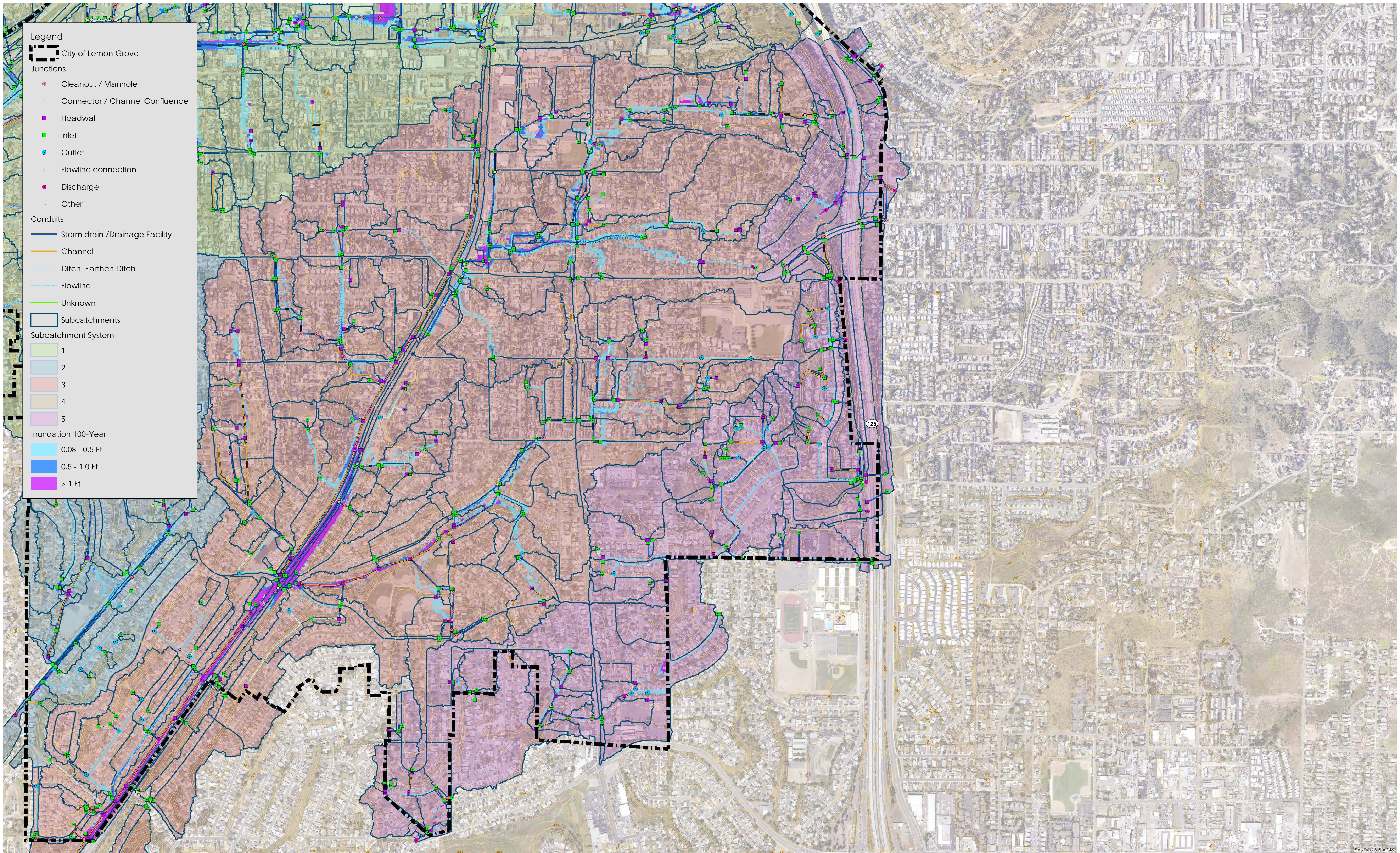
Date of Exhibit: 5/24/2019
Data Sources:
City of Lemon Grove: Storm Drain
SANGIS/SANDAG: Aerial Imagery, DEM, Topography

City of Lemon Grove DMP
100-Year Inundation - System 3



- Legend**
- City of Lemon Grove
 - Junctions**
 - Cleanout / Manhole
 - Connector / Channel Confluence
 - Headwall
 - Inlet
 - Outlet
 - Flowline connection
 - Discharge
 - Other
 - Conduits**
 - Storm drain / Drainage Facility
 - Channel
 - Ditch: Earthen Ditch
 - Flowline
 - Unknown
 - Subcatchments**
 - 1
 - 2
 - 3
 - 4
 - 5
 - Inundation 100-Year**
 - 0.08 - 0.5 Ft
 - 0.5 - 1.0 Ft
 - > 1 Ft

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Legend

City of Lemon Grove

Junctions

- Cleanout / Manhole
- ◆ Connector / Channel Confluence
- Headwall
- Inlet
- Outlet
- Flowline connection
- ◆ Discharge
- Other

Conduits

- Storm drain / Drainage Facility
- Channel
- Ditch: Earthen Ditch
- Flowline
- Unknown

Subcatchments

Subcatchment System

- 1
- 2
- 3
- 4
- 5

Inundation 100-Year

- 0.08 - 0.5 Ft
- 0.5 - 1.0 Ft
- > 1 Ft

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E. Summary Tables

Existing Condition Storm Conveyance Results Summary Table

Conveyance Info		Dimensions					2-year		10-year		100-year	
Facility ID	D' or H' (diameter) or (height)	B' (width)	Barrels	Shape	Slope (ft/ft)	Material	Q _{con} (2-year) (cfs)	Qcon vs Qcap	Q _{con} (10-year) (cfs)	Qcon vs Qcap3	Q _{con} (100-year) (cfs)	Qcon vs Qcap7
1	30	20	1	RECT_OPEN	0.00662	Other	0	0	0	0	1.89	0
187	2	0	1	CIRCULAR	0.13435	RCP	8.04	0.1	13.83	0.17	63.6	0.77
C155_1	0	0	1	IRREGULAR	0.09333	Earthen	4.81	0	8.3	0	13.79	0
C232	4	0	1	CIRCULAR	0.08121	RCP	0	0	6.02	0.01	33.24	0.08
C3277	1	3	1	PARABOLIC	0.27746	Other	1.78	0.02	2.96	0.03	4.95	0.05
C3284	3	8	1	RECT_OPEN	0.28107	Other	6.67	0.01	11.25	0.02	19.35	0.04
C3287	3.5	0	3	CIRCULAR	0.03785	Other	175.6	0.3	223.11	0.38	385.47	0.66
C3309	30	30	1	RECT_OPEN	0.00484	Other	10.27	0	30.98	0	89	0
C3309_3	4	8	1	RECT_CLOSED	0.01601	RCB	175.71	0.31	223.18	0.4	385.43	0.69
C3309_4	4	8	1	RECT_CLOSED	0.05066	RCB	175.73	0.18	223.19	0.22	385.44	0.39
C3310	30	30	1	RECT_OPEN	0.3131	Other	43.12	0	54.1	0	61.48	0
C3311	30	30	1	RECT_OPEN	0.76122	Other	2.01	0	3.34	0	5.54	0
C3330	30	30	1	RECT_OPEN	0.00041	Other	144.81	0.02	153.64	0.02	157.32	0.02
C3375	30	30	1	RECT_OPEN	0.0104	Other	63.78	0	127.38	0	236.18	0.01
C389	1.5	0	1	CIRCULAR	0.01571	RCP	1.48	0.11	3.27	0.25	4.78	0.36
C433	1.5	0	1	CIRCULAR	0.04786	HDPE	5.21	0.17	8.28	0.28	12.97	0.43
C447	30	30	1	RECT_OPEN	0.04555	Other	0	0	0	0	0	0
C85	2	20	1	TRAPEZOIDAL	0.01244	Other	25.02	0.13	41.06	0.21	75.1	0.38
ST-MAI-1	3	7	1	CIRCULAR	0.00681	RCB	58.4	1.06	69.04	1.25	119.98	2.18
ST-MAI-100	2	0	1	CIRCULAR	0.0273	CMP	14.44	0.71	21.46	1.06	26.23	1.3
ST-MAI-101	2	0	1	CIRCULAR	0.0271	RCP	17.18	0.46	31.07	0.83	39.25	1.05
ST-MAI-1019	3	0	1	CIRCULAR	0.00832	RCP	54.73	0.9	64.54	1.06	64.68	1.06
ST-MAI-102	1.5	0	1	CIRCULAR	0.08918	RCP	9.73	0.31	18.76	0.6	31.02	0.99
ST-MAI-1027	1	0	1	CIRCULAR	0.1136	Other	0	0	0	0	0	0
ST-MAI-1028	1	0	1	CIRCULAR	0.10304	Other	5.04	0.34	7.96	0.54	12.42	0.84
ST-MAI-1029	1	0	1	CIRCULAR	0.6801	Other	2.81	0.07	4.46	0.12	7.01	0.18
ST-MAI-103	2	0	1	CIRCULAR	0.07777	CMP	8.39	0.25	14.6	0.43	25.05	0.73
ST-MAI-1030	2	0	1	CIRCULAR	0.06302	Concrete	0.71	0.02	1.26	0.03	2.09	0.05
ST-MAI-1031	1	3	1	PARABOLIC	0.01685	Other	0.69	0.03	1.24	0.05	2.05	0.08
ST-MAI-1032	2	0	1	CIRCULAR	0.01072	Concrete	11.25	0.7	19.88	1.24	33.47	2.09
ST-MAI-1033	2	0	1	CIRCULAR	0.00597	Concrete	15.39	1.29	27.04	2.26	45.31	3.79
ST-MAI-1034	1	3	1	PARABOLIC	0.13008	Other	15.92	0.23	27.85	0.39	46.81	0.66
ST-MAI-1035	2	0	1	CIRCULAR	0.0109	Other	15.86	0.67	26.9	1.14	46.82	1.98
ST-MAI-1036_1	2	0	1	CIRCULAR	0.00912	Concrete	0.67	0.02	1.21	0.04	2.02	0.07
ST-MAI-1036_2	1	3	1	PARABOLIC	0.03543	Other	0.67	0.02	1.2	0.03	2	0.05
ST-MAI-104	2	0	1	CIRCULAR	0.00314	CMP	2.51	0.37	3.92	0.57	6.08	0.89
ST-MAI-1043	2	0	1	CIRCULAR	0.03297	CONC	0	0	0	0	1.71	0.04
ST-MAI-1044	2	0	1	CIRCULAR	0.05453	CONC	0	0	0	0	4.12	0.08
ST-MAI-105	2	0	1	CIRCULAR	0.02442	CMP	12.46	0.65	19.77	1.03	20.12	1.05
ST-MAI-1051	2	0	1	CIRCULAR	0.01107	CONC	7.28	0.31	12.58	0.53	20.27	0.85
ST-MAI-1052	2	0	1	CIRCULAR	0.00682	CONC	2.66	0.14	4.4	0.24	7.01	0.37
ST-MAI-1053	2	0	1	CIRCULAR	0.00684	CONC	2.95	0.16	4.82	0.26	7.18	0.38
ST-MAI-1054	2	0	1	CIRCULAR	0.00871	CONC	2.58	0.12	4.28	0.2	6.83	0.32
ST-MAI-1055	2	0	1	CIRCULAR	0.00682	CONC	5.47	0.29	8.96	0.48	13.75	0.74
ST-MAI-1056	2	0	1	CIRCULAR	0.01281	CONC	7.69	0.3	13.21	0.52	20.4	0.8
ST-MAI-1057	1	0	1	CIRCULAR	0.00788	CONC	0.93	0.29	1.47	0.47	3.76	1.19
ST-MAI-1058	2.5	0	1	CIRCULAR	0.00683	CONC	14.19	0.42	23.4	0.69	30.3	0.89
ST-MAI-1059	1.5	0	1	CIRCULAR	0.08322	CONC	1.09	0.04	1.69	0.06	2.6	0.09
ST-MAI-106	3	0	1	CIRCULAR	0.01994	CMP	54.26	1.06	57.32	1.12	57.64	1.13
ST-MAI-1060	1.5	0	1	CIRCULAR	0.00648	CONC	1.61	0.19	2.58	0.3	7.48	0.89
ST-MAI-1061	2.5	0	1	CIRCULAR	0.00759	CONC	18.71	0.52	25.35	0.71	30.42	0.85
ST-MAI-1062	2	0	1	CIRCULAR	0.07643	CONC	1.72	0.03	2.68	0.04	4	0.06
ST-MAI-1063	2	0	1	CIRCULAR	0.00619	CONC	1.21	0.07	3.13	0.18	7.73	0.43
ST-MAI-1064	1.5	0	1	CIRCULAR	0.09982	CONC	28.83	0.87	37.78	1.14	31.83	0.96
ST-MAI-1065	3.5	0	1	CIRCULAR	0.00565	CONC	22.14	0.29	28.97	0.38	34.01	0.45
ST-MAI-1066	3.5	0	1	CIRCULAR	0.00683	CONC	47.39	0.57	56.25	0.68	58.97	0.71

Existing Condition Storm Conveyance Results Summary Table

Existing Condition Storm Conveyance Results Summary Table												
Conveyance Info	Dimensions						2-year		10-year		100-year	
Facility ID	D' or H' (diameter) or (height)	B' (width)	Barrels	Shape	Slope (ft/ft)	Material	Q _{con} (2-year) (cfs)	Qcon vs Qcap	Q _{con} (10-year) (cfs)	Qcon vs Qcap3	Q _{con} (100-year) (cfs)	Qcon vs Qcap7
ST-MAI-1067	2	0	1	CIRCULAR	0.0778	CONC	13.08	0.21	24.47	0.39	44.6	0.71
ST-MAI-1068	2	0	1	CIRCULAR	0.3288	CONC	13.1	0.1	25.56	0.2	48.51	0.37
ST-MAI-1069	2	0	1	CIRCULAR	0.03638	CONC	13.1	0.3	25.56	0.59	48.66	1.13
ST-MAI-107	3	0	1	CIRCULAR	0.01441	RCP	15.23	0.19	26.51	0.33	45.07	0.56
ST-MAI-1070	4	0	1	CIRCULAR	0.00683	CONC	55.24	0.47	80.96	0.68	100.84	0.85
ST-MAI-1071	4	0	1	CIRCULAR	0.00778	CONC	49.66	0.39	78.67	0.62	133.38	1.05
ST-MAI-1072	2.5	0	1	CIRCULAR	0.03688	CONC	35.92	0.46	50.59	0.64	49.68	0.63
ST-MAI-1073	1.5	0	1	CIRCULAR	0.49848	CONC	0	0	0	0	0	0
ST-MAI-1074	2	0	1	CIRCULAR	0.1602	RCP	12.51	0.14	21.86	0.24	36.55	0.4
ST-MAI-1075	2	0	1	CIRCULAR	0.11358	RCP	13.72	0.18	24.11	0.32	39.73	0.52
ST-MAI-1076	2	0	1	CIRCULAR	0.0126	RCP	22.51	0.89	22.81	0.9	23.54	0.93
ST-MAI-1077	2	0	1	CIRCULAR	0.00215	RCP	22.5	2.15	22.79	2.17	23.52	2.24
ST-MAI-1079	2	0	1	CIRCULAR	0.23773	CONC	1.63	0.01	2.79	0.03	4.71	0.04
ST-MAI-1080	2	0	1	CIRCULAR	0.26307	CONC	0.91	0.01	1.52	0.01	2.48	0.02
ST-MAI-1081	0	0	1	IRREGULAR	0.49541	Other	0	0	0	0	0	0
ST-MAI-1082	2	0	1	CIRCULAR	0.28416	CONC	1.07	0.01	1.83	0.02	3.06	0.03
ST-MAI-1084	1.5	0	1	CIRCULAR	0.01915	RCP	1.31	0.09	2.33	0.16	3.97	0.27
ST-MAI-1085	1.5	0	1	CIRCULAR	0.08175	RCP	2.56	0.09	4.48	0.15	7.53	0.25
ST-MAI-1086	1.5	0	1	CIRCULAR	0.0997	RCP	2.55	0.08	4.46	0.13	7.5	0.23
ST-MAI-1087	1.5	0	1	CIRCULAR	0.03039	RCP	2.51	0.14	4.4	0.24	7.4	0.4
ST-MAI-1088	1.5	0	1	CIRCULAR	0.01047	RCP	3.21	0.3	5.53	0.51	8.52	0.79
ST-MAI-1089	1.5	0	1	CIRCULAR	0.01185	RCP	3.46	0.3	5.91	0.52	9.86	0.86
ST-MAI-109	2.75	0	1	CIRCULAR	0.02737	RCP	32.74	0.37	47.05	0.54	59.07	0.68
ST-MAI-1090	1.5	0	1	CIRCULAR	0.02159	RCP	6.4	0.41	11.01	0.71	13.65	0.88
ST-MAI-1091	1.5	0	1	CIRCULAR	0.12254	RCP	1.26	0.03	2.11	0.06	3.38	0.09
ST-MAI-1092	1.5	0	1	CIRCULAR	0.00459	RCP	5.43	0.76	8.78	1.23	14.3	2.01
ST-MAI-1093	1.5	0	1	CIRCULAR	0.05928	RCP	12.79	0.5	20.74	0.81	25.14	0.98
ST-MAI-1094	1.5	0	1	CIRCULAR	0.00862	RCP	11.88	1.22	15.24	1.56	14.83	1.52
ST-MAI-1095	1.5	0	1	CIRCULAR	0.02045	RCP	12.92	0.86	15.99	1.06	15.38	1.02
ST-MAI-1096	1.5	0	1	CIRCULAR	0.0199	RCP	12.93	0.87	14.86	1	14.45	0.98
ST-MAI-1097	1.5	0	1	CIRCULAR	0.00852	RCP	0.56	0.06	3.48	0.36	2.89	0.3
ST-MAI-1098	1.5	0	1	CIRCULAR	0.08713	RCP	1.12	0.04	2.99	0.1	2.93	0.09
ST-MAI-1099	1.5	0	1	CIRCULAR	0.01599	RCP	2.3	0.17	4.16	0.31	4.13	0.31
ST-MAI-110	2.5	0	1	CIRCULAR	0.02105	RCP	82.27	1.38	82.53	1.39	82.55	1.39
ST-MAI-1100	1.5	0	1	CIRCULAR	0.01148	RCP	4.64	0.41	9.07	0.81	12.92	1.15
ST-MAI-1101	1.5	0	1	CIRCULAR	0.08919	RCP	18.4	0.59	22.31	0.71	22.21	0.71
ST-MAI-1102	1.5	0	1	CIRCULAR	0.02806	RCP	20.08	1.14	25.42	1.44	29.27	1.66
ST-MAI-1103	2	0	1	CIRCULAR	0.28995	RCP	20.99	0.17	27.07	0.22	41.83	0.34
ST-MAI-1104	1	3	1	PARABOLIC	0.14718	Concrete	1.65	0.03	2.26	0.04	3.84	0.07
ST-MAI-1105	2.5	0	1	CIRCULAR	0.0249	CONC	25.63	0.4	37.15	0.57	48.71	0.75
ST-MAI-1106	1.5	0	1	CIRCULAR	0.00374	CONC	1.61	0.25	2.69	0.42	4.45	0.69
ST-MAI-1107	1.5	0	1	CIRCULAR	0.25101	CONC	1.93	0.04	3.15	0.06	5.06	0.1
ST-MAI-1108	2	0	1	CIRCULAR	0.07585	CONC	12.79	0.21	25.03	0.4	47.86	0.77
ST-MAI-1110	2	0	1	CIRCULAR	0.01	RCP	1.94	0.09	3.25	0.14	5.22	0.23
ST-MAI-1111	2	0	1	CIRCULAR	0.00913	RCP	4.1	0.19	6.62	0.31	10.53	0.49
ST-MAI-1112	2	0	1	CIRCULAR	0.08003	RCP	2.26	0.04	3.56	0.06	5.56	0.09
ST-MAI-1113	2	0	1	CIRCULAR	0.06722	RCP	2.27	0.04	3.57	0.06	5.58	0.1
ST-MAI-1114	2	0	1	CIRCULAR	0.50682	RCP	0.27	0	0.42	0	0.65	0
ST-MAI-1115	2	0	1	CIRCULAR	0.06722	RCP	2.02	0.03	3.18	0.05	4.96	0.08
ST-MAI-1116	2	0	1	CIRCULAR	0.06722	RCP	0.78	0.01	1.22	0.02	1.89	0.03
ST-MAI-1117	2	0	1	CIRCULAR	0.04271	RCP	0.53	0.01	0.85	0.02	1.36	0.03
ST-MAI-1118	2	0	1	CIRCULAR	0.05805	RCP	0.69	0.01	1.1	0.02	1.73	0.03
ST-MAI-112	2	0	1	CIRCULAR	0.01895	CMP	4.88	0.29	11.69	0.69	16.75	0.99
ST-MAI-1120	4	0	1	CIRCULAR	0.0126	CONC	52.35	0.32	51.52	0.32	46.2	0.29
ST-MAI-1121	2	0	1	CIRCULAR	0.05673	CONC	0.26	0	0.41	0.01	0.63	0.01
ST-MAI-1122	2	0	1	CIRCULAR	0.0063	CONC	2.73	0.15	4.44	0.25	7.09	0.39

Existing Condition Storm Conveyance Results Summary Table

Conveyance Info	Dimensions						2-year		10-year		100-year	
Facility ID	D' or H' (diameter) or (height)	B' (width)	Barrels	Shape	Slope (ft/ft)	Material	Q _{con} (2-year) (cfs)	Qcon vs Qcap	Q _{con} (10-year) (cfs)	Qcon vs Qcap3	Q _{con} (100-year) (cfs)	Qcon vs Qcap7
ST-MAI-1123	2	0	1	CIRCULAR	0.00813	CONC	0.32	0.02	0.5	0.02	0.8	0.04
ST-MAI-1124	2	0	1	CIRCULAR	0.28118	CONC	0.31	0	0.5	0	0.8	0.01
ST-MAI-1125	2	0	1	CIRCULAR	0.0076	CONC	1.77	0.09	5.7	0.29	12.05	0.61
ST-MAI-1126	2	0	1	CIRCULAR	0.03135	CONC	2.04	0.05	8.88	0.22	11.49	0.29
ST-MAI-1127	2	0	1	CIRCULAR	0.0303	CONC	2.6	0.07	7.94	0.2	9.16	0.23
ST-MAI-1128	2	0	1	CIRCULAR	0.00764	CONC	2.19	0.11	3.59	0.18	5.78	0.29
ST-MAI-1129a	2	0	1	CIRCULAR	0.00547	CONC	6.39	0.38	10.54	0.63	16.96	1.01
ST-MAI-1129b	2	0	1	CIRCULAR	0.04885	CONC	6.35	0.13	10.47	0.21	16.89	0.34
ST-MAI-113	1.5	0	1	CIRCULAR	0.0155	RCP	11.79	0.9	12.9	0.99	14.59	1.12
ST-MAI-1130	3	0	1	CIRCULAR	0.05904	CONC	48.17	0.3	84.6	0.52	127.91	0.79
ST-MAI-1131	2	0	1	CIRCULAR	0.34511	CONC	10.53	0.08	17.56	0.13	29.54	0.22
ST-MAI-1132	2	0	1	CIRCULAR	0.00922	CONC	9.97	0.46	16.64	0.77	28.02	1.29
ST-MAI-1133	2	0	1	CIRCULAR	0.00574	CONC	8.3	0.48	14.05	0.82	23.57	1.37
ST-MAI-1134	1.5	0	1	CIRCULAR	0.11272	CONC	0.32	0.01	0.51	0.01	0.81	0.02
ST-MAI-1135	1.5	0	1	CIRCULAR	0.00499	CONC	1	0.14	1.66	0.22	2.72	0.37
ST-MAI-1136	1.5	0	1	CIRCULAR	0.00305	CONC	16.63	2.87	16.61	2.86	16.58	2.86
ST-MAI-114	3.5	0	1	CIRCULAR	0.00596	RCP	75.27	0.97	83.99	1.08	91.58	1.18
ST-MAI-1142	0	0	1	IRREGULAR	0.26594	Other	0.04	0	0.06	0	0.1	0
ST-MAI-1143	1	3	1	PARABOLIC	0.17654	Other	0.1	0	0.19	0	0.33	0.01
ST-MAI-1144	1	3	1	PARABOLIC	0.03167	Other	1.05	0.04	1.67	0.06	2.48	0.09
ST-MAI-1145	2	0	1	CIRCULAR	0.01884	CONC	0.4	0.01	0.63	0.02	1	0.03
ST-MAI-1146	2	0	1	CIRCULAR	0.03439	CONC	1.49	0.04	2.36	0.06	3.69	0.09
ST-MAI-1147	2	0	1	CIRCULAR	0.01155	CONC	1.97	0.08	3.12	0.13	4.91	0.2
ST-MAI-1148	2	0	1	CIRCULAR	0.00646	CONC	0.28	0.02	0.43	0.02	0.76	0.04
ST-MAI-1149	4	0	1	CIRCULAR	0.05241	CONC	43.12	0.13	54.1	0.16	61.48	0.19
ST-MAI-115	2	0	1	CIRCULAR	0.01477	CMP	12.12	0.81	11.54	0.78	13.07	0.88
ST-MAI-1150	2	0	1	CIRCULAR	0.06713	CONC	1.39	0.02	2.25	0.04	3.59	0.06
ST-MAI-1151	4	0	1	CIRCULAR	0.04016	CONC	43.13	0.15	54.1	0.19	61.47	0.21
ST-MAI-1152	2	0	1	CIRCULAR	0.27741	CONC	41.91	0.35	52.14	0.44	57.93	0.49
ST-MAI-1153	2	0	1	CIRCULAR	0.07911	CONC	1.14	0.02	1.75	0.03	2.69	0.04
ST-MAI-1154	2	0	1	CIRCULAR	0.02972	CONC	40.14	1.03	49.67	1.27	53.2	1.36
ST-MAI-1155	2	0	1	CIRCULAR	0.15393	CONC	0.48	0.01	0.75	0.01	1.15	0.01
ST-MAI-1156	2	0	1	CIRCULAR	0.08633	CONC	0.48	0.01	0.74	0.01	1.14	0.02
ST-MAI-1157	2	0	1	CIRCULAR	0.02973	CONC	40.18	1.03	49.67	1.27	53.2	1.36
ST-MAI-1158	2	0	1	CIRCULAR	0.01295	CONC	0.32	0.01	3.71	0.14	3.58	0.14
ST-MAI-1159	2	0	1	CIRCULAR	0.15413	CONC	3.41	0.04	5.79	0.07	9.61	0.11
ST-MAI-1160	2	0	1	CIRCULAR	0.03219	CONC	3.42	0.08	5.79	0.14	9.62	0.24
ST-MAI-1161	2	0	1	CIRCULAR	0.02973	CONC	36.22	0.93	45.48	1.17	46.62	1.2
ST-MAI-1162	2	0	1	CIRCULAR	0.02972	CONC	3.7	0.09	6.46	0.17	9.98	0.26
ST-MAI-1163	2.5	0	1	CIRCULAR	0.045	CONC	30.8	0.35	50.52	0.58	100.61	1.16
ST-MAI-1164	2.5	0	1	CIRCULAR	0.03859	CONC	1.66	0.02	2.8	0.03	4.63	0.06
ST-MAI-1167	2	0	1	CIRCULAR	0.00554	CONC	5.88	0.35	10.8	0.64	18.22	1.08
ST-MAI-1168	2	0	1	CIRCULAR	0.00355	CONC	5.88	0.44	10.8	0.8	18.21	1.35
ST-MAI-1169	1	0	1	CIRCULAR	0.00272	CONC	3.59	1.93	7.17	3.86	12.45	6.7
ST-MAI-117	1	0	1	CIRCULAR	0.02845	HDPE	1.35	0.22	2.3	0.38	3.76	0.63
ST-MAI-1170	2	0	1	CIRCULAR	0.00117	CONC	3.12	0.4	6.47	0.83	11.38	1.47
ST-MAI-1171	2	0	1	CIRCULAR	0.00117	CONC	2.7	0.35	5.84	0.75	10.42	1.34
ST-MAI-1172	2	0	1	CIRCULAR	0.0333	CONC	9.29	0.22	15.67	0.38	25.77	0.62
ST-MAI-1173	2	0	1	CIRCULAR	0.00117	CONC	7.05	0.91	10.58	1.37	16.47	2.13
ST-MAI-1174	2.5	0	1	CIRCULAR	0.00117	CONC	17.09	1.22	28.18	2.01	45.98	3.27
ST-MAI-1175	2.5	0	1	CIRCULAR	0.22562	CONC	8.79	0.05	15.65	0.08	26.46	0.14
ST-MAI-1176	2.5	0	1	CIRCULAR	0.00514	CONC	6	0.2	10.68	0.36	17.89	0.61
ST-MAI-1177	2.5	0	1	CIRCULAR	0.00118	CONC	18.18	1.29	29.94	2.13	48.81	3.47
ST-MAI-1178	2.5	0	1	CIRCULAR	0.00118	CONC	18.36	1.31	30.24	2.15	49.28	3.5
ST-MAI-1179	2.5	0	1	CIRCULAR	0.00117	CONC	18.77	1.34	30.37	2.16	48.23	3.44
ST-MAI-118	1	0	1	CIRCULAR	0.03128	CMP	3.94	1.15	5.21	1.53	5.22	1.53

Existing Condition Storm Conveyance Results Summary Table

Existing Condition Storm Conveyance Results Summary Table												
Conveyance Info	Dimensions						2-year		10-year		100-year	
Facility ID	D' or H' (diameter) or (height)	B' (width)	Barrels	Shape	Slope (ft/ft)	Material	Q _{con} (2-year) (cfs)	Qcon vs Qcap	Q _{con} (10-year) (cfs)	Qcon vs Qcap3	Q _{con} (100-year) (cfs)	Qcon vs Qcap7
ST-MAI-1180	2.5	0	1	CIRCULAR	0.00118	CONC	8.25	0.59	10.27	0.73	14.58	1.04
ST-MAI-1181	2.5	0	1	CIRCULAR	0.00118	CONC	43.91	3.12	44.35	3.15	44.88	3.19
ST-MAI-1182	2	0	1	CIRCULAR	0.00117	CONC	44.51	5.75	45.29	5.85	46.12	5.96
ST-MAI-1184	2	0	1	CIRCULAR	0.01145	CONC	0.56	0.02	0.91	0.04	1.46	0.06
ST-MAI-1185	2	0	1	CIRCULAR	0.01325	CONC	0.66	0.03	1.08	0.04	1.72	0.07
ST-MAI-1186	2	0	1	CIRCULAR	0.16198	CONC	0.81	0.01	1.31	0.01	2.1	0.02
ST-MAI-1187	2	0	1	CIRCULAR	0.0143	CONC	0.48	0.02	0.77	0.03	1.23	0.05
ST-MAI-1188	2	0	1	CIRCULAR	0.00604	CONC	0.52	0.03	0.84	0.05	1.33	0.08
ST-MAI-119	1.5	0	1	CIRCULAR	0.27246	RCP	0.05	0	0.1	0	0.19	0
ST-MAI-1190	2.5	0	1	CIRCULAR	0.08137	RCP	2.48	0.02	4.64	0.04	4.88	0.04
ST-MAI-1191	2.5	0	1	CIRCULAR	0.14974	CONC	16.74	0.11	30.41	0.19	55	0.35
ST-MAI-1192	2	0	1	CIRCULAR	0.0177	RCP	13.52	0.45	23.67	0.79	42.32	1.41
ST-MAI-1196	0	0	1	IRREGULAR	0.11937	Concrete	3.18	0	5.22	0	8.47	0
ST-MAI-1197	4	0	1	CIRCULAR	0.03075	CONC	0	0	5.66	0.91	14.18	2.27
ST-MAI-1199	2	0	1	CIRCULAR	0.04315	RCP	11.01	0.23	19.41	0.41	33.04	0.7
ST-MAI-12	1.25	0	1	CIRCULAR	0.11215	ABS	19.46	0.9	21.19	0.98	20.28	0.94
ST-MAI-120	3.5	0	1	CIRCULAR	0.00902	RCP	53.35	0.56	85.72	0.9	85.83	0.9
ST-MAI-1200	0.5	6	1	TRIANGULAR	0.00689	CONC	0.29	0.05	0.72	0.13	1.63	0.29
ST-MAI-1202	4	0	1	CIRCULAR	0.01009	RCP	60.46	0.42	101.98	0.71	172.68	1.2
ST-MAI-1204	1	3	1	PARABOLIC	0.07516	Concrete	0.5	0.02	0.61	0.02	0.8	0.03
ST-MAI-1206	2	0	1	CIRCULAR	0.01528	RCP	12.94	0.46	22.72	0.81	38.53	1.38
ST-MAI-1207	2	0	1	CIRCULAR	0.36589	RCP	12.95	0.09	22.74	0.17	38.56	0.28
ST-MAI-1208	2	0	1	CIRCULAR	0.31957	RCP	12.95	0.1	22.73	0.18	38.56	0.3
ST-MAI-1209	2	0	1	CIRCULAR	0.00616	RCP	12.89	0.73	25.27	1.42	38.53	2.17
ST-MAI-121	2	0	1	CIRCULAR	0.00941	CONC	3.18	0.14	5.23	0.24	8.48	0.39
ST-MAI-1210	2	0	1	CIRCULAR	0.26871	RCP	12.89	0.11	24.49	0.21	38.53	0.33
ST-MAI-1211	2	0	1	CIRCULAR	0.00918	RCP	13.37	0.62	25.8	1.19	38.51	1.78
ST-MAI-1214	3	0	1	CIRCULAR	0.01035	CONC	24.74	0.36	41.75	0.62	69.2	1.02
ST-MAI-1215	3	0	1	CIRCULAR	0.03263	RCP	50.65	0.42	85.47	0.71	140.81	1.17
ST-MAI-1216	2.5	0	1	CIRCULAR	0.14147	RCP	50.7	0.33	85.5	0.55	144.55	0.94
ST-MAI-1217	2.5	0	1	CIRCULAR	0.04496	RCP	48.3	0.56	81.54	0.94	142.27	1.64
ST-MAI-1219	1.5	0	1	CIRCULAR	0.06107	RCP	0.62	0.02	0.98	0.04	6.49	0.25
ST-MAI-1220	1.5	0	1	CIRCULAR	0.02665	RCP	3.35	0.2	5.76	0.34	10.11	0.59
ST-MAI-1221	2	0	1	CIRCULAR	0.00693	RCP	1.58	0.08	2.66	0.14	4.35	0.23
ST-MAI-1222	1.5	0	1	CIRCULAR	0.00944	RCP	9.81	0.96	17.64	1.73	30.73	3.01
ST-MAI-1223	1.5	0	1	CIRCULAR	0.033	RCP	2.21	0.12	3.9	0.2	12.56	0.66
ST-MAI-1224	1.5	0	1	CIRCULAR	0.04284	RCP	3.1	0.14	5.45	0.25	12.11	0.56
ST-MAI-1225	1.5	0	1	CIRCULAR	0.06509	RCP	9.82	0.37	17.65	0.66	30.71	1.15
ST-MAI-1226	1.5	0	1	CIRCULAR	0.0756	RCP	0.62	0.02	0.98	0.03	3.41	0.12
ST-MAI-1227	1.5	0	1	CIRCULAR	0.01109	RCP	0.75	0.07	1.22	0.11	8.56	0.77
ST-MAI-1228	1.5	0	1	CIRCULAR	0.01744	RCP	5.06	0.36	8.73	0.63	18.95	1.37
ST-MAI-1229	1.5	0	1	CIRCULAR	0.0543	RCP	4.91	0.2	8.85	0.36	15.42	0.63
ST-MAI-1230	1.5	0	1	CIRCULAR	0.05521	RCP	1.63	0.07	2.6	0.11	5.85	0.24
ST-MAI-1231	2	0	1	CIRCULAR	0.05533	RCP	24.63	0.46	42.06	0.79	71.92	1.35
ST-MAI-1232	1.5	0	1	CIRCULAR	0.03164	RCP	2.23	0.12	3.92	0.21	9.44	0.51
ST-MAI-1233	2	0	1	CIRCULAR	0.07428	RCP	9.69	0.16	16.36	0.27	26.85	0.44
ST-MAI-1234	2.5	0	1	CIRCULAR	0.03291	RCP	46.6	0.63	78.76	1.06	137.23	1.84
ST-MAI-1235	1.5	0	1	CIRCULAR	0.06934	RCP	1.37	0.05	2.19	0.08	4.98	0.18
ST-MAI-1236	1.5	0	1	CIRCULAR	0.16109	RCP	1.4	0.03	2.38	0.06	4.42	0.1
ST-MAI-1237	1.5	0	1	CIRCULAR	0.08181	RCP	9.1	0.3	15.85	0.53	26.82	0.89
ST-MAI-1238	1.5	0	1	CIRCULAR	0.34974	RCP	12.29	0.2	21.76	0.35	37.44	0.6
ST-MAI-1239	1.5	0	1	CIRCULAR	0.05659	RCP	3.1	0.12	5.45	0.22	12.35	0.49
ST-MAI-1240	1.5	0	1	CIRCULAR	0.08591	RCP	2.24	0.07	3.93	0.13	8.55	0.28
ST-MAI-1241	1.5	0	1	CIRCULAR	0.03075	RCP	2.21	0.12	3.9	0.21	12.61	0.68
ST-MAI-1242	2.5	0	1	CIRCULAR	0.01501	RCP	37.03	0.74	63.15	1.26	109.16	2.17
ST-MAI-1243	2.5	0	1	CIRCULAR	0.02163	RCP	37.58	0.62	63.89	1.06	110.7	1.83

Existing Condition Storm Conveyance Results Summary Table

Existing Condition Storm Conveyance Results Summary Table												
Conveyance Info	Dimensions						2-year		10-year		100-year	
Facility ID	D' or H' (diameter) or (height)	B' (width)	Barrels	Shape	Slope (ft/ft)	Material	Q _{con} (2-year) (cfs)	Qcon vs Qcap	Q _{con} (10-year) (cfs)	Qcon vs Qcap3	Q _{con} (100-year) (cfs)	Qcon vs Qcap7
ST-MAI-1244	1.5	0	1	CIRCULAR	0.0869	RCP	4.98	0.16	8.82	0.28	15.11	0.49
ST-MAI-1245	1.5	0	1	CIRCULAR	0.01913	RCP	4.93	0.34	8.82	0.61	15.44	1.06
ST-MAI-1246	1.5	0	1	CIRCULAR	0.0049	RCP	2.75	0.37	4.94	0.67	7.88	1.07
ST-MAI-1247	2	0	1	CIRCULAR	0.04397	RCP	12.98	0.27	22.1	0.47	41.13	0.87
ST-MAI-1248	1.5	0	1	CIRCULAR	0.07376	RCP	4.18	0.15	7.14	0.25	12.55	0.44
ST-MAI-1249	1.5	0	1	CIRCULAR	0.02315	RCP	2.22	0.14	3.91	0.24	11.22	0.7
ST-MAI-1250	1.5	0	1	CIRCULAR	0.03348	RCP	2.21	0.11	3.9	0.2	12.27	0.64
ST-MAI-1251	2	0	1	CIRCULAR	0.05196	RCP	24.63	0.48	41.83	0.81	71.82	1.39
ST-MAI-1252	2	0	1	CIRCULAR	0.05642	RCP	11.45	0.21	19.59	0.36	33.73	0.63
ST-MAI-1253	1.5	0	1	CIRCULAR	0.47787	RCP	1.18	0.02	1.88	0.03	4.71	0.06
ST-MAI-1254	0	0	1	IRREGULAR	0.06202	Earthen	24.54	0	33.7	0	55.87	0
ST-MAI-1255	0	0	1	IRREGULAR	0.02075	Earthen	28.59	0	41.53	0	62.96	0
ST-MAI-1256	0	0	1	IRREGULAR	0.01689	Earthen	28.31	0	41.22	0	62.95	0
ST-MAI-1257	0	0	1	IRREGULAR	0.15145	Earthen	0.27	0	0.43	0	0.7	0
ST-MAI-1258	0	0	1	IRREGULAR	0.17542	Earthen	4.25	0	7.89	0	13.63	0
ST-MAI-1259	0	0	1	IRREGULAR	0.28537	Earthen	3.39	0	6.31	0	10.84	0
ST-MAI-1260	0	0	1	IRREGULAR	0.17845	Earthen	20.21	0	22	0	42.62	0
ST-MAI-1261	2	0	1	CIRCULAR	0.127	RCP	1.28	0.02	2.04	0.03	3.25	0.04
ST-MAI-1262	2.5	0	1	CIRCULAR	0.02463	RCP	30.52	0.47	47.28	0.73	69.54	1.08
ST-MAI-1263	2.5	0	1	CIRCULAR	0.00989	RCP	30.57	0.75	50.24	1.23	69.78	1.71
ST-MAI-1264	2.5	0	1	CIRCULAR	0.03491	RCP	30.24	0.39	46.68	0.61	69.26	0.9
ST-MAI-1265	1.5	0	1	CIRCULAR	0.01894	RCP	1.97	0.14	3.55	0.25	6.21	0.43
ST-MAI-1266	1.5	3	1	PARABOLIC	0.03062	Concrete	0	0	0	0	0	0
ST-MAI-1267	1.5	0	1	CIRCULAR	0.01969	RCP	2.42	0.16	4.26	0.29	7.31	0.5
ST-MAI-1268	1.5	0	1	CIRCULAR	0.24242	RCP	4.25	0.08	7.89	0.15	13.63	0.26
ST-MAI-1269	1.5	0	1	CIRCULAR	0.02704	RCP	4.07	0.24	7.61	0.44	13.2	0.76
ST-MAI-1270	1.5	0	1	CIRCULAR	0.0339	RCP	0.78	0.04	1.21	0.06	1.87	0.1
ST-MAI-1271	1.5	0	1	CIRCULAR	0.15238	RCP	3.4	0.08	6.32	0.15	10.85	0.26
ST-MAI-1272	1.5	0	1	CIRCULAR	0.01441	RCP	0.6	0.05	0.92	0.07	1.41	0.11
ST-MAI-1273	1.5	0	1	CIRCULAR	0.01153	RCP	19.33	1.71	19.77	1.75	19.74	1.75
ST-MAI-1274	1.5	0	1	CIRCULAR	0.06287	RCP	0.3	0.01	0.47	0.02	0.76	0.03
ST-MAI-1275	1.5	3	1	PARABOLIC	0.01316	Concrete	0.57	0.03	0.89	0.04	1.39	0.07
ST-MAI-1276	1.5	0	1	CIRCULAR	0.02156	RCP	19.7	1.28	20.02	1.3	20.82	1.35
ST-MAI-1277	1.5	0	1	CIRCULAR	0.00485	RCP	2.39	0.33	4.22	0.58	7.24	0.99
ST-MAI-1278	1.5	0	1	CIRCULAR	0.02279	RCP	2.28	0.14	4.03	0.25	6.96	0.44
ST-MAI-1279	1.5	0	1	CIRCULAR	0.16671	RCP	4.11	0.1	7.67	0.18	13.3	0.31
ST-MAI-1280	1.5	0	1	CIRCULAR	0.02839	RCP	2.15	0.12	3.83	0.22	6.65	0.38
ST-MAI-1281	1.5	0	1	CIRCULAR	0.01689	RCP	20.21	1.48	22	1.61	42.62	3.12
ST-MAI-1282	1.5	3	1	PARABOLIC	0.01841	Concrete	1.06	0.04	2.16	0.09	3.94	0.16
ST-MAI-1283	2	0	1	IRREGULAR	-0.17256	Earthen	0	0	0	0	0	0
ST-MAI-1284	1.5	0	1	CIRCULAR	0.0145	RCP	15.25	1.21	16.99	1.34	16.84	1.33
ST-MAI-1285	2	0	1	CIRCULAR	0.00792	RCP	1.29	0.06	2.65	0.13	5.98	0.3
ST-MAI-1286	1.5	0	1	CIRCULAR	0.00825	RCP	7.65	0.8	11.51	1.21	13.78	1.44
ST-MAI-1287	1.5	0	1	CIRCULAR	0.0085	RCP	10.05	1.04	11.29	1.17	11.23	1.16
ST-MAI-1288	1.5	0	1	CIRCULAR	0.023	RCP	2.6	0.16	5.71	0.36	7.25	0.45
ST-MAI-1289	1.5	0	1	CIRCULAR	0.00889	RCP	4.36	0.44	9.32	0.94	12.76	1.29
ST-MAI-1290	1.5	0	1	CIRCULAR	0.04459	RCP	4.78	0.22	8.19	0.37	13.79	0.62
ST-MAI-1291	1.5	0	1	CIRCULAR	0.0321	RCP	1.73	0.09	2.98	0.16	4.91	0.26
ST-MAI-1292	1.5	0	1	CIRCULAR	0.03202	RCP	1.1	0.06	1.89	0.1	3.92	0.21
ST-MAI-1293	1.5	0	1	CIRCULAR	0.02974	RCP	2.8	0.15	4.81	0.27	8.1	0.45
ST-MAI-1294	1.5	0	1	CIRCULAR	0.13965	RCP	0.53	0.01	1.79	0.05	1.4	0.04
ST-MAI-1295	1.5	0	1	CIRCULAR	0.02338	RCP	0.62	0.04	1.09	0.07	1.7	0.11
ST-MAI-1296	1.5	0	1	CIRCULAR	0.06495	RCP	2.84	0.11	4.55	0.17	7.77	0.29
ST-MAI-1297	1.5	0	1	CIRCULAR	0.11492	RCP	0.7	0.02	1.52	0.04	2.97	0.08
ST-MAI-1298	1.5	0	1	CIRCULAR	0.05558	RCP	21.09	0.85	24.41	0.99	28.06	1.13
ST-MAI-1299	1.5	0	1	CIRCULAR	0.03617	RCP	3.29	0.16	6.17	0.31	9.71	0.49

Existing Condition Storm Conveyance Results Summary Table

Existing Condition Storm Conveyance Results Summary Table												
Conveyance Info	Dimensions						2-year		10-year		100-year	
Facility ID	D' or H' (diameter) or (height)	B' (width)	Barrels	Shape	Slope (ft/ft)	Material	Q _{con} (2-year) (cfs)	Qcon vs Qcap	Q _{con} (10-year) (cfs)	Qcon vs Qcap3	Q _{con} (100-year) (cfs)	Qcon vs Qcap7
ST-MAI-13	6	0	1	CIRCULAR	0.00788	RCP	154.15	0.41	261.53	0.7	356.63	0.95
ST-MAI-130	1	0	1	CIRCULAR	0.12586	RCP	0.64	0.05	1.06	0.08	1.7	0.13
ST-MAI-1300	1.5	0	1	CIRCULAR	0.01289	RCP	13.02	1.09	14.92	1.25	14.92	1.25
ST-MAI-1301	1.5	0	1	CIRCULAR	0.01166	RCP	11.85	1.04	13.91	1.23	14.01	1.24
ST-MAI-1302	1.5	0	1	CIRCULAR	0.04832	RCP	1.11	0.05	2.16	0.09	3.2	0.14
ST-MAI-1303	1.5	0	1	CIRCULAR	0.02709	RCP	3.29	0.19	6.1	0.35	10.52	0.61
ST-MAI-1304	1.5	0	1	CIRCULAR	0.08051	RCP	4.39	0.15	7.99	0.27	13.7	0.46
ST-MAI-1305	1.5	0	1	CIRCULAR	0.22803	RCP	0.56	0.01	0.95	0.02	1.49	0.03
ST-MAI-1306	1.5	0	1	CIRCULAR	0.00923	RCP	9.25	0.92	11.71	1.16	11.58	1.15
ST-MAI-1307	1.5	0	1	CIRCULAR	0.12857	RCP	0.99	0.03	1.82	0.05	2.84	0.08
ST-MAI-1308	1.5	0	1	CIRCULAR	0.07572	RCP	0.99	0.03	1.81	0.06	2.81	0.1
ST-MAI-1309	1.5	0	1	CIRCULAR	0.15911	RCP	1.37	0.03	2.28	0.05	3.59	0.09
ST-MAI-131	2.5	0	1	CIRCULAR	0.11242	CONC	3.79	0.03	9.88	0.07	20.88	0.15
ST-MAI-1310	1.5	0	1	CIRCULAR	0.0122	RCP	12.41	1.07	14.31	1.23	14.43	1.24
ST-MAI-1311	1.5	0	1	CIRCULAR	0.16693	RCP	4.86	0.11	8	0.19	13.45	0.31
ST-MAI-1312	1.5	3	1	PARABOLIC	0.02936	Concrete	0	0	0	0	0	0
ST-MAI-1313	1.5	3	1	PARABOLIC	0.02817	Concrete	0	0	0	0	0	0
ST-MAI-1314	1.5	3	1	PARABOLIC	0.01189	Concrete	0	0	0	0	0	0
ST-MAI-1315	1.5	3	1	PARABOLIC	0.04384	Concrete	0	0	0	0	0	0
ST-MAI-1316	1.5	3	1	PARABOLIC	0.02529	Concrete	0	0	0	0	0	0
ST-MAI-1317	1.5	3	1	PARABOLIC	0.03361	Concrete	0	0	0	0	0	0
ST-MAI-1318	1.5	3	1	PARABOLIC	0.02587	Concrete	0	0	0	0	0	0
ST-MAI-1319	1.5	3	1	PARABOLIC	0.02739	Concrete	0	0	0	0	0	0
ST-MAI-132	2.5	0	1	CIRCULAR	0.0872	CONC	6.84	0.06	13.16	0.11	22.5	0.19
ST-MAI-1320	1.5	3	1	PARABOLIC	0.31866	Concrete	0	0	0	0	0	0
ST-MAI-1321	1.5	3	1	PARABOLIC	0.09845	Concrete	0.57	0.01	0.89	0.02	1.38	0.02
ST-MAI-1322	1.5	3	1	PARABOLIC	0.10003	Concrete	1.05	0.02	2.15	0.04	3.9	0.07
ST-MAI-1323	1.5	3	1	PARABOLIC	0.01024	Concrete	1.05	0.06	2.15	0.12	3.9	0.21
ST-MAI-1324	1.5	3	1	PARABOLIC	0.00908	Concrete	0.05	0	0.08	0	0.12	0.01
ST-MAI-1325	1.5	3	1	PARABOLIC	0.11334	Concrete	0.05	0	0.08	0	0.12	0
ST-MAI-1326	2.5	5	1	TRIANGULAR	0.25461	Concrete	20.21	0.09	22	0.1	42.62	0.19
ST-MAI-1327	1.5	0	1	CIRCULAR	0.37845	RCP	0	0	0	0	0	0
ST-MAI-1328	2.5	0	1	CIRCULAR	0.16515	RCP	30.1	0.18	46.39	0.28	69.09	0.41
ST-MAI-1329	1.5	0	1	CIRCULAR	0.50056	RCP	0.16	0	0.24	0	0.38	0.01
ST-MAI-1330	2.75	0	1	CIRCULAR	0.05563	RCP	24.54	0.2	33.69	0.27	55.87	0.45
ST-MAI-1331	2	0	1	CIRCULAR	0.09183	RCP	0.8	0.01	2.29	0.03	5.36	0.08
ST-MAI-1332	0	0	1	IRREGULAR	0.07956	Earthen	1.32	0	4.03	0	8.19	0
ST-MAI-1333	0	0	1	IRREGULAR	0.16629	Earthen	2.01	0	6.18	0	14.21	0
ST-MAI-1334	0	0	1	IRREGULAR	0.15216	Earthen	2.81	0	9.67	0	23.78	0
ST-MAI-1335	0.75	3.5	1	TRIANGULAR	0.04742	Concrete	0	0	0	0	0	0
ST-MAI-1336	0.75	3.5	1	TRIANGULAR	0.03475	Concrete	0	0	0	0	0	0
ST-MAI-1337	0.75	3.5	1	TRIANGULAR	0.02011	Concrete	0	0	0	0	0	0
ST-MAI-1338	0.75	3.5	1	TRIANGULAR	0.04443	Concrete	0	0	0	0	0	0
ST-MAI-1339	0.75	3.5	1	TRIANGULAR	0.02702	Concrete	0	0	0	0	0	0
ST-MAI-1340	0.75	3.5	1	TRIANGULAR	0.05527	Concrete	0.06	0.01	0.18	0.01	0.32	0.03
ST-MAI-1341	0.75	3.5	1	TRIANGULAR	0.07895	Concrete	0.34	0.02	1.08	0.08	2.3	0.16
ST-MAI-1342	2	0	1	CIRCULAR	0.25686	CMP	0.72	0.01	2.44	0.04	6.14	0.1
ST-MAI-1343	2	0	1	CIRCULAR	0.30285	CMP	1.36	0.02	4.44	0.07	10.43	0.15
ST-MAI-1344	2	0	1	CIRCULAR	0.19298	CMP	0.7	0.01	2.37	0.04	5.99	0.11
ST-MAI-1345	2	0	1	CIRCULAR	0.36985	CMP	1.96	0.03	6.04	0.08	13.85	0.19
ST-MAI-1346	2	0	1	CIRCULAR	0.19881	CMP	0.19	0	0.63	0.01	1.46	0.03
ST-MAI-1347	2	0	1	CIRCULAR	0.26796	CMP	0.65	0.01	2.11	0.03	4.67	0.07
ST-MAI-1348	2	0	1	CIRCULAR	0.35953	CMP	2.8	0.04	9.61	0.13	23.62	0.32
ST-MAI-1349	2	0	1	CIRCULAR	0.30978	CMP	1.13	0.02	3.46	0.05	7.12	0.1
ST-MAI-135	6	0	1	CIRCULAR	0.00414	RCP	156.75	0.58	276.6	1.02	450.78	1.65
ST-MAI-1350	0.75	3.5	1	TRIANGULAR	0.01467	Concrete	0.15	0.03	0.67	0.11	1.77	0.29

Existing Condition Storm Conveyance Results Summary Table

Existing Condition Storm Conveyance Results Summary Table												
Conveyance Info	Dimensions						2-year		10-year		100-year	
Facility ID	D' or H' (diameter) or (height)	B' (width)	Barrels	Shape	Slope (ft/ft)	Material	Q _{con} (2-year) (cfs)	Qcon vs Qcap	Q _{con} (10-year) (cfs)	Qcon vs Qcap3	Q _{con} (100-year) (cfs)	Qcon vs Qcap7
ST-MAI-1351	0.75	3.5	1	TRIANGULAR	0.03242	Concrete	0.57	0.06	2.4	0.26	7.32	0.81
ST-MAI-1352	0.75	3.5	1	TRIANGULAR	0.02978	Concrete	0	0	0	0	0	0
ST-MAI-1353	2	0	1	CIRCULAR	0.29986	CMP	1.51	0.02	5.21	0.08	13.29	0.2
ST-MAI-1355	2	0	1	CIRCULAR	0.03612	RCP	33.76	0.79	61.48	1.43	104.79	2.44
ST-MAI-1356	2	0	1	CIRCULAR	0.02814	RCP	22.18	0.58	39.8	1.05	67.21	1.77
ST-MAI-1357	2	0	1	CIRCULAR	0.02642	RCP	32.64	0.89	59.34	1.61	101.47	2.76
ST-MAI-1358	1.5	0	1	CIRCULAR	0.00984	RCP	3.47	0.33	6.21	0.6	10.5	1.01
ST-MAI-1359	1.5	0	1	CIRCULAR	0.04388	RCP	4.63	0.21	8.21	0.37	13.85	0.63
ST-MAI-136	3.5	0	1	CIRCULAR	0.0059	RCP	53.3	0.69	82.4	1.07	87.5	1.13
ST-MAI-1360	2	0	1	CIRCULAR	0.02862	RCP	7.6	0.2	13.61	0.36	22.66	0.59
ST-MAI-1361	3	0	1	CIRCULAR	0.00466	RCP	39.3	0.86	70.3	1.54	104.76	2.3
ST-MAI-1362	1.5	0	1	CIRCULAR	0.02792	RCP	0	0	0	0	0	0
ST-MAI-1364	1.5	0	1	CIRCULAR	0.02613	RCP	3.07	0.18	5.38	0.32	8.82	0.52
ST-MAI-1365	2	0	1	CIRCULAR	0.23975	CONC	21.41	0.19	37.16	0.34	62.33	0.56
ST-MAI-1366	2	0	1	CIRCULAR	0.01058	CONC	3.84	0.17	6.1	0.26	23.28	1
ST-MAI-1367	2	0	1	CIRCULAR	0.01739	CONC	25.24	0.85	39.99	1.34	39.74	1.33
ST-MAI-1368	2	0	1	CIRCULAR	0.15624	CONC	8.83	0.1	15.14	0.17	25.76	0.29
ST-MAI-1369	2	0	1	CIRCULAR	0.0284	CONC	1.24	0.03	2.15	0.06	3.47	0.09
ST-MAI-1370	2	0	1	CIRCULAR	0.09169	RCP	8.94	0.13	15.46	0.23	26.06	0.38
ST-MAI-1371	2	0	1	CIRCULAR	0.01802	RCP	8.08	0.27	22.09	0.73	28.5	0.94
ST-MAI-1372	2	0	1	CIRCULAR	0.03052	RCP	35.25	0.89	40.25	1.02	40.96	1.04
ST-MAI-1373	2	0	1	CIRCULAR	0.00253	RCP	14.67	1.29	14.65	1.29	16.24	1.43
ST-MAI-1374	0	0	1	IRREGULAR	0.0394	Earthen	12.11	0	19.8	0	23.92	0
ST-MAI-1375	0	0	1	IRREGULAR	0.01044	Earthen	25.01	0	30.98	0	35.28	0
ST-MAI-1376	0	0	1	IRREGULAR	0.04285	Earthen	3.34	0	5.7	0	9.27	0
ST-MAI-1377	0	0	1	IRREGULAR	0.06107	Earthen	2.71	0	4.92	0	8.29	0
ST-MAI-1378	0	0	1	IRREGULAR	0.05729	Earthen	1.21	0	1.97	0	3.21	0
ST-MAI-1379	0	0	1	IRREGULAR	0.0977	Earthen	6.38	0	10.76	0	18.38	0
ST-MAI-1380	0	0	1	IRREGULAR	0.00107	Earthen	7.79	0.01	11.32	0.02	15.8	0.02
ST-MAI-1381	0	0	1	IRREGULAR	0.13612	Earthen	7.92	0	11.52	0	16.7	0
ST-MAI-1382	0	0	1	IRREGULAR	0.02861	Earthen	16.61	0	19.11	0	19.92	0
ST-MAI-1383	0	0	1	IRREGULAR	0.01535	Earthen	23.43	0	29.14	0	33.17	0
ST-MAI-1384	0	0	1	IRREGULAR	0.08393	Earthen	16.05	0	19.63	0	18.97	0
ST-MAI-1385	1.5	0	1	CIRCULAR	0.01602	CONC	16.6	1.25	19.15	1.44	19.5	1.47
ST-MAI-1386	1.5	0	1	CIRCULAR	0.04258	CONC	25.01	1.15	30.98	1.43	35.28	1.63
ST-MAI-1387	1.5	0	1	CIRCULAR	0.00445	CONC	16.05	2.29	19.83	2.83	19.03	2.71
ST-MAI-1388	1.5	0	1	CIRCULAR	0.05136	RCP	6.38	0.27	10.77	0.45	18.39	0.77
ST-MAI-1389	2.5	0	1	CIRCULAR	0.08958	RCP	41.94	0.34	60.75	0.49	86.09	0.7
ST-MAI-139	2.5	0	1	CIRCULAR	0.04171	RCP	16.34	0.2	27.43	0.33	50.75	0.61
ST-MAI-1390	1.5	0	1	CIRCULAR	0.7111	RCP	22.14	0.25	35.66	0.4	55.45	0.63
ST-MAI-1391	1.5	0	1	CIRCULAR	0.02932	RCP	1.3	0.07	2.11	0.12	3.41	0.19
ST-MAI-1392	1.5	0	1	CIRCULAR	0.0089	RCP	0.6	0.06	0.96	0.1	1.53	0.15
ST-MAI-1393	1.5	0	1	CIRCULAR	0.11704	RCP	3.55	0.1	5.98	0.17	9.64	0.27
ST-MAI-1394	1.5	0	1	CIRCULAR	0.0505	RCP	19.62	0.83	31.22	1.32	43.22	1.83
ST-MAI-1395	1.5	0	1	CIRCULAR	0.03914	RCP	7.84	0.38	11.35	0.55	15.49	0.75
ST-MAI-1396	2.5	0	1	CIRCULAR	0.03719	RCP	25.06	0.32	31.05	0.39	35.42	0.45
ST-MAI-1397	2.5	0	1	CIRCULAR	0.07908	RCP	42.02	0.36	60.84	0.53	86.1	0.75
ST-MAI-1398	1.75	0	1	CIRCULAR	0.01023	RCP	12.15	0.76	19.8	1.24	23.93	1.49
ST-MAI-1399	1.75	0	1	CIRCULAR	0.04099	RCP	7.93	0.25	11.52	0.36	16.44	0.51
ST-MAI-14	2	0	1	CIRCULAR	0.01555	RCP	39.47	1.4	39.51	1.4	39.69	1.41
ST-MAI-140	2.5	0	1	CIRCULAR	0.01245	RCP	24.92	0.54	45.06	0.98	62.04	1.36
ST-MAI-1400	2.25	0	1	CIRCULAR	0.02797	CONC	2.63	0.05	4.5	0.09	7.27	0.14
ST-MAI-1401	1.5	0	1	CIRCULAR	0.04374	RCP	13.92	0.63	25.13	1.14	35.22	1.6
ST-MAI-1402	1.5	0	1	CIRCULAR	0.15811	RCP	16.66	0.4	30.23	0.72	46.19	1.11
ST-MAI-1404	2	0	1	CIRCULAR	0.02608	RCP	13.85	0.38	24.83	0.68	43.81	1.2
ST-MAI-1405	2	0	1	CIRCULAR	0.0138	RCP	13.85	0.52	24.86	0.94	43.81	1.65

Existing Condition Storm Conveyance Results Summary Table

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Conveyance Info	Dimensions						2-year		10-year		100-year	
Facility ID	D' or H' (diameter) or (height)	B' (width)	Barrels	Shape	Slope (ft/ft)	Material	Q _{con} (2-year) (cfs)	Qcon vs Qcap	Q _{con} (10-year) (cfs)	Qcon vs Qcap3	Q _{con} (100-year) (cfs)	Qcon vs Qcap7
ST-MAI-1406	1.5	0	1	CIRCULAR	0.16319	RCP	0.25	0.01	0.41	0.01	0.66	0.02
ST-MAI-1415	2	0	1	CIRCULAR	0.01622	RCP	2.42	0.08	3.83	0.13	6.79	0.24
ST-MAI-1416	1.5	0	1	CIRCULAR	0.0333	RCP	5.07	0.26	8.76	0.46	14.84	0.77
ST-MAI-1418	2	0	1	CIRCULAR	0.2531	HDPE	0	0	0	0	0	0
ST-MAI-1420	2.5	0	1	CIRCULAR	0.02991	RCP	1.3	0.02	2.39	0.03	4.13	0.06
ST-MAI-1421	2.5	0	1	CIRCULAR	0.03346	RCP	28.75	0.38	47.51	0.63	94.81	1.26
ST-MAI-1425	2	0	1	CIRCULAR	0.15358	RCP	0	0	0	0	0	0
ST-MAI-1426	2	0	1	CIRCULAR	0.07147	RCP	0	0	0	0	0.69	0.01
ST-MAI-142a	3	5.5	1	CIRCULAR	0.00541	CMP	53.5	2.01	53.36	2.01	52.25	1.97
ST-MAI-142b	3	5.5	1	CIRCULAR	0.00895	CMP	53.5	1.57	53.36	1.56	52.25	1.53
ST-MAI-1430	2	0	1	CIRCULAR	0.02458	RCP	0	0	0	0	0	0
ST-MAI-1432	2	0	1	CIRCULAR	0.05404	RCP	0.54	0.01	0.96	0.02	1.6	0.03
ST-MAI-1433	2	0	1	CIRCULAR	0.05318	RCP	0.53	0.01	0.95	0.02	4.16	0.08
ST-MAI-1434	2	0	1	CIRCULAR	0.00612	RCP	2.69	0.15	3.25	0.18	29.27	1.65
ST-MAI-1435	1.5	0	1	CIRCULAR	0.0664	RCP	0	0	0.98	0.04	38.37	1.42
ST-MAI-1436	2	0	1	CIRCULAR	0.02	RCP	0	0	0	0	0	0
ST-MAI-1437	2	0	1	CIRCULAR	0.0095	RCP	0	0	0	0	0	0
ST-MAI-1438	2	0	1	CIRCULAR	0.01855	RCP	0	0	0	0	0	0
ST-MAI-1439	2	0	1	CIRCULAR	0.00971	RCP	4.34	0.19	7.61	0.34	12.88	0.58
ST-MAI-144	2	0	1	CIRCULAR	0.08472	SP	15.38	0.43	27.35	0.77	36.55	1.02
ST-MAI-1440	2	0	1	CIRCULAR	0.00958	RCP	4.33	0.2	7.61	0.34	12.87	0.58
ST-MAI-1441	2	0	1	CIRCULAR	0.02473	RCP	4.33	0.12	7.6	0.21	12.7	0.36
ST-MAI-1442	2	0	1	CIRCULAR	0.00383	RCP	7.84	0.56	13.88	0.99	23.19	1.66
ST-MAI-1444	2	0	1	CIRCULAR	0.03044	RCP	0	0	0	0	0	0
ST-MAI-1445	2	0	1	CIRCULAR	0.06465	RCP	0	0	0	0	0	0
ST-MAI-1446	1.5	0	1	CIRCULAR	0.04035	RCP	0	0	0	0	0	0
ST-MAI-1447	1.5	0	1	CIRCULAR	0.04249	RCP	0	0	0	0	0	0
ST-MAI-1452	2.5	0	1	CIRCULAR	0.00117	CMP	36.06	4.74	35.21	4.63	35.31	4.64
ST-MAI-1453	3	0	1	CIRCULAR	0.08941	RCP	10.82	0.05	20.64	0.1	33.86	0.17
ST-MAI-1454	3	0	1	CIRCULAR	0.0074	RCP	10.82	0.19	20.71	0.36	33.84	0.59
ST-MAI-155	4	0	1	CIRCULAR	0.02767	RCP	37.23	0.16	56.88	0.24	81.41	0.34
ST-MAI-156	4	0	1	CIRCULAR	0.02594	RCP	38.05	0.16	56.39	0.24	83.92	0.36
ST-MAI-157	1.5	0	1	CIRCULAR	0.03249	RCP	7.39	0.39	22.16	1.17	22.98	1.21
ST-MAI-158	4	0	1	CIRCULAR	0.2143	RCP	1.02	0	1.65	0	2.61	0
ST-MAI-15a	2.5	0	1	CIRCULAR	0.00377	CONC	15.43	0.61	27.51	1.09	40.03	1.59
ST-MAI-15b	2.5	0	1	CIRCULAR	0.00524	CONC	15.39	0.52	27.43	0.92	41.03	1.38
ST-MAI-16	5	0	1	CIRCULAR	0.01283	RCP	344.91	1.17	354.05	1.2	361.86	1.23
ST-MAI-165	4.75	0	1	CIRCULAR	0.00246	RCP	49.6	0.44	50.38	0.45	48.92	0.43
ST-MAI-166	1	0	1	CIRCULAR	0.03745	ABS	0.77	0.11	1.26	0.18	2.06	0.3
ST-MAI-167	1	0	1	CIRCULAR	0.06325	ABS	0.67	0.07	1.06	0.12	1.67	0.19
ST-MAI-168	1	0	1	CIRCULAR	0.07322	RCP	3.47	0.36	4.5	0.47	6.01	0.62
ST-MAI-169	1	0	1	CIRCULAR	0.04763	ABS	2.1	0.27	3.44	0.44	5.26	0.68
ST-MAI-17	1.5	0	1	CIRCULAR	0.0246	CMP	5.9	0.66	10.58	1.19	17.27	1.94
ST-MAI-18	0.5	0	1	CIRCULAR	0.0277	ABS	1	1.08	1	1.08	1	1.08
ST-MAI-180	0	0	1	IRREGULAR	0.02069	Earthen	339.92	0.03	499.66	0.05	1119.93	0.11
ST-MAI-181a_1	0	0	1	IRREGULAR	0.01811	Earthen	336.28	0.05	496.6	0.08	1097.12	0.17
ST-MAI-181a_2	0	0	1	IRREGULAR	0.01811	Earthen	335.1	0.05	498.12	0.08	1129.36	0.18
ST-MAI-181b	0	0	1	IRREGULAR	0.01793	Earthen	333.37	0.1	470.96	0.14	1062.46	0.32
ST-MAI-182	2	0	1	CIRCULAR	0.05628	HDPE	3.1	0.06	5.39	0.1	8.05	0.15
ST-MAI-183	5	0	1	CIRCULAR	0.00964	CMP	165.64	1.2	167.19	1.21	167.66	1.21
ST-MAI-184	3	4.7	1	CIRCULAR	0.00554	CMP	33.67	1.25	33.32	1.24	33.56	1.25
ST-MAI-185	3	5.5	1	CIRCULAR	0.01271	CMP	34.49	0.85	33.81	0.83	33.89	0.83
ST-MAI-186	3	0	1	CIRCULAR	0.00637	CMP	51.51	1.79	51.44	1.78	51.32	1.78
ST-MAI-187	3	0	1	CIRCULAR	0.02425	CONC	9.08	0.09	15.03	0.14	24.94	0.24
ST-MAI-190	2	0	1	CIRCULAR	0.27807	RCP	0.72	0.01	1.27	0.01	2.1	0.02
ST-MAI-192	1.5	0	1	CIRCULAR	0.01849	CMP	2.14	0.28	3.83	0.49	6.46	0.84

Existing Condition Storm Conveyance Results Summary Table

Existing Condition Storm Conveyance Results Summary Table												
Conveyance Info	Dimensions						2-year		10-year		100-year	
Facility ID	D' or H' (diameter) or (height)	B' (width)	Barrels	Shape	Slope (ft/ft)	Material	Q _{con} (2-year) (cfs)	Qcon vs Qcap	Q _{con} (10-year) (cfs)	Qcon vs Qcap3	Q _{con} (100-year) (cfs)	Qcon vs Qcap7
ST-MAI-194	1.5	0	1	CIRCULAR	0.14235	RCP	1.79	0.05	3.15	0.08	5.15	0.13
ST-MAI-196	1	0	1	CIRCULAR	0.02113	ABS	0.92	0.18	1.53	0.3	2.51	0.49
ST-MAI-197	1	0	1	CIRCULAR	0.08454	CMP	1.83	0.33	3.3	0.59	5.54	0.99
ST-MAI-198	1.5	0	1	CIRCULAR	0.02043	SP	0.26	0.03	0.46	0.06	0.74	0.09
ST-MAI-19b	6	0	1	CIRCULAR	0.07526	RCP	0	0	0	0	82.44	0.07
ST-MAI-2	4	8	1	RECT_CLOSED	0.02261	RCB	214.3	0.32	241.33	0.36	270.45	0.41
ST-MAI-20	1.5	0	1	CIRCULAR	0.19522	RCP	6.39	0.14	11.52	0.25	20.14	0.43
ST-MAI-200	1	0	1	CIRCULAR	0.03309	ABS	7.57	1.17	7.57	1.17	7.57	1.17
ST-MAI-201	1.5	0	1	CIRCULAR	0.03023	ABS	10.73	0.59	18.74	1.03	19.72	1.08
ST-MAI-202	1	3	1	PARABOLIC	0.1641	RCP	3.52	0.06	6.18	0.1	10.37	0.17
ST-MAI-203	1	0	1	CIRCULAR	0.01262	RCP	0.29	0.07	0.59	0.15	1.03	0.26
ST-MAI-204	1	0	1	CIRCULAR	0.0057	RCP	0.06	0.02	0.14	0.05	0.25	0.09
ST-MAI-206	1.5	0	1	CIRCULAR	0.13647	CMP	5.65	0.27	10.31	0.49	17.68	0.84
ST-MAI-209	3.5	0	1	CIRCULAR	0.03992	RCP	33.42	0.17	36.03	0.18	39.52	0.2
ST-MAI-21	6	0	1	CIRCULAR	0.0133	RCP	29.25	0.06	77.78	0.16	197.57	0.4
ST-MAI-210	4	0	1	CIRCULAR	0.00365	RCP	58.65	0.68	76.04	0.88	78.32	0.9
ST-MAI-211	5.5	0	1	CIRCULAR	0.00391	RCP	176.37	0.84	322.21	1.53	404.36	1.93
ST-MAI-212	5.5	0	1	CIRCULAR	0.00341	RCP	174.16	0.89	299.2	1.53	351.33	1.79
ST-MAI-213	5	0	1	CIRCULAR	0.01039	RCP	162.55	0.61	282.45	1.06	319.43	1.2
ST-MAI-218	5	0	1	CIRCULAR	0.01571	RCP	108.45	0.33	195.21	0.6	340.91	1.04
ST-MAI-219	5	0	1	CIRCULAR	0.02475	RCP	79.52	0.19	144.57	0.35	222.47	0.54
ST-MAI-220	5	0	1	CIRCULAR	0.00709	RCP	79.32	0.36	147.69	0.67	225.67	1.03
ST-MAI-221	3.5	0	1	CIRCULAR	0.0077	RCP	33.1	0.37	74.48	0.84	82.88	0.94
ST-MAI-222	3.5	0	1	CIRCULAR	0.03572	RCP	57.73	0.3	119.93	0.63	124.92	0.66
ST-MAI-223	3	0	1	CIRCULAR	0.01468	RCP	8.82	0.11	14.34	0.18	27.53	0.34
ST-MAI-224	3	0	1	CIRCULAR	0.06052	RCP	11.52	0.07	20.89	0.13	48.56	0.3
ST-MAI-225	1.25	0	1	CIRCULAR	0.0109	HDPE	0.65	0.1	1.06	0.16	1.53	0.23
ST-MAI-226	1.25	0	1	CIRCULAR	0.00612	HDPE	2.86	0.57	4.77	0.94	6.75	1.34
ST-MAI-227	1.25	0	1	CIRCULAR	0.0342	HDPE	2.85	0.24	4.77	0.4	6.76	0.57
ST-MAI-228	1.25	0	1	CIRCULAR	0.04641	HDPE	1.06	0.08	1.8	0.13	2.95	0.21
ST-MAI-229	1.25	0	1	CIRCULAR	0.01048	HDPE	1.85	0.28	3.08	0.47	4.47	0.68
ST-MAI-22b	2	0	1	CIRCULAR	0.03596	RCP	0.17	0	2.95	0.07	1.89	0.04
ST-MAI-23	6	0	1	CIRCULAR	0.01075	RCP	429.37	0.98	558.01	1.27	563.88	1.28
ST-MAI-230	1.5	0	1	CIRCULAR	0.1456	RCP	2.15	0.05	3.62	0.09	5.75	0.14
ST-MAI-231	1.5	0	1	CIRCULAR	0.01633	RCP	2.51	0.19	4.26	0.32	6.77	0.5
ST-MAI-232	1.5	0	1	CIRCULAR	0.0151	RCP	2.5	0.19	4.25	0.33	6.76	0.52
ST-MAI-233	1.5	0	1	CIRCULAR	0.02257	HDPE	2.74	0.17	4.88	0.31	8.3	0.53
ST-MAI-234	2	0	1	CIRCULAR	0.01518	RCP	33.15	1.19	35.22	1.26	35.67	1.28
ST-MAI-235	0	0	1	IRREGULAR	0.19961	Earthen	0.13	0	0.21	0	0.34	0
ST-MAI-236	1.25	0	1	CIRCULAR	0.00845	HDPE	3.14	0.53	5.52	0.93	8.34	1.4
ST-MAI-237	1.25	0	1	CIRCULAR	0.01821	RCP	3.09	0.35	5.46	0.63	8.31	0.95
ST-MAI-238	1.5	0	1	CIRCULAR	0.01598	RCP	14.74	1.11	24.15	1.82	27.2	2.05
ST-MAI-239	1.5	0	1	CIRCULAR	0.05941	RCP	3.43	0.13	6.12	0.24	10.39	0.41
ST-MAI-24	2	0	1	CIRCULAR	0.06565	CMP	17.14	0.55	26.59	0.85	33.12	1.05
ST-MAI-241	1.5	0	1	CIRCULAR	0.09864	CMP	2.15	0.12	3.58	0.2	5.76	0.32
ST-MAI-243	1.5	0	1	CIRCULAR	-0.00097	RCP	22.61	6.93	22.68	6.95	22.34	6.84
ST-MAI-244	2	0	1	CIRCULAR	0.00147	RCP	22.87	2.64	22.86	2.64	22.88	2.64
ST-MAI-245	2	0	1	CIRCULAR	-0.03119	RCP	26.01	0.65	25.04	0.63	23.09	0.58
ST-MAI-246	2	0	1	CIRCULAR	0.06704	RCP	5.21	0.09	9.3	0.16	15.61	0.27
ST-MAI-247	1.5	0	1	CIRCULAR	0.14905	RCP	2.41	0.06	4.34	0.11	7.28	0.18
ST-MAI-248	1.5	0	1	CIRCULAR	0.02518	RCP	1.57	0.09	2.86	0.17	4.81	0.29
ST-MAI-249	1.5	0	1	CIRCULAR	0.21636	RCP	2.85	0.06	5.02	0.1	8.43	0.17
ST-MAI-25	3	0	1	CIRCULAR	0.00345	RCP	45.22	1.15	63.38	1.62	63.32	1.62
ST-MAI-250	2	0	1	CIRCULAR	0.01003	RCP	5.42	0.24	9.57	0.42	16.51	0.73
ST-MAI-251	2	0	1	CIRCULAR	0.02382	RCP	5.43	0.16	9.57	0.27	16.57	0.47
ST-MAI-252	2	0	1	CIRCULAR	0.0245	RCP	5.39	0.15	9.5	0.27	16.47	0.47

Existing Condition Storm Conveyance Results Summary Table

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Conveyance Info	Dimensions						2-year		10-year		100-year	
Facility ID	D' or H' (diameter) or (height)	B' (width)	Barrels	Shape	Slope (ft/ft)	Material	Q _{con} (2-year) (cfs)	Qcon vs Qcap	Q _{con} (10-year) (cfs)	Qcon vs Qcap3	Q _{con} (100-year) (cfs)	Qcon vs Qcap7
ST-MAI-253	1.5	0	1	CIRCULAR	0.01737	RCP	11.16	0.81	20.06	1.45	32.82	2.37
ST-MAI-254	2.5	0	1	CIRCULAR	0.02144	RCP	16.44	0.27	29.45	0.49	48.94	0.81
ST-MAI-255	3	0	1	CIRCULAR	0.06449	RCP	23.15	0.14	39.66	0.23	70.99	0.42
ST-MAI-257	3.5	0	1	CIRCULAR	0.01678	RCP	2.18	0.02	6.51	0.05	10.32	0.08
ST-MAI-259	0.67	0	1	CIRCULAR	0.16213	PVC	0.91	0.18	1.53	0.31	2.44	0.5
ST-MAI-26	2.5	0	1	CIRCULAR	0.02387	RCP	20.29	0.32	32.68	0.52	45.81	0.72
ST-MAI-260	2	0	1	CIRCULAR	0.0155	RCP	2.56	0.09	5.09	0.18	12.72	0.45
ST-MAI-261	2	0	1	CIRCULAR	0.01653	RCP	2.56	0.09	5.07	0.17	12.72	0.44
ST-MAI-262	2	0	1	CIRCULAR	0.07858	RCP	2.55	0.04	5.06	0.08	12.72	0.2
ST-MAI-265	1	0	1	CIRCULAR	0.08978	PVC	2.21	0.21	3.82	0.36	6.21	0.58
ST-MAI-266	1.5	0	1	CIRCULAR	0.08805	RCP	2.23	0.07	4	0.13	6.84	0.22
ST-MAI-267	1.5	0	1	CIRCULAR	0.10047	CMP	2.14	0.12	3.73	0.21	6.15	0.34
ST-MAI-27	2	0	1	CIRCULAR	0.00716	CMP	11.18	1.08	15.89	1.53	16.7	1.61
ST-MAI-273	1.5	0	1	CIRCULAR	0.00716	RCP	5.12	0.58	8.57	0.96	12.11	1.36
ST-MAI-274	3	0	1	CIRCULAR	0.11572	RCP	1.39	0.01	3.35	0.01	6.14	0.03
ST-MAI-275	1.5	0	1	CIRCULAR	0.02669	RCP	7.33	0.43	12.74	0.74	15.39	0.9
ST-MAI-276	2	0	1	CIRCULAR	0.02534	CMP	35.96	1.84	35.95	1.84	35.86	1.84
ST-MAI-277	3.5	0	1	CIRCULAR	0.0369	RCP	120.63	0.62	182	0.94	189.7	0.98
ST-MAI-279	3	0	1	CIRCULAR	0.0315	RCP	59.32	0.5	69.43	0.59	99.62	0.84
ST-MAI-281	3	0	1	CIRCULAR	0.02168	RCP	98.66	1	114.46	1.17	114.01	1.16
ST-MAI-282	3.5	0	1	CIRCULAR	0.02175	RCP	124.68	0.84	163.01	1.1	165.54	1.12
ST-MAI-283	3	0	1	CIRCULAR	0.03355	RCP	57.88	0.47	65.47	0.54	87.86	0.72
ST-MAI-285	1.5	0	1	CIRCULAR	0.02837	RCP	2.37	0.13	4.28	0.24	7.3	0.41
ST-MAI-286	1.5	0	1	CIRCULAR	0.05008	CMP	13.97	1.1	14	1.1	14.02	1.1
ST-MAI-287	1.5	0	1	CIRCULAR	0.03224	CMP	17.84	1.75	18.54	1.82	19.25	1.88
ST-MAI-288	2	0	1	CIRCULAR	0.00332	RCP	3.99	0.31	4.25	0.33	34.65	2.66
ST-MAI-289	2.25	0	1	CIRCULAR	0.0059	RCP	2.14	0.09	3.91	0.16	11.96	0.5
ST-MAI-29	1.25	0	1	CIRCULAR	0.08432	ABS	6.93	0.37	18.1	0.96	19.59	1.04
ST-MAI-290	2	0	1	CIRCULAR	0.00453	RCP	0.96	0.06	1.77	0.12	3.54	0.23
ST-MAI-291	2	0	1	CIRCULAR	0.02619	RCP	0.18	0	0.27	0.01	0.42	0.01
ST-MAI-293	1.5	0	1	CIRCULAR	0.06693	RCP	1.01	0.04	1.73	0.06	2.81	0.1
ST-MAI-294	1	3	1	PARABOLIC	0.11591	CONC	0	0	0	0	0	0
ST-MAI-295	1	3	1	PARABOLIC	0.00757	CONC	1.6	0.12	3	0.23	5.06	0.39
ST-MAI-296	1	0	1	CIRCULAR	0.00305	RCP	0.2	0.1	0.44	0.22	0.78	0.4
ST-MAI-297	1	3	1	PARABOLIC	0.01636	CONC	0	0	0	0	0	0
ST-MAI-299	1	0	1	CIRCULAR	0.17878	CMP	0.85	0.1	1.5	0.18	2.47	0.3
ST-MAI-3	5	16	1	RECT_CLOSED	0.00788	RCB	277.5	0.22	527.52	0.42	946.67	0.76
ST-MAI-30	6	0	1	CIRCULAR	0.06169	RCP	0.03	0	0.05	0	0.08	0
ST-MAI-301	1	3	1	PARABOLIC	0.04794	CONC	0	0	0	0	0	0
ST-MAI-302	1	3	1	PARABOLIC	0.09823	CONC	0	0	0	0	0	0
ST-MAI-303	1	3	1	PARABOLIC	0.07036	CONC	2.03	0.05	3.6	0.09	5.88	0.15
ST-MAI-304	1.5	0	1	CIRCULAR	0.01774	CMP	5.03	0.66	8.11	1.07	12.74	1.68
ST-MAI-305	1.25	0	1	CIRCULAR	0.0304	ABS	14.68	1.3	16.91	1.5	15.93	1.41
ST-MAI-306	1.5	0	1	CIRCULAR	0.00323	RCP	3.27	0.55	5.4	0.9	8.47	1.42
ST-MAI-307	1.5	0	1	CIRCULAR	0.27678	RCP	6.05	0.11	10.21	0.18	16.49	0.3
ST-MAI-309	1	0	1	CIRCULAR	0.85398	CMP	0.34	0.02	0.54	0.03	0.84	0.05
ST-MAI-31	4	0	1	CIRCULAR	0.01834	RCP	13.62	0.07	13.77	0.07	11.6	0.06
ST-MAI-311	1	3	1	PARABOLIC	0.56037	CONC	0	0	0	0	0	0
ST-MAI-312	1	3	1	PARABOLIC	0.24209	CONC	0	0	0	0	0	0
ST-MAI-314	1	3	1	PARABOLIC	0.0148	CONC	0	0	0	0	0	0
ST-MAI-315	1.5	0	1	CIRCULAR	0.14772	CMP	0.83	0.04	1.51	0.07	2.45	0.11
ST-MAI-316	1.5	0	1	CIRCULAR	0.01324	RCP	10.66	0.88	18.8	1.56	22.69	1.88
ST-MAI-317	1.5	0	1	CIRCULAR	0.15621	CMP	12.33	0.55	21.66	0.96	24.24	1.08
ST-MAI-318	1	3	1	PARABOLIC	0.00303	CONC	0.27	0.03	0.49	0.06	0.78	0.09
ST-MAI-319	6	0	1	CIRCULAR	0.00422	RCP	127.39	0.46	342.27	1.24	374.16	1.36
ST-MAI-32	1.5	0	1	CIRCULAR	0.06712	CMP	16.98	1.15	20.69	1.4	20.37	1.38

Existing Condition Storm Conveyance Results Summary Table

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Facility ID	D' or H' (diameter) or (height)	B' (width)	Barrels	Shape	Slope (ft/ft)	Material	Q _{con} (2-year) (cfs)	Qcon vs Qcap	Q _{con} (10-year) (cfs)	Qcon vs Qcap3	Q _{con} (100-year) (cfs)	Qcon vs Qcap7
ST-MAI-320	3	0	1	CIRCULAR	0.02147	CMP	28.99	0.55	50.95	0.96	58.13	1.1
ST-MAI-321	1.5	0	1	CIRCULAR	0.05043	RCP	0.9	0.04	1.43	0.06	2.27	0.1
ST-MAI-322	1.5	0	1	CIRCULAR	0.01278	RCP	1.43	0.12	17.83	1.5	19.57	1.65
ST-MAI-323	1.5	0	1	CIRCULAR	0.00966	RCP	2.16	0.21	3.64	0.35	5.77	0.56
ST-MAI-324	1	3	1	PARABOLIC	0.17585	Concrete	2.83	0.07	4.77	0.11	7.91	0.18
ST-MAI-325	1.25	0	1	CIRCULAR	0.02919	CMP	0.24	0.04	0.39	0.06	0.61	0.1
ST-MAI-326	1.25	0	1	CIRCULAR	0.01504	HDPE	0.26	0.03	0.43	0.05	0.67	0.08
ST-MAI-327	1.25	0	1	CIRCULAR	0.04105	CMP	0.26	0.04	0.43	0.06	0.67	0.1
ST-MAI-328	1.5	0	1	CIRCULAR	0.06328	CMP	1.86	0.13	3.34	0.23	5.49	0.38
ST-MAI-33	1.5	0	1	CIRCULAR	0.01859	RCP	9.04	0.63	15.26	1.07	15.43	1.08
ST-MAI-330	1.5	0	1	CIRCULAR	0.06189	CMP	6.87	0.49	12.13	0.86	14.12	1
ST-MAI-332	2	0	1	CIRCULAR	0.47947	CMP	3.18	0.04	5.8	0.07	8.01	0.09
ST-MAI-333	1.75	0	1	CIRCULAR	0.01083	RCP	11.78	0.71	20.7	1.26	24.44	1.48
ST-MAI-334	2.5	0	1	CIRCULAR	0.01081	CMP	20.82	0.9	36.56	1.58	46.17	2
ST-MAI-335	1	0	1	CIRCULAR	0.02205	HDPE	3.46	0.65	4.75	0.9	4.78	0.9
ST-MAI-337	1.5	0	1	CIRCULAR	0.15237	CMP	5.46	0.25	8.53	0.38	8.67	0.39
ST-MAI-338	1.5	0	1	CIRCULAR	0.00506	CMP	6.31	1.56	9.76	2.41	10.57	2.61
ST-MAI-339	1.5	0	1	CIRCULAR	0.01534	CMP	3.84	0.54	6.79	0.96	11.75	1.67
ST-MAI-34	6	0	1	CIRCULAR	0.00263	RCP	80.68	0.37	219.18	1.01	274.87	1.27
ST-MAI-340	1.5	0	1	CIRCULAR	0.01929	RCP	4.35	0.3	7.63	0.52	13.1	0.9
ST-MAI-341	1.5	0	1	CIRCULAR	0.00704	CMP	3.83	0.8	6.58	1.38	9.56	2
ST-MAI-342	2	0	1	CIRCULAR	0.0524	HDPE	4.01	0.08	6.88	0.13	10.36	0.2
ST-MAI-343	1.5	0	1	CIRCULAR	0.27655	CMP	0	0	0	0	0	0
ST-MAI-345	0	0	1	IRREGULAR	0.01478	EAR	0.6	0.2	0.96	0.32	1.51	0.51
ST-MAI-346	1.5	0	1	CIRCULAR	0.19015	CMP	3.45	0.14	5.69	0.23	9.16	0.37
ST-MAI-347	2.5	0	1	CIRCULAR	0.09578	CMP	18.93	0.28	29	0.42	39.28	0.57
ST-MAI-348	1.5	0	1	CIRCULAR	0.03988	RCP	1.33	0.06	2.31	0.11	4.13	0.2
ST-MAI-349	1	4	1	RECT_OPEN	0.02479	Concrete	0	0	0	0	0	0
ST-MAI-35	3	0	1	CIRCULAR	0.00564	RCP	79.5	1.59	78.92	1.58	79.28	1.58
ST-MAI-350	1	8	1	RECT_OPEN	0.00961	Concrete	5.17	0.1	8.53	0.16	13.92	0.26
ST-MAI-351	1	5	1	RECT_OPEN	0.02826	Concrete	0.17	0	0.26	0	0.39	0.01
ST-MAI-352	1.5	0	1	CIRCULAR	0.0106	CMP	5.23	0.89	7.91	1.35	12.34	2.11
ST-MAI-353	1.67	0	1	CIRCULAR	0.04587	RCP	6.31	0.21	9.73	0.32	15.33	0.51
ST-MAI-354	1.67	0	1	CIRCULAR	0.00784	RCP	7.9	0.64	12.69	1.02	19.23	1.55
ST-MAI-355	0.5	0	1	CIRCULAR	0.87276	PVC	1.17	0.22	1.83	0.35	2.85	0.54
ST-MAI-356	3	8	1	RECT_OPEN	0.00915	EAR	1.79	0.02	3.16	0.04	5.5	0.07
ST-MAI-357	4	0	1	CIRCULAR	0.00576	HDPE	97.27	0.89	182.34	1.67	313.58	2.88
ST-MAI-358	1.5	0	1	CIRCULAR	0.04554	CMP	0.94	0.08	1.56	0.13	2.6	0.21
ST-MAI-359	4	0	1	CIRCULAR	0.01812	HDPE	97.83	0.51	182.97	0.95	345.83	1.79
ST-MAI-36	2	0	1	CIRCULAR	0.00379	RCP	21.16	1.52	22.45	1.61	20.61	1.48
ST-MAI-361	1	3	1	PARABOLIC	0.02196	Earthen	1.64	0.34	2.83	0.59	3.21	0.66
ST-MAI-362	2	0	1	CIRCULAR	0.00517	CMP	1.3	0.15	2.12	0.24	3.42	0.39
ST-MAI-363a	3	8	1	RECT_OPEN	0.00056	CONC	1.22	0.06	2.13	0.11	3.28	0.16
ST-MAI-363b	3	8	1	RECT_OPEN	0.00217	CONC	5.22	0.13	8.61	0.22	14.01	0.35
ST-MAI-364_1	2.5	0	1	CIRCULAR	0.03181	RCP	83.88	1.15	90.64	1.24	90.96	1.24
ST-MAI-364_2	2.5	0	1	CIRCULAR	0.0469	RCP	79.07	0.89	84.94	0.96	86.11	0.97
ST-MAI-365	1.5	0	1	CIRCULAR	0.04287	RCP	6.11	0.28	5.97	0.27	6.33	0.29
ST-MAI-366	1.5	0	1	CIRCULAR	0.05768	RCP	16.43	0.65	15.22	0.6	11.88	0.47
ST-MAI-368	1.5	0	1	CIRCULAR	0.02149	HDPE	2.01	0.13	3.34	0.22	5.54	0.36
ST-MAI-370	2.5	0	1	CIRCULAR	0.00601	RCP	0.42	0.01	0.89	0.03	1.64	0.05
ST-MAI-371	2	0	1	CIRCULAR	0.00605	RCP	0.33	0.02	0.6	0.03	1.11	0.06
ST-MAI-372	2.5	0	1	CIRCULAR	0.09391	RCP	0.24	0	0.4	0	0.67	0.01
ST-MAI-373	1.5	0	1	CIRCULAR	0.02797	RCP	0.32	0.02	0.56	0.03	0.89	0.05
ST-MAI-374	2	0	1	CIRCULAR	0.09948	CMP	1.33	0.03	2.36	0.06	4.17	0.11
ST-MAI-375	2.5	0	1	CIRCULAR	0.21096	RCP	33.8	0.18	61.21	0.32	112.6	0.6
ST-MAI-376a	1	3	1	PARABOLIC	0.09316	Concrete	0	0	0	0	0	0

Existing Condition Storm Conveyance Results Summary Table

Existing Condition Storm Conveyance Results Summary Table												
Conveyance Info	Dimensions						2-year		10-year		100-year	
Facility ID	D' or H' (diameter) or (height)	B' (width)	Barrels	Shape	Slope (ft/ft)	Material	Q _{con} (2-year) (cfs)	Qcon vs Qcap	Q _{con} (10-year) (cfs)	Qcon vs Qcap3	Q _{con} (100-year) (cfs)	Qcon vs Qcap7
ST-MAI-376b	1	3	1	PARABOLIC	0.04	Concrete	0.48	0.02	0.61	0.03	0.79	0.04
ST-MAI-377	2	0	1	CIRCULAR	0.1509	CONC	5.11	0.06	8.05	0.09	12.59	0.14
ST-MAI-38	5	0	1	CIRCULAR	0.01522	RCP	87.5	0.27	154.09	0.48	227.9	0.71
ST-MAI-380	1.5	0	1	CIRCULAR	0.14643	CMP	2.81	0.13	4.47	0.21	7.02	0.32
ST-MAI-381	1.5	0	1	CIRCULAR	0.00976	CMP	1.42	0.25	2.46	0.44	3.95	0.7
ST-MAI-382	1.5	0	1	CIRCULAR	0.17017	CMP	0.51	0.02	0.88	0.04	1.41	0.06
ST-MAI-383	2	0	1	CIRCULAR	0.04798	HDPE	1.87	0.04	3.43	0.07	5.77	0.12
ST-MAI-384	2	0	1	CIRCULAR	0.46873	HDPE	2.39	0.02	4.33	0.03	7.22	0.05
ST-MAI-385	1.5	0	1	CIRCULAR	0.03969	HDPE	7.52	0.36	11.99	0.57	18.66	0.89
ST-MAI-386	4	0	1	CIRCULAR	0.00333	CMP	16.5	0.37	26.99	0.6	30.24	0.67
ST-MAI-388_1	4	0	1	CIRCULAR	0.10334	Earthen	24.01	0.05	38.95	0.08	48.35	0.1
ST-MAI-388_2	30	20	1	RECT_OPEN	0.10318	Earthen	24	0	38.95	0	48.34	0
ST-MAI-389	1.5	0	1	CIRCULAR	0.04903	HDPE	0.86	0.04	1.38	0.06	2.19	0.09
ST-MAI-390	1.5	0	1	CIRCULAR	0.03154	HDPE	0.89	0.05	1.43	0.08	2.27	0.12
ST-MAI-391	1.5	0	1	CIRCULAR	0.03585	HDPE	6.74	0.34	10.76	0.54	16.89	0.85
ST-MAI-392	1.5	0	1	CIRCULAR	0.02862	HDPE	7.55	0.42	12.04	0.68	18.7	1.05
ST-MAI-393	1.5	0	1	CIRCULAR	0.02449	HDPE	0.51	0.03	0.79	0.05	1.24	0.08
ST-MAI-394	1.5	0	1	CIRCULAR	0.01638	HDPE	0.41	0.03	0.63	0.05	0.92	0.07
ST-MAI-395	2	0	1	CIRCULAR	0.02458	ABS	14.1	0.4	25.27	0.71	43.32	1.22
ST-MAI-396	1.25	0	1	CIRCULAR	0.01862	HDPE	4.94	0.56	9.1	1.03	15.78	1.79
ST-MAI-397	1.5	0	1	CIRCULAR	0.01962	HDPE	1.08	0.07	1.71	0.12	2.67	0.18
ST-MAI-398	1.5	0	1	CIRCULAR	0.01614	HDPE	0.19	0.01	0.29	0.02	0.45	0.03
ST-MAI-399	1.5	0	1	CIRCULAR	0.03746	HDPE	0.54	0.03	0.82	0.04	1.26	0.06
ST-MAI-4	2	0	1	CIRCULAR	0.13082	HDPE	4.52	0.06	7.69	0.09	11.79	0.14
ST-MAI-40	1.5	3	1	PARABOLIC	0.0177	CONC	0.83	0.02	1.91	0.05	3.87	0.11
ST-MAI-400	1.5	0	1	CIRCULAR	0.01652	HDPE	1.57	0.12	2.56	0.19	4.05	0.3
ST-MAI-401	1.5	0	1	CIRCULAR	0.03322	HDPE	2.05	0.11	3.3	0.17	5.19	0.27
ST-MAI-402	1.5	0	1	CIRCULAR	0.01452	HDPE	1.03	0.08	1.59	0.13	2.47	0.19
ST-MAI-403	1.5	0	1	CIRCULAR	0.02852	HDPE	1.28	0.07	2	0.11	3.1	0.17
ST-MAI-404	1.5	0	1	CIRCULAR	0.04167	HDPE	4.25	0.2	6.74	0.31	10.55	0.49
ST-MAI-405	1	0	1	CIRCULAR	0.08783	CMP	0.66	0.12	1.05	0.18	1.66	0.29
ST-MAI-406	1.5	0	1	CIRCULAR	0.00621	HDPE	2.45	0.3	3.89	0.47	6.12	0.74
ST-MAI-407	1.5	0	1	CIRCULAR	0.02495	HDPE	3.52	0.21	5.62	0.34	8.82	0.53
ST-MAI-408	1.5	0	1	CIRCULAR	0.06935	HDPE	1.18	0.04	1.84	0.07	2.87	0.1
ST-MAI-409	2	0	1	CIRCULAR	0.10685	HDPE	4.79	0.06	7.61	0.1	11.92	0.16
ST-MAI-410	1.5	0	1	CIRCULAR	0.0196	RCP	7.02	0.48	12.36	0.84	12.33	0.84
ST-MAI-411	1.5	0	1	CIRCULAR	0.00366	RCP	8.89	1.4	15.35	2.42	17.54	2.76
ST-MAI-412	1	3	1	PARABOLIC	0.10962	Concrete	0	0	0	0	0	0
ST-MAI-413	1	3	1	PARABOLIC	0.05945	Concrete	0	0	0	0	0	0
ST-MAI-414	1	3	1	PARABOLIC	0.02626	Concrete	1.35	0.08	2.7	0.16	4.63	0.28
ST-MAI-415	1	3	1	PARABOLIC	0.14246	Concrete	1.97	0.05	3.52	0.09	5.79	0.15
ST-MAI-416	1	3	1	PARABOLIC	0.08587	Concrete	1.37	0.05	2.6	0.09	4.5	0.15
ST-MAI-417	1	3	1	PARABOLIC	0.16413	Concrete	0	0	0	0	0	0
ST-MAI-418	1	3	1	PARABOLIC	0.12316	Concrete	0	0	0	0	0	0
ST-MAI-419	1.5	0	1	CIRCULAR	0.01258	RCP	7.55	0.64	15.45	1.31	26.53	2.25
ST-MAI-41a	2.5	0	1	CIRCULAR	0.01599	RCP	54.16	1.04	57.82	1.11	57.33	1.11
ST-MAI-41b	2.5	0	1	CIRCULAR	0.03635	RCP	52.53	0.67	71.77	0.92	72.92	0.93
ST-MAI-42	2.5	0	1	CIRCULAR	0.02199	RCP	48.18	0.79	55.85	0.92	53.04	0.87
ST-MAI-420	1	3	1	PARABOLIC	0.09872	Concrete	0	0	0	0	0	0
ST-MAI-421	1	3	1	PARABOLIC	0.00505	Concrete	1.81	0.25	3.38	0.46	5.67	0.77
ST-MAI-422	1.5	0	1	CIRCULAR	0.00934	RCP	3.22	0.32	5.82	0.57	10.35	1.02
ST-MAI-423	3	0	1	CIRCULAR	0.00838	RCP	5.51	0.09	9.88	0.16	17.41	0.29
ST-MAI-424	2	0	1	CIRCULAR	0.06925	RCP	3.88	0.07	7.16	0.12	11.9	0.2
ST-MAI-425	2.5	0	1	CIRCULAR	0.05923	RCP	10.94	0.11	20.02	0.2	33.95	0.34
ST-MAI-426	3	0	1	CIRCULAR	0.03148	RCP	16.95	0.14	30.69	0.26	53.09	0.45
ST-MAI-427	3	0	1	CIRCULAR	0.06807	RCP	11.41	0.07	21.68	0.12	35.91	0.21

Existing Condition Storm Conveyance Results Summary Table

Existing Condition Storm Conveyance Results Summary Table												
Conveyance Info	Dimensions						2-year		10-year		100-year	
Facility ID	D' or H' (diameter) or (height)	B' (width)	Barrels	Shape	Slope (ft/ft)	Material	Q _{con} (2-year) (cfs)	Qcon vs Qcap	Q _{con} (10-year) (cfs)	Qcon vs Qcap3	Q _{con} (100-year) (cfs)	Qcon vs Qcap7
ST-MAI-428	1.5	0	1	CIRCULAR	0.06224	RCP	1.15	0.04	2.11	0.08	3.58	0.14
ST-MAI-429	4	0	1	CIRCULAR	0.01105	RCP	28.35	0.19	52.51	0.35	91.23	0.6
ST-MAI-430	1.5	0	1	CIRCULAR	0.07414	RCP	0.64	0.02	1.14	0.04	1.87	0.07
ST-MAI-431	4	0	1	CIRCULAR	0.03938	RCP	27.58	0.1	51.13	0.18	89.06	0.31
ST-MAI-432	2.5	0	1	CIRCULAR	0.02111	CMP	16.86	0.52	28.34	0.88	41.77	1.29
ST-MAI-433	2.5	0	1	CIRCULAR	0.05984	CMP	24.19	0.45	41.18	0.76	57.76	1.06
ST-MAI-434	1.5	0	1	CIRCULAR	0.01887	CMP	5.24	0.67	9.5	1.22	16.34	2.09
ST-MAI-437	2	0	1	CIRCULAR	0.04587	RCB	20.31	0.42	36.88	0.76	57.16	1.18
ST-MAI-438	1.5	0	1	CIRCULAR	0.02502	CMP	12.5	1.39	18.7	2.08	19.58	2.18
ST-MAI-439	1.5	0	1	CIRCULAR	0.02587	CMP	11.15	1.22	16.21	1.77	16.45	1.8
ST-MAI-44	3	0	1	CIRCULAR	0.05871	CMP	37.3	0.43	66.52	0.76	67.84	0.77
ST-MAI-440	1.5	0	1	CIRCULAR	0.02778	CMP	2.8	0.3	8.16	0.86	16.81	1.77
ST-MAI-441	0.83	0	1	CIRCULAR	0.00906	HDPE	4.39	2.13	4.47	2.16	4.52	2.19
ST-MAI-442	1.5	0	1	CIRCULAR	0.12358	ABS	4.19	0.11	8.48	0.23	17.59	0.48
ST-MAI-443	3	0	1	CIRCULAR	0.0162	RCP	65.94	0.78	117.55	1.38	121.4	1.43
ST-MAI-444	2	0	1	CIRCULAR	0.07062	CMP	0.76	0.02	1.32	0.04	44.96	1.38
ST-MAI-445	4	0	1	CIRCULAR	0.01712	RCP	72.36	0.38	128.25	0.68	187.21	1
ST-MAI-446	4	0	1	CIRCULAR	0.03356	RCP	56.16	0.21	104.15	0.4	174.88	0.66
ST-MAI-447	4	0	1	CIRCULAR	0.00678	RCP	56.23	0.48	104.3	0.88	170.28	1.44
ST-MAI-448	4	0	1	CIRCULAR	0.0181	RCP	54.24	0.28	99.92	0.52	167.17	0.87
ST-MAI-449	1	0	1	CIRCULAR	0.05178	RCP	3.73	0.46	6.69	0.83	10.15	1.25
ST-MAI-452	3	0	1	CIRCULAR	0.03747	RCP	25.2	0.2	44.52	0.34	81.02	0.63
ST-MAI-453	1.5	0	1	CIRCULAR	0.0509	CMP	5.4	0.42	10.37	0.81	18.44	1.44
ST-MAI-454	3	0	1	CIRCULAR	0.09784	CMP	10.57	0.09	19.17	0.17	34.9	0.31
ST-MAI-455	6	0	1	CIRCULAR	0.03933	RCP	25.18	0.03	44.73	0.05	81.42	0.1
ST-MAI-456	1.5	0	1	CIRCULAR	0.01682	ABS	2.78	0.2	4.75	0.35	7.91	0.58
ST-MAI-457	1.5	0	1	CIRCULAR	0.2452	ABS	2.77	0.05	4.74	0.09	7.89	0.15
ST-MAI-458	1.5	0	1	CIRCULAR	0.02226	ABS	5.64	0.36	9.75	0.62	16.34	1.04
ST-MAI-459	1.5	0	1	CIRCULAR	0.06198	ABS	5.63	0.22	9.73	0.37	16.33	0.62
ST-MAI-46	1.5	0	1	CIRCULAR	0.00607	ABS	4.86	0.59	9.31	1.14	14.43	1.76
ST-MAI-461	6	0	1	CIRCULAR	0.01527	RCP	25.28	0.05	78.06	0.15	197.89	0.38
ST-MAI-462	3	0	1	CIRCULAR	0.06046	RCP	19.37	0.12	34.35	0.21	60.54	0.37
ST-MAI-463	3	0	1	CIRCULAR	0.0082	RCP	19.39	0.32	34.32	0.57	60.39	1
ST-MAI-464	3	0	1	CIRCULAR	0.10425	RCP	11.44	0.05	20.74	0.1	37.11	0.17
ST-MAI-467	1.5	0	1	CIRCULAR	0.00806	CMP	6.55	1.28	9.47	1.85	13.38	2.62
ST-MAI-468	1	3	1	PARABOLIC	0.02293	Concrete	0.11	0.01	0.17	0.01	0.28	0.02
ST-MAI-469	1	3	1	PARABOLIC	0.07433	Concrete	0.19	0.01	0.31	0.01	0.5	0.02
ST-MAI-47	2	0	1	CIRCULAR	0.01033	CMP	10.59	0.85	15.9	1.28	17.15	1.38
ST-MAI-470	1	3	1	PARABOLIC	0.07132	Concrete	0.16	0.01	0.24	0.01	0.37	0.01
ST-MAI-471	1.5	0	1	CIRCULAR	0.02264	RCP	1.34	0.09	2.45	0.16	4.03	0.25
ST-MAI-472	2	0	1	CIRCULAR	0.00901	RCP	9.61	0.45	17.25	0.8	25.43	1.18
ST-MAI-473	2	0	1	CIRCULAR	0.03829	RCP	17.2	0.39	31.14	0.7	47.57	1.07
ST-MAI-474	2	0	1	CIRCULAR	0.04249	RCP	17.19	0.37	31.11	0.67	44.34	0.95
ST-MAI-475	2	0	1	CIRCULAR	0.00322	RCP	8.83	0.69	16.18	1.26	27.69	2.16
ST-MAI-477	1	3	1	PARABOLIC	0.02076	Concrete	0.11	0.01	0.2	0.01	0.32	0.02
ST-MAI-478	1	3	1	PARABOLIC	0.00495	Earthen	0.73	0.32	1.4	0.61	2.09	0.91
ST-MAI-479	1	3	1	PARABOLIC	0.18781	Concrete	0.09	0	0.15	0	0.24	0.01
ST-MAI-48	2	0	1	CIRCULAR	0.01891	CMP	9.35	0.55	15.07	0.89	17.9	1.06
ST-MAI-480	1	3	1	PARABOLIC	0.03288	Concrete	0.18	0.01	0.31	0.02	0.49	0.03
ST-MAI-481	2	0	1	CIRCULAR	0.21715	Concrete	2.97	0.04	5.38	0.07	9.21	0.13
ST-MAI-482	1	3	1	PARABOLIC	0.23712	Concrete	0	0	0	0	0	0
ST-MAI-483	1.5	0	1	CIRCULAR	0.00435	ABS	7.03	1.02	12.4	1.79	13.15	1.9
ST-MAI-484	0.5	0	1	CIRCULAR	0.05823	ABS	0	0	0	0	0	0
ST-MAI-485	0.5	0	1	CIRCULAR	0.01097	ABS	0.02	0.04	0.04	0.07	0.06	0.1
ST-MAI-486	1	3	1	PARABOLIC	0.03529	Concrete	0.07	0	0.11	0.01	0.18	0.01
ST-MAI-487	1.5	0	1	CIRCULAR	0.03299	RCP	1.27	0.07	2.31	0.12	3.84	0.2

Existing Condition Storm Conveyance Results Summary Table

Existing Condition Storm Conveyance Results Summary Table												
Conveyance Info	Dimensions						2-year		10-year		100-year	
Facility ID	D' or H' (diameter) or (height)	B' (width)	Barrels	Shape	Slope (ft/ft)	Material	Q _{con} (2-year) (cfs)	Qcon vs Qcap	Q _{con} (10-year) (cfs)	Qcon vs Qcap3	Q _{con} (100-year) (cfs)	Qcon vs Qcap7
ST-MAI-488	1.5	0	1	CIRCULAR	0.0967	RCP	1.36	0.04	2.55	0.08	4.32	0.13
ST-MAI-489	1.5	0	1	CIRCULAR	0.04935	ABS	2.18	0.09	3.98	0.17	6.6	0.28
ST-MAI-49	3	0	1	CIRCULAR	0.01085	CMP	19.28	0.51	22.16	0.59	22.44	0.6
ST-MAI-490	1	3	1	PARABOLIC	0.10272	Concrete	0.7	0.02	1.21	0.04	1.95	0.06
ST-MAI-491	1.5	0	1	CIRCULAR	0.0152	RCP	0.84	0.06	1.53	0.12	2.5	0.19
ST-MAI-492	1	3	1	PARABOLIC	0.31425	Concrete	0.08	0	0.12	0	0.18	0
ST-MAI-493	1	3	1	PARABOLIC	0.16378	Concrete	0.53	0.01	1.06	0.03	1.78	0.04
ST-MAI-494	1	3	1	PARABOLIC	0.04039	Concrete	0.23	0.01	0.45	0.02	0.75	0.04
ST-MAI-497	1.5	0	1	CIRCULAR	0.0219	CMP	4.46	0.53	7.87	0.93	7.47	0.89
ST-MAI-498	1.5	0	1	CIRCULAR	0.01514	CMP	5.57	0.8	8.06	1.15	7.12	1.02
ST-MAI-499	1.25	0	1	CIRCULAR	0.01978	CMP	4.31	0.88	5.24	1.06	5.41	1.1
ST-MAI-5	1.5	0	1	CIRCULAR	0.00456	HDPE	4.05	0.57	6.91	0.97	10.37	1.46
ST-MAI-50	3	0	1	CIRCULAR	0.03154	CONC	26.6	0.22	44.87	0.38	74.28	0.63
ST-MAI-501	1.5	0	1	CIRCULAR	0.10703	RCP	2.92	0.08	6.28	0.18	13.01	0.38
ST-MAI-502	4	0	1	CIRCULAR	0.00646	RCP	37.67	0.33	69.77	0.6	121.62	1.05
ST-MAI-503	4	0	1	CIRCULAR	0.00902	RCP	50.3	0.37	92.66	0.68	155.47	1.14
ST-MAI-504	4	0	1	CIRCULAR	0.0122	RCP	51.22	0.32	94.15	0.59	157.26	0.99
ST-MAI-505	4	0	1	CIRCULAR	0.00327	RCP	18.78	0.23	32.39	0.39	60.19	0.73
ST-MAI-506	2.25	0	1	CIRCULAR	0.0409	ABS	3.16	0.05	6.13	0.1	11.41	0.18
ST-MAI-507	2	0	1	CIRCULAR	0.02557	ABS	1.34	0.04	2.32	0.06	3.86	0.11
ST-MAI-508	2	0	1	CIRCULAR	0.01378	ABS	1.3	0.05	2.26	0.09	3.77	0.14
ST-MAI-509	1.5	0	1	CIRCULAR	0.15746	CMP	1.36	0.06	2.37	0.1	3.9	0.17
ST-MAI-51	3.5	0	1	CIRCULAR	0.06161	CMP	24.1	0.18	32.96	0.24	41.63	0.31
ST-MAI-511	1	3	1	PARABOLIC	0.01145	CONC	2.34	0.15	3.35	0.21	5.27	0.33
ST-MAI-512	1.5	0	1	CIRCULAR	0.00884	CMP	2.31	0.43	4.13	0.77	6.57	1.23
ST-MAI-513	0.92	2.67	1	RECT_CLOSED	0.00802	RCB	2.54	0.21	4.58	0.37	7.24	0.59
ST-MAI-515	1.5	0	1	CIRCULAR	0.00666	CMP	10.89	2.34	12.25	2.64	11.59	2.5
ST-MAI-516	1	1.5	1	PARABOLIC	0.03101	CONC	10.99	1.04	12.15	1.15	13.42	1.27
ST-MAI-519	1.5	0	1	CIRCULAR	0.07756	RCP	7.03	0.24	7.39	0.25	7.59	0.26
ST-MAI-52	3	0	1	CIRCULAR	0.05399	SP	16.85	0.2	30.06	0.36	36.11	0.43
ST-MAI-520	1	3	1	PARABOLIC	0.02734	CONC	0.55	0.02	0.99	0.04	1.6	0.06
ST-MAI-521	0.33	0	1	CIRCULAR	0.13726	HDPE	0.7	1.02	0.67	0.98	0.67	0.98
ST-MAI-522	2	0	1	CIRCULAR	0.00492	RCP	15.99	1.01	17.46	1.1	15.64	0.99
ST-MAI-523	3	0	1	CIRCULAR	0.01641	RCP	28.47	0.33	43.75	0.51	43.82	0.51
ST-MAI-524	3	0	1	CIRCULAR	0.00819	RCP	69.89	1.16	79.64	1.32	81.72	1.35
ST-MAI-525	3	0	1	CIRCULAR	0.03748	RCP	67.87	0.53	79.49	0.62	81.39	0.63
ST-MAI-526	3.5	0	1	CIRCULAR	0.00833	RCP	75.13	0.82	79.51	0.87	77.57	0.84
ST-MAI-527	2	0	1	CIRCULAR	0.00403	RCP	19	1.32	20.81	1.45	18.66	1.3
ST-MAI-528	3	0	1	CIRCULAR	0.02132	RCP	4.78	0.05	8.57	0.09	15.21	0.16
ST-MAI-529	3	0	1	CIRCULAR	0.05786	RCP	18.07	0.11	32.36	0.2	57.54	0.36
ST-MAI-53	1.5	0	1	CIRCULAR	0.09632	RCP	8.01	0.25	13.75	0.42	21.16	0.65
ST-MAI-530	3	0	1	CIRCULAR	0.03919	RCP	17.99	0.14	32.23	0.24	57.63	0.44
ST-MAI-531	3	0	1	CIRCULAR	0.01655	RCP	17.86	0.21	31.66	0.37	57.12	0.67
ST-MAI-533	3	0	1	CIRCULAR	0.03188	RCP	25.27	0.21	42.77	0.36	77.88	0.65
ST-MAI-534	3	0	1	CIRCULAR	0.00483	RCP	24.41	0.53	42.48	0.92	93.51	2.02
ST-MAI-535	3	0	1	CIRCULAR	0.01531	RCP	13.83	0.17	22.83	0.28	38.42	0.47
ST-MAI-536	3	0	1	CIRCULAR	0.07015	RCP	13.13	0.07	23.55	0.13	41.95	0.24
ST-MAI-538	1	5.5	1	PARABOLIC	0.01489	ASPHALT	0.21	0.01	0.34	0.01	0.53	0.02
ST-MAI-539	1.5	0	1	CIRCULAR	0.01333	CMP	11.39	1.73	11.39	1.73	11.41	1.74
ST-MAI-540	1.5	0	1	CIRCULAR	0.05245	CMP	12.3	0.94	12.72	0.98	12.84	0.99
ST-MAI-541	1.5	0	1	CIRCULAR	0.02697	HDPE	9.49	0.55	9.65	0.56	9.81	0.57
ST-MAI-542	1.5	0	1	CIRCULAR	0.01712	HDPE	16.25	1.18	16.58	1.21	16.68	1.21
ST-MAI-543	1	0	1	CIRCULAR	0.00358	ABS	4.5	2.11	4.49	2.11	4.49	2.1
ST-MAI-544	1.5	0	1	CIRCULAR	0.00366	CMP	9.36	2.72	9.38	2.73	9.4	2.73
ST-MAI-548	1.5	0	1	CIRCULAR	0.04081	RCP	5.22	0.25	7.1	0.33	19.12	0.9
ST-MAI-549	1.5	0	1	CIRCULAR	0.01746	RCP	5.99	0.43	8.82	0.64	14.27	1.03

Existing Condition Storm Conveyance Results Summary Table

Existing Condition Storm Conveyance Results Summary Table												
Conveyance Info	Dimensions						2-year		10-year		100-year	
Facility ID	D' or H' (diameter) or (height)	B' (width)	Barrels	Shape	Slope (ft/ft)	Material	Q _{con} (2-year) (cfs)	Qcon vs Qcap	Q _{con} (10-year) (cfs)	Qcon vs Qcap3	Q _{con} (100-year) (cfs)	Qcon vs Qcap7
ST-MAI-54a	1.5	0	1	CIRCULAR	0.04267	RCP	7	0.32	6.37	0.29	11.88	0.55
ST-MAI-54b	1.5	0	1	CIRCULAR	0.36144	RCP	2.4	0.04	3.72	0.06	5.53	0.09
ST-MAI-55	0	0	1	IRREGULAR	0.01301	CONC	305.17	0.11	535.07	0.19	1051.18	0.37
ST-MAI-550	1.5	0	1	CIRCULAR	0.02067	RCP	7.37	0.49	10.71	0.71	14.65	0.97
ST-MAI-551	1.5	0	1	CIRCULAR	0.01369	RCP	10.78	0.88	15.98	1.3	16.51	1.34
ST-MAI-552	2	0	1	CIRCULAR	0.00701	CMP	10.63	1.04	15.22	1.48	15.57	1.52
ST-MAI-553	1.5	0	1	CIRCULAR	0.0427	HDPE	2.14	0.1	2.9	0.13	3.65	0.17
ST-MAI-554	1.5	0	1	CIRCULAR	0.02612	CMP	8.83	0.96	8.95	0.97	8.98	0.98
ST-MAI-556	0	0	1	IRREGULAR	0.01988	EAR	7.24	0	11.9	0	19.94	0
ST-MAI-557	1	3	1	PARABOLIC	0.02879	EAR	0	0	0	0	0	0
ST-MAI-559	1	3	1	PARABOLIC	0.15859	Concrete	0.12	0	0.22	0.01	0.35	0.01
ST-MAI-56	3.5	0	1	CIRCULAR	0.00199	RCP	36.41	0.81	53.07	1.18	59.05	1.32
ST-MAI-560	4	5	1	HORIZ_ELLIPSE	0.00131	CMP	144.75	2.78	153.3	2.94	157.39	3.02
ST-MAI-561	3	5	1	HORIZ_ELLIPSE	0.00422	CMP	143.58	3.31	151.95	3.5	154.32	3.55
ST-MAI-562	4	5	1	HORIZ_ELLIPSE	0.13693	CMP	143.73	0.27	152.12	0.29	154.65	0.29
ST-MAI-563	3	5	1	CIRCULAR	0.05677	CMP	92.93	1.08	92.05	1.07	90.8	1.05
ST-MAI-564	3	0	1	CIRCULAR	0.00352	CMP	45.28	2.11	44.36	2.07	43.68	2.04
ST-MAI-565	3	0	1	CIRCULAR	0.01661	CMP	41.04	0.88	40.85	0.88	40.35	0.87
ST-MAI-566	2	0	1	CIRCULAR	0.02256	CMP	14.34	0.78	16.04	0.87	17	0.92
ST-MAI-567	2	0	1	CIRCULAR	0.04862	PVC	6.38	0.13	11.31	0.23	18.97	0.38
ST-MAI-568	1.5	0	1	CIRCULAR	0.00483	CMP	0.63	0.16	1.06	0.27	1.68	0.42
ST-MAI-569	1.5	0	1	CIRCULAR	0.07683	RCP	3.12	0.11	5.2	0.18	8.24	0.28
ST-MAI-57	4	0	1	CIRCULAR	0.00776	CMP	88.43	1.29	89.38	1.3	90.11	1.31
ST-MAI-570	1.5	0	1	CIRCULAR	0.3513	RCP	3.41	0.05	5.67	0.09	8.99	0.14
ST-MAI-571	2	0	1	CIRCULAR	0.01352	RCP	40.73	1.55	43.77	1.66	46.63	1.77
ST-MAI-572	3	5	1	RECT_CLOSED	0.01171	CMP	79.27	0.82	79.24	0.82	74.84	0.78
ST-MAI-573	2	6	1	RECT_CLOSED	0.02261	RCB	79.26	0.47	79.24	0.47	74.85	0.44
ST-MAI-574	0.5	0	1	CIRCULAR	0.01132	PVC	1.54	2.59	1.51	2.53	1.48	2.47
ST-MAI-575	3	0	1	CIRCULAR	0.02844	RCP	56.59	0.5	83.12	0.74	101.81	0.91
ST-MAI-576	1.5	0	1	CIRCULAR	0.01439	CMP	0.04	0.01	3.31	0.49	8.17	1.2
ST-MAI-577	1.5	0	1	CIRCULAR	0.04342	CMP	11.1	0.94	11.59	0.98	10.68	0.9
ST-MAI-578	2.75	0	1	CIRCULAR	0.01865	RCP	45.27	0.63	55.51	0.77	55.76	0.77
ST-MAI-579	1.5	0	1	CIRCULAR	0.10633	CMP	0	0	0	0	0	0
ST-MAI-58	4	0	1	CIRCULAR	0.00575	RCP	60.82	0.56	80.17	0.74	94.78	0.87
ST-MAI-580	1.5	0	1	CIRCULAR	0.01936	CMP	4.69	0.59	7.89	1	11.57	1.46
ST-MAI-581	1.5	0	1	CIRCULAR	0.06851	CMP	6.4	0.43	10.68	0.72	15.89	1.07
ST-MAI-583	0.67	0	1	CIRCULAR	0.03324	ABS	0	0	0	0	0	0
ST-MAI-587	2	0	1	CIRCULAR	0.00743	RCP	14.67	0.75	26.9	1.38	43.79	2.25
ST-MAI-588	1.5	0	1	CIRCULAR	-0.02002	RCP	0.17	0.01	2.66	0.18	5.9	0.4
ST-MAI-589	1.25	0	1	CIRCULAR	0	SP	9.02	27.24	9.14	27.61	9	27.19
ST-MAI-59	2.5	0	1	CIRCULAR	0.02058	RCP	7.9	0.13	14.48	0.25	25.6	0.44
ST-MAI-590	1.75	0	1	CIRCULAR	0.00752	SP	10.51	1.41	10.97	1.47	10.98	1.48
ST-MAI-591	2	0	1	CIRCULAR	0.0369	HDPE	17.92	0.41	30.52	0.7	32.8	0.75
ST-MAI-592	2	0	1	CIRCULAR	0.01465	HDPE	17.6	0.64	29.64	1.08	31.78	1.16
ST-MAI-593	1	0	1	CIRCULAR	0.07241	HDPE	0.63	0.07	1.06	0.11	1.78	0.19
ST-MAI-594	2	0	1	CIRCULAR	0.0205	RCP	17.01	0.53	29.37	0.91	32.56	1.01
ST-MAI-595	2	0	1	CIRCULAR	0.02143	RCP	9.42	0.28	15.73	0.47	22.8	0.69
ST-MAI-596	1	0	1	CIRCULAR	0.01468	RCP	5.26	1.22	6.96	1.61	7.07	1.64
ST-MAI-597	1	0	1	CIRCULAR	0.0449	ABS	0.86	0.11	1.31	0.17	2.09	0.28
ST-MAI-598	1.5	0	1	CIRCULAR	0.01632	RCP	8.67	0.65	14.51	1.08	21.1	1.57
ST-MAI-599	1.5	0	1	CIRCULAR	0.00337	RCP	2.5	0.41	4.37	0.72	7.08	1.16
ST-MAI-6	1.5	0	1	CIRCULAR	0.19239	HDPE	0.62	0.01	0.96	0.02	1.47	0.03
ST-MAI-60	2	0	1	CIRCULAR	0.01358	CMP	5.58	0.39	6.46	0.45	6.3	0.44
ST-MAI-600	1.5	0	1	CIRCULAR	0.00462	RCP	2.77	0.39	4.81	0.67	7.74	1.08
ST-MAI-601	1.5	0	1	CIRCULAR	0.00992	RCP	2.7	0.26	4.83	0.46	7.63	0.73
ST-MAI-602	1.5	0	1	CIRCULAR	0.01926	RCP	2.76	0.19	4.95	0.34	7.63	0.52

Existing Condition Storm Conveyance Results Summary Table

Existing Condition Storm Conveyance Results Summary Table												
Conveyance Info	Dimensions						2-year		10-year		100-year	
Facility ID	D' or H' (diameter) or (height)	B' (width)	Barrels	Shape	Slope (ft/ft)	Material	Q _{con} (2-year) (cfs)	Qcon vs Qcap	Q _{con} (10-year) (cfs)	Qcon vs Qcap3	Q _{con} (100-year) (cfs)	Qcon vs Qcap7
ST-MAI-603	2	0	1	CIRCULAR	0.0127	RCP	11.49	0.45	20.21	0.79	30.42	1.19
ST-MAI-604	2	0	1	CIRCULAR	0.03828	RCP	9.98	0.23	17.98	0.41	29.45	0.67
ST-MAI-605	2.5	0	1	CIRCULAR	0.0025	RCP	0.47	0.02	0.96	0.05	1.35	0.07
ST-MAI-607	3.5	0	1	CIRCULAR	0.00103	CMP	8.92	0.51	10.12	0.58	11.32	0.65
ST-MAI-608	1.25	0	1	CIRCULAR	0.03355	SP	8.91	1.39	10.09	1.57	11.31	1.76
ST-MAI-609	2.5	0	1	CIRCULAR	0.01792	RCP	0	0	0.3	0.01	0.68	0.01
ST-MAI-61	1.5	0	1	CIRCULAR	0.03195	RCP	17.43	0.93	17.65	0.94	17.5	0.93
ST-MAI-610	2.5	0	1	CIRCULAR	0.03125	RCP	0	0	0	0	0	0
ST-MAI-611	2.5	0	1	CIRCULAR	0.00867	RCP	17.52	0.46	16.99	0.44	17.47	0.46
ST-MAI-612	2.5	0	1	CIRCULAR	0.11215	RCP	3.86	0.03	6.23	0.05	8.57	0.06
ST-MAI-613	1.5	0	1	CIRCULAR	0.03885	CMP	7.75	0.69	7.77	0.69	7.76	0.69
ST-MAI-614	2	0	1	CIRCULAR	0.00731	CMP	11.67	1.11	11.45	1.09	10.71	1.02
ST-MAI-615	2	0	1	CIRCULAR	0.00581	RCP	28.55	1.66	29.83	1.73	29.72	1.72
ST-MAI-620	1.5	0	1	CIRCULAR	0.01189	RCP	4.12	0.36	7.42	0.65	12.19	1.06
ST-MAI-621	1	0	1	CIRCULAR	0.01529	RCP	5.71	1.3	5.67	1.29	5.65	1.28
ST-MAI-622	1.5	0	1	CIRCULAR	0.02304	RCP	0.74	0.05	1.39	0.09	2.43	0.15
ST-MAI-623	1	0	1	CIRCULAR	0.03061	PVC	0.2	0.03	0.45	0.07	0.92	0.15
ST-MAI-624	1.5	0	1	CIRCULAR	0.01932	RCP	4.02	0.28	6.78	0.46	10.44	0.72
ST-MAI-626	1	0	1	CIRCULAR	0.01945	PVC	8.89	1.79	10.14	2.04	10.43	2.1
ST-MAI-627	1.5	0	1	CIRCULAR	0.00379	HDPE	0.87	0.13	1.56	0.24	2.65	0.41
ST-MAI-628	1.5	0	1	CIRCULAR	0.00328	RCP	9.65	1.6	11.56	1.92	12.9	2.15
ST-MAI-629	2	0	1	CIRCULAR	0.0285	RCB	16.97	0.44	29.82	0.78	53.5	1.4
ST-MAI-62a	2	0	1	CIRCULAR	0.02354	RCP	15.31	0.44	26	0.75	32.69	0.94
ST-MAI-62b	2	0	1	CIRCULAR	0.03063	RCP	17.21	0.43	29.43	0.74	35.05	0.89
ST-MAI-630	2.5	0	1	CIRCULAR	0.01699	CMP	17	0.59	29.86	1.03	53.49	1.85
ST-MAI-631	1.5	0	1	CIRCULAR	0.01088	ABS	21.8	1.99	22.04	2.01	22	2.01
ST-MAI-632	4	0	1	CIRCULAR	0.01269	RCP	96.76	0.6	124.05	0.77	137.57	0.85
ST-MAI-633	1.5	0	1	CIRCULAR	0.00444	CMP	2.04	0.54	3.55	0.94	5.75	1.52
ST-MAI-634	1.25	0	1	CIRCULAR	0.05891	ABS	4.21	0.27	7.33	0.47	11.97	0.76
ST-MAI-635	1.25	0	1	CIRCULAR	0.0115	ABS	5.05	0.73	8.96	1.29	13.61	1.96
ST-MAI-636	6	0	1	CIRCULAR	0.00803	RCP	130.3	0.34	221.71	0.58	366.55	0.97
ST-MAI-637	1.5	0	1	CIRCULAR	0.05139	RCP	1.51	0.06	2.9	0.12	14.2	0.6
ST-MAI-638	2.5	0	1	CIRCULAR	0.05264	RCP	3.14	0.03	7.68	0.08	31.52	0.33
ST-MAI-639	6	0	1	CIRCULAR	0.04159	RCP	2.81	0	4	0	19.18	0.02
ST-MAI-63a	2.5	0	1	CIRCULAR	0.05905	CONC	13.99	0.14	25.39	0.25	45.9	0.46
ST-MAI-63b	2.5	0	1	CIRCULAR	0.00317	CONC	14.54	0.63	27.79	1.2	50.77	2.2
ST-MAI-640	6	0	1	CIRCULAR	0.00316	RCP	133.07	0.56	241.23	1.01	368.49	1.55
ST-MAI-641	1.5	0	1	CIRCULAR	0.13892	RCP	8	0.2	14.2	0.36	27.54	0.7
ST-MAI-642	6	0	1	CIRCULAR	0.00623	RCP	134.21	0.4	228.89	0.68	363.87	1.09
ST-MAI-643	4.5	0	1	CIRCULAR	0.01699	RCP	138.99	0.54	235.29	0.92	297.18	1.16
ST-MAI-644	6	0	1	CIRCULAR	0.00709	RCB	138.89	0.39	235.3	0.66	355.79	1
ST-MAI-645	2.5	0	1	CIRCULAR	0.06048	CMP	15.34	0.28	31.92	0.58	34.35	0.63
ST-MAI-646	2.5	0	1	CIRCULAR	0.01602	CMP	15.89	0.57	32.2	1.15	35.48	1.26
ST-MAI-647	2	0	1	CIRCULAR	0.02815	RCP	17.16	0.45	33.07	0.87	37.99	1
ST-MAI-648	2	0	1	CIRCULAR	0.02162	CMP	18.9	1.05	18.79	1.04	18.89	1.05
ST-MAI-649	2	0	1	CIRCULAR	0.01984	RCP	26.99	0.85	33.47	1.05	33.8	1.06
ST-MAI-65	3	0	1	CIRCULAR	0.00573	RCP	55.63	1.1	83.12	1.65	101.53	2.01
ST-MAI-650	2	0	1	CIRCULAR	0.00814	CMP	17.09	1.55	17.15	1.55	17.15	1.55
ST-MAI-651	1.5	0	1	CIRCULAR	0.03267	CMP	17.16	1.67	17.14	1.67	17.15	1.67
ST-MAI-652	2.5	0	1	CIRCULAR	0.00291	RCP	20.97	0.95	21.06	0.95	19.95	0.9
ST-MAI-653	4.5	0	1	CIRCULAR	0.01999	RCP	119.95	0.43	146.23	0.53	154.9	0.56
ST-MAI-654	0	0	1	IRREGULAR	0.02502	EAR	124.17	0.01	142.63	0.01	164.61	0.01
ST-MAI-655	4.5	0	1	CIRCULAR	0.00112	RCP	101.09	1.54	133.59	2.03	172.71	2.62
ST-MAI-656	2.5	0	1	CIRCULAR	0.02275	RCP	119.98	1.94	146.48	2.37	155.34	2.51
ST-MAI-657	2	0	1	CIRCULAR	0.00637	CMP	5.14	0.53	17.71	1.81	19.58	2
ST-MAI-658	2	0	1	CIRCULAR	0.02738	RCP	23.52	0.63	37.01	0.99	39.13	1.05

Existing Condition Storm Conveyance Results Summary Table

Existing Condition Storm Conveyance Results Summary Table												
Conveyance Info	Dimensions						2-year		10-year		100-year	
Facility ID	D' or H' (diameter) or (height)	B' (width)	Barrels	Shape	Slope (ft/ft)	Material	Q _{con} (2-year) (cfs)	Qcon vs Qcap	Q _{con} (10-year) (cfs)	Qcon vs Qcap3	Q _{con} (100-year) (cfs)	Qcon vs Qcap7
ST-MAI-659	1	3	1	PARABOLIC	0.02251	ASPHALT	5.6	0.3	9.3	0.51	10.1	0.55
ST-MAI-66	2	0	1	CIRCULAR	0.02474	CMP	10.6	0.55	16.93	0.88	18.53	0.96
ST-MAI-663	1	0	1	CIRCULAR	0.06675	ABS	4.08	0.44	7.26	0.79	10.01	1.09
ST-MAI-664	2	0	1	CIRCULAR	0.01744	HDPE	14.38	0.48	24.16	0.81	26.52	0.89
ST-MAI-665	1.5	0	1	CIRCULAR	0.01806	HDPE	1.41	0.1	2.52	0.18	4.14	0.29
ST-MAI-666	1.5	0	1	CIRCULAR	0.03489	HDPE	1.4	0.07	2.5	0.13	4.11	0.21
ST-MAI-667	2	0	1	CIRCULAR	0.00705	HDPE	9.18	0.48	15.57	0.82	17.59	0.93
ST-MAI-668	1	0	1	CIRCULAR	0.1717	HDPE	1.22	0.08	2.12	0.14	4.29	0.29
ST-MAI-669	1	0	1	CIRCULAR	0.02095	HDPE	6.02	1.17	6.07	1.18	6.1	1.18
ST-MAI-67	1.75	0	1	CIRCULAR	0.09901	CMP	10.54	0.39	18.44	0.68	28.38	1.05
ST-MAI-670	1.5	0	1	CIRCULAR	0.01308	RCP	5.75	0.48	11.13	0.93	12.23	1.02
ST-MAI-671	1	0	1	CIRCULAR	0.05481	ABS	2.41	0.29	4.78	0.57	5.24	0.63
ST-MAI-672	1.5	0	1	CIRCULAR	0.01369	RCP	3.22	0.26	5.66	0.46	7.84	0.64
ST-MAI-673	1.5	0	1	CIRCULAR	0.01785	CMP	3.2	0.42	5.2	0.68	7.94	1.04
ST-MAI-674	2	0	1	CIRCULAR	0.02373	CMP	9.56	0.51	15.07	0.8	18.65	0.99
ST-MAI-675	1.5	0	1	CIRCULAR	0.02559	CMP	2.52	0.28	4.4	0.48	5.85	0.64
ST-MAI-676	2.5	0	1	CIRCULAR	0.02648	CMP	20.41	0.56	32.34	0.89	41.4	1.15
ST-MAI-677	2.5	0	1	CIRCULAR	0.03535	CMP	20.35	0.49	32.27	0.77	43.56	1.04
ST-MAI-678	2.5	0	1	CIRCULAR	0.00714	RCP	20.3	0.59	32.17	0.93	43.76	1.26
ST-MAI-679	2.5	0	1	CIRCULAR	0.00711	RCP	58.41	1.69	85.62	2.48	119.1	3.44
ST-MAI-680	3	0	1	CIRCULAR	0.08274	RCP	63.3	0.33	104.1	0.54	156.4	0.82
ST-MAI-681	1.5	0	1	CIRCULAR	0.00819	CMP	1.48	0.29	2.61	0.51	4.36	0.85
ST-MAI-682	1.5	0	1	CIRCULAR	0.00287	CMP	2.13	0.7	3.78	1.24	6.24	2.05
ST-MAI-683	1	3	1	RECT_CLOSED	-0.004	RCB	2.7	0.24	4.51	0.4	6.32	0.56
ST-MAI-686	1.5	0	1	CIRCULAR	0.03087	HDPE	3.72	0.2	6.14	0.33	7.22	0.39
ST-MAI-687	3.5	0	1	CIRCULAR	0.0312	CMP	0.06	0	0.09	0	0.14	0
ST-MAI-688	3.5	0	1	CIRCULAR	0.03948	CMP	11.4	0.11	20.36	0.19	35.16	0.32
ST-MAI-69	3	0	1	CIRCULAR	0.00689	CMP	29.56	0.99	29.63	0.99	29.68	0.99
ST-MAI-690	1.5	0	1	CIRCULAR	0.03258	RCP	3.39	0.18	6.56	0.35	10.46	0.55
ST-MAI-691	1	3	1	PARABOLIC	0.07889	Concrete	0.27	0.01	0.44	0.02	0.7	0.02
ST-MAI-693	1	3	1	PARABOLIC	0.05771	Concrete	0.05	0	0.1	0	0.19	0.01
ST-MAI-694	1	0	1	CIRCULAR	0.00581	ABS	0.58	0.21	0.86	0.32	1.96	0.72
ST-MAI-695	1	0	1	CIRCULAR	0.00402	ABS	3.28	1.45	4.92	2.18	5.11	2.26
ST-MAI-696	1	0	1	CIRCULAR	0.04015	ABS	5.02	0.7	4.75	0.67	4.54	0.64
ST-MAI-697	1.5	0	1	CIRCULAR	0.00851	RCP	7.64	0.79	9.25	0.95	10.09	1.04
ST-MAI-698	1	0	1	CIRCULAR	0.0111	HDPE	6.62	1.76	6.73	1.79	6.83	1.82
ST-MAI-700	1.5	0	1	CIRCULAR	0.01417	RCP	2.35	0.19	3.83	0.31	7.91	0.63
ST-MAI-701	1.5	0	1	CIRCULAR	0.05023	CMP	7.37	0.58	12.87	1.01	13	1.02
ST-MAI-702	1.5	0	1	CIRCULAR	0.01876	CMP	10.28	1.32	15.68	2.01	16.47	2.11
ST-MAI-704	0.67	0	1	CIRCULAR	0.01477	VCP	1.39	1.01	1.5	1.09	1.6	1.16
ST-MAI-705	2	4	1	RECT_OPEN	0.00572	Earthen	1.89	0.13	4.18	0.28	6.39	0.43
ST-MAI-707	1	0	1	CIRCULAR	0.01031	RCP	3.5	0.97	4.45	1.23	4.52	1.25
ST-MAI-708	1	0	1	CIRCULAR	0.01128	HDPE	4.58	1.21	4.62	1.22	4.67	1.23
ST-MAI-709	0	0	1	IRREGULAR	0.03569	EAR	0.19	0	0.19	0	0.2	0
ST-MAI-70a	3	0	1	CIRCULAR	0.0586	RCP	0.97	0.01	1.61	0.01	2.59	0.02
ST-MAI-71	1.5	0	1	CIRCULAR	0.08646	RCP	15.7	0.51	28.2	0.91	33.14	1.07
ST-MAI-710a	0	0	1	IRREGULAR	0.04673	EAR	8.59	0	15.14	0	26.9	0
ST-MAI-710b	0	0	1	IRREGULAR	0.05244	EAR	8.59	0	15.34	0	27	0
ST-MAI-710c	1	3	1	PARABOLIC	0.06452	CONC	0	0	0	0	0	0
ST-MAI-711	1	3	1	PARABOLIC	0.07107	CONC	0.21	0.01	0.35	0.01	0.56	0.01
ST-MAI-713	2	0	1	CIRCULAR	0.00692	RCP	10.37	0.55	16.54	0.88	18.93	1.01
ST-MAI-714	2	0	1	CIRCULAR	0.03404	CMP	18.56	0.82	24.31	1.08	24.34	1.08
ST-MAI-715	2	0	1	CIRCULAR	0.03487	CMP	20.87	0.91	25.85	1.13	26.27	1.15
ST-MAI-716	1	0	1	CIRCULAR	0.07551	ABS	1.58	0.16	2.82	0.29	4.68	0.48
ST-MAI-717	1.25	0	1	CIRCULAR	0.23812	CMP	0.48	0.03	0.81	0.05	1.28	0.08
ST-MAI-718a	4	0	1	CIRCULAR	0.01979	RCP	33.81	0.17	51.68	0.26	73.5	0.36

Existing Condition Storm Conveyance Results Summary Table

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Conveyance Info	Dimensions						2-year		10-year		100-year	
Facility ID	D' or H' (diameter) or (height)	B' (width)	Barrels	Shape	Slope (ft/ft)	Material	Q _{con} (2-year) (cfs)	Qcon vs Qcap	Q _{con} (10-year) (cfs)	Qcon vs Qcap3	Q _{con} (100-year) (cfs)	Qcon vs Qcap7
ST-MAI-718b	4	0	1	CIRCULAR	0.01982	RCP	33.82	0.17	51.53	0.25	73.21	0.36
ST-MAI-72	2	0	1	CIRCULAR	0.10128	CONC	4.13	0.06	6.81	0.09	11.02	0.15
ST-MAI-724	3	0	1	CIRCULAR	0.00692	RCP	15.28	0.28	27.54	0.5	46	0.83
ST-MAI-725	3	0	1	CIRCULAR	0.0085	RCP	15.27	0.25	27.45	0.45	45.99	0.75
ST-MAI-726	1.5	0	1	CIRCULAR	0.05279	RCP	1.59	0.07	2.84	0.12	4.76	0.2
ST-MAI-727	3	0	1	CIRCULAR	0.05562	RCP	17.35	0.11	31.42	0.2	52.95	0.34
ST-MAI-728	2.5	0	1	CIRCULAR	0.00673	RCP	21.26	0.63	39.23	1.17	64.7	1.92
ST-MAI-729	2.5	0	1	CIRCULAR	0.03092	RCP	23.44	0.32	43.24	0.6	68.63	0.95
ST-MAI-73	3.5	0	1	CIRCULAR	0.02696	RCP	23.36	0.14	41.44	0.25	55.44	0.34
ST-MAI-730	2.5	0	1	CIRCULAR	0.08306	RCP	28.68	0.24	52.95	0.45	80.24	0.68
ST-MAI-731	2.5	0	1	CIRCULAR	0.02342	RCP	33.05	0.53	60.31	0.96	85.88	1.37
ST-MAI-732	1	0	1	CIRCULAR	0.16796	CMP	0.12	0.01	0.18	0.02	0.28	0.04
ST-MAI-733	1.5	0	1	CIRCULAR	0.01787	RCP	9.33	0.66	16.34	1.16	16.34	1.16
ST-MAI-734	1	0	1	CIRCULAR	0.3433	RCP	0.28	0.01	0.45	0.02	0.71	0.03
ST-MAI-735	6	0	1	CIRCULAR	0.00529	RCP	116.94	0.38	138.67	0.45	159.23	0.52
ST-MAI-736	2.5	0	2	CIRCULAR	0.02311	RCP	130.17	1.04	130.21	1.04	130.39	1.05
ST-MAI-738	1.5	0	1	CIRCULAR	0.01451	CMP	14.32	2.09	14.31	2.09	14.33	2.09
ST-MAI-739	1.5	0	1	CIRCULAR	0.00414	CMP	16.94	4.62	17.02	4.65	16.99	4.64
ST-MAI-74	2.5	0	1	CIRCULAR	0.01415	RCP	53.23	1.09	81.36	1.67	92.36	1.89
ST-MAI-740	3.25	0	1	CIRCULAR	0.0385	RCP	29.87	0.18	54.51	0.34	60.66	0.37
ST-MAI-741	6	0	1	CIRCULAR	0.00408	RCP	115.61	0.43	311.67	1.15	344.74	1.27
ST-MAI-742	1	3	1	PARABOLIC	0.09321	EAR	0	0	0	0	0	0
ST-MAI-743	2.5	0	1	CIRCULAR	0.01089	RCP	54.18	1.27	55.97	1.31	57.54	1.34
ST-MAI-744	1.5	0	1	CIRCULAR	0.01124	CMP	2.99	0.5	4.33	0.72	2.7	0.45
ST-MAI-745	2	0	1	CIRCULAR	0.0107	CMP	8.72	0.69	10.35	0.82	7.8	0.62
ST-MAI-746	1.5	0	1	CIRCULAR	0.07895	CMP	2.53	0.16	4.5	0.28	7.46	0.47
ST-MAI-747a	4	0	1	CIRCULAR	0.01978	RCP	37.4	0.19	59.39	0.29	113.81	0.56
ST-MAI-747b	4	0	1	CIRCULAR	0.01978	RCP	37.49	0.19	58.9	0.29	85.61	0.42
ST-MAI-748	1	0	1	CIRCULAR	0.04044	HDPE	3.44	0.48	4.25	0.59	4.93	0.69
ST-MAI-75	0	0	1	IRREGULAR	0.01187	Earthen	537.3	0.08	884	0.14	1664.34	0.26
ST-MAI-750	4	0	1	CIRCULAR	0.01978	RCP	41.89	0.21	67.42	0.33	127.18	0.63
ST-MAI-753	4.5	0	1	CIRCULAR	0.01947	RCP	154.07	0.56	261.3	0.95	356.76	1.3
ST-MAI-755	4.5	0	1	CIRCULAR	0.02089	RCP	153.96	0.54	261.18	0.92	358.15	1.26
ST-MAI-756	2	0	1	CIRCULAR	0.03843	RCP	1.18	0.03	2.03	0.05	4.04	0.09
ST-MAI-757	6	0	1	CIRCULAR	0.00764	RCP	157.42	0.43	267.78	0.72	485.03	1.31
ST-MAI-758	1.5	0	1	CIRCULAR	0.04813	HDPE	7.19	0.31	15.25	0.66	22.11	0.96
ST-MAI-759	2	0	1	CIRCULAR	0.01396	HDPE	10.63	0.4	25.84	0.97	40.91	1.53
ST-MAI-76_1	0	0	1	IRREGULAR	0.01417	Earthen	551.4	0.37	911.75	0.61	1450.12	0.96
ST-MAI-76_3	0	0	1	IRREGULAR	0.01338	Earthen	537.86	0.37	896.82	0.61	1500.68	1.03
ST-MAI-76_4	0	0	1	IRREGULAR	-0.11433	Earthen	459.15	0.11	690.02	0.16	1043.23	0.24
ST-MAI-760	1	0	1	CIRCULAR	0.02166	CONC	3.29	0.63	5.16	0.98	4.74	0.9
ST-MAI-761	2	0	1	CIRCULAR	0.19098	HDPE	13.71	0.14	13.96	0.14	14.3	0.14
ST-MAI-762	1	0	1	CIRCULAR	0.00587	ABS	2.62	0.96	2.58	0.95	3.63	1.33
ST-MAI-763	1	0	1	CIRCULAR	0.0167	ABS	3.48	0.76	3.73	0.81	4.34	0.94
ST-MAI-764	1	0	1	CIRCULAR	0.00621	HDPE	1.27	0.45	2.24	0.8	3.45	1.23
ST-MAI-765	1	0	1	CIRCULAR	0.03881	HDPE	3.06	0.44	5.46	0.78	8.17	1.16
ST-MAI-766	0	0	1	IRREGULAR	0.00702	CONC	36.12	0	53.68	0	85.78	0
ST-MAI-767	0	0	1	IRREGULAR	0.01345	EAR	36.09	0	53.68	0	85.99	0.01
ST-MAI-768	0	0	1	IRREGULAR	0.00634	EAR	62.92	0.01	105.62	0.01	156.2	0.02
ST-MAI-771	1	3	1	PARABOLIC	0.01421	CONC	0.16	0.01	0.02	0	0.02	0
ST-MAI-772	1	0	1	CIRCULAR	0.0075	RCP	0.63	0.2	1.18	0.38	1.6	0.52
ST-MAI-773	1	0	1	CIRCULAR	0.00304	RCP	3.07	1.56	4.4	2.24	4.46	2.27
ST-MAI-774	2	6	1	TRIANGULAR	0.07367	CONC	1.11	0.01	1.93	0.01	3.14	0.02
ST-MAI-775	1.5	0	1	CIRCULAR	0.07777	CMP	6.57	0.41	13.01	0.82	18.87	1.19
ST-MAI-776	2.5	0	1	CIRCULAR	0.05451	RCP	28.81	0.3	42.52	0.44	57.63	0.6
ST-MAI-777	2.5	0	1	CIRCULAR	0.03714	RCP	29.83	0.38	45.01	0.57	59.92	0.76

Existing Condition Storm Conveyance Results Summary Table

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Facility ID	D' or H' (diameter) or (height)	B' (width)	Barrels	Shape	Slope (ft/ft)	Material	Q _{con} (2-year) (cfs)	Qcon vs Qcap	Q _{con} (10-year) (cfs)	Qcon vs Qcap3	Q _{con} (100-year) (cfs)	Qcon vs Qcap7
ST-MAI-779	1.5	0	1	CIRCULAR	0.01976	RCP	0.99	0.07	1.86	0.13	3.21	0.22
ST-MAI-77a	0	0	1	IRREGULAR	0.037	Earthen	542.83	0.05	909.66	0.08	1733.71	0.15
ST-MAI-77b	0	0	1	IRREGULAR	0.01391	Earthen	543.45	0.04	917.34	0.06	1772.89	0.12
ST-MAI-78	2.5	0	1	CIRCULAR	0.08056	CONC	3.92	0.03	12.38	0.11	28.8	0.25
ST-MAI-780	2.5	0	1	CIRCULAR	0.00486	RCP	30.89	1.08	47.21	1.65	57.66	2.02
ST-MAI-781	4	0	1	CIRCULAR	0.04831	RCP	45.39	0.14	68.32	0.22	98.41	0.31
ST-MAI-782	4	0	1	CIRCULAR	0.00818	RCP	29.64	0.23	44.16	0.34	59.88	0.46
ST-MAI-783	4.75	0	1	CIRCULAR	0.00854	CMP	209.63	1.84	235.02	2.07	252.74	2.22
ST-MAI-784	1.5	0	1	CIRCULAR	0.11696	CMP	24.36	1.25	24.47	1.26	24.43	1.26
ST-MAI-785	2	0	1	CIRCULAR	0.29333	CMP	4.17	0.06	15.71	0.24	35.13	0.53
ST-MAI-786	6.5	0	1	CIRCULAR	0.00849	RCP	175.39	0.36	320.5	0.66	466.53	0.97
ST-MAI-787	6	0	1	CIRCULAR	0.01041	CMP	61.41	0.26	124.82	0.53	255.95	1.09
ST-MAI-788	6	0	1	CIRCULAR	0.01564	CMP	61.18	0.21	124.47	0.43	254.05	0.89
ST-MAI-789	6.5	0	1	CIRCULAR	0.00271	RCP	66.77	0.24	132.98	0.49	267.53	0.98
ST-MAI-79	3	9	1	RECT_CLOSED	0.01748	RCB	133.53	0.3	244.76	0.55	384.82	0.87
ST-MAI-790	6.5	0	1	CIRCULAR	0.00716	RCP	65.37	0.15	133.67	0.3	267.64	0.6
ST-MAI-791	2	0	1	CIRCULAR	0.05349	CMP	0.42	0.01	0.56	0.02	1.32	0.05
ST-MAI-792	2	0	1	CIRCULAR	0.16129	CMP	1.05	0.02	1.59	0.03	2.93	0.06
ST-MAI-793	6.5	0	1	CIRCULAR	0.0284	RCP	175.48	0.2	320.25	0.36	482.25	0.55
ST-MAI-794	5	0	1	CIRCULAR	0.03687	CMP	190.43	0.7	218.69	0.81	236.02	0.87
ST-MAI-797	3	0	1	CIRCULAR	0.00343	RCP	31.98	0.82	33.2	0.85	32.38	0.83
ST-MAI-798	3.5	0	1	CIRCULAR	0.00206	RCP	22.4	0.49	29.44	0.65	37.46	0.82
ST-MAI-799	3	0	1	CIRCULAR	0.00338	RCP	18.67	0.48	20.78	0.54	24.73	0.64
ST-MAI-7a	2	0	1	CIRCULAR	0.013	HDPE	4.53	0.18	7.7	0.3	11.8	0.46
ST-MAI-7b	2	0	1	CIRCULAR	0.01304	HDPE	4.53	0.18	7.7	0.3	11.8	0.46
ST-MAI-8	2	0	1	CIRCULAR	0.04507	HDPE	4.51	0.09	7.68	0.16	12.7	0.26
ST-MAI-800	6.5	0	1	CIRCULAR	0.01265	RCP	240.96	0.41	454.16	0.77	724.63	1.23
ST-MAI-801	2	0	1	CIRCULAR	-0.00651	RCP	35.47	1.94	29	1.59	29.97	1.64
ST-MAI-802	3	0	1	CIRCULAR	0.0481	RCP	7.92	0.05	10.01	0.07	12.29	0.08
ST-MAI-804	1.5	0	1	CIRCULAR	0.00868	CMP	1.31	0.25	1.27	0.24	3.43	0.65
ST-MAI-805	3.5	0	1	CIRCULAR	-0.0007	RCP	22.18	0.84	28.87	1.09	36.1	1.36
ST-MAI-806	4	0	1	CIRCULAR	0.01482	RCP	63.35	0.36	106.49	0.61	177.08	1.01
ST-MAI-807	4	0	1	CIRCULAR	0.31215	RCP	63.34	0.08	106.49	0.13	182.25	0.23
ST-MAI-808	2	0	1	CIRCULAR	0.03407	HDPE	3.46	0.08	5.66	0.14	8.88	0.21
ST-MAI-809	2.5	0	1	CIRCULAR	0.05257	RCP	29.11	0.31	49.03	0.52	80.1	0.85
ST-MAI-80a_1	0	0	1	IRREGULAR	0.02049	Concrete	338.29	0.13	411.97	0.16	602.34	0.23
ST-MAI-80a_2	0	0	1	IRREGULAR	0.01427	Concrete	331.66	0.15	401.61	0.19	629.33	0.29
ST-MAI-80a_3	0	0	1	IRREGULAR	0.00495	Concrete	337.28	0.26	402.82	0.32	544.54	0.43
ST-MAI-80a_4	0	0	1	IRREGULAR	0.02722	Concrete	332.05	0.11	400.84	0.13	752.31	0.25
ST-MAI-80a_6	0	0	1	IRREGULAR	0.05109	Concrete	121.4	0.03	177.81	0.04	463.26	0.11
ST-MAI-80b	0	0	1	IRREGULAR	0.01883	Concrete	331.19	0.03	422.15	0.03	818.65	0.06
ST-MAI-81	3	0	1	CIRCULAR	0.07351	RCP	38.66	0.21	65.03	0.36	98.27	0.54
ST-MAI-810	3	0	1	CIRCULAR	0.01172	RCP	28.8	0.4	32.65	0.45	100.44	1.39
ST-MAI-811	3	0	1	CIRCULAR	0.0071	RCP	73.4	1.31	77.58	1.38	83.51	1.49
ST-MAI-812	3	0	1	CIRCULAR	0.01089	RCP	82.97	1.19	86.54	1.24	95.37	1.37
ST-MAI-813	3	10	1	RECT_CLOSED	0.00592	RCB	267.87	0.92	419.93	1.45	497.61	1.71
ST-MAI-814	4.5	10	1	RECT_OPEN	0.00368	Earthen	211.99	1.77	225.85	1.88	237.91	1.98
ST-MAI-816a_2	4	8	1	RECT_OPEN	0.03105	Earthen	0	0	0	0	84.2	0.08
ST-MAI-816a_3	4	8	1	RECT_OPEN	0.03038	Earthen	0	0	0	0	21.55	0.02
ST-MAI-816a_4	4	6	1	RECT_CLOSED	0.01022	Earthen	0	0	0	0	116.83	0.37
ST-MAI-817a	4.5	10	1	RECT_OPEN	0.00893	Concrete	179.78	0.3	243.19	0.41	350.59	0.59
ST-MAI-817b	3	10	1	RECT_CLOSED	0.02127	CONC	346.34	0.63	448.11	0.81	560.36	1.02
ST-MAI-817c	4.6	10	1	RECT_OPEN	0.00308	Concrete	319.87	0.89	418.32	1.17	536.05	1.5
ST-MAI-819	4.75	0	1	CIRCULAR	0.00941	CMP	112.27	0.94	119.67	1	122.04	1.02
ST-MAI-82	5	10	1	RECT_OPEN	0.00151	Concrete	296.13	1.06	366.31	1.31	471.04	1.68
ST-MAI-820	1.5	0	1	CIRCULAR	0.05896	CMP	13.96	1.01	14.1	1.02	14.09	1.02

Existing Condition Storm Conveyance Results Summary Table

Conveyance Info	Dimensions						2-year		10-year		100-year	
Facility ID	D' or H' (diameter) or (height)	B' (width)	Barrels	Shape	Slope (ft/ft)	Material	Q _{con} (2-year) (cfs)	Qcon vs Qcap	Q _{con} (10-year) (cfs)	Qcon vs Qcap3	Q _{con} (100-year) (cfs)	Qcon vs Qcap7
ST-MAI-821	1	0	1	CIRCULAR	0.01495	ABS	0.78	0.18	1.27	0.29	2.06	0.47
ST-MAI-822	4.75	0	1	CIRCULAR	0.00877	CMP	157.31	1.37	156.07	1.35	157.35	1.37
ST-MAI-823	4.75	0	1	CIRCULAR	0.01026	CMP	153.27	1.23	154.6	1.24	155.08	1.24
ST-MAI-824	5	0	1	CIRCULAR	0.03387	CMP	112.34	0.43	111.85	0.43	111.11	0.43
ST-MAI-825	2	0	1	CIRCULAR	0.0095	CMP	11.2	0.94	14.06	1.18	14.23	1.19
ST-MAI-826	1.5	0	1	CIRCULAR	0.01692	RCP	6.37	0.47	11.15	0.82	11.32	0.83
ST-MAI-827	1	0	1	CIRCULAR	0.05965	ABS	1.41	0.16	1.52	0.17	2.59	0.3
ST-MAI-828	2	0	1	CIRCULAR	0.00988	RCP	20.9	0.93	20.8	0.92	20.52	0.91
ST-MAI-829	1.5	0	1	CIRCULAR	0.04842	CMP	4.81	0.38	5.06	0.4	5.88	0.47
ST-MAI-83	3	8	1	RECT_OPEN	0.02254	RCB	229.01	0.39	437.81	0.74	515.65	0.87
ST-MAI-830	1.5	0	1	CIRCULAR	0.07663	CMP	12.7	0.81	12.53	0.8	12.5	0.79
ST-MAI-831	3	4.6	1	CIRCULAR	0.00429	CMP	34.05	1.44	33.66	1.42	33.91	1.43
ST-MAI-832	2	0	1	CIRCULAR	0.03133	CMP	18.79	0.87	18.68	0.86	16.85	0.78
ST-MAI-833	1.5	0	1	CIRCULAR	0.02019	CMP	7.95	0.98	8.54	1.06	8.39	1.04
ST-MAI-834	2.5	0	1	CIRCULAR	0.03182	CMP	11.98	0.3	21.77	0.55	39.46	1
ST-MAI-835	2.5	0	1	CIRCULAR	0.02222	CMP	15.32	0.46	27.41	0.83	33.54	1.01
ST-MAI-836	1.5	0	1	CIRCULAR	0.02762	CMP	11.97	1.27	11.68	1.23	11.22	1.19
ST-MAI-837	1.5	0	1	CIRCULAR	0.02196	CMP	9.98	1.18	12.76	1.51	12.65	1.5
ST-MAI-838	1.5	0	1	CIRCULAR	0.01657	CMP	4.51	0.62	7.59	1.04	7.72	1.05
ST-MAI-839	1	0	1	CIRCULAR	0.01262	HDPE	10.46	2.61	9.84	2.46	9.76	2.44
ST-MAI-84	1.5	0	1	CIRCULAR	0.08025	CMP	3.38	0.21	6.17	0.38	10.48	0.65
ST-MAI-840	3	0	1	CIRCULAR	0.02419	RCP	67.86	0.65	90.92	0.88	96.75	0.93
ST-MAI-841	3	0	1	CIRCULAR	0.05238	RCP	68.89	0.45	73.73	0.48	69.48	0.46
ST-MAI-842	4	0	1	CIRCULAR	0.00207	CMP	61.47	1.74	62.72	1.77	63.16	1.78
ST-MAI-843	1.25	0	1	CIRCULAR	0.10592	RCP	0.55	0.03	0.96	0.05	1.54	0.07
ST-MAI-844	4	0	1	CIRCULAR	0.01039	CMP	61.37	0.77	62.63	0.79	63.05	0.8
ST-MAI-845	2.5	0	1	CIRCULAR	0.00174	RCP	59.97	3.51	78.06	4.57	81.18	4.75
ST-MAI-846	2.5	0	1	CIRCULAR	0.02646	RCP	59.95	0.9	78.09	1.17	81.28	1.22
ST-MAI-847	3	0	1	CIRCULAR	0.03132	RCP	67.51	0.57	90.52	0.77	96.34	0.82
ST-MAI-848	3	0	1	CIRCULAR	0.04937	RCP	8.13	0.05	13.49	0.09	21.88	0.15
ST-MAI-849	1	0	1	CIRCULAR	0.07018	HDPE	0.96	0.1	1.52	0.16	2.36	0.25
ST-MAI-85	4.75	0	1	CIRCULAR	0.00966	CMP	152.19	1.26	153.67	1.27	154.18	1.27
ST-MAI-850	1	0	1	CIRCULAR	0.03732	HDPE	0.63	0.09	1.01	0.15	1.58	0.23
ST-MAI-851	3	0	1	CIRCULAR	0.00527	RCP	9.46	0.2	15.92	0.33	25.53	0.53
ST-MAI-852	5	0	1	CIRCULAR	0.01672	RCP	56.51	0.17	90.13	0.27	156.8	0.47
ST-MAI-853	3.5	0	1	CIRCULAR	0.55138	RCP	0.79	0	1.31	0	5.62	0.01
ST-MAI-854	5	0	1	CIRCULAR	0.02255	RCP	54.37	0.14	83.98	0.21	151.61	0.39
ST-MAI-855	2.5	0	1	CIRCULAR	0.05594	RCP	3.9	0.04	6.48	0.07	54.58	0.56
ST-MAI-857	2	0	1	CIRCULAR	0.07201	HDPE	3.66	0.06	6.11	0.1	9.8	0.16
ST-MAI-858	2	0	1	CIRCULAR	0.00685	RCP	6.4	0.34	20.98	1.12	36.74	1.96
ST-MAI-859	1	3	1	PARABOLIC	0.02976	Concrete	0	0	0	0	0	0
ST-MAI-86	2.75	0	1	CIRCULAR	0.02432	CMP	15.27	0.34	29.44	0.66	40.02	0.9
ST-MAI-862	1.5	0	1	CIRCULAR	0.0431	RCP	6.11	0.28	11.46	0.53	20.88	0.96
ST-MAI-864	1.5	0	1	CIRCULAR	0.16428	CMP	3.43	0.15	6.14	0.27	10.61	0.46
ST-MAI-865	1.5	0	1	CIRCULAR	0.00306	CMP	13.68	4.35	13.72	4.36	13.71	4.36
ST-MAI-866	1.5	0	1	CIRCULAR	0.05426	CMP	6.06	0.46	10.16	0.77	14.84	1.12
ST-MAI-867	1.5	0	1	CIRCULAR	0.05762	CMP	2.8	0.2	4.45	0.33	7	0.51
ST-MAI-868	1	0	1	CIRCULAR	0.0673	Concrete	0.7	0.11	1.2	0.19	1.92	0.3
ST-MAI-869	0.67	0	1	CIRCULAR	0.02563	CONC	1.39	0.71	1.5	0.76	1.6	0.81
ST-MAI-87	3.5	0	1	CIRCULAR	0.03621	RCP	76.42	0.4	86.08	0.45	95.91	0.5
ST-MAI-870	2	4	1	RECT_OPEN	0.00034	Earthen	2.11	0.58	4.14	1.14	6.28	1.73
ST-MAI-871	1	3	1	PARABOLIC	0.10057	CONC	0.12	0	0.16	0	0.2	0
ST-MAI-876	2	0	1	CIRCULAR	0.06139	RCP	10.01	0.18	18.3	0.33	31.74	0.57
ST-MAI-878	0.5	3	1	TRIANGULAR	0.02359	CONC	0.17	0.03	0.27	0.05	0.41	0.08
ST-MAI-879	2	0	1	CIRCULAR	0.1068	RCP	0.17	0	0.27	0	0.41	0.01
ST-MAI-88	3	0	1	CIRCULAR	0.01235	CONC	8.96	0.12	14.77	0.2	24.53	0.33

Existing Condition Storm Conveyance Results Summary Table

Existing Condition Storm Conveyance Results Summary Table												
Conveyance Info	Dimensions						2-year		10-year		100-year	
Facility ID	D' or H' (diameter) or (height)	B' (width)	Barrels	Shape	Slope (ft/ft)	Material	Q _{con} (2-year) (cfs)	Qcon vs Qcap	Q _{con} (10-year) (cfs)	Qcon vs Qcap3	Q _{con} (100-year) (cfs)	Qcon vs Qcap7
ST-MAI-880	0.33	0	1	CIRCULAR	0.04998	PVC	0.24	0.58	0.42	1.01	0.44	1.07
ST-MAI-881	1	3	1	PARABOLIC	0.10043	Concrete	0	0	0	0	0	0
ST-MAI-882	1	3	1	PARABOLIC	0.0915	Concrete	0	0	0	0	0	0
ST-MAI-885	3	0	1	CIRCULAR	0.20008	RCP	2.66	0.01	4.41	0.01	7.27	0.02
ST-MAI-889	2.5	0	1	CIRCULAR	0.07002	CONC	23.11	0.21	31.21	0.29	38.51	0.35
ST-MAI-89	0.5	3	1	PARABOLIC	0.02878	Concrete	15.86	2.6	19.96	3.27	19.97	3.27
ST-MAI-890	2.5	0	1	CIRCULAR	0.04492	CONC	21.64	0.25	28.73	0.33	34.37	0.4
ST-MAI-895	2.5	0	1	CIRCULAR	0.02864	RCP	16.38	0.24	29.35	0.42	48.99	0.71
ST-MAI-9	1.5	0	1	CIRCULAR	0.01469	HDPE	4.01	0.32	6.87	0.54	10.36	0.81
ST-MAI-90	2.5	0	1	CIRCULAR	0.02426	Not modeled	24.29	0.7	38.22	1.1	49.35	1.43
ST-MAI-902	1	3	1	PARABOLIC	0.04219	Other	0.29	0.04	0.52	0.08	0.84	0.13
ST-MAI-909	1.5	0	1	CIRCULAR	0.10623	RCP	4.3	0.13	7.73	0.23	13.19	0.39
ST-MAI-91	2.5	0	1	CIRCULAR	0.04233	CMP	24.09	0.53	37.77	0.83	48.53	1.06
ST-MAI-910	1.5	0	1	CIRCULAR	0.08841	RCP	8.42	0.27	14.86	0.48	25.42	0.81
ST-MAI-911	1.5	0	1	CIRCULAR	0.08949	RCP	10.95	0.35	19.23	0.61	28.56	0.91
ST-MAI-912	1.5	0	1	CIRCULAR	0.07287	RCP	7.19	0.25	12.66	0.45	21.67	0.76
ST-MAI-913	1.5	0	1	CIRCULAR	0.01118	RCP	16.56	1.49	23.84	2.15	31.83	2.87
ST-MAI-914	1.5	0	1	CIRCULAR	0.00616	RCP	16.13	1.96	20.12	2.44	22.13	2.68
ST-MAI-915	1.5	0	1	CIRCULAR	0.01387	RCP	12.7	1.03	12.16	0.98	13.05	1.06
ST-MAI-916	1.5	0	1	CIRCULAR	0.01682	RCP	15.91	1.17	16.73	1.23	17.32	1.27
ST-MAI-917	1.5	0	1	CIRCULAR	0.10761	RCP	18.99	0.55	31.13	0.9	33.38	0.97
ST-MAI-918	1.5	0	1	CIRCULAR	0.01317	RCP	3.24	0.27	8.2	0.68	11.45	0.95
ST-MAI-92	2.5	0	1	CIRCULAR	0.07204	CMP	15.78	0.26	23.62	0.4	31.88	0.53
ST-MAI-924	1.5	0	1	CIRCULAR	0.04634	CMP	2.46	0.2	4.39	0.36	7.3	0.6
ST-MAI-926	1	3	1	PARABOLIC	0.19867	CONC	0.21	0	0.34	0.01	0.54	0.01
ST-MAI-93	2.5	0	1	CIRCULAR	0.03611	CMP	53.78	1.27	63.88	1.51	62.8	1.49
ST-MAI-932	1	3	1	PARABOLIC	0.01341	CONC	12.51	0.72	2.31	0.13	1.89	0.11
ST-MAI-942	0	0	1	IRREGULAR	0.04951	Other	1.05	0.01	2	0.01	3.38	0.02
ST-MAI-946	1	3	1	PARABOLIC	0.17945	Other	1.48	0.02	2.77	0.03	4.65	0.06
ST-MAI-95	2	0	1	CIRCULAR	0.00744	RCP	22.92	1.17	36.97	1.9	42.46	2.18
ST-MAI-952	1	3	1	PARABOLIC	0.0674	Other	10.68	0.21	20.45	0.4	33.57	0.66
ST-MAI-953	0	0	1	IRREGULAR	0.03539	Other	0	0	0	0	0	0
ST-MAI-96	4	0	1	CIRCULAR	0.00777	RCP	52.46	0.41	96.51	0.76	161.85	1.28
ST-MAI-964	1.5	0	1	CIRCULAR	0.00648	RCP	1.85	0.22	2.84	0.34	4.14	0.49
ST-MAI-965	0	0	1	IRREGULAR	0.02576	CONC	0	0	0	0	0	0
ST-MAI-967	3	0	1	CIRCULAR	0.33922	CMP	19.27	0.09	33.52	0.16	60.24	0.29
ST-MAI-97	4	0	1	CIRCULAR	0.02456	RCP	71.68	0.32	127.18	0.57	146.38	0.65
ST-MAI-970	2	0	1	CIRCULAR	0.10048	RCP	31.59	0.44	33.07	0.46	33.75	0.47
ST-MAI-98	1.5	0	1	CIRCULAR	0.10367	CMP	5.25	0.29	8.95	0.49	13.32	0.73
ST-MAI-980	0	0	1	IRREGULAR	0.08468	Other	3.44	0.01	6.06	0.02	10.22	0.04
ST-MAI-981	1.5	0	1	CIRCULAR	0.07684	RCP	6.52	0.22	11.27	0.39	17.6	0.6
ST-MAI-982	1.5	0	1	CIRCULAR	0.02637	RCP	6.77	0.4	11.67	0.68	18.05	1.06
ST-MAI-983	2	0	1	CIRCULAR	0.02899	RCP	3.5	0.09	5.69	0.15	9.05	0.24
ST-MAI-984	2	0	1	CIRCULAR	0.00558	RCP	7.04	0.42	12.13	0.72	19.27	1.14
ST-MAI-985	2	0	1	CIRCULAR	0.02137	RCP	7.53	0.23	12.1	0.37	19.2	0.58
ST-MAI-99	1	0	1	CIRCULAR	0.05591	AC	3.7	0.44	6.79	0.81	8.11	0.96
ST-MAI-995	2	4	1	RECT_OPEN	0.02756	Other	2.09	0.01	4.12	0.02	6.27	0.03

Existing Condition Junctions Results Summary Table

Facility ID	Type	Dimensions			2-year				10-year				100-year			
		Invert Elevation (feet)	Rim Elevation (feet)	Depth (feet)	Max. HGL (2-year) (feet)	Max. Lateral Inflow (2-year) (cfs)	Max. Total Inflow (2-year) (cfs)	Surcharging (2-year)	Max. HGL (10-year) (feet)	Max. Lateral Inflow (10-year) (cfs)	Max. Total Inflow (10-year) (cfs)	Surcharging (10-year)	Max. HGL (100-year) (feet)	Max. Lateral Inflow (100-year) (cfs)	Max. Total Inflow (100-year) (cfs)	Surcharging (100-year)
178	DS Headwa	341.403	341.403	0	344.21	0	220.37	YES	344.41	0	248.78	YES	344.7	0	303.87	YES
2598	DS Headwa	346.771	346.771	0	346.77	0	0	YES	346.77	0	0.01	YES	347.93	0	118.39	YES
2745	Headwall	347.275	347.275	0	347.27	0	0	YES	347.28	0	0	YES	349.03	0	149.07	YES
2828	Channel co	329.825	329.825	0	332.46	0	338.29	NO	332.69	0	411.97	NO	333.3	0	602.34	NO
2955	Channel co	328.592	328.592	0	330.6	0	337.28	NO	330.79	0	403.43	NO	331.5	0	646.07	NO
3069	Channel co	326.449	326.449	0	328.25	0	331.66	NO	328.4	0	401.61	NO	329.36	0	739.01	NO
3132	Channel co	322.374	322.374	0	323.28	0	332.05	NO	323.45	0	403.36	NO	324.14	0	761.35	NO
3133	Channel co	303.901	303.901	0	306.01	0	336.28	NO	306.42	0	498.94	NO	307.76	0	1102.23	NO
CMS_Add1	DS Headwa	442.149	442.149	0	442.3	0	0.67	YES	442.34	0	1.21	YES	442.4	0	2.02	YES
J10430	DS Headwa	395.27	398.27	3	395.5	0	24.01	YES	395.58	0	38.95	YES	395.62	0	48.35	YES
J132067	Spillway	406.663	407.059	0	406.66	0	0	YES	406.66	0	0	YES	406.66	0	0	YES
J155_1	Channel co	379.738	379.738	0	379.89	0	4.81	YES	379.95	0	8.3	YES	380.03	0	13.79	YES
J2	Conduit co	387.4	398.929	11.529	388.88	0	175.6	YES	389.13	0	223.11	YES	389.9	0	385.47	YES
J20	Conduit co	383.6	389.575	5.975	384.59	0	175.71	YES	384.76	0	223.18	YES	385.28	0	385.43	YES
ST-STR-1	Cleanout	345.701	352.201	6.5	346.14	0	2.5	YES	346.28	0	4.25	YES	346.46	0	6.76	YES
ST-STR-100	Channel co	414.412	414.412	0	414.41	0	0	YES	414.41	0	0	YES	414.41	0	0	YES
ST-STR-1000	Conduit co	303.5	314.067	10.567	304.68	0	28.2	NO	305.14	0	52.25	NO	305.75	0	90.9	NO
ST-STR-1001	DS Headwa	372.88	373.335	0	374.17	0	103.49	YES	374.71	0	184.43	YES	375.6	0	276.77	YES
ST-STR-1002	Conduit co	386.919	393.919	7	388.64	0	72.29	YES	389.35	0	128.12	YES	390.18	0	188.59	YES
ST-STR-1003	Headwall	360.282	360.282	0	360.32	0.04	0.04	YES	360.33	0.06	0.06	YES	360.35	0.09	0.09	YES
ST-STR-1004	Headwall	355.651	355.651	0	360.69	1.44	13.7	YES	360.7	2.41	13.84	YES	360.7	4.06	12.07	YES
ST-STR-1005	DS Headwa	354.446	354.446	0	360.08	0	135.93	YES	360.32	0	194.64	YES	360.58	0	271	YES
ST-STR-1006	Conduit co	348.963	357.963	9	349.68	0	25.23	YES	349.91	0	44.57	YES	350.42	0	81.09	YES
ST-STR-1007	Conduit co	339.925	348.925	9	340.92	0	30.74	NO	341.54	0	81.83	NO	342.58	0	204.84	YES
ST-STR-1008	Headwall	373.974	373.974	0	374.44	11.45	11.45	YES	374.6	20.75	20.75	YES	374.82	37.12	37.12	YES
ST-STR-101	DS Headwa	374.021	374.021	0	374.17	0	3.52	YES	374.21	0	6.18	YES	374.25	0	10.37	YES
ST-STR-1010	Headwall	376.37	376.548	0	377.49	7.43	10.11	YES	377.91	14.01	18.32	YES	378.8	24.42	29.25	YES
ST-STR-1011	DS Headwa	408.997	408.997	0	409.14	0	1.49	YES	409.19	0	2.77	YES	409.25	0	4.65	YES
ST-STR-1012	Headwall	407.59	407.59	0	407.9	0	2.22	YES	408.01	0	4.04	YES	408.16	0	6.7	YES
ST-STR-1013	DS Headwa	443.09	443.09	0	443.22	0.69	4.85	YES	443.24	1.36	6.29	YES	443.26	2.35	7.65	YES
ST-STR-1014	Headwall	460.336	461.226	0	462.81	7.06	7.06	YES	462.88	12.75	12.75	YES	462.92	22.63	22.63	YES
ST-STR-1015	DS Headwa	457.858	457.858	0	458.37	0.26	7.29	YES	458.42	0.4	11.91	YES	458.51	0.6	19.9	YES
ST-STR-1016	Headwall	497.337	498.613	0	499.92	5.17	17.36	YES	500.27	9.42	9.75	YES	500.65	16.51	24.27	YES
ST-STR-1017	Inlet	480.302	480.579	0	480.9	2.96	13.04	YES	480.95	5.46	18.91	YES	481	9.4	24.93	YES
ST-STR-1018	Inlet	482.694	490.694	8	484.47	0.18	10.94	YES	486.57	0.29	16.24	YES	486.78	0.46	16.85	YES
ST-STR-1019	Headwall	433	437.465	4.465	433.51	2.02	2.68	YES	433.66	3.77	4.44	YES	433.85	6.52	7.2	YES
ST-STR-102	Unimprove	373.7	375.557	0.557	374.05	0	0.05	YES	374.27	0	0.09	YES	374.56	0	0.23	YES
ST-STR-1020	Conduit co	430	442.835	12.835	431.54	0	77.28	YES	431.65	0	88.83	YES	431.88	0	100.5	YES
ST-STR-1021	Conduit co	411	418.952	7.952	416.48	0	53.8	YES	419.21	0	63.9	YES	421.11	0	62.8	YES
ST-STR-1022	Headwall	419.743	419.743	0	420.91	0.98	32.81	YES	421.74	1.58	47.25	YES	424.42	2.52	66.2	YES
ST-STR-1023	Conduit co	443.159	449.159	6	445.44	0	9.43	YES	446.41	0	15.73	YES	447.58	0	22.81	YES
ST-STR-1024	Conduit co	439.995	444.995	5	445.37	0	11.48	YES	445.68	0	20.2	YES	446.08	0	30.41	YES
ST-STR-1025	Conduit co	388.527	398.827	10.3	391.67	0	131.05	YES	392.83	0	223.47	YES	396.92	0	369.16	YES
ST-STR-1026	Conduit co	388.355	397.355	9	391	0	136.29	YES	392.03	0	246.53	YES	396.5	0	378.15	YES

Existing Condition Junctions Results Summary Table

Facility ID	Type	Dimensions			2-year				10-year				100-year			
		Invert Elevation (feet)	Rim Elevation (feet)	Depth (feet)	Max. HGL (2-year) (feet)	Max. Lateral Inflow (2-year) (cfs)	Max. Total Inflow (2-year) (cfs)	Surcharging (2-year)	Max. HGL (10-year) (feet)	Max. Lateral Inflow (10-year) (cfs)	Max. Total Inflow (10-year) (cfs)	Surcharging (10-year)	Max. HGL (100-year) (feet)	Max. Lateral Inflow (100-year) (cfs)	Max. Total Inflow (100-year) (cfs)	Surcharging (100-year)
ST-STR-1027	Conduit co	387.716	394.716	7	390.32	0	138.92	YES	391.28	0	236.12	YES	395.74	0	363.87	YES
ST-STR-1028	DS Headwa	392.309	392.309	0	394.87	1.67	125.73	YES	396.86	2.69	152	YES	398.62	4.31	173.43	YES
ST-STR-1029	Conduit co	412.208	417.208	5	417.48	0	26.71	YES	417.77	0	37.01	YES	417.89	0	39.13	YES
ST-STR-103	DS Headwa	430.764	430.764	0	431.8	0	0.16	YES	431.81	0	0.24	YES	431.81	0	0.37	YES
ST-STR-1030	DS Headwa	391.018	391.018	0	395.32	0	63.3	YES	395.7	0	104.69	YES	395.89	0	167.46	YES
ST-STR-1031	Headwall	442.39	442.475	0	443.93	7.4	7.59	YES	444.42	13.49	13.68	YES	444.46	23.31	23.51	YES
ST-STR-1032	Headwall	409.806	416.806	7	410.91	11.02	33.8	YES	411.19	20.44	51.42	YES	411.48	36.44	73.05	YES
ST-STR-1033	Headwall	332.276	332.691	0	334.21	19.28	19.28	NO	335.14	33.54	33.54	NO	335.94	60.2	60.2	NO
ST-STR-1034	Headwall	330.193	330.193	0	334.65	18.07	155.71	NO	335.07	32.14	170.06	NO	335.59	57.6	275.68	NO
ST-STR-1035	Conduit co	324.25	333.38	9.13	329.23	0	131.49	NO	334.39	0	344.94	NO	335.17	0	381.51	NO
ST-STR-1036	Headwall	378.33	382.41	4.08	380.09	5.29	48.02	YES	382.89	9.27	60.42	YES	383.08	14.85	55.33	YES
ST-STR-1037	Conduit co	384.013	391.513	7.5	386.44	0	153.96	YES	387.61	0	261.18	YES	391.62	0	358.15	YES
ST-STR-1038	Conduit co	376.5	386.892	10.392	379.35	0	157.38	YES	380.29	0	277.46	YES	382.34	0	451.99	YES
ST-STR-1039	Headwall	374.327	375.504	0	377.4	2.39	37.15	YES	377.43	4.27	55.97	YES	377.47	7.09	91.51	YES
ST-STR-1040	Conduit co	406.689	412.189	5.5	407.75	0	31.83	YES	408.06	0	49.05	YES	408.32	0	60.06	YES
ST-STR-1041	Conduit co	400.418	407.418	7	401.49	8.02	37.31	YES	401.75	13.42	57.39	YES	402.03	22.55	81.56	YES
ST-STR-1042	Conduit co	389.922	396.922	7	392.69	0	45.44	YES	394.48	0	68.32	YES	396.05	0	98.48	YES
ST-STR-1043	Conduit co	390.701	397.701	7	392.7	0	38.16	YES	394.52	0	58.46	YES	396.11	0	83.85	YES
ST-STR-1044	Conduit co	383	395.741	12.741	385.71	0	175.93	YES	386.89	0	321.08	YES	390.23	0	483.61	YES
ST-STR-1045	Conduit co	385.83	395.864	10.034	391.78	0	209.63	YES	393.18	0	235.04	YES	394.65	0	252.78	YES
ST-STR-1046	Headwall	397.87	397.87	0	398.19	2.83	2.83	YES	398.25	4.63	4.63	YES	398.32	7.55	7.55	YES
ST-STR-105	DS Headwa	404.786	405.75	0	404.85	0	2.97	YES	404.87	0	5.38	YES	404.9	0	9.21	YES
ST-STR-1051	Conduit co	374.3	380.26	5.96	376.86	0	22.6	YES	377.89	0	29.55	YES	378.84	0	37.48	YES
ST-STR-1052	Conduit co	389.45	397.45	8	394.85	0	165.65	YES	396.41	0	167.18	YES	397.5	0	167.69	YES
ST-STR-1053	Conduit co	390.224	397.974	7.75	396.02	0	153.26	YES	397.42	0	154.59	YES	398.38	0	155.08	YES
ST-STR-1054	Conduit co	397.729	401.729	4	397.95	0	0.78	YES	398.43	0	1.27	YES	400.29	0	2.06	YES
ST-STR-1055	Conduit co	393.464	401.214	7.75	401.33	0	157.39	YES	401.83	0	156.06	YES	402.01	0	157.39	YES
ST-STR-1056	Conduit co	409.6	416.359	6.759	416.64	0	61.49	YES	416.75	0	62.74	YES	416.86	0	63.18	YES
ST-STR-1057	Inlet	425.117	425.117	0	425.59	4.06	8.15	YES	425.73	6.77	13.52	YES	425.9	11	21.93	YES
ST-STR-1058	Headwall	333.493	333.493	0	337.27	0.11	46.77	NO	337.9	0.17	72.42	NO	338.25	0.28	125.65	NO
ST-STR-1059	Cleanout	382.29	398.951	16.661	383.65	0	50.7	YES	384.16	0	85.5	YES	389.63	0	144.55	YES
ST-STR-1060	Cleanout	432.73	441.73	9	433.36	0	5.12	YES	433.59	0	8.84	YES	521.31	0	18.34	YES
ST-STR-1061	Cleanout	450.91	459.585	8.675	451.29	0	2.23	YES	451.42	0	3.92	YES	529.36	0	17.17	YES
ST-STR-1062	Cleanout	447.38	455.652	8.272	447.73	0	2.22	YES	447.85	0	3.91	YES	529.99	0	18.48	YES
ST-STR-1063	Cleanout	436.24	442.716	6.476	436.6	0	3.1	YES	436.72	0	5.45	YES	524.35	0	15.24	YES
ST-STR-1064	Cleanout	434.82	442.08	7.26	435.28	0	4.93	YES	435.46	0	8.82	YES	505.64	0	15.44	YES
ST-STR-1065	Cleanout	436.92	447.818	10.898	437.49	0	9.12	YES	437.69	0	15.89	YES	513.44	0	26.86	YES
ST-STR-1066	Cleanout	439.82	448.262	8.442	440.16	0	2.21	YES	440.28	0	3.9	YES	527.32	0	14.77	YES
ST-STR-1067	Cleanout	453.1	462.786	9.686	453.45	0	2.24	YES	453.57	0	3.93	YES	534.18	0	15.49	YES
ST-STR-1068	Cleanout	443.04	449.186	6.146	443.39	0	2.21	YES	443.5	0	3.9	YES	526.65	0	14.62	YES
ST-STR-1069	Cleanout	410	421.927	11.927	410.16	0	0.62	YES	410.2	0	0.98	YES	461.18	0	7.61	YES
ST-STR-107	Flowline co	439.709	439.896	0	439.99	0	2.84	YES	440.01	0	3.61	YES	440.03	0	4.6	YES
ST-STR-1070	DS Headwa	341.396	341.396	0	342.48	0	29.69	YES	342.99	0	56.47	YES	343.6	0	96.16	YES
ST-STR-1071	DS Headwa	316.022	316.022	0	316.04	0	0.7	NO	316.04	0	1.2	NO	316.05	0	1.92	NO

Existing Condition Junctions Results Summary Table

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ST-STR-1072	DS Headwa	454.343	454.343	0	454.44	0	2.11	YES	454.5	0	4.14	YES	454.54	0	6.28	YES
ST-STR-1073	DS Headwa	350.392	350.392	0	350.39	0	0	YES	350.39	0	0	YES	350.39	0	0	YES
ST-STR-1074	Flowline co	445.997	445.997	0	446.37	0	6.22	YES	446.43	0	10.59	YES	446.51	0	16.49	YES
ST-STR-1075	DS Headwa	285.632	285.768	0	290.63	0	358.12	NO	290.85	0	435.27	NO	292.2	0	726.36	NO
ST-STR-1076	DS Headwa	431.602	431.602	0	432.09	0	15.97	YES	432.24	0	28.04	YES	432.43	0	47.04	YES
ST-STR-1077	DS Headwa	276.635	276.635	0	280.01	0	557.07	NO	280.48	0	915.67	NO	281.11	0	1519.56	NO
ST-STR-1078	DS Headwa	285.233	285.233	0	287.73	0	543.82	NO	288.39	0	910.95	NO	289.76	0	1736.93	NO
ST-STR-1079	DS Headwa	303	319.993	0	311.89	0	0.91	NO	311.9	0	1.52	NO	311.95	0	3.13	NO
ST-STR-108	Flowline co	429.345	429.407	0	429.51	0	1.98	YES	429.64	0	5.27	YES	429.83	0	11.9	YES
ST-STR-1080	DS Headwa	316.031	316.031	0	317.95	0	356.04	NO	318.19	0	448.71	NO	319	0	856.11	NO
ST-STR-1081	DS Headwa	425.583	425.583	0	425.64	0	4.1	YES	425.66	0	6.62	YES	425.69	0	10.53	YES
ST-STR-1083	DS Headwa	431.881	431.881	0	434.27	0	45.74	YES	435.2	0	79.41	YES	436.85	0	92.64	YES
ST-STR-1084	DS Headwa	425.701	425.701	0	425.75	0	1.97	YES	425.76	0	3.12	YES	425.78	0	4.91	YES
ST-STR-1085	DS Headwa	392.829	392.829	0	393.01	0	43.12	YES	393.04	0	54.1	YES	393.06	0	61.48	YES
ST-STR-1086	DS Headwa	433.408	437.943	4.535	433.56	0	44.51	YES	433.56	0	45.29	YES	433.56	0	46.12	YES
ST-STR-1087	DS Headwa	307.49	307.49	0	311.5	0	53.66	NO	312	0	135.16	NO	313.26	0	306.15	NO
ST-STR-1088	Channel co	429.226	429.226	0	429.56	0	8.68	YES	429.63	0	15.44	YES	429.73	0	27.18	YES
ST-STR-1089	Headwall	404.754	409.934	5.18	405.92	0	37.49	YES	406.24	0	59.52	YES	406.9	0	113.98	YES
ST-STR-109	Flowline co	434.677	434.825	0	434.92	0	2.54	YES	435	0	5.25	YES	435.06	0	8.56	YES
ST-STR-1092	Inlet	409.937	414.937	5	410.03	0	0.17	YES	411.85	0	3.11	YES	412.3	0	2.19	YES
ST-STR-1093	Inlet	415.682	422.682	7	415.75	0	0.17	YES	415.77	0	0.27	YES	415.79	0	0.41	YES
ST-STR-1096	Conduit co	287.2	290.419	3.219	292.45	0	18.3	NO	295.6	0	24.16	NO	295.98	0	25.8	NO
ST-STR-1097	Conduit co	288.017	292.517	4.5	293.19	0	18.99	NO	294.7	0	31.13	NO	295.41	0	33.38	NO
ST-STR-1098	Channel co	391.025	392.025	1	392.84	0	25.66	YES	393.04	0	36.2	YES	393.22	0	46.89	YES
ST-STR-110	DS Headwa	440	441.073	1.073	440.65	0	2.54	YES	440.7	0	4.58	YES	440.75	0	7.24	YES
ST-STR-1100	Headwall	311.506	316.506	5	311.98	0.26	10.93	NO	312.16	0.4	20.83	NO	312.34	0.61	34.16	NO
ST-STR-1102	Flowline co	351.28	351.459	0	351.28	0	0.02	YES	351.29	0	0.02	YES	351.29	0	0.03	YES
ST-STR-1103	Manhole	301.435	304.935	3.5	303	0	3.21	NO	303.62	0	3.72	NO	306.13	0	11	NO
ST-STR-1104	Channel co	354	354.566	0.566	354.01	0	0.04	YES	354.01	0	0.14	YES	354.02	0	0.32	YES
ST-STR-1105	Flowline co	414.035	414.192	0	414.07	0	0.71	YES	414.08	0	1.13	YES	414.1	0	1.76	YES
ST-STR-111	Flowline co	438.347	438.347	0	438.37	0	0.32	YES	438.38	0	0.54	YES	438.39	0	0.72	YES
ST-STR-1110	Outlet	448.444	448.444	0	448.62	0	0.71	YES	448.68	0	1.26	YES	448.74	0	2.09	YES
ST-STR-1111	Headwall	443.335	443.335	0	443.56	0	0.69	YES	443.63	0	1.24	YES	443.71	0	2.05	YES
ST-STR-1112	Flowline co	400.331	400.331	0	401.55	0	15.92	YES	402.29	0	27.85	YES	411.94	0	46.81	YES
ST-STR-1113	Channel co	413	414.259	1.259	415.03	0	17.01	YES	415.19	0	29.88	YES	415.44	0	53.52	YES
ST-STR-1114	Flowline co	413.729	413.877	0	414.08	0	18.26	YES	414.15	0	24.74	YES	414.26	0	36.45	YES
ST-STR-1115	Conduit co	427.746	439.246	11.5	429.09	0	15.39	YES	429.65	0	27.43	YES	435.42	0	41.03	YES
ST-STR-1116	Conduit co	431.077	437.077	6	431.08	0	0	YES	431.08	0	0	YES	434.87	0	4.12	YES
ST-STR-1117	Conduit co	431.676	436.676	5	431.68	0	0	YES	431.68	0	0	YES	434.83	0	1.71	YES
ST-STR-1118	Flowline co	437.805	437.805	0	437.85	0	0.58	YES	437.86	0	0.97	YES	437.88	0	1.43	YES
ST-STR-112	Channel co	432.413	433.275	0	432.53	0	10.99	YES	432.55	0	14.3	YES	432.58	0	19.95	YES
ST-STR-1120	Conduit co	469.206	476.123	6.917	469.96	0	5.49	YES	470.68	0	9.06	YES	473.81	0	13.75	YES
ST-STR-1121	Conduit co	462.42	469.992	7.572	464.34	0	47.08	YES	476.14	0	59.96	YES	471.57	0	58.97	YES
ST-STR-1122	Manhole	465.861	470.861	5	466.48	0	13.1	YES	468.3	0	25.56	YES	471.19	0	48.51	YES

Existing Condition Junctions Results Summary Table

Facility ID	Type	Dimensions			2-year				10-year				100-year			
		Invert Elevation (feet)	Rim Elevation (feet)	Depth (feet)	Max. HGL (2-year) (feet)	Max. Lateral Inflow (2-year) (cfs)	Max. Total Inflow (2-year) (cfs)	Surcharging (2-year)	Max. HGL (10-year) (feet)	Max. Lateral Inflow (10-year) (cfs)	Max. Total Inflow (10-year) (cfs)	Surcharging (10-year)	Max. HGL (100-year) (feet)	Max. Lateral Inflow (100-year) (cfs)	Max. Total Inflow (100-year) (cfs)	Surcharging (100-year)
ST-STR-1123	Conduit co	485.912	495.586	9.674	486.34	0	13.1	YES	486.51	0	25.56	YES	486.76	0	48.66	YES
ST-STR-1124	Conduit co	277.5	283.037	5.537	282.57	0	22.51	NO	282.88	0	24.11	NO	283.67	0	39.73	NO
ST-STR-1125	Conduit co	277.2	282.045	4.845	282.33	0	22.51	NO	282.67	0	22.81	NO	283.43	0	23.54	NO
ST-STR-1126	Flowline co	306.849	306.849	0	308.97	0	333.62	NO	309.38	0	504.24	NO	310.61	0	1094.71	NO
ST-STR-1128	Channel co	459.186	459.937	0.751	459.22	0	1.93	YES	459.24	0	3.15	YES	459.25	0	5.06	YES
ST-STR-1129	Conduit co	439.108	494.57	55.462	439.36	0	2.27	YES	439.43	0	3.57	YES	439.51	0	5.58	YES
ST-STR-113	DS Headwa	479	480.009	1.009	479	0	0	YES	479	0	0	YES	479	0	0	YES
ST-STR-1130	Conduit co	426.021	433.105	7.084	426.62	0	4.12	YES	426.78	0	6.67	YES	427.01	0	10.65	YES
ST-STR-1131	Conduit co	449.195	483.482	34.287	449.47	0	2.28	YES	449.53	0	3.59	YES	449.62	0	5.6	YES
ST-STR-1132	Conduit co	415.533	421.533	6	415.61	0	0.32	YES	415.63	0	0.5	YES	415.65	0	0.8	YES
ST-STR-1133	Conduit co	393.28	406.28	13	393.76	0	6.39	YES	393.9	0	10.54	YES	394.08	0	16.96	YES
ST-STR-1135	Channel co	348.925	348.925	0	349.55	0	28.29	YES	349.83	0	53.93	YES	350.17	0	94.86	YES
ST-STR-1136	Conduit co	436.266	449.407	13.141	437.97	0.59	40.32	YES	443.11	0.92	51.9	YES	442.95	1.42	53.2	YES
ST-STR-1137	Conduit co	445.582	450.582	5	445.85	0	3.42	YES	445.93	0	5.79	YES	446.03	0	9.62	YES
ST-STR-1138	Conduit co	432.866	443.867	11.001	434.56	0	40.18	YES	436.03	0	49.67	YES	436.63	0	53.2	YES
ST-STR-1139	Conduit co	442.07	447.07	5	442.19	0	0.48	YES	442.22	0	0.75	YES	442.25	0	1.15	YES
ST-STR-114	Channel co	478.344	479.047	0.547	478.34	0	0	YES	478.34	0	0	YES	478.34	0	0	YES
ST-STR-1140	Conduit co	413.957	420.957	7	415	0	43.18	YES	415.13	0	54.12	YES	415.21	0	61.52	YES
ST-STR-1141	Conduit co	404.53	411.53	7	405.7	0	43.13	YES	405.84	0	54.1	YES	405.92	0	61.47	YES
ST-STR-1143	Conduit co	435.197	439.197	4	443.51	0	5.88	YES	444.68	0	10.8	YES	447.01	0	18.21	YES
ST-STR-1144	Channel co	336.145	336.409	0	337.91	0	17.55	NO	338.04	0	35.5	NO	338.74	0	54.14	NO
ST-STR-1145	Channel co	492.567	492.567	0	492.74	0	0.5	YES	492.75	0	0.61	YES	492.78	0	0.8	YES
ST-STR-1146	Conduit co	354	363.998	9.998	354.42	0	12.94	YES	354.56	0	22.72	YES	354.74	0	38.53	YES
ST-STR-1147	Conduit co	326.945	331.945	5	327.37	0	12.95	NO	327.52	0	22.74	NO	327.7	0	38.56	NO
ST-STR-1148	Conduit co	319.546	324.546	5	319.99	0	12.89	NO	320.16	0	25.27	NO	320.33	0	38.53	NO
ST-STR-1149	Conduit co	308.033	313.033	5	311.65	0	12.89	NO	312.08	0	24.49	NO	313.83	0	38.53	NO
ST-STR-115	Flowline co	489.972	490.419	0	490	0	0.55	YES	490.01	0	0.99	YES	490.03	0	1.6	YES
ST-STR-1150	Conduit co	319.955	324.955	5	321.22	0	12.95	NO	321.8	0	22.73	NO	322.93	0	38.56	NO
ST-STR-1151	Flowline co	406.116	406.116	0	406.17	0	1.32	YES	406.19	0	2.36	YES	406.23	0	4.03	YES
ST-STR-1152	Channel co	375.226	375.226	0	375.69	0	2.81	YES	375.82	0	4.46	YES	375.99	0	7.01	YES
ST-STR-1153	Conduit co	429.62	436.773	7.153	430.28	0	9.81	YES	430.55	0	17.64	YES	496.71	0	30.73	YES
ST-STR-1154	Conduit co	402.2	416.522	14.322	403.65	0	46.61	YES	404.49	0	79.14	YES	441.78	0	137.23	YES
ST-STR-1155	Conduit co	421.8	437.233	15.433	422.76	0	24.63	YES	423.55	0	41.83	YES	502.57	0	71.82	YES
ST-STR-1156	Manhole	429.626	438.126	8.5	430.38	0	12.93	YES	430.88	0	21.7	YES	435.79	0	29.46	YES
ST-STR-1157	Manhole	443.331	447.831	4.5	443.71	0	2.55	YES	443.83	0	4.46	YES	443.99	0	7.5	YES
ST-STR-1158	Manhole	462.385	469.885	7.5	462.67	0	2.56	YES	462.76	0	4.48	YES	462.87	0	7.53	YES
ST-STR-1159	Manhole	419.264	423.764	4.5	421.69	0	12.79	YES	425.01	0	20.74	YES	425.77	0	25.14	YES
ST-STR-116	DS Headwa	447.138	450.138	3	449.97	0	19.03	YES	450.02	0	27.67	YES	450.07	0	39.47	YES
ST-STR-1160	Manhole	415.8	422.621	6.821	416.91	0	12.92	YES	421.05	0	15.99	YES	423.2	0	15.38	YES
ST-STR-1161	Manhole	403.376	419.876	16.5	408.43	0	22.18	YES	414.27	0	31.37	YES	418.97	0	34.16	YES
ST-STR-1162	Manhole	407.033	411.533	4.5	408.6	0	1.86	YES	415.94	0	3.91	YES	421.22	0	4.14	YES
ST-STR-1163	Manhole	413.4	433.957	20.557	415.02	0	36.89	YES	425.63	0	63.15	YES	487.15	0	109.15	YES
ST-STR-1164	Manhole	407.93	422.158	14.228	409.36	0	37.6	YES	410.16	0	64.08	YES	461.16	0	110.69	YES
ST-STR-1165	Inlet	371.911	377.411	5.5	372.16	2.54	2.54	YES	372.25	4.73	4.73	YES	376.35	8.1	9.94	YES

Existing Condition Junctions Results Summary Table

Facility ID	Type	Dimensions			2-year				10-year				100-year			
		Invert Elevation (feet)	Rim Elevation (feet)	Depth (feet)	Max. HGL (2-year) (feet)	Max. Lateral Inflow (2-year) (cfs)	Max. Total Inflow (2-year) (cfs)	Surcharging (2-year)	Max. HGL (10-year) (feet)	Max. Lateral Inflow (10-year) (cfs)	Max. Total Inflow (10-year) (cfs)	Surcharging (10-year)	Max. HGL (100-year) (feet)	Max. Lateral Inflow (100-year) (cfs)	Max. Total Inflow (100-year) (cfs)	Surcharging (100-year)
ST-STR-1166	Inlet	353.293	357.793	4.5	353.68	3.44	3.44	YES	353.82	6.16	6.16	YES	354.01	10.63	10.63	YES
ST-STR-1167	Inlet	326.427	329.427	3	326.71	0.71	0.71	NO	326.8	1.22	1.22	NO	326.9	1.95	1.95	NO
ST-STR-1168	Spillway	440.891	441.85	0	441.91	0.72	0.72	YES	441.92	1.23	1.23	YES	441.93	1.97	1.97	YES
ST-STR-1169	Spillway	451.819	451.819	0	451.83	0.5	0.5	YES	451.84	0.87	0.87	YES	451.84	1.4	1.4	YES
ST-STR-117	DS Headwa	504	506.222	2.222	504	0	0	YES	504	0	0	YES	504	0	0	YES
ST-STR-1170	Spillway	418.673	418.869	0	419.03	0.18	0.18	YES	419.05	0.27	0.27	YES	419.09	0.42	0.42	YES
ST-STR-1171	Inlet	367.261	372.761	5.5	370.07	2.83	56.13	YES	372.81	4.64	97.95	YES	373.14	7.33	124.47	YES
ST-STR-1172	Inlet	419.441	426.441	7	419.44	0	0	YES	420.31	0	5.27	YES	426.71	0	20.83	YES
ST-STR-1173	Inlet	418	426.009	8.009	418	0	0	YES	418.34	0	6.06	YES	418.77	0	33.25	YES
ST-STR-1175	Inlet	310.585	314.085	3.5	311.06	3.39	3.39	NO	311.18	5.47	5.47	NO	311.33	8.64	8.64	NO
ST-STR-1176	Inlet	370.137	375.637	5.5	370.92	1.8	23.13	YES	371.05	2.98	31.21	YES	371.17	4.87	38.51	YES
ST-STR-1177	Headwall	372.601	374.524	0	372.63	1.69	1.69	YES	372.64	2.8	2.8	YES	372.65	4.58	4.58	YES
ST-STR-1178	Headwall	372.14	372.14	0	374.57	2.71	21.66	YES	375.16	4.26	28.82	YES	375.71	6.67	41.26	YES
ST-STR-1179	Inlet	300.311	304.811	4.5	301.11	0.9	19.04	NO	304.77	1.49	33.29	NO	306.98	2.39	52.55	NO
ST-STR-118	DS Headwa	499.014	499.014	0	499.92	0	25.35	YES	500.27	0	4.87	YES	500.65	0	8.51	YES
ST-STR-1180	Inlet	309.358	313.858	4.5	309.89	8.43	8.43	NO	310.09	14.87	14.87	NO	313.55	25.49	25.49	NO
ST-STR-1181	Inlet	309.882	314.382	4.5	310.24	4.3	4.3	NO	310.37	7.74	7.74	NO	310.85	13.32	13.32	NO
ST-STR-1182	Inlet	306.317	310.817	4.5	306.93	2.55	10.97	NO	307.32	4.61	19.47	NO	311.66	8.09	33.48	NO
ST-STR-1183	Inlet	306.218	310.718	4.5	306.73	2.92	7.21	NO	307.01	5.07	12.8	NO	310.18	8.99	22.15	NO
ST-STR-1184	Inlet	286.7	291.386	4.686	290.55	0.46	16.76	NO	290.95	0.75	23.49	NO	292.45	1.24	27.89	NO
ST-STR-1185	Inlet	287.521	291.021	3.5	292.47	4.46	4.46	NO	294.41	7.35	7.35	NO	295.33	11.67	11.67	NO
ST-STR-1186	Inlet	286.604	290.104	3.5	290.36	1.99	26.76	NO	290.65	3.45	55.73	NO	292.47	5.79	305.29	NO
ST-STR-1187	Inlet	329.608	332.608	3	330.55	13.49	13.49	NO	330.95	23.62	23.62	NO	332.22	42.32	42.32	NO
ST-STR-1189	Inlet	303.682	306.682	3	304.16	7.68	8.5	NO	304.33	13.43	15.09	NO	304.58	23.19	26.07	NO
ST-STR-119	Channel co	454.567	454.91	0	454.65	0	7.24	YES	454.67	0	11.93	YES	454.72	0	20.76	YES
ST-STR-1190	Inlet	300.727	305.727	5	301.38	0.45	6.78	NO	301.64	0.73	11.67	NO	305.51	1.17	18.52	NO
ST-STR-1191	Inlet	299.522	304.522	5	299.93	3.52	3.52	NO	300.04	5.72	5.72	NO	300.18	9.1	9.1	NO
ST-STR-1192	Inlet	296.453	301.453	5	297.1	4.08	7.57	NO	297.29	6.48	12.16	NO	297.55	10.26	19.28	NO
ST-STR-1194	Inlet	296.45	301.45	5	297.35	0.72	7.04	NO	297.7	1.1	12.13	NO	298.06	1.68	19.26	NO
ST-STR-1195	Inlet	433.306	435.306	2	434.62	8.92	11.29	YES	440.96	15.57	19.87	YES	450.82	26.3	33.47	YES
ST-STR-1196	Inlet	432.339	437.339	5	434.01	4.25	15.44	YES	440.09	7.17	27.04	YES	446.56	11.84	45.3	YES
ST-STR-1198	Inlet	444.938	450.438	5.5	445.57	0.7	15.24	YES	445.8	1.13	28.91	YES	446.13	1.79	52.44	YES
ST-STR-1199	Inlet	470.205	475.205	5	470.72	2.66	2.66	YES	470.89	4.41	4.41	YES	473.96	7.16	7.16	YES
ST-STR-12	Cleanout	429	441.503	12.503	429.57	0	4.54	YES	429.75	0	7.69	YES	429.95	0	11.78	YES
ST-STR-1200	Inlet	469.727	475.588	5.861	470.28	0.3	2.95	YES	470.73	0.47	4.86	YES	473.9	0.72	7.7	YES
ST-STR-1201	Inlet	470.747	475.747	5	471.51	7.27	7.27	YES	471.79	12.56	12.56	YES	474.86	20.75	20.75	YES
ST-STR-1202	Inlet	469.845	474.845	5	470.32	2.58	2.58	YES	470.73	4.29	4.29	YES	473.89	6.98	6.98	YES
ST-STR-1203	Inlet	468.335	474.763	6.428	469.46	0.4	14.38	YES	470.56	0.63	24.07	YES	473.38	1	35.07	YES
ST-STR-1204	Inlet	469.45	476.339	6.889	470.23	0.44	7.71	YES	470.72	0.67	13.23	YES	474.04	1.01	21.27	YES
ST-STR-1205	Inlet	469.037	472.037	3	469.52	0.97	0.97	YES	470.6	1.5	1.5	YES	472.58	2.32	5.8	YES
ST-STR-1206	Inlet	471.488	475.988	4.5	471.68	1.09	1.09	YES	471.73	1.7	1.7	YES	471.79	2.61	2.61	YES
ST-STR-1207	Inlet	465.742	472.234	6.492	467.03	2.45	18.88	YES	469.93	4.01	30.54	YES	471.3	6.38	38.08	YES
ST-STR-1208	Inlet	466.243	470.243	4	467.05	1.67	1.67	YES	469.98	2.68	2.68	YES	470.9	4.24	11.1	YES
ST-STR-1209	Inlet	463.5	470.898	7.398	464.89	0.65	21.85	YES	469.02	1	32.09	YES	469.79	1.55	35.27	YES

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ST-STR-121	Unimprove	460.402	479.884	0	460.42	0	0.12	YES	460.42	0	0.22	YES	460.43	0	0.35	YES
ST-STR-1210	Inlet	468.745	473.745	5	468.97	1.73	1.73	YES	469.03	2.69	2.69	YES	469.79	4.17	4.17	YES
ST-STR-1211	Inlet	463.95	468.95	5	464.89	1.35	1.35	YES	469.01	2.12	2.38	YES	469.83	3.29	9.74	YES
ST-STR-1212	Inlet	470.033	474.533	4.5	471.11	28.88	28.88	YES	474.65	50.65	50.65	YES	474.75	81.08	81.08	YES
ST-STR-1213	Inlet	459.574	467.932	8.358	463.75	2.14	61.85	YES	467.55	3.44	80.73	YES	468.16	5.46	107.13	YES
ST-STR-1214	Inlet	488.671	493.671	5	489.48	0.32	13.1	YES	489.84	0.51	25.54	YES	494.12	0.79	48.65	YES
ST-STR-1216	Inlet	457.564	466.564	9	463.57	1.98	54.3	YES	467.26	3.08	78.52	YES	467.89	4.76	162.37	YES
ST-STR-1217	Inlet	285.795	290.795	5	286.3	8.97	12.51	NO	286.46	15.31	21.86	NO	286.76	25.27	36.52	NO
ST-STR-1218	Headwall	293.131	293.637	0	293.19	4.78	4.78	NO	293.21	8.82	8.82	NO	293.24	15.13	15.13	NO
ST-STR-1219	Inlet	280.844	285.844	5	282.6	0.07	13.61	NO	283.16	0.1	23.88	NO	284.52	0.15	40.03	NO
ST-STR-122	DS Headwa	389.88	391.386	1.506	391.49	0	144.75	YES	391.62	0	153.3	YES	392.07	0	157.39	YES
ST-STR-1220	Inlet	318.429	323.429	5	318.6	1.63	1.63	NO	318.65	2.8	2.8	NO	318.71	4.72	4.72	NO
ST-STR-1221	Inlet	351.075	356.075	5	351.2	0.92	0.92	YES	351.24	1.53	1.53	YES	351.28	2.49	2.49	YES
ST-STR-1222	Inlet	362.871	367.871	5	363	1.08	1.08	YES	363.04	1.84	1.84	YES	363.09	3.08	3.08	YES
ST-STR-1223	Inlet	465.19	469.69	4.5	465.5	1.31	1.31	YES	465.6	2.33	2.33	YES	465.73	3.96	3.96	YES
ST-STR-1224	Inlet	464.556	470.056	5.5	464.86	1.25	2.56	YES	464.95	2.15	4.47	YES	465.07	3.56	7.52	YES
ST-STR-1225	Inlet	438.166	442.666	4.5	438.73	0.82	3.3	YES	438.93	1.32	5.68	YES	440.6	2.13	9.47	YES
ST-STR-1226	Inlet	433.983	440.483	6.5	434.66	0	6.49	YES	434.92	0	11.23	YES	438.94	0	18.33	YES
ST-STR-1227	Inlet	434.879	439.379	4.5	435.45	3.45	3.45	YES	435.66	5.91	5.91	YES	439.27	9.86	9.86	YES
ST-STR-1228	Inlet	460.503	465.003	4.5	460.69	1.27	1.27	YES	460.75	2.14	2.14	YES	460.81	3.41	3.41	YES
ST-STR-1229	Inlet	430.532	435.032	4.5	431.49	5.47	5.47	YES	432.17	8.95	8.95	YES	437.93	14.31	14.31	YES
ST-STR-123	DS Headwa	421.073	421.073	0	421.4	0	26.08	YES	421.76	0	36.72	YES	424.42	0	52.8	YES
ST-STR-1230	Inlet	417.1	423.222	6.122	418.18	1.3	12.91	YES	421.98	2.13	17.29	YES	423.8	3.42	16.84	YES
ST-STR-1231	Inlet	407.471	411.971	4.5	408.57	0.51	0.64	YES	419.25	0.78	4.16	YES	421.2	1.21	3.4	YES
ST-STR-1232	Inlet	407.64	412.14	4.5	408.59	1.12	1.12	YES	416.02	1.81	2.45	YES	421.2	2.89	2.89	YES
ST-STR-1233	Inlet	405.459	408.959	3.5	415.2	3.48	5.06	YES	418.64	5.58	9.03	YES	421.07	8.83	12.92	YES
ST-STR-1234	Inlet	397	411.119	14.119	397.66	1.6	20.99	YES	397.76	2.57	27.07	YES	397.95	4.04	41.83	YES
ST-STR-1235	Headwall	419.794	419.794	0	420.91	10.21	26.07	YES	421.18	17.49	37.44	YES	421.45	29.29	49.21	YES
ST-STR-1236	Inlet	470.452	474.952	4.5	470.93	1.52	1.52	YES	471.08	2.52	2.52	YES	471.27	4.09	4.09	YES
ST-STR-1237	Inlet	470.312	474.812	4.5	470.51	0.41	2.02	YES	470.56	0.63	3.32	YES	470.63	0.97	5.42	YES
ST-STR-1238	Inlet	497.883	502.883	5	498.5	12.83	12.83	YES	498.77	25.09	25.09	YES	499.2	47.69	47.69	YES
ST-STR-1239	Inlet	469.674	474.674	5	469.84	0.78	0.78	YES	469.87	1.22	1.22	YES	469.92	1.9	1.9	YES
ST-STR-124	DS Headwa	422.797	422.797	0	422.9	0	6.4	YES	422.93	0	10.68	YES	424.42	0	15.89	YES
ST-STR-1240	Inlet	465.8	475.718	9.918	466.05	0.6	2.05	YES	466.12	0.93	3.23	YES	466.19	1.44	5.04	YES
ST-STR-1241	Inlet	476.55	481.55	5	476.71	0.17	0.7	YES	476.75	0.26	1.11	YES	476.79	0.4	1.75	YES
ST-STR-1242	Inlet	480.055	485.055	5	480.2	0.53	0.53	YES	480.24	0.86	0.86	YES	480.29	1.36	1.36	YES
ST-STR-1243	Inlet	483.29	488.29	5	483.35	0.27	0.27	YES	483.37	0.43	0.43	YES	483.38	0.66	0.66	YES
ST-STR-1244	Inlet	426.976	431.976	5	427.37	1.96	1.96	YES	427.49	3.26	3.26	YES	427.65	5.22	5.22	YES
ST-STR-1245	Inlet	458.884	465.884	7	463.67	2.24	57.39	YES	467.33	3.63	83.79	YES	467.97	5.78	106.23	YES
ST-STR-1246	Inlet	437.476	442.476	5	438	2.52	2.77	YES	438.15	4.09	4.5	YES	438.35	6.55	7.18	YES
ST-STR-1247	Inlet	441.629	446.629	5	441.73	0.26	0.26	YES	441.75	0.41	0.41	YES	441.78	0.64	0.64	YES
ST-STR-1248	Inlet	416.141	421.141	5	416.33	0.32	0.32	YES	416.38	0.51	0.51	YES	416.43	0.8	0.8	YES
ST-STR-1249	Inlet	395.467	400.467	5	395.88	1.48	1.79	YES	396.91	2.4	6.06	YES	401.7	3.85	16.62	YES
ST-STR-125	DS Headwa	429.066	429.617	0	429.43	0	15.23	YES	429.55	0	26.51	YES	429.67	0	45.07	YES

Existing Condition Junctions Results Summary Table

Facility ID	Type	Dimensions			2-year				10-year				100-year			
		Invert Elevation (feet)	Rim Elevation (feet)	Depth (feet)	Max. HGL (2-year) (feet)	Max. Lateral Inflow (2-year) (cfs)	Max. Total Inflow (2-year) (cfs)	Surcharging (2-year)	Max. HGL (10-year) (feet)	Max. Lateral Inflow (10-year) (cfs)	Max. Total Inflow (10-year) (cfs)	Surcharging (10-year)	Max. HGL (100-year) (feet)	Max. Lateral Inflow (100-year) (cfs)	Max. Total Inflow (100-year) (cfs)	Surcharging (100-year)
ST-STR-1250	Inlet	394.784	406.784	12	395.09	0.28	2.04	YES	397.02	0.43	12.13	YES	402.09	0.66	13.04	YES
ST-STR-1251	Inlet	393.915	408.915	15	394.26	0.58	2.6	YES	397.15	0.94	11.93	YES	402.15	1.52	11.73	YES
ST-STR-1252	Inlet	395.713	402.713	7	396.62	4.38	6.54	YES	396.92	7.22	10.75	YES	397.4	11.71	17.43	YES
ST-STR-1253	Inlet	396.209	401.209	5	396.71	2.21	2.21	YES	396.98	3.62	3.62	YES	397.45	5.88	5.88	YES
ST-STR-1254	Inlet	389.999	404.999	15	391.24	2.93	48.17	YES	391.71	4.64	84.63	YES	392.23	7.31	127.87	YES
ST-STR-1255	Inlet	388.18	393.18	5	389.17	8.3	8.3	YES	389.55	14.06	14.06	YES	390.72	23.63	23.63	YES
ST-STR-1256	Inlet	386.2	395.214	9.014	386.58	0.58	10.53	YES	386.69	0.96	17.57	YES	386.84	1.57	29.54	YES
ST-STR-1257	Inlet	387.3	392.925	5.625	388.27	1.73	9.99	YES	388.61	2.82	16.81	YES	389.17	4.55	28.01	YES
ST-STR-1258	Inlet	443.519	448.019	4.5	443.62	0.33	0.33	YES	443.65	0.52	0.52	YES	443.68	0.82	0.82	YES
ST-STR-1259	Inlet	432.4	435.599	3.199	435.23	0.98	0.98	YES	435.36	1.64	1.64	YES	436.85	2.69	9.11	YES
ST-STR-126	Unimprove	452.713	454.465	0	452.71	0	0	YES	452.71	0	0	YES	452.71	0	0	YES
ST-STR-1260	Inlet	432	434.959	2.959	435.22	46.96	47.92	YES	435.34	84.26	85.9	YES	436.85	137.2	138.76	YES
ST-STR-1261	Inlet	425.903	430.903	5	426.29	0.49	1.98	YES	426.39	0.78	3.13	YES	426.51	1.24	4.92	YES
ST-STR-1262	Headwall	412.188	412.188	0	412.8	0.28	2.67	YES	413.04	0.43	4.2	YES	414.33	0.65	5.66	YES
ST-STR-1263	Inlet	412.883	415.883	3	413.06	0.29	0.29	YES	413.1	0.45	0.45	YES	414.36	0.69	1.09	YES
ST-STR-1264	Inlet	428.438	433.438	5	428.6	0.4	0.4	YES	428.64	0.64	0.64	YES	428.68	1	1	YES
ST-STR-1265	Unimprove	413.316	413.316	0	413.53	0.41	1.07	YES	413.58	0.64	1.69	YES	414.33	0.99	2.65	YES
ST-STR-1266	Inlet	427.83	434.83	7	428.09	1.1	1.5	YES	428.15	1.73	2.37	YES	428.23	2.71	3.71	YES
ST-STR-1267	Headwall	501.677	501.677	0	502.25	10.24	10.24	YES	502.46	18.66	18.66	YES	502.75	32.25	32.25	YES
ST-STR-1268	Inlet	440.074	445.074	5	440.23	0.35	0.35	YES	441.61	0.54	4.23	YES	443	0.82	4.07	YES
ST-STR-1269	Inlet	434.433	439.433	5	434.65	1.42	1.42	YES	434.7	2.29	2.29	YES	434.77	3.65	3.65	YES
ST-STR-1270	Inlet	430.779	435.779	5	431.6	0.95	41.91	YES	431.7	1.49	52.14	YES	431.76	2.31	57.94	YES
ST-STR-1271	Inlet	433	435.855	2.855	433.19	0.67	1.15	YES	433.23	1.03	1.76	YES	433.28	1.56	2.7	YES
ST-STR-1272	Inlet	438.972	444.456	5.484	440.51	0.3	36.32	YES	445.19	0.49	59.06	YES	446.1	0.72	113.96	YES
ST-STR-1273	Inlet	446.577	451.577	5	446.98	3.41	3.41	YES	447.1	5.78	5.78	YES	447.25	9.6	9.6	YES
ST-STR-1274	Inlet	440.952	445.952	5	441.37	3.71	3.71	YES	445.22	6.3	6.3	YES	446.14	10.47	12.82	YES
ST-STR-1275	Inlet	447.932	453.432	5.5	448.18	1.69	1.69	YES	448.25	2.84	2.84	YES	448.34	4.68	4.68	YES
ST-STR-1276	Inlet	442.996	450.342	7.346	444.02	2.14	30.8	YES	446.16	3.56	50.52	YES	463.89	5.81	100.62	YES
ST-STR-1277	Inlet	445.989	450.989	5	446.09	0.48	0.48	YES	446.12	0.75	0.75	YES	446.15	1.15	1.15	YES
ST-STR-1278	Inlet	433.545	454.07	20.525	441.82	0.33	44.57	YES	442.11	0.53	45.38	YES	442.42	0.84	46.29	YES
ST-STR-1279	Inlet	433.619	441.456	7.837	442.53	105.11	111.28	YES	442.82	183.78	183.78	YES	443.15	315.85	315.85	YES
ST-STR-128	DS Headwa	436.287	436.287	0	439.4	0	8.92	YES	439.4	0	10.12	YES	439.41	0	11.32	YES
ST-STR-1280	Inlet	433.785	442.226	8.441	442.55	2.24	20.89	YES	442.75	3.6	40.43	YES	443.07	5.72	76.69	YES
ST-STR-1281	Inlet	434.215	448.695	14.48	443.33	0.43	18.79	YES	444.79	0.67	30.91	YES	448.05	1.04	50.31	YES
ST-STR-1282	Inlet	434.297	453.455	19.158	443.47	0.17	18.35	YES	445.14	0.29	30.22	YES	448.94	0.46	49.27	YES
ST-STR-1283	Inlet	436.539	441.539	5	444.06	9.28	9.28	YES	446.62	15.66	15.66	YES	452.71	25.78	25.78	YES
ST-STR-1284	Inlet	434.639	442.218	7.579	443.95	0.41	9.69	YES	446.33	0.62	16.29	YES	451.93	0.94	26.72	YES
ST-STR-1285	Inlet	434.421	445.129	10.708	443.7	1.08	18.17	YES	445.75	1.76	29.94	YES	450.42	2.82	48.79	YES
ST-STR-1286	Inlet	434.494	446.578	12.084	443.82	1.29	17.08	YES	446.06	2.01	28.17	YES	451.28	3.12	45.97	YES
ST-STR-1287	Inlet	434.773	438.892	4.119	443.93	0.44	3.13	YES	446.26	0.67	6.47	YES	451.65	1.02	11.38	YES
ST-STR-1288	Inlet	434.91	437.841	2.931	443.9	0.48	3.59	YES	446.16	0.73	7.17	YES	451.38	1.12	12.45	YES
ST-STR-1289	Inlet	434.999	437.499	2.5	443.56	2.28	5.87	YES	444.82	3.66	10.79	YES	447.37	5.8	18.2	YES
ST-STR-1290	Inlet	437.985	441.985	4	443.27	1.45	7.33	YES	443.4	2.31	13.1	YES	444.03	3.63	60.47	YES
ST-STR-1291	Inlet	472.587	478.087	5.5	472.95	2.81	8.81	YES	473.07	5.01	15.68	YES	473.21	8.63	26.51	YES

Existing Condition Junctions Results Summary Table

Facility ID	Type	Dimensions			2-year				10-year				100-year			
		Invert Elevation (feet)	Rim Elevation (feet)	Depth (feet)	Max. HGL (2-year) (feet)	Max. Lateral Inflow (2-year) (cfs)	Max. Total Inflow (2-year) (cfs)	Surcharging (2-year)	Max. HGL (10-year) (feet)	Max. Lateral Inflow (10-year) (cfs)	Max. Total Inflow (10-year) (cfs)	Surcharging (10-year)	Max. HGL (100-year) (feet)	Max. Lateral Inflow (100-year) (cfs)	Max. Total Inflow (100-year) (cfs)	Surcharging (100-year)
ST-STR-1292	Inlet	472.786	478.286	5.5	473.55	6.02	6.02	YES	473.83	10.71	10.71	YES	474.19	17.94	17.94	YES
ST-STR-1293	Inlet	452.047	457.047	5	452.28	0.11	0.67	YES	452.34	0.17	1.08	YES	452.41	0.27	1.72	YES
ST-STR-1294	Inlet	451.19	456.19	5	451.32	0.16	0.81	YES	451.36	0.26	1.32	YES	451.4	0.4	2.1	YES
ST-STR-1295	Inlet	452.8	458.152	5.352	453.01	0.05	0.57	YES	453.07	0.08	0.92	YES	453.13	0.15	1.48	YES
ST-STR-1296	Inlet	453.638	458.638	5	453.82	0.48	0.48	YES	453.87	0.77	0.77	YES	453.93	1.23	1.23	YES
ST-STR-1297	Inlet	453.183	458.183	5	453.42	0.05	0.52	YES	453.48	0.07	0.84	YES	453.56	0.11	1.34	YES
ST-STR-1298	Inlet	427.572	433.072	5.5	431.62	16.74	16.74	YES	435.26	30.38	30.38	YES	436.99	54.98	54.98	YES
ST-STR-1299	Headwall	495.501	495.501	0	495.65	0.53	0.82	YES	495.66	0.86	0.86	YES	495.68	1.33	1.33	YES
ST-STR-13	Cleanout	424.5	432.562	8.062	426.42	0	53.36	YES	433.7	0	97.2	YES	434.68	0	97.61	YES
ST-STR-130	Unimprove	450.604	450.604	0	450.74	0	3.15	YES	450.79	0	5.35	YES	450.86	0	8.66	YES
ST-STR-1300	Inlet	370.654	376.654	6	371.91	24.8	24.8	YES	372.36	41.87	41.87	YES	373.17	69.51	69.51	YES
ST-STR-1301	Inlet	391.6	402.97	11.37	392.98	1.86	48.28	YES	393.59	3.11	81.52	YES	407.25	5.11	142.27	YES
ST-STR-1302	Inlet	386.39	398.826	12.436	387.38	2.67	50.7	YES	387.72	4.45	85.5	YES	393.07	7.32	149.49	YES
ST-STR-1303	Inlet	372.6	378.941	6.341	374.41	0.12	60.57	YES	375.08	0.19	102.09	YES	376.39	0.28	169.61	YES
ST-STR-1304	Inlet	435.55	441.67	6.12	436.15	4.92	4.92	YES	436.39	8.83	8.83	YES	506.41	15.48	15.48	YES
ST-STR-1305	Inlet	441.27	449.524	8.254	441.68	4.98	4.98	YES	441.82	8.83	8.83	YES	514.46	15.15	15.15	YES
ST-STR-1306	Inlet	430.42	437.457	7.037	431.6	5.01	9.9	YES	434.15	8.89	17.64	YES	503.92	15.34	30.74	YES
ST-STR-1307	Inlet	433.55	441.867	8.317	433.81	0.76	0.76	YES	433.89	1.23	1.23	YES	521.91	1.98	10.2	YES
ST-STR-1308	Inlet	447	454.616	7.616	447.63	2.75	2.75	YES	447.86	4.77	4.77	YES	515.62	7.92	7.92	YES
ST-STR-1309	Inlet	444.94	452.229	7.289	445.33	0.85	4.19	YES	445.45	1.4	7.15	YES	514.82	2.31	12.15	YES
ST-STR-131	Conduit co	427	431.233	4.233	428.6	0	9.65	YES	428.87	0	11.56	YES	429.21	0	12.95	YES
ST-STR-1310	Inlet	435.68	443.849	8.169	435.81	1.18	1.18	YES	435.85	1.88	1.88	YES	505.52	2.96	4.5	YES
ST-STR-1311	Inlet	426.07	440.735	14.665	426.7	0.78	11.47	YES	426.91	1.22	19.62	YES	504.78	1.89	33.61	YES
ST-STR-1312	Inlet	425.46	437.154	11.694	426.17	8.23	13.01	YES	426.42	13.85	22.14	YES	505.42	23.72	41.28	YES
ST-STR-1313	Inlet	454.8	470.709	15.909	455.07	2.24	2.24	YES	455.16	3.93	3.93	YES	535.01	6.58	14.64	YES
ST-STR-1314	Inlet	412.9	421.039	8.139	413.05	0.62	0.62	YES	413.09	0.98	0.98	YES	461.23	1.53	4.54	YES
ST-STR-1315	Inlet	439.21	447.819	8.609	439.6	0.97	3.1	YES	439.73	1.67	5.45	YES	527.08	2.7	11.94	YES
ST-STR-1316	Inlet	429.98	442.532	12.552	430.24	0.27	1.64	YES	430.31	0.42	2.61	YES	504.96	0.67	9.04	YES
ST-STR-1317	Inlet	406.5	414.63	8.13	406.89	1.59	1.59	YES	407.02	2.66	2.66	YES	442.5	4.23	7.68	YES
ST-STR-1318	Inlet	446.8	454.93	8.13	447.26	0.61	3.36	YES	447.41	1	5.93	YES	515.39	1.64	9.51	YES
ST-STR-1319	Inlet	422.16	437.253	15.093	423.13	0.24	24.64	YES	423.78	0.37	42.03	YES	503.27	0.56	71.79	YES
ST-STR-132	DS Headwa	413.451	414.451	1	415.08	0	17	YES	415.32	0	29.86	YES	415.72	0	53.49	YES
ST-STR-1320	Inlet	440.61	448.741	8.131	440.8	1.41	1.41	YES	440.85	2.38	2.38	YES	521.94	3.77	6.77	YES
ST-STR-1321	Inlet	425.9	434.028	8.128	426.35	2.54	12.3	YES	426.51	4.19	21.76	YES	491.86	6.77	37.47	YES
ST-STR-1322	Inlet	432.62	443.875	11.255	432.85	0.2	1.38	YES	432.91	0.32	2.2	YES	505.47	0.5	7.02	YES
ST-STR-1323	Inlet	405.99	414.128	8.138	406.53	8.15	9.71	YES	406.69	13.78	16.4	YES	442.47	22.67	26.88	YES
ST-STR-1324	Inlet	373	391.797	18.797	373.18	1.29	1.29	YES	373.22	2.05	2.05	YES	373.27	3.26	3.26	YES
ST-STR-1326	Inlet	366.46	390.013	23.553	367.67	0.54	30.52	YES	368.05	0.84	47.29	YES	372.11	1.29	69.55	YES
ST-STR-1327	Inlet	368	387.892	19.892	369.1	0.24	30.23	YES	369.43	0.38	46.68	YES	372.5	0.6	69.25	YES
ST-STR-1328	Unimprove	405.627	405.627	0	405.79	0	20.21	YES	405.79	0	22	YES	405.83	0	42.62	YES
ST-STR-1329	Headwall	386.848	386.848	0	386.85	0	0	YES	386.85	0	0	YES	386.85	0	0	YES
ST-STR-133	DS Headwa	397	401.214	4.214	399.15	0	23.94	YES	399.28	0	32.27	YES	399.38	0	38.72	YES
ST-STR-1330	Inlet	361.25	388.128	26.878	362.87	0.15	30.59	YES	363.58	0.23	47.44	YES	365.16	0.35	69.78	YES
ST-STR-1331	Inlet	418.4	426.734	8.334	418.93	0.77	4.08	YES	419.14	1.46	7.62	YES	419.43	2.42	13.21	YES

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Facility ID	Type	Dimensions			2-year				10-year				100-year			
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ST-STR-1332	Inlet	427.13	429.198	2.068	427.45	1.07	1.07	YES	427.59	2.18	2.18	YES	427.74	3.96	3.96	YES
ST-STR-1333	Cleanout	419.38	429.337	9.957	419.97	0	2.42	YES	420.19	0	4.26	YES	420.56	0	7.31	YES
ST-STR-1334	Inlet	423.3	432.756	9.456	423.71	0.18	2.44	YES	423.85	0.28	4.29	YES	424.05	0.43	7.36	YES
ST-STR-1335	Inlet	425.45	434.69	9.24	425.83	0.14	2.28	YES	425.97	0.22	4.04	YES	426.15	0.34	6.98	YES
ST-STR-1336	Inlet	427.56	436.554	8.994	427.91	0.2	2.17	YES	428.03	0.31	3.86	YES	428.2	0.49	6.69	YES
ST-STR-1337	Inlet	430	438.444	8.444	430.38	1.97	1.97	YES	430.51	3.55	3.55	YES	430.7	6.21	6.21	YES
ST-STR-1338	Inlet	415.78	425.215	9.435	416.1	0.05	4.11	YES	416.22	0.08	7.67	YES	416.36	0.12	13.3	YES
ST-STR-1339	Inlet	417.06	425.185	8.125	417.27	0.17	0.78	YES	417.31	0.26	1.22	YES	417.38	0.39	1.88	YES
ST-STR-134	Headwall	437.086	437.086	0	439.12	3.96	9.53	YES	439.66	6.75	16.01	YES	439.7	11.66	21.75	YES
ST-STR-1340	Inlet	415.53	423.837	8.307	415.85	2.64	3.4	YES	415.97	5.14	6.32	YES	416.12	9.02	10.86	YES
ST-STR-1341	Outlet	404.327	404.327	0	404.49	0	3.4	YES	404.53	0	6.32	YES	404.58	0	10.85	YES
ST-STR-1342	DS Headwa	381.44	381.44	0	381.73	0	4.25	YES	381.81	0	7.89	YES	381.89	0	13.63	YES
ST-STR-1343	Inlet	423.62	425.75	2.13	423.72	0.05	0.05	YES	423.74	0.08	0.08	YES	423.77	0.13	0.13	YES
ST-STR-1344	Channel Co	423.07	425.202	2.132	423.12	0	0.05	YES	423.13	0	0.08	YES	423.15	0	0.12	YES
ST-STR-1345	Inlet	423.84	425.933	2.093	424.12	0.58	0.58	YES	424.18	0.9	0.9	YES	424.25	1.39	1.39	YES
ST-STR-1346	Inlet	427.47	435.598	8.128	435.9	0.89	21.93	YES	436.6	1.41	25.16	YES	437.05	2.19	30.1	YES
ST-STR-1347	Inlet	427.06	435.532	8.472	434.38	0.6	0.6	YES	434.98	0.91	0.91	YES	435.66	1.4	1.4	YES
ST-STR-1348	DS Headwa	422.786	422.786	0	424.03	0	20.21	YES	424.07	0	22	YES	424.43	0	42.62	YES
ST-STR-1349	Outlet	419.982	419.982	0	419.99	0	0.3	YES	420	0	0.47	YES	420	0	0.76	YES
ST-STR-135	Unimprove	448.398	448.668	0	448.4	0	0	YES	448.4	0	0	YES	448.4	0	0	YES
ST-STR-1350	Inlet	417	425.264	8.264	417.05	0.16	0.16	YES	417.06	0.24	0.24	YES	417.08	0.38	0.38	YES
ST-STR-1351	Channel Co	378.818	378.818	0	378.82	0	0	YES	378.82	0	0	YES	378.82	0	0	YES
ST-STR-1352	Inlet	454.41	461.531	7.121	454.58	0.99	0.99	YES	459.77	1.71	1.71	YES	461.98	2.81	2.81	YES
ST-STR-1353	Inlet	459.72	465.839	6.119	460.13	2.6	2.6	YES	482.1	4.43	4.63	YES	478.13	7.24	7.24	YES
ST-STR-1354	Inlet	458.887	465.476	6.589	459.58	1.92	4.51	YES	480.93	3.32	8.99	YES	477.25	5.52	12.76	YES
ST-STR-1355	Inlet	462.2	469.35	7.15	462.63	3.07	3.07	YES	468.42	5.32	5.32	YES	470.33	8.82	8.82	YES
ST-STR-1356	Inlet	461.25	469.366	8.116	461.72	1.74	4.81	YES	467.89	3.01	8.31	YES	470.06	4.97	13.79	YES
ST-STR-1357	Inlet	454.3	461.807	7.507	457.83	0.22	0.88	YES	463.31	0.39	2.67	YES	465.26	0.63	5.98	YES
ST-STR-1358	Inlet	454	461.576	7.576	457.77	3.92	11.64	YES	463.24	6.95	19.43	YES	465.2	11.71	31.44	YES
ST-STR-1359	Conduit co	455.285	466.09	10.805	458.22	0	9.1	YES	465.03	0	16.98	YES	467.75	0	26.56	YES
ST-STR-136	DS Headwa	451.007	451.007	0	451.01	0	0	YES	451.01	0	0	YES	451.01	0	0	YES
ST-STR-1360	Inlet	455.3	462.804	7.504	455.74	3.29	3.29	YES	461.91	5.92	5.92	YES	464.79	10.5	10.5	YES
ST-STR-1361	Cleanout	450	462.577	12.577	454.57	0	12.59	YES	461.69	0	15.33	YES	463.65	0	17.56	YES
ST-STR-1362	Inlet	452.54	462.656	10.116	454.87	0.57	0.57	YES	461.84	0.92	0.92	YES	463.76	1.45	1.45	YES
ST-STR-1363	Inlet	456.78	462.897	6.117	457	1.11	1.11	YES	461.89	1.92	1.92	YES	464.67	3.2	3.2	YES
ST-STR-1364	Inlet	456.27	463.403	7.133	456.52	1.11	1.11	YES	457.13	1.89	1.89	YES	468.11	3.1	4.17	YES
ST-STR-1365	Inlet	455.84	462.968	7.128	456.15	1.73	1.73	YES	457.16	2.98	2.98	YES	468	4.91	4.91	YES
ST-STR-1366	Inlet	451.63	459.761	8.131	451.75	0.53	0.53	YES	457.05	0.87	1.98	YES	460.87	1.38	1.38	YES
ST-STR-1367	Inlet	446.59	454.724	8.134	446.92	2.24	2.85	YES	451.15	3.77	4.74	YES	456.45	6.07	7.76	YES
ST-STR-1368	Inlet	447.52	455.647	8.127	447.72	0.62	0.62	YES	451.11	1.05	1.37	YES	456.47	1.69	1.69	YES
ST-STR-1369	Inlet	445.15	454.279	9.129	445.3	0.7	0.7	YES	451.07	1.5	1.5	YES	456.18	2.96	2.96	YES
ST-STR-137	Inlet	433.086	436.086	3	436.44	1.89	22.41	YES	436.58	3.37	38.12	YES	436.77	5.73	65.71	YES
ST-STR-1370	Cleanout	455.02	463.149	8.129	455.42	0	2.83	YES	457.17	0	4.87	YES	467.72	0	8.02	YES
ST-STR-1371	Cleanout	454.84	462.956	8.116	455.23	0	4.4	YES	461.91	0	8	YES	464.66	0	13.72	YES

Existing Condition Junctions Results Summary Table

Facility ID	Type	Dimensions			2-year				10-year				100-year			
		Invert Elevation (feet)	Rim Elevation (feet)	Depth (feet)	Max. HGL (2-year) (feet)	Max. Lateral Inflow (2-year) (cfs)	Max. Total Inflow (2-year) (cfs)	Surcharging (2-year)	Max. HGL (10-year) (feet)	Max. Lateral Inflow (10-year) (cfs)	Max. Total Inflow (10-year) (cfs)	Surcharging (10-year)	Max. HGL (100-year) (feet)	Max. Lateral Inflow (100-year) (cfs)	Max. Total Inflow (100-year) (cfs)	Surcharging (100-year)
ST-STR-1372	Inlet	451.2	461.323	10.123	452.92	1.37	1.37	YES	460.11	2.26	2.26	YES	462.25	3.57	3.57	YES
ST-STR-1373	Cleanout	448.145	461.115	12.97	452.53	0	13.25	YES	459.72	0	14.9	YES	461.9	0	16.38	YES
ST-STR-1374	Cleanout	442.295	454.852	12.557	445.15	0	22.66	YES	451.03	0	27.31	YES	456.12	0	37.81	YES
ST-STR-1375	Cleanout	426.48	434.608	8.128	434.38	0	20.24	YES	434.94	0	20.47	YES	435.62	0	22.19	YES
ST-STR-1376	Conduit co	450.383	463.009	12.626	454.87	0	10.57	YES	461.84	0	11.4	YES	463.72	0	11.36	YES
ST-STR-1377	Cleanout	453.29	461.411	8.121	453.48	0	0.99	YES	459.8	0	1.95	YES	462	0	2.84	YES
ST-STR-1378	Cleanout	448.479	461.429	12.95	452.92	0	12.99	YES	460.1	0	14.93	YES	462.19	0	15.83	YES
ST-STR-1379	Cleanout	445.945	459.331	13.386	449.94	0	15.69	YES	456.93	0	19.25	YES	460.3	0	23.55	YES
ST-STR-138	DS Headwa	407.161	407.716	0	407.19	0	1.83	YES	407.21	0	3.3	YES	407.22	0	5.54	YES
ST-STR-1380	Inlet	447.26	455.389	8.129	447.6	4.87	4.87	YES	451.13	8.26	8.26	YES	456.58	13.45	13.45	YES
ST-STR-1381	Channel Co	454.914	458.048	3.134	454.91	0	0	YES	454.91	0	0	YES	454.91	0	0	YES
ST-STR-1382	Channel Co	452.05	455.67	3.62	452.05	0	0	YES	452.05	0	0	YES	452.05	0	0	YES
ST-STR-1383	Channel co	450.87	452.906	2.036	450.87	0	0	YES	450.87	0	0	YES	450.87	0	0	YES
ST-STR-1384	Channel Co	446.342	449.962	3.62	446.34	0	0	YES	446.34	0	0	YES	446.34	0	0	YES
ST-STR-1385	Channel Co	443.954	447.574	3.62	443.95	0	0	YES	443.95	0	0	YES	443.95	0	0	YES
ST-STR-1386	Channel Co	440.498	444.118	3.62	440.5	0	0	YES	440.5	0	0	YES	440.5	0	0	YES
ST-STR-1387	Channel Co	437.81	441.43	3.62	437.81	0	0	YES	437.81	0	0	YES	437.81	0	0	YES
ST-STR-1388	Channel Co	434.691	438.311	3.62	434.69	0	0	YES	434.69	0	0	YES	434.69	0	0	YES
ST-STR-1389	Channel Co	433.39	437.01	3.62	433.39	0	0	YES	433.39	0	0	YES	433.39	0	0	YES
ST-STR-139	DS Headwa	455.323	455.323	0	457.47	0	2.7	YES	457.48	0	4.51	YES	457.5	0	6.32	YES
ST-STR-1390	Channel Co	424.885	427.015	2.13	425.1	0	1.05	YES	425.19	0	2.15	YES	425.29	0	3.9	YES
ST-STR-1391	Channel Co	425.515	427.657	2.142	425.9	0	1.06	YES	426.05	0	2.16	YES	426.21	0	3.94	YES
ST-STR-1392	Conduit co	448.899	460.179	11.28	449.96	0	3.32	YES	457.07	0	6.14	YES	460.9	0	9.5	YES
ST-STR-1393	Conduit co	399.535	405.165	5.63	399.83	0	4.25	YES	399.94	0	7.89	YES	400.08	0	13.63	YES
ST-STR-1394	Inlet	423.75	430.339	6.589	423.89	0.3	0.3	YES	423.92	0.48	0.48	YES	423.96	0.76	0.76	YES
ST-STR-1395	Inlet	423.5	427.792	4.292	425.66	1.53	20.21	YES	425.99	2.54	22	YES	431.39	3.84	42.62	YES
ST-STR-1396	Channel Co	458.121	460.241	2.12	458.12	0	0	YES	458.12	0	0	YES	458.12	0	0	YES
ST-STR-1397	Channel Co	423.004	425.134	2.13	423.17	0	0.57	YES	423.2	0	0.89	YES	423.25	0	1.39	YES
ST-STR-1398	Headwall	372.025	372.025	0	372.74	2.17	30.1	YES	372.93	5.77	46.4	YES	373.47	10.68	69.14	YES
ST-STR-1399	Headwall	392.179	392.179	0	393.05	1.78	24.58	YES	393.22	5.84	33.99	YES	393.57	12.3	55.88	YES
ST-STR-14	Cleanout	422.52	433.735	11.215	424.8	0	53.35	YES	432.26	0	85.72	YES	434.47	0	100.9	YES
ST-STR-1400	DS Headwa	378.247	378.247	0	378.86	0	24.54	YES	378.93	0	33.69	YES	379.08	0	55.87	YES
ST-STR-1401	Channel Co	373.582	373.582	0	374.5	0	28.85	YES	374.61	0	41.96	YES	374.78	0	63.24	YES
ST-STR-1402	Channel Co	376.559	376.559	0	377.02	0	28.6	YES	377.09	0	41.54	YES	377.17	0	62.96	YES
ST-STR-1403	Headwall	456.759	456.759	0	457.78	0.7	0.7	YES	463.3	2.27	2.27	YES	465.29	5.35	5.35	YES
ST-STR-1404	Inlet	428.767	430.887	2.12	428.92	0.72	0.72	YES	429.04	2.44	2.44	YES	429.19	6.14	6.14	YES
ST-STR-1405	Inlet	379.51	381.626	2.116	379.71	0.78	1.36	YES	379.86	2.41	4.44	YES	380.04	4.71	10.5	YES
ST-STR-1406	Inlet	345.55	347.674	2.124	345.87	0.9	2.8	YES	346.13	2.88	9.62	YES	346.48	6.32	23.67	YES
ST-STR-1407	Inlet	322.304	322.304	0	322.39	0.09	2.81	NO	322.46	0.15	9.67	NO	322.55	0.25	23.78	NO
ST-STR-1408	Inlet	425.492	427.612	2.12	425.65	0.7	0.7	YES	425.78	2.37	2.37	YES	425.94	5.99	5.99	YES
ST-STR-1409	Inlet	390.33	392.453	2.123	390.54	0.82	1.51	YES	390.71	2.84	5.21	YES	390.93	7.35	13.29	YES
ST-STR-141	DS Headwa	436.1	436.1	0	439.43	0	3.72	YES	439.44	0	6.14	YES	439.45	0	7.22	YES
ST-STR-1410	Inlet	337.828	337.828	0	337.9	0.24	2.01	NO	337.96	0.46	6.18	NO	338.04	0.76	14.21	NO
ST-STR-1411	Inlet	436.348	438.478	2.13	436.43	0.19	0.19	YES	436.5	0.63	0.63	YES	436.57	1.46	1.46	YES

Existing Condition Junctions Results Summary Table

Facility ID	Type	Dimensions			2-year				10-year				100-year			
		Invert Elevation (feet)	Rim Elevation (feet)	Depth (feet)	Max. HGL (2-year) (feet)	Max. Lateral Inflow (2-year) (cfs)	Max. Total Inflow (2-year) (cfs)	Surcharging (2-year)	Max. HGL (10-year) (feet)	Max. Lateral Inflow (10-year) (cfs)	Max. Total Inflow (10-year) (cfs)	Surcharging (10-year)	Max. HGL (100-year) (feet)	Max. Lateral Inflow (100-year) (cfs)	Max. Total Inflow (100-year) (cfs)	Surcharging (100-year)
ST-STR-1412	Inlet	402.12	404.423	2.303	402.26	0.42	0.65	YES	402.37	1.34	2.11	YES	402.49	2.94	4.69	YES
ST-STR-1413	Inlet	379.62	381.752	2.132	379.81	0.3	1.29	YES	379.95	0.96	4.14	YES	380.09	2.06	8.99	YES
ST-STR-1414	Inlet	340.225	340.225	0	340.38	0.35	1.32	NO	340.46	0.76	4.03	NO	340.54	1.28	8.19	NO
ST-STR-1415	Inlet	367.81	369.935	2.125	368.08	0.93	2.53	YES	368.27	3.02	8.44	YES	368.5	6.73	21.2	YES
ST-STR-1416	Inlet	390.532	390.532	0	390.53	0	0	YES	390.53	0	0	YES	390.53	0	0	YES
ST-STR-1417	Inlet	351.842	351.842	0	351.84	0	0	YES	351.84	0	0	YES	351.84	0	0	YES
ST-STR-1418	Unimproved	395.139	395.139	0	395.14	0	0	YES	395.14	0	0	YES	395.14	0	0	YES
ST-STR-1419	Headwall	411.318	411.318	0	411.32	0	0	YES	411.32	0	0	YES	411.32	0	0	YES
ST-STR-142	DS Headwall	426.066	426.066	0	427.02	0	15.3	YES	427.17	0	27.49	YES	427.33	0	46.36	YES
ST-STR-1420	Headwall	420.914	420.914	0	421.02	0.07	0.07	YES	421.07	0.19	0.19	YES	421.11	0.33	0.33	YES
ST-STR-1421	Headwall	426.15	426.15	0	426.33	0.34	0.34	YES	426.44	1.08	1.08	YES	426.53	2.34	2.34	YES
ST-STR-1422	Inlet	440	447.678	7.678	440.6	3.57	8.16	YES	440.82	6.29	14.44	YES	441.27	10.54	24.29	YES
ST-STR-1423	Conduit cover	392.52	402.84	10.32	394.22	1.34	33.74	YES	402.75	2.11	61.45	YES	406.99	3.3	104.76	YES
ST-STR-1424	Inlet	451.59	459.716	8.126	452.19	3.48	3.48	YES	452.42	6.22	6.22	YES	452.83	10.53	10.53	YES
ST-STR-1425	Inlet	393.589	401.935	8.346	395.13	11.11	32.63	YES	411.62	19.66	59.32	YES	415.19	34.64	101.46	YES
ST-STR-1426	Inlet	391.75	402.436	10.686	393.81	3.23	39.17	YES	401.27	5.49	70.3	YES	402.43	9.09	113.87	YES
ST-STR-1427	Inlet	451.26	459.386	8.126	451.73	1.2	4.67	YES	451.89	2.07	8.28	YES	452.12	3.46	13.95	YES
ST-STR-1428	Inlet	395.14	402.376	7.236	396.28	15.38	22.52	YES	426.51	26.91	39.8	YES	420.02	47.22	67.2	YES
ST-STR-1429	Inlet	396.124	401.754	5.63	396.12	0	0	YES	396.12	0	0	YES	396.12	0	0	YES
ST-STR-1433	DS Headwall	465.982	465.982	0	466.94	0	0.97	YES	466.95	0	1.61	YES	466.96	0	2.59	YES
ST-STR-1434	Inlet	411.082	420.582	9.5	412.01	6.71	18.55	YES	417.58	11.15	25.06	YES	421.66	18.33	27.13	YES
ST-STR-1435	DS Headwall	378.15	378.15	0	378.33	0	20.99	YES	378.36	0	27.07	YES	378.42	0	41.83	YES
ST-STR-1436	Headwall	440.799	440.799	0	440.8	0	0	YES	440.8	0	0	YES	440.8	0	0	YES
ST-STR-1439	Headwall	378.836	378.836	0	378.84	0	0	YES	378.84	0	0	YES	378.84	0	0	YES
ST-STR-144	DS Headwall	447.833	447.833	0	449.4	0	3.28	YES	449.44	0	4.92	YES	449.45	0	5.54	YES
ST-STR-1440	Headwall	342.941	343.503	0	342.94	0	0	YES	342.94	0	0	YES	342.94	0	0	YES
ST-STR-1441	Inlet	292.767	298.545	5.778	293.88	3.81	3.81	NO	298.94	6.57	6.57	NO	299.05	10.75	33.91	NO
ST-STR-1442	Inlet	297.747	303.535	5.788	298.34	21.41	21.41	NO	299.53	37.09	37.09	NO	301.18	62.26	62.26	NO
ST-STR-1443	Inlet	299.747	305.53	5.783	299.99	1.25	1.25	NO	300.07	2.16	2.16	NO	300.15	3.48	3.48	NO
ST-STR-1444	Inlet	294.587	300.365	5.778	295.07	0.12	8.94	NO	296.6	0.19	15.33	NO	297.59	0.29	26.05	NO
ST-STR-1445	Inlet	298.607	304.387	5.78	299.03	7.6	8.84	NO	299.16	13	15.15	NO	299.36	22.31	25.77	NO
ST-STR-1446	Inlet	292.467	295.249	2.782	293.24	1.64	7.72	NO	295.95	2.78	24.31	NO	296.2	4.43	50.79	NO
ST-STR-1447	Cleanout	290.937	297.656	6.719	292.55	0	35.78	NO	296.4	0	55.22	NO	297.06	0	64.13	NO
ST-STR-1448	Inlet	277.806	281.806	4	282.67	3.63	38.66	NO	282.83	5.82	47.34	NO	282.96	9.2	66.41	NO
ST-STR-1449	Inlet	292.407	298.19	5.783	293.85	0.07	25.21	NO	299.01	0.11	40.28	NO	299.43	0.18	62.5	NO
ST-STR-145	DS Headwall	443.669	443.669	0	444.22	0	7.82	YES	444.29	0	14.15	YES	444.37	0	22.82	YES
ST-STR-1450	Inlet	431.82	439.226	7.406	432.21	0.94	3.57	YES	432.33	1.52	6.01	YES	432.47	2.43	9.69	YES
ST-STR-1451	Conduit cover	336.08	357.698	21.618	337.23	0	41.94	NO	337.5	0	60.75	NO	337.86	0	86.09	NO
ST-STR-1452	Inlet	348.62	355.955	7.335	349.13	2.53	22.14	YES	349.28	4.46	35.66	YES	349.48	7.53	55.45	YES
ST-STR-1453	Inlet	412.22	420.404	8.184	412.47	0.6	0.6	YES	412.55	0.96	0.96	YES	412.65	1.53	1.53	YES
ST-STR-1454	Outlet	407.928	407.928	0	407.98	0	3.55	YES	408	0	5.98	YES	408.02	0	9.64	YES
ST-STR-1455	Headwall	342.317	342.317	0	343.3	0.46	25.09	YES	343.43	0.71	31.08	YES	343.51	1.09	35.41	YES
ST-STR-1456	Headwall	360.341	360.341	0	361	0.46	7.94	YES	361.15	0.75	11.53	YES	361.28	1.23	16.1	YES
ST-STR-1457	Headwall	374.544	374.544	0	375.7	11.32	13.15	YES	376.26	19.67	23.42	YES	377.79	32.79	39.61	YES

Existing Condition Junctions Results Summary Table

Facility ID	Type	Dimensions			2-year				10-year				100-year			
		Invert Elevation (feet)	Rim Elevation (feet)	Depth (feet)	Max. HGL (2-year) (feet)	Max. Lateral Inflow (2-year) (cfs)	Max. Total Inflow (2-year) (cfs)	Surcharging (2-year)	Max. HGL (10-year) (feet)	Max. Lateral Inflow (10-year) (cfs)	Max. Total Inflow (10-year) (cfs)	Surcharging (10-year)	Max. HGL (100-year) (feet)	Max. Lateral Inflow (100-year) (cfs)	Max. Total Inflow (100-year) (cfs)	Surcharging (100-year)
ST-STR-1458	Inlet	432.82	440.412	7.592	433.16	2.64	2.64	YES	433.27	4.51	4.51	YES	433.39	7.27	7.27	YES
ST-STR-1459	Headwall	387.525	387.525	0	388.15	7.59	8.67	YES	388.36	12.99	14.8	YES	388.71	22.98	25.98	YES
ST-STR-1460	Inlet	411.92	418.789	6.869	412.26	0.72	1.32	YES	412.35	1.18	2.13	YES	412.46	1.92	3.44	YES
ST-STR-1461	DS Headwa	383.685	383.685	0	383.79	0	6.38	YES	383.81	0	10.77	YES	383.83	0	18.39	YES
ST-STR-1462	Outlet	373.477	373.477	0	373.66	0	12.15	YES	373.69	0	19.8	YES	373.71	0	23.93	YES
ST-STR-1463	Outlet	355.51	355.51	0	355.78	0	7.93	YES	355.82	0	11.52	YES	356.56	0	16.44	YES
ST-STR-1464	Outlet	406.459	406.459	0	406.49	0	1.3	YES	406.49	0	2.11	YES	406.51	0	3.41	YES
ST-STR-1465	Conduit co	337.12	357.484	20.364	338.14	0	41.87	NO	338.4	0	60.67	NO	338.73	0	86.06	NO
ST-STR-1466	Inlet	350.45	356.52	6.07	351.54	19.6	19.6	YES	353.45	31.33	31.33	YES	356.78	49.25	49.25	YES
ST-STR-1467	Outlet	345.995	345.995	0	346.6	0	25.01	YES	346.66	0	30.98	YES	346.69	0	35.28	YES
ST-STR-1468	Headwall	365.027	365.027	0	366.81	8.94	13.26	YES	367.64	14.4	22.04	YES	369.06	22.49	36.6	YES
ST-STR-1469	Outlet	360.448	360.448	0	361.01	0	7.84	YES	361.16	0	11.35	YES	361.29	0	15.49	YES
ST-STR-147	DS Headwa	443.867	443.867	0	444	0.88	10.98	YES	444.09	1.48	24.78	YES	444.18	2.38	43.09	YES
ST-STR-1470	Headwall	354.155	354.155	0	355.96	15.53	24.96	YES	357.15	26.72	42.69	YES	359.23	43.28	63.7	YES
ST-STR-1471	Outlet	353.954	353.954	0	354.54	0	16.05	YES	355.87	0	19.83	YES	358.02	0	19.03	YES
ST-STR-1472	Headwall	350.949	350.949	0	352.95	1.48	16.4	YES	355.87	2.25	20.4	YES	358.02	3.43	21.15	YES
ST-STR-1473	Outlet	350.105	350.105	0	351.78	0	16.6	YES	354.39	0	19.15	YES	356.56	0	19.5	YES
ST-STR-1474	Headwall	348.91	348.91	0	351.77	7.81	25.09	YES	354.38	12.58	31.08	YES	356.56	19.61	35.44	YES
ST-STR-1475	Channel Co	388.104	390.234	2.13	388.29	0	3.34	YES	388.34	0	5.7	YES	388.39	0	9.27	YES
ST-STR-1476	Channel Co	349.134	349.134	0	351.77	0	23.96	YES	354.38	0	29.82	YES	356.56	0	33.65	YES
ST-STR-1477	DS Headwa	348.967	348.967	0	349.52	0	39.48	YES	350.46	0	94.64	YES	351.99	0	181.5	YES
ST-STR-1478	Inlet	372.14	378.539	6.399	372.92	2.32	16.24	YES	373.28	4.14	29.25	YES	379.38	7.25	47.2	YES
ST-STR-1479	Inlet	373.61	378.66	5.05	374.48	13.9	13.9	YES	375.36	25.13	25.13	YES	379.58	44.43	44.43	YES
ST-STR-148	DS Headwa	441.059	441.059	0	441.48	0	1.39	YES	441.5	0	1.5	YES	441.52	0	1.6	YES
ST-STR-1480	Cleanout	412.19	426.462	14.272	413.05	0	13.85	YES	413.4	0	24.86	YES	417.32	0	43.81	YES
ST-STR-1481	Inlet	414.5	421.106	6.606	415.54	13.82	13.82	YES	416.04	24.86	24.86	YES	422.78	43.81	43.81	YES
ST-STR-1482	DS Headwa	408.751	408.751	0	408.81	0	13.85	YES	408.83	0	24.83	YES	408.86	0	43.81	YES
ST-STR-1483	Inlet	336.02	341.742	5.722	336.12	0.25	0.25	NO	336.15	0.42	0.42	NO	336.18	0.66	0.66	NO
ST-STR-1484	DS Headwa	309.391	309.391	0	309.4	0	0.25	NO	309.4	0	0.41	NO	309.4	0	0.66	NO
ST-STR-1485	Outlet	329.402	329.402	0	329.92	0	42.02	NO	330.03	0	60.84	NO	331.01	0	129.02	NO
ST-STR-1487	Channel co	303.185	303.185	0	311.46	0	500.05	NO	311.95	0	695.54	NO	313.28	0	1141.53	NO
ST-STR-149	DS Headwa	439.754	442.524	0.524	442.31	0	8.6	YES	442.39	0	16.81	YES	442.48	0	37.59	YES
ST-STR-1490	DS Headwa	332.436	332.436	0	336.61	0	354.22	NO	336.68	0	534.06	NO	338.17	0	939.08	NO
ST-STR-1491	Headwall	333.181	333.181	0	336.85	4.32	321.94	NO	337	6.8	484.8	NO	338.64	10.65	792.93	NO
ST-STR-1492	Conduit co	399.04	405.421	6.381	405.31	0	53.5	YES	405.99	0	53.36	YES	406.22	0	52.25	YES
ST-STR-1495	Outlet	288.832	288.98	0	288.88	3.81	3.81	NO	288.9	6.55	6.55	NO	288.93	11.03	11.03	NO
ST-STR-1496	Outlet	284.72	287.162	0	284.72	0	0	NO	284.72	0	0	NO	284.72	0	0	NO
ST-STR-1497	Outlet	290.031	290.3	0	290.05	1.69	1.69	NO	290.06	2.99	2.99	NO	290.07	4.99	4.99	NO
ST-STR-1498	Inlet	284.023	289.023	5	284.02	0	0	NO	284.02	0	0	NO	284.57	0	0.49	NO
ST-STR-1499	Inlet	286.259	291.259	5	286.26	0	0	NO	286.26	0	0	NO	286.26	0	0	NO
ST-STR-15	DS Headwa	390.636	390.636	0	390.64	0	0	YES	390.64	0	0	YES	390.64	0	0	YES
ST-STR-150	DS Headwa	456.901	456.901	0	456.95	0	4.58	YES	456.95	0	4.62	YES	456.95	0	4.67	YES
ST-STR-1500	Conduit co	407.805	412.805	5	409.16	0	17.72	YES	419.85	0	29.46	YES	417.75	0	35.05	YES
ST-STR-1501	DS Headwa	432.83	434.83	2	432.87	0	5.07	YES	432.89	0	8.76	YES	432.91	0	14.84	YES

Existing Condition Junctions Results Summary Table

Facility ID	Type	Dimensions			2-year				10-year				100-year			
		Invert Elevation (feet)	Rim Elevation (feet)	Depth (feet)	Max. HGL (2-year) (feet)	Max. Lateral Inflow (2-year) (cfs)	Max. Total Inflow (2-year) (cfs)	Surcharging (2-year)	Max. HGL (10-year) (feet)	Max. Lateral Inflow (10-year) (cfs)	Max. Total Inflow (10-year) (cfs)	Surcharging (10-year)	Max. HGL (100-year) (feet)	Max. Lateral Inflow (100-year) (cfs)	Max. Total Inflow (100-year) (cfs)	Surcharging (100-year)
ST-STR-1502	Headwall	432	439.133	7.133	432	0	0	YES	432	0	0	YES	432	0	0	YES
ST-STR-1503	Conduit co	427.5	438.767	11.267	428.1	0	4.53	YES	428.28	0	7.7	YES	428.47	0	11.8	YES
ST-STR-1504	Inlet	444.596	450.096	5.5	445.67	28.54	29.61	YES	446.69	51.89	53.88	YES	475.46	91.28	94.81	YES
ST-STR-1505	Inlet	279.406	284.406	5	279.41	0	0	NO	279.41	0	0	NO	279.41	0	0	NO
ST-STR-1507	Cleanout	278.841	289.841	11	278.84	0	0	NO	278.84	0	0	NO	278.84	0	0	NO
ST-STR-1508	Cleanout	277.337	288.337	11	277.34	0	0	NO	277.34	0	0	NO	277.34	0	0	NO
ST-STR-1509	Manhole	276.159	281.159	5	276.3	0	0.54	NO	276.35	0	0.96	NO	276.57	0	4.57	NO
ST-STR-151	Headwall	396.068	396.068	0	397.83	15.9	20.75	YES	398.6	29.15	37.26	YES	399.78	49.76	72.63	YES
ST-STR-1510	Cleanout	272.269	277.269	5	273.74	0	2.33	NO	274.27	0	3.01	NO	277.43	0	29.95	NO
ST-STR-1512	Inlet	279.665	284.665	5	279.81	0	0.54	NO	279.85	0	0.96	NO	279.91	0	1.61	NO
ST-STR-1513	Inlet	282.607	287.607	5	282.61	0	0	NO	282.61	0	0	NO	282.61	0	0	NO
ST-STR-1514	Inlet	273.809	278.309	4.5	273.81	0	0	NO	274.23	0	0.97	NO	280.41	0	126.97	NO
ST-STR-1515	Inlet	285	287	2	285.6	0	4.34	NO	285.81	0	7.61	NO	286.09	0	12.87	NO
ST-STR-1516	Cleanout	284.5	288.1	3.6	285.1	0	4.34	NO	285.31	0	7.61	NO	285.6	0	12.88	NO
ST-STR-1517	Cleanout	283.96	288.96	5	284.43	0	4.33	NO	284.59	0	7.61	NO	285.05	0	12.87	NO
ST-STR-1518	Cleanout	282.5	288.17	5.67	283.54	3.78	7.94	NO	283.97	6.8	14.12	NO	284.84	12.37	24.65	NO
ST-STR-152	Channel co	429.307	429.307	0	429.37	0	0.21	YES	429.39	0	0.35	YES	429.41	0	0.56	YES
ST-STR-1520	Outlet, D-2	335.956	335.956	0	335.96	0	0	NO	335.96	0	0	NO	335.96	0	0	NO
ST-STR-1521	Inlet	302.981	307.481	4.5	302.98	0	0	NO	302.98	0	0	NO	302.98	0	0	NO
ST-STR-1522	Inlet	300.132	309.632	9.5	300.13	0	0	NO	300.13	0	0	NO	300.13	0	0	NO
ST-STR-1523	Cleanout	297.613	302.613	5	297.61	0	0	NO	297.61	0	0	NO	297.61	0	0	NO
ST-STR-1524	Cleanout	289.103	294.103	5	289.1	0	0	NO	289.1	0	0	NO	289.1	0	0	NO
ST-STR-1525	Outlet	307.266	307.392	0	307.27	0	0	NO	307.27	0	0	NO	307.27	0	0	NO
ST-STR-1526	Headwall	283.742	283.742	0	283.74	0	0	NO	283.74	0	0	NO	286.83	0	200.39	NO
ST-STR-1527	DS Headwa	279.146	282.113	0	279.94	0	75.13	NO	280.09	0	89.12	NO	283.52	0	475.73	NO
ST-STR-1529	Inlet	308.57	314.57	6	309.5	0	10.82	NO	309.87	0	20.64	NO	310.27	0	33.86	NO
ST-STR-153	DS Headwa	443.961	443.961	0	444.09	0	4.86	YES	444.14	0	9.32	YES	444.2	0	14.45	YES
ST-STR-154	DS Headwa	423.859	423.859	0	423.89	0	1.58	YES	423.9	0	2.82	YES	423.92	0	4.68	YES
ST-STR-155	DS Headwa	422.08	422.08	0	422.35	0	20.87	YES	422.39	0	25.85	YES	422.39	0	26.27	YES
ST-STR-156	Headwall	408.713	417.122	8.409	409.82	0	33.82	YES	410.1	0	51.53	YES	410.4	0	73.21	YES
ST-STR-157	Channel co	329.574	330.639	0	334.67	0	156.9	NO	335.08	0	202.5	NO	335.64	0	308.3	NO
ST-STR-158	DS Headwa	338	340.918	2.918	339.46	0	33.05	NO	339.71	0	60.31	NO	339.88	0	85.92	NO
ST-STR-159	DS Headwa	391.511	396.011	4.5	391.97	0	2.53	YES	392.13	0	4.5	YES	392.34	0	7.46	YES
ST-STR-16	DS Headwa	399.374	399.374	0	399.37	0	0	YES	399.37	0	0	YES	399.37	0	0	YES
ST-STR-160	DS Headwa	395.187	399.187	4	395.78	0	41.89	YES	396	0	67.42	YES	396.38	0	127.18	YES
ST-STR-161	DS Headwa	382.863	385.863	3	387.27	0	44.5	YES	387.42	0	72.62	YES	387.67	0	132.97	YES
ST-STR-163	Outlet, D-2	402.294	402.294	0	402.33	0	0.64	YES	402.34	0	1.06	YES	402.35	0	1.7	YES
ST-STR-164	DS Headwa	376	378.889	2.889	378.92	0	165.68	YES	379.62	0	278.63	YES	380.69	0	499.02	YES
ST-STR-165	DS Headwa	374.214	375.214	1	376.18	0	3.29	YES	377.18	0	40.45	YES	378.11	0	118.47	YES
ST-STR-166	DS Headwa	370.868	370.892	0	374.31	0	189	YES	375.31	0	327.8	YES	376.26	0	510.61	YES
ST-STR-167	DS Headwa	367.076	367.076	0	370.79	0	242.43	YES	371.92	0	420.91	YES	372.79	0	519.47	YES
ST-STR-168	DS Headwa	358.082	358.082	0	361.99	0	272.87	YES	362.87	0	402.75	YES	364.13	0	546.88	YES
ST-STR-169	DS Headwa	391.492	394.492	3	392.86	0	3.06	YES	393.07	0	5.46	YES	393.26	0	8.17	YES
ST-STR-170	Headwall	390.022	390.022	0	395.29	0	65.41	YES	395.67	0	107.68	YES	395.85	0	156.2	YES

Existing Condition Junctions Results Summary Table

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		Invert Elevation (feet)	Rim Elevation (feet)	Depth (feet)	Max. HGL (2-year) (feet)	Max. Lateral Inflow (2-year) (cfs)	Max. Total Inflow (2-year) (cfs)	Surcharging (2-year)	Max. HGL (10-year) (feet)	Max. Lateral Inflow (10-year) (cfs)	Max. Total Inflow (10-year) (cfs)	Surcharging (10-year)	Max. HGL (100-year) (feet)	Max. Lateral Inflow (100-year) (cfs)	Max. Total Inflow (100-year) (cfs)	Surcharging (100-year)
ST-STR-171	DS Headwa	428.66	432.66	4	428.66	0	0	YES	428.66	0	0	YES	428.66	0	0	YES
ST-STR-172	Flowline co	431.296	431.296	0	431.33	0	1.11	YES	431.34	0	1.93	YES	431.37	0	4.12	YES
ST-STR-173	DS Headwa	419.927	419.927	0	420.77	0	21.19	YES	421.04	0	41.53	YES	421.3	0	68.87	YES
ST-STR-176	DS Headwa	373.89	373.89	0	376.71	0	82.95	YES	377.84	0	180.17	YES	378.75	0	275.9	YES
ST-STR-177	DS Headwa	373.41	373.41	0	376.72	0	18.67	YES	377.85	0	20.78	YES	378.76	0	64.21	YES
ST-STR-178	Headwall	343.804	343.804	0	348.94	9.05	251.68	YES	349.46	15.4	421.62	YES	350.06	27.07	563.38	YES
ST-STR-180	DS Headwa	364.917	364.917	0	365.24	0	3.18	YES	365.31	0	5.23	YES	365.39	0	8.48	YES
ST-STR-181	DS Headwa	335.187	335.187	0	340.79	0	403.75	NO	341.54	0	700.95	NO	343.08	0	1395.62	YES
ST-STR-182	Headwall	335.843	335.843	0	340.82	3.88	281.68	NO	341.79	6.52	604.5	NO	343.46	10.72	1270.27	YES
ST-STR-183	DS Headwa	333.403	333.403	0	337.1	0	321.88	NO	337.41	0	453.49	NO	338.97	0	890.94	NO
ST-STR-187	DS Headwa	314.352	314.352	0	314.83	0	15.76	NO	315.04	0	27.85	NO	315.68	0	70.48	NO
ST-STR-188	Conduit co	422.077	433.577	11.5	424.45	0	53.3	YES	431.77	0	82.4	YES	434.15	0	142.02	YES
ST-STR-189	Conduit co	444.1	451.752	7.652	444.61	0	3.14	YES	444.82	0	5.52	YES	445.08	0	8.34	YES
ST-STR-19	DS Headwa	377.895	378.238	0	377.91	0	0.92	YES	377.91	0	1.53	YES	377.92	0	2.51	YES
ST-STR-190	Conduit co	383.758	388.008	4.25	383.91	0	0.26	YES	383.96	0	0.43	YES	384	0	0.67	YES
ST-STR-191	Manhole	401.88	407.88	6	413.67	0	76.42	YES	414.67	0	86.08	YES	417.08	0	95.91	YES
ST-STR-192	Conduit co	396.2	400.698	4.498	401.1	0	79.26	YES	401.98	0	79.24	YES	402.37	0	74.85	YES
ST-STR-193	Conduit co	436.531	441.031	4.5	439.46	0	8.91	YES	439.48	0	10.09	YES	439.5	0	11.31	YES
ST-STR-194	Conduit co	441.489	446.989	5.5	441.49	0	0	YES	441.49	0	0	YES	441.49	0	0	YES
ST-STR-195	Inlet	392.364	397.864	5.5	393.66	13.23	16.9	YES	394.19	21.96	28.45	YES	398.2	35.22	43.54	YES
ST-STR-196	Inlet	347.449	356.449	9	348.35	0.35	25.52	YES	349.06	0.55	93.15	YES	350.1	0.86	213.01	YES
ST-STR-197	Inlet	329.52	334.52	5	336.45	7.24	338.26	NO	336.9	12.63	438.18	NO	337.75	21.71	678.5	NO
ST-STR-198	Inlet	381.627	386.127	4.5	383.48	1.37	12.52	YES	385.48	2.48	18.68	YES	386.74	4.05	20.02	YES
ST-STR-199	Inlet	380.896	385.896	5	381.93	0.18	20.31	YES	382.38	0.28	37.13	YES	386.47	0.44	59.72	YES
ST-STR-1-R	Inlet	280.66	280.66	0	282.75	0	551.4	NO	283.4	0	922.3	NO	285.38	0	1603.38	NO
ST-STR-1-R	Inlet	452.01	459.236	7.226	457.68	0	83.88	YES	459.58	0	114.86	YES	460.05	0	216.42	YES
ST-STR-200	Inlet	424.5	428.38	3.88	425.61	7.02	7.02	YES	426.95	12.47	12.47	YES	428.95	21.85	21.85	YES
ST-STR-201	Inlet	450.764	455.264	4.5	452.14	1.18	5.64	YES	456.32	2.09	9.94	YES	457.11	3.52	11.93	YES
ST-STR-202	Inlet	451.855	456.355	4.5	452.63	4.48	4.48	YES	456.45	8.14	8.14	YES	457.11	14.2	14.2	YES
ST-STR-203	Conduit co	398.477	403.977	5.5	399.77	0	24.18	YES	400.21	0	37.9	YES	403.61	0	52.54	YES
ST-STR-204	Inlet	388.508	394.008	5.5	390.05	0.25	24.32	YES	390.77	0.59	38.32	YES	392.36	1.02	49.39	YES
ST-STR-205	Inlet	368.507	373.007	4.5	369.38	6.52	7.56	YES	369.96	12.48	14.84	YES	373.35	21.83	26.99	YES
ST-STR-207	Manhole	342.46	347.96	5.5	343.78	0	24.9	YES	344.48	0	45.03	YES	347.56	0	63.41	YES
ST-STR-208	Inlet	306.148	312.148	6	306.92	4.89	17	NO	307.19	8.33	30.59	NO	307.6	14.99	52.9	NO
ST-STR-209	Inlet	418.758	423.258	4.5	418.94	0.41	0.41	YES	418.98	0.64	0.64	YES	419.34	0.99	0.99	YES
ST-STR-21	DS Headwa	331.454	331.454	0	333.52	0	329.81	NO	333.79	0	407.19	NO	334.73	0	548.74	NO
ST-STR-210	Inlet	432.528	437.028	4.5	433.36	4.71	4.71	YES	433.73	7.95	7.95	YES	437.12	13.51	13.51	YES
ST-STR-211	Inlet	430.902	435.402	4.5	431.61	1.4	6.07	YES	431.89	2.32	10.17	YES	434.42	3.86	14.76	YES
ST-STR-212	Inlet	430.835	437.335	6.5	433.87	1.17	12.87	YES	434.06	1.97	12.96	YES	434.18	3.27	14.51	YES
ST-STR-213	Inlet	368.519	373.019	4.5	369.05	0.53	5.77	YES	369.26	0.87	10.37	YES	369.58	1.43	17.76	YES
ST-STR-214	Headwall	430.99	430.99	0	431.26	1.54	2.88	YES	431.34	2.56	4.85	YES	431.43	4.27	8.02	YES
ST-STR-215	Inlet	420.792	425.292	4.5	422.79	1.06	6.52	YES	425.18	1.81	10.14	YES	425.87	2.98	14.11	YES
ST-STR-216	Inlet	445.979	451.979	6	446.9	1.23	16.91	YES	447.23	1.93	30.12	YES	447.35	3.01	36.14	YES
ST-STR-217	Inlet	452.2	455.7	3.5	452.48	1.09	1.09	YES	452.55	1.72	1.72	YES	452.63	2.68	2.68	YES

Existing Condition Junctions Results Summary Table

Facility ID	Type	Dimensions			2-year				10-year				100-year			
		Invert Elevation (feet)	Rim Elevation (feet)	Depth (feet)	Max. HGL (2-year) (feet)	Max. Lateral Inflow (2-year) (cfs)	Max. Total Inflow (2-year) (cfs)	Surcharging (2-year)	Max. HGL (10-year) (feet)	Max. Lateral Inflow (10-year) (cfs)	Max. Total Inflow (10-year) (cfs)	Surcharging (10-year)	Max. HGL (100-year) (feet)	Max. Lateral Inflow (100-year) (cfs)	Max. Total Inflow (100-year) (cfs)	Surcharging (100-year)
ST-STR-22	Unimprove	367.455	367.455	0	367.46	0	0.13	YES	367.46	0	0.21	YES	367.46	0	0.35	YES
ST-STR-220	DS Headwa	421.182	421.182	0	421.39	4.16	14.4	YES	421.44	6.78	21.3	YES	421.49	11	28.14	YES
ST-STR-23	DS Headwa	440.598	441.439	0	440.82	0	3.09	YES	440.91	0	5.46	YES	441.01	0	8.31	YES
ST-STR-236	Inlet	397.026	404.026	7	397.14	1.03	1.03	YES	397.17	1.65	1.65	YES	397.21	2.62	2.62	YES
ST-STR-237	Inlet	398.346	402.346	4	398.64	0.78	0.78	YES	398.72	1.27	1.27	YES	400.38	2.05	2.05	YES
ST-STR-238	Inlet	401.57	405.57	4	401.93	2.12	2.12	YES	402.04	3.46	3.46	YES	403	5.56	5.56	YES
ST-STR-24	DS Headwa	332.018	332.018	0	335.95	0	576.18	NO	336.48	0	627.99	NO	337.76	0	973.66	NO
ST-STR-242	Inlet	403.07	407.07	4	403.25	0.67	0.67	YES	403.3	1.07	1.07	YES	403.36	1.69	1.69	YES
ST-STR-247	Inlet	333.774	337.274	3.5	336.93	0.26	16.15	NO	336.98	0.41	29.35	NO	337.55	0.65	47.29	NO
ST-STR-248	Headwall	430.004	430.004	0	490.34	15.86	15.86	YES	530.5	27.96	27.96	YES	530.5	48.94	48.94	YES
ST-STR-249	Inlet	420.838	426.838	6	421.54	8.65	8.97	YES	421.75	14.39	14.9	YES	422.03	23.91	24.72	YES
ST-STR-25	DS Headwa	400.111	401.538	0	400.16	0	2.6	YES	400.17	0	4.6	YES	400.2	0	7.6	YES
ST-STR-250	Inlet	445.06	450.56	5.5	446.36	13.37	13.37	YES	446.94	24.26	24.26	YES	454.07	44.12	44.12	YES
ST-STR-251	Inlet	443.026	448.526	5.5	443.64	8.29	8.29	YES	443.87	15.07	15.07	YES	444.18	26.44	26.44	YES
ST-STR-252	Inlet	437	442.916	5.916	437.33	1.42	4.14	YES	437.42	2.4	6.82	YES	437.53	3.98	11.04	YES
ST-STR-253	Inlet	321.137	325.387	4.25	322.11	4.6	19.46	NO	325.68	7.96	22.57	NO	326.02	13.46	30.18	NO
ST-STR-254	Inlet	426.882	431.382	4.5	427.43	2.56	5.26	YES	427.62	4.45	8.96	YES	427.83	7.38	13.33	YES
ST-STR-255	Inlet	407.347	411.017	3.67	407.35	0	0	YES	407.35	0	0	YES	407.35	0	0	YES
ST-STR-256	Inlet	411.927	415.597	3.67	411.93	0	0	YES	411.93	0	0	YES	411.93	0	0	YES
ST-STR-26	DS Headwa	399.296	399.296	0	401.05	0	3.43	YES	401.08	0	6.12	YES	401.1	0	10.39	YES
ST-STR-260	Inlet	430.397	433.397	3	430.63	1.06	1.06	YES	430.7	1.8	1.8	YES	432.07	3	3	YES
ST-STR-261	Inlet	431.3	434.554	3.254	431.56	0.65	0.65	YES	431.63	1.06	1.06	YES	432.59	1.73	1.73	YES
ST-STR-262	Inlet	430.72	434.594	3.874	431.17	1.23	1.87	YES	431.32	2.07	3.12	YES	432.56	3.42	4.86	YES
ST-STR-264	Inlet	379.112	383.112	4	379.45	0.92	0.92	YES	379.55	1.54	1.54	YES	379.68	2.52	2.52	YES
ST-STR-265	Inlet	337.71	337.71	0	339.29	26.34	45.64	NO	339.93	46.63	84	NO	340.8	85.42	145.04	NO
ST-STR-266	Inlet	446.857	451.107	4.25	447.53	3.18	3.18	YES	447.84	5.62	5.62	YES	450.87	9.54	9.54	YES
ST-STR-267	Inlet	360.343	388.343	28	361.28	11.14	38.67	YES	361.59	19.17	67.09	YES	361.92	31.12	98.33	YES
ST-STR-268	Inlet	409.786	414.286	4.5	410.16	3.45	3.45	YES	410.29	6.16	6.16	YES	410.45	10.45	10.45	YES
ST-STR-269	Inlet	432.412	436.912	4.5	432.63	1.81	1.81	YES	432.7	3.19	3.19	YES	432.78	5.21	5.21	YES
ST-STR-27	DS Headwa	398.477	398.477	0	398.79	0	11.97	YES	399.01	0	24.92	YES	399.26	0	43.12	YES
ST-STR-270	Inlet	410.045	413.045	3	413	3.48	3.48	YES	413.05	6.47	6.47	YES	413.11	10.83	10.83	YES
ST-STR-271	Inlet	440.398	444.898	4.5	440.75	2.16	2.16	YES	440.85	3.6	3.6	YES	440.98	5.78	5.78	YES
ST-STR-272	Inlet	433.958	436.958	3	437.41	0.57	2.72	YES	437.45	0.9	4.48	YES	437.49	1.41	7.16	YES
ST-STR-273	Unimprove	387.672	387.672	0	387.82	4.84	4.84	YES	387.85	8.33	8.33	YES	387.88	13.83	13.83	YES
ST-STR-274	Unimprove	449.983	449.983	0	449.98	0	0	YES	449.98	0	0	YES	449.98	0	0	YES
ST-STR-275	Inlet	297.493	301.993	4.5	303.94	2.87	109.15	NO	304.4	4.94	151.23	NO	304.79	8.44	198.11	NO
ST-STR-276	Inlet	297.901	302.901	5	304.42	11.37	128.93	NO	304.92	20.47	211.33	NO	305.23	36.12	286.42	NO
ST-STR-277	Inlet	299.5	302.863	3.363	303.69	1.3	57.77	NO	304.1	2.19	92.28	NO	304.52	3.53	128.62	NO
ST-STR-278	Inlet	320.989	325.489	4.5	321.31	1.57	1.57	NO	321.42	2.86	2.86	NO	321.54	4.8	4.8	NO
ST-STR-279	Inlet	320.264	324.764	4.5	320.51	0.84	2.41	NO	320.6	1.49	4.34	NO	320.69	2.49	7.28	NO
ST-STR-28	Unimprove	369.07	369.494	0.424	371.99	0	137.38	YES	372.47	0	246.05	YES	372.83	0	350.01	YES
ST-STR-280	Inlet	313.437	317.937	4.5	313.68	2.85	2.85	NO	313.76	5.02	5.02	NO	313.86	8.42	8.42	NO
ST-STR-281	Inlet	338.278	338.278	0	338.68	5.95	6.95	NO	338.83	9.63	13.3	NO	339.01	14.98	22.68	NO
ST-STR-282	Headwall	330.32	330.32	0	330.6	2.55	3.81	NO	330.77	4.59	9.89	NO	330.98	7.64	20.9	NO

Existing Condition Junctions Results Summary Table

Facility ID	Type	Dimensions			2-year				10-year				100-year			
		Invert Elevation (feet)	Rim Elevation (feet)	Depth (feet)	Max. HGL (2-year) (feet)	Max. Lateral Inflow (2-year) (cfs)	Max. Total Inflow (2-year) (cfs)	Surcharging (2-year)	Max. HGL (10-year) (feet)	Max. Lateral Inflow (10-year) (cfs)	Max. Total Inflow (10-year) (cfs)	Surcharging (10-year)	Max. HGL (100-year) (feet)	Max. Lateral Inflow (100-year) (cfs)	Max. Total Inflow (100-year) (cfs)	Surcharging (100-year)
ST-STR-283	Headwall	311.124	311.124	0	311.44	2.01	3.95	NO	311.67	3.67	12.41	NO	311.97	6.18	28.84	NO
ST-STR-284	Channel co	283.829	283.829	0	285.96	14.5	553.29	NO	286.49	24.95	928.24	NO	288.32	42.32	1792.87	NO
ST-STR-285	Inlet	433.124	438.124	5	433.8	5.41	5.41	YES	434.03	9.55	9.55	YES	434.39	16.6	16.6	YES
ST-STR-286	Inlet	426.3	430.8	4.5	427.32	10.62	11.18	YES	428.18	19	20.05	YES	430.57	31.03	32.84	YES
ST-STR-287	Outlet, D-2	444.322	444.322	0	444.34	0	0.91	YES	444.35	0	1.53	YES	444.36	0	2.44	YES
ST-STR-288	Inlet	462.187	465.857	3.67	462.43	0.91	0.91	YES	462.51	1.54	1.54	YES	462.61	2.45	2.45	YES
ST-STR-289	Inlet	424.931	430.431	5.5	425.83	0	16.38	YES	426.17	0	29.35	YES	426.65	0	48.99	YES
ST-STR-292	Unimprove	458.916	458.916	0	458.92	0	0	YES	458.92	0	0	YES	458.92	0	0	YES
ST-STR-293	Unimprove	470.135	470.135	0	470.13	0	0	YES	470.13	0	0	YES	470.13	0	0	YES
ST-STR-294	Outlet, D-2	437.849	437.849	0	437.92	0	2.14	YES	437.95	0	3.73	YES	438	0	6.15	YES
ST-STR-295	Inlet	449.468	453.968	4.5	449.89	2.16	2.16	YES	450.02	3.76	3.76	YES	450.19	6.18	6.18	YES
ST-STR-296	Unimprove	450.537	450.537	0	450.54	0	0	YES	450.54	0	0	YES	450.54	0	0	YES
ST-STR-297	Unimprove	449.513	449.513	0	449.82	5.82	5.82	YES	449.89	10.29	10.29	YES	449.98	17.46	17.46	YES
ST-STR-298	Inlet	396.521	400.521	4	397.84	12.83	15.66	YES	398.49	22.82	29.66	YES	402.9	40.11	57.39	YES
ST-STR-299	Inlet	437.614	442.114	4.5	437.91	2.23	2.23	YES	438	4	4	YES	438.11	6.85	6.85	YES
ST-STR-3	Inlet	408.85	414.841	5.991	414.27	0	55.63	YES	415.69	0	83.13	YES	416.04	0	181.02	YES
ST-STR-30	DS Headwa	297.608	297.608	0	299.55	0	238.7	NO	301.18	0	467.22	NO	301.93	0	764.58	NO
ST-STR-300	Inlet	427.435	430.435	3	427.8	2.21	2.21	YES	427.92	3.82	3.82	YES	428.07	6.21	6.21	YES
ST-STR-301	Inlet	361.942	366.442	4.5	362.63	7.36	7.36	YES	365.31	12.97	12.98	YES	366.68	22.6	22.6	YES
ST-STR-302	Inlet	358.777	363.777	5	360.49	9.59	22.45	YES	363.62	16.68	38.08	YES	365.09	29.53	45.28	YES
ST-STR-303	Inlet	359.051	363.551	4.5	360.59	5.1	5.1	YES	363.81	8.96	8.96	YES	365.09	15.75	15.75	YES
ST-STR-305	Outlet, D-2	351.671	351.671	0	351.71	0	0.34	YES	351.72	0	0.56	YES	351.73	0	0.77	YES
ST-STR-306	Headwall	352.442	355.442	3	352.56	0.17	0.17	YES	352.62	0.28	0.28	YES	352.67	0.43	0.43	YES
ST-STR-307	Outlet, D-2	356.717	356.717	0	356.74	0	0.3	YES	356.75	0	0.62	YES	356.76	0	1.1	YES
ST-STR-308	Headwall	357.838	359.838	2	358.06	0.45	0.45	YES	358.14	0.79	0.79	YES	358.24	1.29	1.29	YES
ST-STR-309	Inlet	335.492	341.492	6	336.99	2.5	59.39	NO	337.14	4.35	69.64	NO	338	7.16	109.65	NO
ST-STR-31	Channel co	293.532	293.532	0	296.75	0	540.95	NO	297.56	0	931.88	NO	298.93	0	1675.12	NO
ST-STR-310	Inlet	357.021	363.021	6	358.47	6.39	57.97	YES	358.58	10.68	65.73	YES	358.91	17.04	89.79	YES
ST-STR-311	Inlet	324.518	329.518	5	329.92	13.88	48.91	NO	330.28	24.04	85.69	NO	330.65	39.91	107.24	NO
ST-STR-313	Inlet	323.25	329.25	6	325.74	1.9	98.65	NO	329.69	3.21	124.04	NO	330.33	5.16	212.96	NO
ST-STR-314	Inlet	307.735	314.235	6.5	310.19	7.84	124.61	NO	315.21	13.2	186.67	NO	316.37	22.18	371.1	NO
ST-STR-315	Inlet	317.905	324.405	6.5	319.91	14.16	120.64	NO	324.27	24.21	194.13	NO	325.65	44.06	336.05	NO
ST-STR-316	Unimprove	343.742	343.742	0	344.13	2.03	36	YES	344.27	3.42	65.17	YES	344.38	5.51	91.48	YES
ST-STR-317	Inlet	388.178	392.678	4.5	388.55	2.37	2.37	YES	388.68	4.28	4.28	YES	388.85	7.29	7.29	YES
ST-STR-318	Inlet	387.081	391.581	4.5	387.53	4.06	6.42	YES	387.69	7.29	11.57	YES	387.91	12.94	20.21	YES
ST-STR-319	Outlet, D-2	323.814	323.814	0	323.92	0	6.39	NO	323.97	0	11.52	NO	324.02	0	20.14	NO
ST-STR-32	DS Headwa	311.843	311.843	0	313.52	0	334.23	NO	313.88	0	532.04	NO	315.04	0	1399.12	NO
ST-STR-320	Inlet	286.491	290.991	4.5	291.13	4.17	19.41	NO	291.51	7.31	32.54	NO	292.47	12.23	117.81	NO
ST-STR-321	Inlet	289.44	293.94	4.5	294.05	12.69	17.12	NO	294.18	22.11	30.01	NO	294.37	40.13	52.74	NO
ST-STR-322	Inlet	272.351	276.601	4.25	273.68	1.6	1.69	NO	274.33	2.69	2.92	NO	297.85	4.42	13.1	NO
ST-STR-323	Outlet	282.9	283.147	0.247	282.91	0	0.02	NO	282.91	0	0.02	NO	282.91	0	0.02	NO
ST-STR-324	Inlet	282.8	286.59	3.79	283.56	0.53	1.38	NO	283.98	0.89	2.44	NO	284.85	1.43	4.87	NO
ST-STR-325	Outlet	288.332	288.552	0	288.33	0	0	NO	288.33	0	0	NO	288.33	0	0	NO
ST-STR-326	Inlet	283.664	286.664	3	283.76	0.18	0.18	NO	283.97	0.29	0.29	NO	284.84	0.45	0.45	NO

Existing Condition Junctions Results Summary Table

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ST-STR-327	Inlet	287.793	292.293	4.5	287.99	1.01	1.01	NO	288.05	1.73	1.73	NO	288.12	2.81	2.81	NO
ST-STR-328	Spillway	381.253	381.253	0	381.25	0	0	YES	381.25	0	0	YES	381.25	0	0	YES
ST-STR-329	Spillway	342.789	342.789	0	343.21	1.61	1.61	YES	343.34	3.02	3.02	YES	343.48	5.09	5.09	YES
ST-STR-33	DS Headwa	299.021	299.021	0	301.74	0	338.19	NO	302.11	0	505.61	NO	303.33	0	1145.5	NO
ST-STR-330	Outlet, D-2	341.772	341.772	0	341.82	0	1.63	NO	341.84	0	3.07	NO	341.86	0	5.23	NO
ST-STR-331	Outlet, D-2	364.496	364.496	0	364.58	0	0.2	YES	364.6	0	0.44	YES	364.62	0	0.78	YES
ST-STR-332	Headwall	364.832	367.832	3	365.06	0.36	0.36	YES	365.16	0.65	0.65	YES	365.26	1.04	1.04	YES
ST-STR-334	Outlet, D-2	390.481	390.481	0	390.48	0	0	YES	390.48	0	0	YES	390.48	0	0	YES
ST-STR-335	Spillway	365.526	368.517	0	366.54	0.98	0.98	YES	366.55	1.82	1.82	YES	366.56	2.98	2.98	YES
ST-STR-336	Outlet, D-2	370.964	370.964	0	370.96	0	0	YES	370.96	0	0	YES	370.96	0	0	YES
ST-STR-337	Unimprove	378.949	381.949	3	378.95	0	0	YES	378.95	0	0	YES	378.95	0	0	YES
ST-STR-339	Outlet, D-2	339.343	339.343	0	339.34	0	0	NO	339.34	0	0	NO	339.34	0	0	NO
ST-STR-34	DS Headwa	289.196	289.196	0	291.69	0	540.88	NO	292.35	0	897.76	NO	293.38	0	1723.82	NO
ST-STR-340	Inlet	355.086	359.086	4	355.3	0.89	0.89	YES	355.38	1.56	1.56	YES	355.46	2.56	2.56	YES
ST-STR-341	Outlet, D-2	330.673	330.918	0	330.7	0	0.85	NO	330.71	0	1.5	NO	330.73	0	2.47	NO
ST-STR-342	Spillway	361.332	361.332	0	361.33	0	0	YES	361.33	0	0	YES	361.33	0	0	YES
ST-STR-343	Spillway	369.974	370.069	0	369.97	0	0	YES	369.97	0	0	YES	369.97	0	0	YES
ST-STR-344	Outlet, D-2	325.299	325.299	0	325.35	0	2.03	NO	325.37	0	3.6	NO	325.39	0	5.88	NO
ST-STR-345	Spillway	335.384	335.384	0	335.67	2.04	2.04	NO	335.76	3.61	3.61	NO	335.86	5.9	5.9	NO
ST-STR-346	Inlet	307.133	311.633	4.5	308	3.74	4.95	NO	309.69	6.3	8.11	NO	311.79	10.67	13.25	NO
ST-STR-347	Inlet	306.435	310.685	4.25	306.96	1.93	7.02	NO	309.37	3.38	22.78	NO	311.55	5.73	54.72	NO
ST-STR-348	Inlet	310.145	313.645	3.5	310.34	0.73	2.4	NO	310.39	1.19	3.72	NO	310.45	1.95	5.53	NO
ST-STR-349	Inlet	322.381	326.631	4.25	324.37	13.8	14.69	NO	326.87	24.55	26.36	NO	327.01	43.8	44.82	NO
ST-STR-350	Spillway	344.652	344.652	0	344.66	1.21	1.21	YES	344.67	2	2	YES	344.67	3.29	3.29	YES
ST-STR-351	Spillway	338.439	339.368	0	338.44	0.19	0.19	NO	338.45	0.31	0.31	NO	338.45	0.48	0.48	NO
ST-STR-352	Outlet, D-2	325.417	325.417	0	325.42	0	0	NO	325.42	0	0	NO	325.42	0	0	NO
ST-STR-353	Spillway	360.875	360.875	0	360.88	0	0	YES	360.88	0	0	YES	360.88	0	0	YES
ST-STR-354	Inlet	355	361.564	6.564	355.96	1.91	12.92	YES	356.37	3.4	22.79	YES	357.36	5.69	38.7	YES
ST-STR-355	Inlet	356.523	361.523	5	357.18	11.02	11.02	YES	357.44	19.37	19.37	YES	358.09	33.06	33.06	YES
ST-STR-356	Spillway	414.171	414.837	0	414.17	0	0	YES	414.17	0	0	YES	414.17	0	0	YES
ST-STR-357	Outlet, D-2	355.647	355.797	0	355.65	0	0	YES	355.65	0	0	YES	355.65	0	0	YES
ST-STR-358	Inlet	385.759	389.259	3.5	386.85	10.08	10.78	YES	387.78	17.65	19.03	YES	389.4	28.84	31.07	YES
ST-STR-359	Inlet	385.226	389.726	4.5	386.02	1.78	12.39	YES	386.42	3.09	21.82	YES	388.31	5.16	26.92	YES
ST-STR-36	DS Headwa	417.533	417.701	0	418.06	0	23.15	YES	418.26	0	39.66	YES	418.49	0	70.99	YES
ST-STR-360	Spillway	409.422	409.422	0	409.62	0.31	0.31	YES	409.68	0.54	0.54	YES	409.74	0.86	0.86	YES
ST-STR-361	Inlet	326	328.439	2.439	326.35	1.46	1.46	NO	330.03	2.36	64.6	NO	331.07	3.78	192.15	NO
ST-STR-362	Inlet	330.839	335.339	4.5	331.04	0.92	0.92	NO	331.09	1.45	1.45	NO	331.15	2.3	2.3	NO
ST-STR-363	Inlet	346.684	351.184	4.5	347.13	0.37	2.52	YES	347.28	0.65	4.26	YES	347.46	1.03	6.78	YES
ST-STR-365	Manhole	369.362	373.862	4.5	369.6	0	2.16	YES	369.67	0	3.64	YES	369.75	0	5.77	YES
ST-STR-366	Inlet	369.679	374.179	4.5	370.14	2.17	2.17	YES	370.29	3.64	3.64	YES	370.48	5.78	5.78	YES
ST-STR-367	Inlet	432	432.923	0.923	432.33	1.35	1.35	YES	432.44	2.3	2.3	YES	432.58	3.76	3.76	YES
ST-STR-368	Inlet	385	401.047	16.047	385.17	0.03	0.27	YES	385.21	0.05	0.43	YES	385.26	0.07	0.68	YES
ST-STR-369	Inlet	386.155	390.405	4.25	386.33	0.24	0.24	YES	386.37	0.39	0.39	YES	386.42	0.61	0.61	YES
ST-STR-37	DS Headwa	412.288	412.288	0	412.75	0	27.09	YES	412.88	0	47.57	YES	413.06	0	83.72	YES

Existing Condition Junctions Results Summary Table

Facility ID	Type	Dimensions			2-year				10-year				100-year			
		Invert Elevation (feet)	Rim Elevation (feet)	Depth (feet)	Max. HGL (2-year) (feet)	Max. Lateral Inflow (2-year) (cfs)	Max. Total Inflow (2-year) (cfs)	Surcharging (2-year)	Max. HGL (10-year) (feet)	Max. Lateral Inflow (10-year) (cfs)	Max. Total Inflow (10-year) (cfs)	Surcharging (10-year)	Max. HGL (100-year) (feet)	Max. Lateral Inflow (100-year) (cfs)	Max. Total Inflow (100-year) (cfs)	Surcharging (100-year)
ST-STR-370	Inlet	383	389.31	6.31	383.37	1.64	1.89	YES	383.49	2.96	3.38	YES	383.65	4.89	5.55	YES
ST-STR-371	Headwall	376.6	377.153	0	376.64	0.56	2.41	YES	376.65	0.9	4.22	YES	376.67	1.4	6.86	YES
ST-STR-372	Inlet	342.615	347.115	4.5	343.35	5.96	6.94	YES	343.72	10.39	12.33	YES	347.52	17.56	21.1	YES
ST-STR-373	Inlet	329.839	335.339	5.5	331.65	0.99	20.95	NO	333.67	1.57	37.24	NO	335.69	2.47	49.07	NO
ST-STR-374	Inlet	330.274	335.024	4.75	331.83	8.63	11.81	NO	334.29	15.11	20.92	NO	335.79	26.21	34	NO
ST-STR-375	Headwall	334.501	334.501	0	334.77	3.17	3.18	NO	334.86	5.78	5.8	NO	335.8	9.57	9.66	NO
ST-STR-376	Inlet	332.061	337.061	5	337.13	0	0	NO	337.13	0	0.01	NO	337.13	0	0.03	NO
ST-STR-377	Inlet	438.01	442.01	4	439.94	1	4.44	YES	443.92	1.69	6.31	YES	443.97	2.72	6.74	YES
ST-STR-378	Inlet	440.645	444.645	4	441.26	3.53	3.53	YES	445.38	6.1	6.1	YES	445.48	9.97	9.97	YES
ST-STR-379	Inlet	405.68	410.18	4.5	405.71	4.58	4.58	YES	405.73	8.06	8.06	YES	405.74	13.79	13.79	YES
ST-STR-380	Inlet	393.91	398.41	4.5	394.17	1.33	1.38	YES	394.25	2.28	2.38	YES	394.36	4.02	4.21	YES
ST-STR-381	Inlet	396.433	399.433	3	396.43	0	0	YES	396.43	0	0	YES	396.55	0	0.09	YES
ST-STR-382	Headwall	425.421	425.421	0	425.93	5.46	5.46	YES	426.24	9.68	9.68	YES	426.31	16.7	16.7	YES
ST-STR-383	Inlet	437.822	442.322	4.5	438.59	3.83	3.83	YES	438.89	6.79	6.79	YES	440.1	11.79	11.79	YES
ST-STR-384	Inlet	437.238	441.738	4.5	437.8	0.53	4.37	YES	438.02	0.85	7.64	YES	438.37	1.36	13.1	YES
ST-STR-385	Inlet	433.48	436.98	3.5	434.05	0.76	5.08	YES	434.22	1.19	8.77	YES	434.47	1.85	14.87	YES
ST-STR-386	Inlet	432.714	437.214	4.5	433.55	0.35	4.18	YES	433.91	0.57	7.15	YES	437.21	0.91	10.37	YES
ST-STR-387	Inlet	433.052	437.552	4.5	434.01	3.84	3.84	YES	434.48	6.6	6.6	YES	437.55	10.83	10.83	YES
ST-STR-388	Inlet	437.381	441.881	4.5	437.5	0.62	0.62	YES	437.53	0.96	0.96	YES	437.56	1.47	1.47	YES
ST-STR-389	Manhole	429.747	441.747	12	430.12	0	4.01	YES	430.25	0	6.87	YES	430.39	0	10.36	YES
ST-STR-390	Inlet	388.898	394.398	5.5	390.07	0.95	24.38	YES	390.53	1.52	41.48	YES	394.42	2.38	63.48	YES
ST-STR-391	Inlet	437.691	438.013	0	438.09	0.61	0.61	YES	438.11	0.98	0.98	YES	438.13	1.55	1.55	YES
ST-STR-392	Spillway	438.048	438.048	0	438.66	3	3	YES	438.69	5.25	5.25	YES	438.72	8.89	8.89	YES
ST-STR-393	Inlet	428.178	433.178	5	429.24	9.51	9.51	YES	431.12	16.66	16.66	YES	433.67	28.3	28.3	YES
ST-STR-394	Inlet	423.422	428.422	5	424.97	1.58	10.89	YES	427.72	2.74	17.79	YES	428.61	4.45	21.45	YES
ST-STR-395	Inlet	406.705	411.205	4.5	407.08	3.46	3.46	YES	407.19	5.7	5.7	YES	407.34	9.16	9.16	YES
ST-STR-396	Manhole	429.445	433.695	4.25	430.15	0	2.9	YES	430.43	0	4.87	YES	432.04	0	7.27	YES
ST-STR-397	Manhole	427.77	432.02	4.25	428.19	0	2.86	YES	428.33	0	4.77	YES	428.47	0	6.75	YES
ST-STR-399	Outlet, D-2	399.825	399.965	0	399.83	0	0	YES	399.84	0	0	YES	399.84	0	0	YES
ST-STR-40	DS Headwa	439.853	439.853	0	439.97	0	5.6	YES	440.02	0	10	YES	440.09	0	17.07	YES
ST-STR-400	Outlet, D-2	401.708	401.708	0	402.49	0	0.17	YES	402.5	0	0.26	YES	402.5	0	0.39	YES
ST-STR-401	Outlet, D-2	395.871	395.871	0	396.35	0	5.17	YES	396.37	0	8.53	YES	396.4	0	13.92	YES
ST-STR-402	Headwall	396.816	396.816	0	397.05	5.23	5.23	YES	397.13	8.61	8.61	YES	397.24	14.04	14.04	YES
ST-STR-403	Headwall	404.367	404.367	0	404.4	0.18	0.18	YES	404.4	0.27	0.27	YES	404.41	0.4	0.4	YES
ST-STR-404	Headwall	400.667	401.923	0	400.71	2.23	2.23	YES	400.73	3.85	3.85	YES	400.75	6.26	6.26	YES
ST-STR-405	Inlet	403.791	408.291	4.5	404.83	3.8	5.26	YES	405.5	6.06	8.19	YES	407.92	9.55	12.71	YES
ST-STR-406	Inlet	403.025	407.695	4.67	403.55	1.16	6.38	YES	403.68	1.93	9.78	YES	403.87	3.13	15.39	YES
ST-STR-407	Inlet	387.769	392.439	4.67	388.74	1.8	8.07	YES	389.11	2.96	12.56	YES	390.18	4.73	19.88	YES
ST-STR-408	Inlet	432.733	435.733	3	432.89	1.17	1.17	YES	432.94	1.83	1.83	YES	433	2.85	2.85	YES
ST-STR-409	Inlet	404.7	411.909	7.209	406.71	0.6	97.84	YES	407.8	0.98	183.69	YES	409.17	1.59	315.03	YES
ST-STR-41	DS Headwa	377.086	380.221	3.135	377.38	0	15.27	YES	377.51	0	29.44	YES	377.59	0	40.02	YES
ST-STR-410	Inlet	407.174	411.674	4.5	407.46	0.94	0.94	YES	407.85	1.57	1.57	YES	410.09	2.61	2.61	YES
ST-STR-411	Inlet	405.174	412.174	7	408.12	68.31	97.33	YES	409.33	149.91	179.3	YES	412.61	317.66	346.53	YES
ST-STR-413	Inlet	392.013	397.013	5	392.53	1.31	1.31	YES	392.66	2.14	2.14	YES	392.85	3.44	3.44	YES

Existing Condition Junctions Results Summary Table

Facility ID	Type	Dimensions			2-year				10-year				100-year			
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ST-STR-414	Headwall	387.39	387.39	0	387.75	0	1.22	YES	388.02	0	2.13	YES	388.35	0	3.28	YES
ST-STR-415	Inlet	439	447.55	8.55	446.64	7.24	9.95	YES	446.8	12.56	17.75	YES	446.9	21.11	29.74	YES
ST-STR-416	Inlet	440	448.482	8.482	446.64	2.35	4.56	YES	446.84	3.95	4.5	YES	446.99	6.34	6.36	YES
ST-STR-417	Inlet	457	466.873	9.873	463.5	3.85	88.17	YES	467.04	6.42	120.48	YES	467.27	10.49	218.06	YES
ST-STR-419	Inlet	398.605	403.105	4.5	399.05	2.02	2.02	YES	399.18	3.35	3.35	YES	399.35	5.55	5.55	YES
ST-STR-42	DS Headwa	426.099	426.099	0	426.31	0	7.03	YES	426.4	0	12.92	YES	426.52	0	22.46	YES
ST-STR-420	Unimprove	415.002	415.325	0	415.04	1.9	2.27	YES	415.05	2.93	3.57	YES	415.06	4.5	5.55	YES
ST-STR-421	Inlet	490.641	495.641	5	490.85	0.25	0.27	YES	490.9	0.41	0.6	YES	490.99	0.65	1.11	YES
ST-STR-422	Inlet	497.992	502.992	5	498.27	1.33	1.33	YES	498.36	2.37	2.37	YES	498.48	4.18	4.18	YES
ST-STR-423	Inlet	496.963	501.463	4.5	497.1	0.32	0.32	YES	497.15	0.56	0.56	YES	497.19	0.9	0.9	YES
ST-STR-424	Inlet	487.091	492.591	5.5	487.33	1.19	1.54	YES	487.41	2	2.73	YES	487.5	3.21	4.62	YES
ST-STR-425	Inlet	503.89	506.89	3	503.89	0	0	YES	503.89	0	0	YES	503.89	0	0	YES
ST-STR-426	Inlet	392.33	395.33	3	392.73	0	5.11	YES	392.85	0	8.05	YES	393.03	0	12.59	YES
ST-STR-427	Headwall	407	410.832	3.832	407.33	5.12	5.12	YES	407.41	8.07	8.07	YES	407.51	12.61	12.61	YES
ST-STR-428	Headwall	409.773	409.773	0	409.77	0	0	YES	409.77	0	0	YES	409.77	0	0	YES
ST-STR-429	Headwall	407.656	410.656	3	407.66	0	0	YES	407.66	0	0	YES	407.66	0	0	YES
ST-STR-43	DS Headwa	426.025	429.025	3	426.05	0	2.21	YES	426.06	0	3.82	YES	426.08	0	6.21	YES
ST-STR-430	Headwall	408.179	411.179	3	408.18	0	0	YES	408.18	0	0	YES	408.18	0	0	YES
ST-STR-431	Inlet	421.791	426.291	4.5	422.31	0.93	1.44	YES	422.49	1.6	2.48	YES	422.71	2.58	3.98	YES
ST-STR-432	Inlet	428.617	433.117	4.5	428.77	0.51	0.51	YES	428.82	0.88	0.88	YES	428.87	1.41	1.41	YES
ST-STR-433	Inlet	404.316	407.316	3	404.5	0	2.81	YES	404.55	0	4.47	YES	404.61	0	7.02	YES
ST-STR-434	Inlet	492.692	495.692	3	492.8	0.72	0.72	YES	492.84	1.28	1.28	YES	492.88	2.11	2.11	YES
ST-STR-436	Inlet	451.575	456.575	5	451.75	0.53	2.39	YES	451.8	0.91	4.34	YES	451.87	1.46	7.22	YES
ST-STR-437	Inlet	456.446	461.446	5	456.73	1.87	1.87	YES	456.83	3.44	3.44	YES	456.94	5.78	5.78	YES
ST-STR-438	Unimprove	399	400.5	1.5	400.33	0	15.86	YES	400.69	0	26.9	YES	400.81	0	46.82	YES
ST-STR-439	Inlet	419.641	424.141	4.5	419.82	0.51	0.51	YES	419.87	0.8	0.8	YES	419.92	1.24	1.24	YES
ST-STR-44	DS Headwa	357.827	357.827	0	358.14	0	24.55	YES	358.26	0	41.31	YES	358.37	0	59.34	YES
ST-STR-440	Inlet	428.125	431.625	3.5	428.32	0.86	0.86	YES	428.37	1.38	1.38	YES	428.44	2.2	2.2	YES
ST-STR-441	Inlet	428.177	431.677	3.5	428.4	0.9	0.9	YES	428.46	1.44	1.44	YES	428.53	2.27	2.27	YES
ST-STR-443	Inlet	477	482.094	5.094	477.17	0.35	0.54	YES	477.21	0.54	0.83	YES	477.25	0.82	1.27	YES
ST-STR-444	Inlet	477.527	482.027	4.5	477.65	0.19	0.19	YES	477.68	0.29	0.29	YES	477.71	0.45	0.45	YES
ST-STR-445	Inlet	463.593	467.093	3.5	463.88	1.03	1.03	YES	463.95	1.6	1.6	YES	464.05	2.47	2.47	YES
ST-STR-446	Inlet	463.371	466.871	3.5	463.64	1.28	1.28	YES	463.72	2	2	YES	463.83	3.1	3.1	YES
ST-STR-447	Inlet	474.541	478.041	3.5	474.89	1.57	1.57	YES	474.98	2.56	2.56	YES	475.1	4.05	4.05	YES
ST-STR-448	Inlet	440.847	445.347	4.5	441.06	1.18	1.18	YES	441.11	1.85	1.85	YES	441.17	2.88	2.88	YES
ST-STR-449	Inlet	435.393	440.393	5	435.74	0.1	4.79	YES	435.83	0.16	7.61	YES	435.94	0.24	11.92	YES
ST-STR-45	DS Headwa	284.149	284.96	0	286.93	0	460.04	NO	286.99	0	527.84	NO	288.89	0	904.94	NO
ST-STR-450	Inlet	436.204	440.704	4.5	436.68	0.41	3.52	YES	436.81	0.67	5.61	YES	436.98	1.06	8.84	YES
ST-STR-451	Inlet	437.662	441.662	4	437.89	0.66	0.66	YES	437.95	1.05	1.05	YES	438.03	1.66	1.66	YES
ST-STR-452	Inlet	436.434	440.934	4.5	436.99	2.46	2.46	YES	437.16	3.91	3.91	YES	437.39	6.14	6.14	YES
ST-STR-453	Inlet	398.07	401.57	3.5	399.13	4.91	7.18	YES	401.88	9.23	12.71	YES	402.57	16.01	20.48	YES
ST-STR-454	Inlet	397.292	401.792	4.5	398.95	1.97	8.89	YES	401.34	3.53	15.4	YES	402.56	6.05	18.63	YES
ST-STR-455	Inlet	368	373.286	5.286	368.6	2.18	9.72	YES	368.89	3.91	19.35	YES	371.07	6.61	33.1	YES
ST-STR-456	Outlet, D-2	382.69	382.763	0	382.69	0	0	YES	382.69	0	0	YES	382.69	0	0	YES

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ST-STR-457	Inlet	394.661	400.271	3	394.67	0.41	0.41	YES	394.68	1.09	1.09	YES	394.68	1.96	1.96	YES
ST-STR-458	Inlet	399.676	402.676	3	400.02	0.15	1.51	YES	401.94	0.24	2.84	YES	402.63	0.38	4.88	YES
ST-STR-459	Outlet, D-2	414.174	414.415	0	414.21	0	1.35	YES	414.23	0	2.7	YES	414.25	0	4.63	YES
ST-STR-46	DS Headwa	271.9	274.05	2.15	273.55	0	16.82	NO	274.14	0	110.59	NO	275.68	0	1019.5	NO
ST-STR-460	Outlet, D-2	419.295	419.451	0	419.3	0	0	YES	419.3	0	0	YES	419.3	0	0	YES
ST-STR-461	Inlet	445.039	448.039	3	445.04	0	0	YES	445.04	0	0	YES	445.04	0	0	YES
ST-STR-462	Headwall	461.001	461.001	0	461.24	2.03	2.03	YES	461.32	3.61	3.61	YES	461.4	5.91	5.91	YES
ST-STR-463	Inlet	410.162	413.162	3	410.39	1.38	1.38	YES	410.47	2.62	2.62	YES	410.56	4.53	4.53	YES
ST-STR-464	Inlet	414.249	417.249	3	414.25	0	0	YES	414.25	0	0	YES	414.25	0	0	YES
ST-STR-465	Inlet	393.072	396.072	3	393.63	0.07	2.04	YES	393.8	0.16	3.68	YES	393.98	0.28	6.06	YES
ST-STR-466	Inlet	441.926	444.926	3	441.93	0	0	YES	441.93	0	0	YES	441.93	0	0	YES
ST-STR-467	Inlet	418.14	421.14	3	418.44	1.49	1.49	YES	418.56	2.9	2.9	YES	418.68	4.9	4.9	YES
ST-STR-468	Outlet, D-2	392.392	392.392	0	392.44	0	1.81	YES	392.46	0	3.38	YES	392.49	0	5.67	YES
ST-STR-469	Inlet	317.992	322.492	4.5	318.57	3.23	3.23	NO	318.81	5.83	5.83	NO	319.23	10.38	10.38	NO
ST-STR-47	DS Headwa	271.632	271.852	0	273.55	0	394.73	NO	274.05	0	729	NO	275.54	0	2134.15	NO
ST-STR-470	Inlet	316.715	324.715	8	317.33	2.3	5.5	NO	317.53	4.06	9.84	NO	317.82	7.08	17.36	NO
ST-STR-471	Inlet	312.366	317.366	5	312.71	3.89	3.89	NO	312.83	7.17	7.17	NO	312.97	11.92	11.92	NO
ST-STR-472	Inlet	308.463	313.963	5.5	309.02	7.09	10.96	NO	309.22	12.9	20.04	NO	309.47	22.1	33.99	NO
ST-STR-473	Inlet	305.908	311.908	6	306.43	0.71	11.44	NO	306.62	1.14	21.72	NO	306.9	1.8	35.55	NO
ST-STR-474	Inlet	304.323	311.323	7	305.21	0.26	27.57	NO	305.6	0.4	50.96	NO	306.15	0.61	88.82	NO
ST-STR-475	Inlet	306.598	311.098	4.5	306.75	0.65	0.65	NO	306.8	1.15	1.15	NO	306.86	1.88	1.88	NO
ST-STR-477	Headwall	312.789	312.789	0	313	1.18	1.18	NO	313.08	2.16	2.16	NO	313.16	3.66	3.66	NO
ST-STR-478	Inlet	306.501	311.501	5	307.44	2.65	2.65	NO	307.68	4.1	4.1	NO	308.01	6.33	6.33	NO
ST-STR-479	Inlet	369.199	373.699	4.5	370.08	5.18	5.18	YES	370.47	9.51	9.51	YES	372.85	16.43	16.43	YES
ST-STR-480	Spillway	393.765	393.765	0	393.94	4.51	4.51	YES	394	8.05	8.05	YES	394.07	14.04	14.04	YES
ST-STR-481	Inlet	382.15	386.65	4.5	384.25	11.18	11.18	YES	386.73	20.03	20.03	YES	386.87	36.37	36.37	YES
ST-STR-482	Inlet	381.595	386.095	4.5	382.17	2.8	2.8	YES	382.86	5.1	8.09	YES	386.68	8.79	23.96	YES
ST-STR-483	Inlet	422	424.458	2.458	425.15	5.31	5.31	YES	425.25	9.28	9.28	YES	425.33	15.6	15.6	YES
ST-STR-484	Flowline co	400.34	403.34	3	403.37	2.79	3.1	YES	403.42	4.81	5.47	YES	403.46	8.15	9.47	YES
ST-STR-485	Flowline co	403.582	403.582	0	403.82	5.91	5.91	YES	403.88	9.79	9.79	YES	403.95	15.64	15.64	YES
ST-STR-486	Inlet	387.699	392.199	4.5	388.04	4.19	4.19	YES	388.19	7.66	8.48	YES	388.55	13.28	17.53	YES
ST-STR-487	Inlet	384.087	392.087	8	385.87	9.42	87.68	YES	386.53	16.22	154.03	YES	387.21	27.11	228.9	YES
ST-STR-488	Inlet	389.034	394.034	5	389.25	0.77	0.77	YES	389.35	1.32	1.32	YES	394.24	2.17	48.87	YES
ST-STR-489	Inlet	399.916	406.916	7	401.47	6.67	71.79	YES	402.07	11.92	127.24	YES	402.27	20.65	146.47	YES
ST-STR-49	Outlet, D-2	365.901	366.056	0	365.9	0	0	YES	365.9	0	0	YES	365.9	0	0	YES
ST-STR-490	Inlet	403.591	409.591	6	405.6	11.91	65.86	YES	409.78	21.11	120.61	YES	410.25	35.91	200.85	YES
ST-STR-491	Inlet	412.155	419.155	7	413.6	2.66	54.25	YES	414.2	4.8	99.93	YES	415.29	8.13	167.1	YES
ST-STR-492	Inlet	410.751	417.751	7	412.01	2.7	56.17	YES	412.78	4.91	104.05	YES	414.2	8.52	174.95	YES
ST-STR-493	Inlet	428.97	432.97	4	429.45	3.75	3.75	YES	429.66	6.72	6.72	YES	433	11.25	11.25	YES
ST-STR-495	Unimprove	416.937	416.937	0	418.75	3.73	3.73	YES	418.77	6.52	6.52	YES	418.79	10.97	10.97	YES
ST-STR-496	Inlet	372.202	378.202	6	372.82	5.71	10.61	YES	373.04	9.78	19.22	YES	373.35	16.82	34.91	YES
ST-STR-497	Inlet	374.636	379.136	4.5	375.32	2.6	5.4	YES	375.67	4.53	10.37	YES	378.74	7.67	18.46	YES
ST-STR-498	Inlet	351.326	357.326	6	352.25	13.72	25.12	YES	352.56	23.4	44.35	YES	353.05	41.67	80.68	YES
ST-STR-499	Inlet	378.866	383.366	4.5	379.33	2.78	2.78	YES	379.48	4.76	4.76	YES	379.69	7.92	7.92	YES

Existing Condition Junctions Results Summary Table

Facility ID	Type	Dimensions			2-year				10-year				100-year			
		Invert Elevation (feet)	Rim Elevation (feet)	Depth (feet)	Max. HGL (2-year) (feet)	Max. Lateral Inflow (2-year) (cfs)	Max. Total Inflow (2-year) (cfs)	Surcharging (2-year)	Max. HGL (10-year) (feet)	Max. Lateral Inflow (10-year) (cfs)	Max. Total Inflow (10-year) (cfs)	Surcharging (10-year)	Max. HGL (100-year) (feet)	Max. Lateral Inflow (100-year) (cfs)	Max. Total Inflow (100-year) (cfs)	Surcharging (100-year)
ST-STR-5	Cleanout	412.747	417.747	5	413.68	0	15.38	YES	415.09	0	27.35	YES	418.3	0	36.55	YES
ST-STR-50	DS Headwa	294.138	294.138	0	298.66	0	437.03	NO	298.83	0	530.03	NO	300.71	0	922.09	NO
ST-STR-500	Inlet	346.543	351.043	4.5	347.18	2.9	5.65	YES	347.42	5.04	9.76	YES	347.84	8.7	16.56	YES
ST-STR-501	Inlet	410.045	414.045	4	410.33	3.54	3.54	YES	410.41	6.2	6.2	YES	410.52	10.4	10.4	YES
ST-STR-502	Inlet	354.506	359.006	4.5	355.86	6.56	9.84	YES	356.85	11.38	17.26	YES	358.69	19.84	29.81	YES
ST-STR-503	Inlet	369.959	375.959	6	371.15	7.94	19.38	YES	371.58	13.9	34.63	YES	372.42	24.13	61.23	YES
ST-STR-505	Unimprove	375.7	376.7	1	375.7	0	0	YES	375.7	0	0	YES	375.7	0	0	YES
ST-STR-506	Inlet	432.412	435.412	3	432.51	0.32	0.32	YES	432.53	0.51	0.51	YES	432.56	0.8	0.8	YES
ST-STR-507	Outlet, D-2	421.326	421.653	0	421.34	0	0.19	YES	421.35	0	0.31	YES	421.36	0	0.5	YES
ST-STR-508	Inlet	429.207	432.207	3	431.68	0.88	0.99	YES	431.69	1.38	1.55	YES	431.7	2.14	2.41	YES
ST-STR-509	Inlet	441.13	444.13	3	441.22	0.16	0.16	YES	441.24	0.25	0.25	YES	441.26	0.38	0.38	YES
ST-STR-51	DS Headwa	298.695	298.695	0	303.2	0	374.13	NO	303.5	0	482.9	NO	305.01	0	799.47	NO
ST-STR-510	Inlet	357.604	362.104	4.5	357.95	1.38	1.38	YES	358.07	2.5	2.5	YES	358.21	4.09	4.09	YES
ST-STR-511	Outlet, D-2	350.929	350.929	0	351.04	0	1.34	YES	351.07	0	2.45	YES	351.1	0	4.03	YES
ST-STR-513	Inlet	342.593	347.593	5	343.87	8.52	8.83	YES	344.65	15.37	16.2	YES	348.01	26.14	28.01	YES
ST-STR-514	Inlet	375.14	385.14	10	376.01	7.35	17.2	YES	376.39	13.33	31.15	YES	377.46	22.85	47.66	YES
ST-STR-515	Unimprove	383.778	386.778	3	385.93	0.22	0.26	YES	385.93	0.41	0.47	YES	385.94	0.66	0.78	YES
ST-STR-516	Unimprove	379.692	382.692	3	379.79	0.11	0.11	YES	379.82	0.2	0.2	YES	379.85	0.33	0.33	YES
ST-STR-517	Unimprove	377.031	380.031	3	377.63	0.75	0.86	YES	378.08	1.6	1.79	YES	379.15	2.83	3.14	YES
ST-STR-518	Outlet, D-2	403.981	403.981	0	404.16	0	0.26	YES	404.26	0	0.46	YES	404.89	0	0.74	YES
ST-STR-519	Inlet	406.563	411.063	4.5	406.75	0.27	0.27	YES	406.8	0.47	0.47	YES	406.87	0.76	0.76	YES
ST-STR-52	DS Headwa	306.046	306.138	0	312.62	0	515.98	NO	313.84	0	792.24	NO	314.95	0	1133.53	NO
ST-STR-520	Inlet	442.346	445.346	3	442.62	3	3	YES	442.72	5.43	5.43	YES	442.83	9.28	9.28	YES
ST-STR-521	Unimprove	417.134	420.134	3	417.24	0.18	0.18	YES	417.28	0.31	0.31	YES	417.31	0.5	0.5	YES
ST-STR-522	Inlet	436.584	439.584	3	436.64	0.1	0.1	YES	436.65	0.16	0.16	YES	436.67	0.24	0.24	YES
ST-STR-523	Unimprove	411.917	418.498	3	411.92	0	0.27	YES	411.93	0	0.46	YES	411.93	0	0.73	YES
ST-STR-524	Inlet	423.965	429.465	5.5	424.79	3.79	10.79	YES	425.38	6.8	19.14	YES	428.27	12.25	21.53	YES
ST-STR-525	Inlet	457	458.054	1.054	457.07	0.1	0.1	YES	457.09	0.16	0.16	YES	457.11	0.25	0.25	YES
ST-STR-526	Inlet	453.778	457.699	3.5	453.79	0.21	0.28	YES	453.8	0.35	0.46	YES	453.8	0.54	0.72	YES
ST-STR-527	Outlet, D-2	452.592	452.592	0	452.61	0	0.27	YES	452.61	0	0.45	YES	452.62	0	0.71	YES
ST-STR-528	Outlet, D-2	456.732	456.732	0	456.98	0	0.02	YES	456.98	0	0.04	YES	456.98	0	0.06	YES
ST-STR-529	Inlet	421.298	425.798	4.5	421.56	1.29	1.29	YES	421.65	2.34	2.34	YES	421.75	3.87	3.87	YES
ST-STR-53	Headwall	337.321	337.321	0	337.56	0.35	0.35	NO	337.63	0.55	0.55	NO	337.71	0.85	0.85	NO
ST-STR-530	Outlet, D-2	416.801	416.855	0	416.86	0	1.27	YES	416.89	0	2.31	YES	416.92	0	3.84	YES
ST-STR-531	Outlet, D-2	403.919	403.919	0	404.3	0	2.37	YES	404.32	0	4.32	YES	404.35	0	7.1	YES
ST-STR-532	Headwall	439.355	439.355	0	439.58	1.38	1.38	YES	439.66	2.58	2.58	YES	439.75	4.35	4.35	YES
ST-STR-533	Inlet	448.232	451.232	3	448.39	0.72	0.72	YES	448.44	1.25	1.25	YES	448.49	2.01	2.01	YES
ST-STR-534	Headwall	406	408.023	2.023	406.28	0.78	0.85	YES	406.38	1.43	1.55	YES	406.49	2.34	2.52	YES
ST-STR-535	Outlet, D-2	404.499	404.499	0	404.63	0	0.84	YES	404.65	0	1.53	YES	404.66	0	2.5	YES
ST-STR-536	Unimprove	421.723	424.723	3	421.77	0.08	0.08	YES	421.78	0.12	0.12	YES	421.79	0.18	0.18	YES
ST-STR-537	Inlet	401.157	401.157	0	401.31	0.31	0.54	YES	401.37	0.63	1.08	YES	401.42	1.06	1.8	YES
ST-STR-538	Inlet	408.234	408.234	0	408.35	0.24	0.24	YES	408.4	0.46	0.46	YES	408.44	0.76	0.76	YES
ST-STR-539	Outlet, D-2	377.262	377.262	0	377.29	0	0.53	YES	377.3	0	1.06	YES	377.32	0	1.78	YES
ST-STR-54	DS Headwa	322.549	328.027	4.027	322.72	0	6.15	NO	323.92	0	106.92	NO	325.9	0	436.22	NO

Existing Condition Junctions Results Summary Table

Facility ID	Type	Dimensions			2-year				10-year				100-year			
		Invert Elevation (feet)	Rim Elevation (feet)	Depth (feet)	Max. HGL (2-year) (feet)	Max. Lateral Inflow (2-year) (cfs)	Max. Total Inflow (2-year) (cfs)	Surcharging (2-year)	Max. HGL (10-year) (feet)	Max. Lateral Inflow (10-year) (cfs)	Max. Total Inflow (10-year) (cfs)	Surcharging (10-year)	Max. HGL (100-year) (feet)	Max. Lateral Inflow (100-year) (cfs)	Max. Total Inflow (100-year) (cfs)	Surcharging (100-year)
ST-STR-540	Outlet, D-2	487.003	487.003	0	487	0	0	YES	487	0	0	YES	487	0	0	YES
ST-STR-541	Outlet, D-2	459.715	459.715	0	459.71	0	0	YES	459.71	0	0	YES	459.71	0	0	YES
ST-STR-542	Outlet, D-2	458.209	458.407	0	458.21	0	0	YES	458.21	0	0	YES	458.21	0	0	YES
ST-STR-543	Headwall	465.837	466.298	0	465.84	0	0	YES	465.84	0	0	YES	465.84	0	0	YES
ST-STR-544	Inlet	420.677	425.177	4.5	420.97	0.27	2.92	YES	421.11	0.46	6.28	YES	421.82	0.73	12.38	YES
ST-STR-545	Inlet	416.881	424.881	8	418.47	0.45	37.68	YES	419.18	0.78	69.88	YES	421.12	1.25	121.03	YES
ST-STR-546	Inlet	415.701	427.701	12	417.38	15.01	50.32	YES	418.12	26.91	92.67	YES	419.83	48.51	156.01	YES
ST-STR-547	Inlet	415	427.361	12.361	416.59	1.21	51.2	YES	417.33	2.03	94.13	YES	418.96	3.32	158.02	YES
ST-STR-548	Inlet	413.6	420.6	7	415.39	1.83	52.48	YES	416.21	3.31	96.53	YES	417.7	5.66	161.72	YES
ST-STR-549	Inlet	425.948	429.948	4	430.1	17.63	17.63	YES	430.19	31.21	31.21	YES	430.3	55.97	55.97	YES
ST-STR-55	DS Headwa	317.128	317.128	0	322.32	0	429.37	NO	322.9	0	606.05	NO	324.13	0	965.29	NO
ST-STR-550	Inlet	420.074	425.324	5.25	420.42	1.73	3.16	YES	420.55	3.08	6.13	YES	421.58	5.13	11.25	YES
ST-STR-551	Inlet	417.728	424.728	7	419.07	3.99	18.75	YES	419.64	7.26	32.39	YES	421.49	12.69	60.19	YES
ST-STR-552	Channel co	438.867	438.867	0	439.11	0.93	0.93	YES	439.23	2.06	2.06	YES	439.37	4.08	4.08	YES
ST-STR-553	Headwall	434	434.522	0.522	434.45	1.36	1.36	YES	434.66	2.36	2.36	YES	434.99	3.92	3.92	YES
ST-STR-554	Flowline co	434.401	434.401	0	434.81	0	0.03	YES	434.83	0	0.05	YES	434.85	0	0.13	YES
ST-STR-555	Spillway	437.078	437.458	0	437.63	4.97	4.97	YES	437.66	8.95	9.64	YES	437.7	15.26	16.83	YES
ST-STR-556	Channel co	437.244	437.244	0	437.64	2.35	2.4	YES	437.71	4.16	4.16	YES	437.83	7.01	7.01	YES
ST-STR-557	Inlet	440.5	443.025	2.525	440.76	0.26	2.56	YES	440.91	0.45	4.57	YES	441.06	0.71	7.21	YES
ST-STR-558	Inlet	441.912	446.412	4.5	442.65	2.35	2.35	YES	442.93	4.2	4.2	YES	443.99	7.07	7.07	YES
ST-STR-559	Inlet	436.596	439.596	3	437.85	0.5	11.36	YES	438.64	0.76	12.73	YES	439.6	1.16	13.92	YES
ST-STR-56	Spillway	404.183	406.01	0	404.18	0	0	YES	404.18	0	0	YES	404.18	0	0	YES
ST-STR-560	Inlet	436.995	440.495	3.5	440.02	10.89	10.89	YES	440.75	19.29	19.29	YES	440.85	34.34	34.34	YES
ST-STR-561	Inlet	479.458	482.128	2.67	479.46	0	0	YES	479.46	0	0	YES	479.46	0	0	YES
ST-STR-562	Inlet	478.195	482.195	4	478.74	3.4	3.71	YES	479.02	6.11	6.82	YES	482.27	10.47	11.73	YES
ST-STR-563	Outlet, D-2	468.79	468.79	0	468.96	0	3.7	YES	469.01	0	6.79	YES	469.04	0	9.32	YES
ST-STR-564	Spillway	491.857	491.857	0	492.02	0.56	0.56	YES	492.07	1	1	YES	492.13	1.61	1.61	YES
ST-STR-565	Inlet	430.381	433.881	3.5	434.02	0	5.59	YES	434.07	0	10.2	YES	434.14	0	17.89	YES
ST-STR-566	Inlet	435.311	438.641	3.33	438.71	0	4.05	YES	438.75	0	7.7	YES	438.81	0	14.49	YES
ST-STR-567	Channel co	448.005	448.005	0	448.1	0.98	11.77	YES	448.13	1.71	18.03	YES	448.16	2.86	24.63	YES
ST-STR-568	Flowline co	449.534	449.927	0	449.86	15.42	15.51	YES	449.95	27.77	27.77	YES	450.07	50.56	50.56	YES
ST-STR-569	Spillway	424.212	424.212	0	424.21	0	0	YES	424.21	0	0	YES	424.21	0	0	YES
ST-STR-57	Channel co	408.446	408.446	0	408.45	0	0	YES	408.45	0	0	YES	408.45	0	0	YES
ST-STR-570	Inlet	407.032	411.032	4	410.74	13.93	16.77	YES	411.45	25.01	25.92	YES	411.64	44.46	45.37	YES
ST-STR-571	Inlet	406.5	411.09	4.59	410.21	3.53	19.31	YES	411.33	6.41	21.87	YES	411.51	11.34	35.11	YES
ST-STR-572	Inlet	405.8	411.162	5.362	409.01	2.7	21.6	YES	411.58	4.72	24.31	YES	412.24	7.73	58.6	YES
ST-STR-573	Inlet	405.55	411.55	6	408.46	1.14	70.57	YES	411.52	2.02	81.73	YES	412.18	3.36	102.35	YES
ST-STR-574	Inlet	407.387	413.387	6	409.67	3.07	30.01	YES	413.84	5.36	52.69	YES	414.16	8.71	90.2	YES
ST-STR-575	Inlet	397.156	403.656	6.5	404.09	4.62	76.22	YES	404.64	8.07	95.72	YES	404.96	14.49	117.45	YES
ST-STR-576	Inlet	396.863	403.863	7	403.91	0.26	81.03	YES	404.56	0.43	87.85	YES	404.93	0.69	99.11	YES
ST-STR-577	Inlet	424.217	430.217	6	424.9	0.22	18.13	YES	425.13	0.35	32.45	YES	425.46	0.53	57.67	YES
ST-STR-578	Inlet	424.947	430.947	6	425.41	4.77	4.77	YES	425.58	8.54	8.54	YES	425.84	15.18	15.18	YES
ST-STR-579	Inlet	411.435	414.935	3.5	413.9	0	0	YES	414.3	0	0	YES	414.75	0	0	YES
ST-STR-58	DS Headwa	344.859	344.892	0	345.67	0	63.81	YES	346	0	99.78	YES	346.38	0	152.87	YES

Existing Condition Junctions Results Summary Table

Facility ID	Type	Dimensions			2-year				10-year				100-year			
		Invert Elevation (feet)	Rim Elevation (feet)	Depth (feet)	Max. HGL (2-year) (feet)	Max. Lateral Inflow (2-year) (cfs)	Max. Total Inflow (2-year) (cfs)	Surcharging (2-year)	Max. HGL (10-year) (feet)	Max. Lateral Inflow (10-year) (cfs)	Max. Total Inflow (10-year) (cfs)	Surcharging (10-year)	Max. HGL (100-year) (feet)	Max. Lateral Inflow (100-year) (cfs)	Max. Total Inflow (100-year) (cfs)	Surcharging (100-year)
ST-STR-580	Inlet	418.362	424.362	6	419.91	7.64	24.53	YES	420.51	13.14	41.43	YES	421.44	21.72	74.32	YES
ST-STR-581	Inlet	418.22	424.22	6	419.16	0.9	25.33	YES	419.46	1.59	44.1	YES	420.27	2.67	96.3	YES
ST-STR-582	Inlet	430.026	436.026	6	430.86	9.17	13.78	YES	431.11	16.37	22.74	YES	431.47	29.03	38.2	YES
ST-STR-583	Inlet	428.532	434.032	5.5	429.28	2.19	16.42	YES	429.52	3.68	27.6	YES	429.94	6.04	51.07	YES
ST-STR-584	Inlet	432.277	438.277	6	432.83	13.15	13.15	YES	433.02	23.59	23.59	YES	433.27	42.02	42.02	YES
ST-STR-585	Spillway	440.024	443.024	3	442.17	0.29	0.29	YES	442.18	0.44	0.44	YES	442.18	0.67	0.67	YES
ST-STR-586	Spillway	439.703	439.703	0	439.82	0.22	0.22	YES	439.84	0.35	0.35	YES	439.87	0.54	0.54	YES
ST-STR-587	Outlet, D-2	437.637	437.637	0	437.68	0	0.24	YES	437.69	0	0.36	YES	437.71	0	0.7	YES
ST-STR-588	Inlet	460.531	470.031	9.5	461.33	0.16	9.49	YES	461.33	0.27	9.65	YES	461.34	0.42	9.82	YES
ST-STR-589	Inlet	448.857	452.357	3.5	452.37	1.62	16.68	YES	452.51	3	23.51	YES	452.59	5.21	32	YES
ST-STR-59	DS Headwa	385.539	387.235	0	385.58	0	2.83	YES	385.59	0	4.77	YES	385.61	0	7.91	YES
ST-STR-590	Inlet	449.3	453.3	4	454.04	5.86	11.92	YES	454.23	10.5	27.97	YES	454.38	17.78	46.71	YES
ST-STR-591	Inlet	464.836	469.336	4.5	469.15	0.18	12.35	YES	469.4	0.27	15.25	YES	469.48	0.42	22.7	YES
ST-STR-592	Inlet	461.021	465.521	4.5	465.75	0.21	12.41	YES	465.76	0.32	13.04	YES	465.77	0.5	13.42	YES
ST-STR-593	Inlet	465.807	470.307	4.5	471.67	11.21	19.32	YES	471.72	20.09	28.87	YES	471.8	35.2	44.15	YES
ST-STR-594	Inlet	505.673	508.673	3	505.67	0	0	YES	505.67	0	0	YES	505.67	0	0	YES
ST-STR-595	Inlet	505	508.709	3.709	505	0	0	YES	505	0	0	YES	505	0	0	YES
ST-STR-596	Spillway	510.098	510.098	0	510.1	0	0	YES	510.1	0	0	YES	510.1	0	0	YES
ST-STR-597	Outlet, D-2	486.593	486.593	0	486.59	0	0	YES	486.59	0	0	YES	486.7	0	0.48	YES
ST-STR-598	Inlet	501.847	506.347	4.5	502.39	2.17	2.17	YES	502.59	3.88	3.88	YES	502.9	6.55	6.55	YES
ST-STR-60	DS Headwa	373.308	373.308	0	373.69	0	1.95	YES	373.7	0	3.25	YES	373.72	0	5.18	YES
ST-STR-600	Inlet	493.811	498.311	4.5	494.5	1.59	6.2	YES	494.68	2.9	8.85	YES	498.74	5.02	23.85	YES
ST-STR-601	Inlet	488.673	493.173	4.5	489.41	1.73	7.41	YES	491.16	3.12	11.7	YES	493.32	5.33	19.27	YES
ST-STR-602	Inlet	484.251	488.751	4.5	485.49	3.73	10.99	YES	488.94	6.75	16.95	YES	489.2	11.81	30.37	YES
ST-STR-603	Inlet	473.845	478.345	4.5	479.05	2.5	13.33	YES	479.31	4.1	12.19	YES	479.45	6.42	13.61	YES
ST-STR-605	Spillway	434.677	436.677	2	434.68	0	0	YES	434.68	0	0	YES	434.68	0	0	YES
ST-STR-607	Inlet	509.211	512.211	3	509.28	0.13	0.13	YES	509.3	0.23	0.23	YES	509.32	0.36	0.36	YES
ST-STR-608	Inlet	415.315	420.315	5	415.8	6.23	6.42	YES	415.96	11.03	11.37	YES	416.19	18.39	18.95	YES
ST-STR-609	Inlet	407.62	410.37	2.75	408.8	1.46	12.83	YES	411.94	2.23	23.57	YES	412.31	3.39	44.25	YES
ST-STR-610	Inlet	411.2	414.29	3.09	411.94	4.8	4.94	YES	413.58	8.12	12.77	YES	415.78	13.94	22.88	YES
ST-STR-611	Inlet	399.39	401.88	2.49	403.78	8.67	72.81	YES	403.99	14.35	105.63	YES	404.36	23.53	206.02	YES
ST-STR-612	Inlet	401.63	404.24	2.61	405.13	2.49	15.03	YES	405.56	4.18	24.08	YES	405.89	6.92	51.64	YES
ST-STR-613	Inlet	396.45	400.05	3.6	401.79	8.72	48.24	YES	402.05	15.35	59.67	YES	402.44	26.67	89.08	YES
ST-STR-614	Inlet	395.62	399.884	4.264	401.04	0.41	106.68	YES	401.98	0.65	107.04	YES	402.36	1.02	102.15	YES
ST-STR-615	Inlet	393.06	398.691	5.631	401.02	3.02	149.96	YES	401.98	4.73	153.34	YES	402.35	7.38	162.43	YES
ST-STR-616	Inlet	392.54	402.342	9.802	395.17	0.51	143.72	YES	395.61	0.81	152.11	YES	395.83	1.29	154.63	YES
ST-STR-617	Inlet	390.24	402.531	12.291	395.01	3.55	144.75	YES	395.45	5.69	153.3	YES	395.67	9.05	157.5	YES
ST-STR-618	Inlet	442.511	447.011	4.5	442.86	2.5	3.12	YES	442.96	4.14	5.19	YES	443.08	6.56	8.23	YES
ST-STR-619	Inlet	442.608	447.108	4.5	443	0.63	0.63	YES	443.11	1.06	1.06	YES	443.23	1.67	1.67	YES
ST-STR-620	Inlet	440.846	445.346	4.5	441.08	0.28	3.41	YES	441.15	0.48	5.67	YES	441.23	0.76	8.99	YES
ST-STR-621	Inlet	431.523	438.023	6.5	434.24	5	85.61	YES	434.4	8.31	91.68	YES	434.55	13.21	98	YES
ST-STR-622	Inlet	397.02	398.61	1.59	401.12	4.67	95.38	YES	401.98	7.71	96.39	YES	402.36	12.76	84.23	YES
ST-STR-623	Inlet	397.528	401.028	3.5	401.21	5.61	5.73	YES	401.98	9.34	9.57	YES	402.41	14.92	18.63	YES
ST-STR-624	Inlet	411.5	418.354	6.854	416.68	16.22	47.04	YES	419.23	28.02	70.22	YES	421.07	47.58	129.69	YES

Existing Condition Junctions Results Summary Table

Facility ID	Type	Dimensions			2-year				10-year				100-year			
		Invert Elevation (feet)	Rim Elevation (feet)	Depth (feet)	Max. HGL (2-year) (feet)	Max. Lateral Inflow (2-year) (cfs)	Max. Total Inflow (2-year) (cfs)	Surcharging (2-year)	Max. HGL (10-year) (feet)	Max. Lateral Inflow (10-year) (cfs)	Max. Total Inflow (10-year) (cfs)	Surcharging (10-year)	Max. HGL (100-year) (feet)	Max. Lateral Inflow (100-year) (cfs)	Max. Total Inflow (100-year) (cfs)	Surcharging (100-year)
ST-STR-625	Inlet	410.5	418.136	7.636	415.71	4.06	56.74	YES	419.07	6.66	83.13	YES	421.07	10.81	102.24	YES
ST-STR-626	Inlet	421.226	425.726	4.5	422.04	0	0.04	YES	425.81	0	3.31	YES	425.88	0	8.17	YES
ST-STR-627	Inlet	426.976	431.476	4.5	427.8	0.36	6.4	YES	428.11	0.56	10.69	YES	430.47	0.86	15.14	YES
ST-STR-628	Outlet, D-2	440.164	440.164	0	440.16	0	0	YES	440.16	0	0	YES	440.16	0	0	YES
ST-STR-631	Outlet, D-2	438.335	438.335	0	438.33	0	0	YES	438.33	0	0	YES	438.33	0	0	YES
ST-STR-632	Inlet	431.235	443.493	3.67	434.92	0.81	0.81	YES	434.92	1.29	1.29	YES	434.93	2.01	2.01	YES
ST-STR-633	Outlet, D-2	450.532	450.532	0	450.53	0	0	YES	450.53	0	0	YES	450.53	0	0	YES
ST-STR-637	Inlet	439.214	444.214	5	440.51	11.91	14.7	YES	441.09	20.02	25.58	YES	443.08	33	43.73	YES
ST-STR-638	Inlet	438.692	444.692	6	439.58	0.77	15.43	YES	439.88	1.27	28.16	YES	440.3	2.08	45.84	YES
ST-STR-639	Outlet, D-2	469.653	469.653	0	469.65	0	0	YES	469.65	0	0	YES	469.65	0	0	YES
ST-STR-64	Headwall	413.253	419.159	0	415.79	6.06	6.86	YES	415.8	9.93	11.57	YES	415.82	16.07	19.38	YES
ST-STR-640	Inlet	464.829	469.329	4.5	465.59	15.77	15.77	YES	465.96	28.34	28.34	YES	469.45	49.29	49.29	YES
ST-STR-641	Inlet	437.454	441.954	4.5	437.96	9.69	9.99	YES	438.13	16.95	17.58	YES	438.39	28.51	29.81	YES
ST-STR-642	Inlet	443.671	448.171	4.5	445.6	8.68	8.68	YES	446.97	14.49	14.49	YES	448.79	23.6	23.6	YES
ST-STR-643	Inlet	439.602	444.602	5	445.27	0.59	16.22	YES	445.4	0.92	27.49	YES	445.47	1.43	38.76	YES
ST-STR-644	Inlet	444.673	448.673	4	445.45	0.74	0.74	YES	446.41	1.2	1.2	YES	447.61	1.93	1.93	YES
ST-STR-645	Inlet	444	449.117	5.117	445.45	0.35	2.85	YES	446.34	0.56	4.92	YES	447.78	0.88	7.95	YES
ST-STR-646	Inlet	444.271	448.771	4.5	445.48	2.69	2.69	YES	446.47	4.44	4.44	YES	448.11	7.23	7.23	YES
ST-STR-647	Inlet	442.117	446.617	4.5	445.36	0.05	2.74	YES	445.87	0.07	4.9	YES	446.6	0.11	7.72	YES
ST-STR-648	Inlet	445.677	449.677	4	446.3	0.65	0.65	YES	448.72	1.1	1.1	YES	449.23	1.78	1.78	YES
ST-STR-649	Inlet	445.69	450.69	5	446.98	1.05	17.97	YES	450.2	1.68	30.87	YES	450.82	2.62	34.7	YES
ST-STR-65	Channel co	434.447	434.447	0	434.52	0	1.36	YES	434.54	0	2.33	YES	434.58	0	3.88	YES
ST-STR-650	Inlet	454.769	459.769	5	455.8	7.37	17.1	YES	456.48	12.62	30.11	YES	460	20.99	49.14	YES
ST-STR-651	Inlet	456.383	461.383	5	457.03	0.13	10.13	YES	457.32	0.19	18.48	YES	460.68	0.29	32.02	YES
ST-STR-653	Inlet	436.406	440.906	4.5	440.36	0.17	0.17	YES	440.68	0.26	2.59	YES	441.03	0.4	6.14	YES
ST-STR-654	Inlet	437	440.918	3.918	441.08	9.86	25.32	YES	441.19	16.61	39.35	YES	441.27	27.5	54.22	YES
ST-STR-655	Inlet	429.206	434.706	5.5	435.4	0.72	13.45	YES	435.61	1.14	27.2	YES	435.8	1.76	46.92	YES
ST-STR-656	Inlet	434.521	439.021	4.5	439.69	11.06	11.06	YES	439.8	19.54	19.54	YES	439.91	34.68	34.68	YES
ST-STR-657	Inlet	425.87	434.373	8.503	435.43	8.36	37.95	YES	435.64	14.47	47.99	YES	435.84	24.29	65.53	YES
ST-STR-658	Inlet	425.5	434.527	9.027	435.4	7.48	29.85	YES	435.62	12.71	49.46	YES	435.81	21	78.44	YES
ST-STR-659	Inlet	433.344	437.344	4	438.07	11.84	11.84	YES	438.22	20.35	20.35	YES	438.37	35.98	35.98	YES
ST-STR-66	DS Headwa	387.049	387.809	0.76	387.86	0	7.9	YES	388.09	0	12.69	YES	388.37	0	19.23	YES
ST-STR-660	Inlet	432.747	436.747	4	437.69	4.47	31.86	YES	438.14	7.58	46.75	YES	438.35	13.09	60.83	YES
ST-STR-661	Inlet	448.232	450.062	1.83	448.23	0	0	YES	448.23	0	0	YES	448.23	0	0	YES
ST-STR-662	Outlet, D-2	447.818	447.818	0	447.82	0	0	YES	447.82	0	0	YES	447.82	0	0	YES
ST-STR-663	Inlet	494.373	500.373	6	494.54	1.02	1.02	YES	494.58	1.67	1.67	YES	494.64	2.67	2.67	YES
ST-STR-666	Unimprove	451.96	452.96	1	453.02	6.14	6.14	YES	453.1	10.77	10.77	YES	453.19	18.47	18.47	YES
ST-STR-667	Inlet	430.296	434.796	4.5	430.83	0.54	0.73	YES	432.26	0.98	1.42	YES	434.01	1.57	2.44	YES
ST-STR-668	Inlet	433.591	438.091	4.5	434.13	4.07	4.07	YES	434.31	6.85	6.85	YES	436.02	11.21	11.21	YES
ST-STR-669	Inlet	428.569	431.569	3	431.72	7.52	7.52	YES	431.85	13	13	YES	431.97	22.67	22.67	YES
ST-STR-67	DS Headwa	404.179	404.179	0	405.02	0	99.76	YES	405.4	0	184.94	YES	405.88	0	347.85	YES
ST-STR-670	Inlet	433.62	437.62	4	433.74	0.2	0.2	YES	433.8	0.46	0.46	YES	434.12	0.88	0.88	YES
ST-STR-671	Headwall	427.256	429.756	2.5	428.6	0.89	0.89	YES	428.88	1.58	1.58	YES	429.24	2.67	2.67	YES
ST-STR-672	DS Headwa	426.8	427.849	1.049	428.14	0.2	9.8	YES	428.19	0.3	11.85	YES	428.31	0.48	14.89	YES

Existing Condition Junctions Results Summary Table

Facility ID	Type	Dimensions			2-year				10-year				100-year			
		Invert Elevation (feet)	Rim Elevation (feet)	Depth (feet)	Max. HGL (2-year) (feet)	Max. Lateral Inflow (2-year) (cfs)	Max. Total Inflow (2-year) (cfs)	Surcharging (2-year)	Max. HGL (10-year) (feet)	Max. Lateral Inflow (10-year) (cfs)	Max. Total Inflow (10-year) (cfs)	Surcharging (10-year)	Max. HGL (100-year) (feet)	Max. Lateral Inflow (100-year) (cfs)	Max. Total Inflow (100-year) (cfs)	Surcharging (100-year)
ST-STR-673	Inlet	414.454	418.454	4	415.66	16.95	16.95	YES	416.22	29.79	29.79	YES	418.46	53.71	53.71	YES
ST-STR-674	Headwall	397.703	400.203	2.5	401.93	2.91	23.14	YES	402.1	4.92	31.91	YES	402.17	8.06	38.37	YES
ST-STR-675	Inlet	394.557	401.557	7	398.16	2.37	97.11	YES	401.04	4	124.97	YES	402.51	6.74	144.17	YES
ST-STR-676	Inlet	393.891	401.391	7.5	397.95	5.71	101.32	YES	400.65	9.61	135.31	YES	402.05	16.65	186.86	YES
ST-STR-677	Inlet	437.133	441.633	4.5	437.92	2.06	2.06	YES	438.2	3.58	3.58	YES	438.73	5.87	5.87	YES
ST-STR-678	Inlet	436.654	440.904	4.25	437.1	2.23	4.23	YES	437.25	3.88	7.36	YES	437.47	6.37	12.02	YES
ST-STR-679	Outlet, D-2	423.32	423.32	0	423.42	0	5.05	YES	423.47	0	8.96	YES	423.51	0	13.61	YES
ST-STR-68	DS Headwa	391.539	391.539	0	391.88	0	1.97	YES	392.04	0	3.42	YES	392.14	0	6.41	YES
ST-STR-680	Inlet	423.931	428.181	4.25	424.72	0.91	5.09	YES	425.1	1.48	8.77	YES	427.47	2.35	14.26	YES
ST-STR-681	Inlet	389.992	398.992	9	391.68	1.82	1.82	YES	392.83	2.93	2.93	YES	396.95	4.72	13.55	YES
ST-STR-682	Headwall	390.367	390.367	0	394.86	0	130.58	YES	396.86	0	223.65	YES	398.62	0	373.7	YES
ST-STR-683	Inlet	393.458	398.958	5.5	393.77	3.06	3.14	YES	393.94	5.31	7.8	YES	397.74	9.11	27.65	YES
ST-STR-684	Inlet	390.694	395.194	4.5	391.01	1.31	1.51	YES	392.03	2.1	2.89	YES	395.67	3.35	15.36	YES
ST-STR-685	Inlet	390.146	394.646	4.5	390.63	7.96	8	YES	391.36	14.11	14.18	YES	395.65	24.13	27.59	YES
ST-STR-686	Inlet	387.21	394.71	7.5	389.57	0.41	138.99	YES	390.64	0.64	235.42	YES	395.23	0.98	357.71	YES
ST-STR-687	Inlet	384.5	390.957	6.457	386.9	0.74	153.91	YES	388.05	1.2	261.09	YES	392.3	1.94	372.69	YES
ST-STR-688	Inlet	387.103	391.603	4.5	390.2	15.86	17.01	YES	392.18	28.28	28.31	YES	392.53	50.83	53.77	YES
ST-STR-689	Conduit co	393.04	397.54	4.5	395.34	0	119.98	YES	396.99	0	146.48	YES	398.67	0	155.34	YES
ST-STR-690	Inlet	394	396.967	2.967	397.39	4.31	21.1	YES	399.05	7.23	21.4	YES	399.1	12	30.82	YES
ST-STR-691	Inlet	393.5	396.915	3.415	397.08	3.04	120.13	YES	399.07	5.15	148.01	YES	399.37	8.8	178.15	YES
ST-STR-692	Inlet	398.776	403.776	5	403.02	9.52	27.11	YES	404.21	15.58	50.2	YES	404.28	25.07	64.3	YES
ST-STR-693	Inlet	395.816	399.816	4	400.9	1.95	28.64	YES	400.93	3.17	35.79	YES	400.95	5.13	38.92	YES
ST-STR-694	Inlet	412.26	417.26	5	417.47	4.47	8.69	YES	417.6	7.14	23.19	YES	417.68	11.38	33.64	YES
ST-STR-695	Unimprove	440.255	440.437	0	441	5.66	5.66	YES	441.27	9.77	9.77	YES	441.31	16.61	16.61	YES
ST-STR-696	Spillway	441.482	441.482	0	441.96	5.06	5.06	YES	441.98	9.01	9.01	YES	442.02	15.3	15.3	YES
ST-STR-697	Inlet	431.118	436.618	5.5	432.46	0.59	15.9	YES	433.1	0.97	32.55	YES	437.09	1.6	35.92	YES
ST-STR-698	Inlet	430.498	436.498	6	431.44	1.37	17.18	YES	432.2	2.26	33.54	YES	436.84	3.7	39.74	YES
ST-STR-699	Inlet	431.753	436.253	4.5	432.79	6.6	15.34	YES	433.41	11.53	31.29	YES	437.09	19.59	36.34	YES
ST-STR-70	Unimprove	465.037	465.525	0	465.04	0	0	YES	465.04	0	0	YES	465.04	0	0	YES
ST-STR-700	Inlet	419.201	424.201	5	420.63	7.17	24.11	YES	424.6	12.35	42.28	YES	425.53	20.98	57.23	YES
ST-STR-702	Headwall	451.132	451.132	0	451.13	0	0	YES	451.13	0	0	YES	451.13	0	0	YES
ST-STR-703	Inlet	441.836	448.836	7	442.92	0.22	14.61	YES	444.79	0.37	24.94	YES	445.61	0.58	28.23	YES
ST-STR-704	Inlet	445.493	449.493	4	445.96	4.09	4.09	YES	446.72	7.32	7.32	YES	449.89	12.51	12.51	YES
ST-STR-705	Inlet	447.618	452.118	4.5	447.95	1.42	1.42	YES	448.06	2.52	2.52	YES	448.18	4.14	4.14	YES
ST-STR-706	Inlet	442.611	445.611	3	443.61	7.83	9.2	YES	445.3	14.04	16.5	YES	445.95	25.05	29.1	YES
ST-STR-707	Headwall	448.672	448.672	0	449.21	1.23	1.23	YES	449.54	2.13	2.13	YES	449.7	3.41	3.41	YES
ST-STR-708	Inlet	436.799	440.299	3.5	440.93	2.91	9.54	YES	441.01	5.23	17.21	YES	441.1	8.89	24.42	YES
ST-STR-709	Inlet	437.292	440.292	3	440.94	3.92	6.13	YES	441.02	7.07	11.34	YES	441.11	12.15	17.37	YES
ST-STR-71	DS Headwa	395.898	395.898	0	395.92	0	2.01	YES	395.93	0	3.34	YES	395.94	0	5.54	YES
ST-STR-710	Inlet	422.292	426.292	4	422.69	1.87	1.87	YES	422.84	3.36	3.36	YES	423.1	5.66	5.66	YES
ST-STR-711	Inlet	398.03	403.53	5.5	400.53	17.33	51.47	YES	401.72	30.67	87.55	YES	404.16	54.43	128.79	YES
ST-STR-712	Inlet	397.69	403.69	6	398.91	0.18	66.34	YES	399.39	0.28	103.96	YES	400.21	0.43	155.64	YES
ST-STR-713	Inlet	415.29	420.79	5.5	416.65	3.62	20.44	YES	417.15	6.24	32.36	YES	419.5	10.8	43.2	YES
ST-STR-714	Inlet	437.586	442.086	4.5	438.49	5.9	5.9	YES	439.19	10.6	10.6	YES	442.37	17.86	17.86	YES

Existing Condition Junctions Results Summary Table

Facility ID	Type	Dimensions			2-year				10-year				100-year			
		Invert Elevation (feet)	Rim Elevation (feet)	Depth (feet)	Max. HGL (2-year) (feet)	Max. Lateral Inflow (2-year) (cfs)	Max. Total Inflow (2-year) (cfs)	Surcharging (2-year)	Max. HGL (10-year) (feet)	Max. Lateral Inflow (10-year) (cfs)	Max. Total Inflow (10-year) (cfs)	Surcharging (10-year)	Max. HGL (100-year) (feet)	Max. Lateral Inflow (100-year) (cfs)	Max. Total Inflow (100-year) (cfs)	Surcharging (100-year)
ST-STR-715	Inlet	436.72	441.72	5	437.77	0.76	17.28	YES	438.13	1.25	26.7	YES	439.68	2.04	35.22	YES
ST-STR-716	Inlet	440.396	444.896	4.5	441.58	2.6	2.6	YES	444.78	4.57	4.57	YES	445.18	7.44	7.44	YES
ST-STR-717	Inlet	439.5	444.5	5	441.53	0.21	12.21	YES	444.65	0.33	19.78	YES	444.89	0.51	27.7	YES
ST-STR-718	Inlet	445.064	450.064	5	446.07	6.53	9.68	YES	448.17	11.72	16.85	YES	450.23	20.09	26.72	YES
ST-STR-719	Inlet	446.5	450.799	4.299	447.05	3.21	3.21	YES	448.66	5.78	5.78	YES	451.24	10.04	10.04	YES
ST-STR-72	Unimprove	401.528	401.528	0	401.64	8.44	8.44	YES	401.98	14.12	14.12	YES	402.36	22.9	22.91	YES
ST-STR-720	Inlet	454.786	458.286	3.5	455.81	0.73	2.21	YES	456.52	1.27	3.87	YES	457.89	2.08	6.43	YES
ST-STR-721	Inlet	455.071	458.571	3.5	455.84	1.51	1.51	YES	456.58	2.66	2.66	YES	458.07	4.44	4.44	YES
ST-STR-722	Inlet	454.5	459.083	4.583	455.71	0.92	3.02	YES	456.21	1.66	5.39	YES	456.99	2.73	8.91	YES
ST-STR-723	Inlet	455.025	457.025	2	457.48	5.64	5.64	YES	457.53	9.97	9.97	YES	457.59	17.08	17.08	YES
ST-STR-724	Inlet	451.253	454.253	3	454.33	4.02	6.62	YES	454.39	7.23	13	YES	454.45	12.57	22.33	YES
ST-STR-725	Inlet	437.324	439.824	2.5	439.48	3.71	3.71	YES	439.58	6.73	6.73	YES	439.64	11.67	11.67	YES
ST-STR-726	Inlet	434.395	440.895	6.5	434.46	0.06	0.06	YES	434.48	0.09	0.09	YES	434.5	0.15	0.15	YES
ST-STR-728	Headwall	442.035	442.035	0	443.03	4.32	4.36	YES	443.57	7.91	8.01	YES	444.41	13.08	13.27	YES
ST-STR-729	Outlet, D-2	437.61	437.61	0	437.91	0	3.48	YES	437.96	0	6.71	YES	438.02	0	10.94	YES
ST-STR-73	DS Headwa	495.41	495.41	0	495.63	0	0.32	YES	495.7	0	0.56	YES	495.78	0	0.89	YES
ST-STR-730	Unimprove	464.611	464.611	0	464.72	0.28	0.28	YES	464.75	0.46	0.46	YES	464.78	0.72	0.72	YES
ST-STR-731	Outlet, D-2	454.901	454.901	0	455.1	0	0.27	YES	455.11	0	0.44	YES	455.12	0	0.7	YES
ST-STR-732	Unimprove	461.249	461.249	0	461.3	1.52	1.52	YES	461.32	2.86	2.86	YES	461.35	4.73	4.73	YES
ST-STR-733	Inlet	448.15	451.022	2.872	450.07	2.72	3.28	YES	450.94	4.83	4.95	YES	451.06	8.12	8.12	YES
ST-STR-734	Inlet	448.3	450.801	2.501	450.08	0.58	0.58	YES	450.93	0.99	0.99	YES	450.98	1.61	3.62	YES
ST-STR-735	Inlet	445.428	448.928	3.5	449.6	3.71	7.82	YES	449.73	6.55	9.99	YES	449.81	11	14.49	YES
ST-STR-736	Inlet	446.507	449.507	3	449.77	7.09	7.09	YES	449.83	12.54	12.54	YES	449.9	21.33	21.33	YES
ST-STR-737	Inlet	445.043	449.043	4	449.36	0.38	7.91	YES	449.38	0.63	9.82	YES	449.39	0.99	11.06	YES
ST-STR-738	Inlet	444.5	448.323	3.823	445.86	1.67	10.29	YES	448.4	2.91	17.19	YES	448.66	4.94	26.23	YES
ST-STR-739	Headwall	446.74	447.601	0	448.43	0.94	7.44	YES	448.57	1.67	13.96	YES	448.68	2.75	17.04	YES
ST-STR-74	DS Headwa	491.421	491.421	0	491.57	0	1.78	YES	491.61	0	2.96	YES	491.66	0	4.95	YES
ST-STR-740	Inlet	446.628	450.128	3.5	447.07	2.37	2.37	YES	448.56	4.09	4.09	YES	450.05	6.83	6.83	YES
ST-STR-741	Headwall	441.83	441.83	0	442.9	0	1.69	YES	442.99	0	2	YES	443.09	0	1.97	YES
ST-STR-742	Inlet	447.356	447.356	0	448.46	0	2.09	YES	448.64	0	4.12	YES	448.83	0	6.27	YES
ST-STR-743	Headwall	432.406	435.906	3.5	432.41	0	0	YES	432.41	0	0	YES	432.41	0	0	YES
ST-STR-744	DS Headwa	416.473	419.473	3	416.59	2.85	2.85	YES	416.63	4.81	4.81	YES	416.68	7.73	7.73	YES
ST-STR-745	Headwall	457.826	457.826	0	459.84	5.95	5.95	YES	459.87	10.74	10.74	YES	459.9	19.15	19.15	YES
ST-STR-746	Spillway	450.207	450.207	0	450.3	0.22	0.22	YES	450.32	0.36	0.36	YES	450.34	0.57	0.57	YES
ST-STR-747	Unimprove	464.582	464.582	0	464.62	0.4	0.4	YES	464.63	0.74	0.74	YES	464.65	1.2	1.2	YES
ST-STR-748	Outlet, D-2	460.446	460.446	0	460.52	0	0.01	YES	460.52	0	0.02	YES	460.52	0	0.03	YES
ST-STR-749	Inlet	444.367	447.867	3.5	445.2	4.89	4.89	YES	445.57	8.78	8.79	YES	446.31	14.51	14.53	YES
ST-STR-75	Inlet	462.854	468.354	5.5	464.5	2.42	36.19	YES	468.51	3.88	65.06	YES	468.7	6.15	118.71	YES
ST-STR-750	Inlet	445.726	449.976	4.25	445.87	0.49	0.49	YES	445.91	0.82	0.82	YES	445.96	1.29	1.29	YES
ST-STR-751	Inlet	429.445	434.445	5	430.82	8.25	18.58	YES	435.11	14.7	30.25	YES	435.29	26.53	45.41	YES
ST-STR-752	Inlet	429.883	434.883	5	431.09	9.86	10.34	YES	435.45	17.56	18.37	YES	435.73	31.53	32.81	YES
ST-STR-753	Inlet	428.871	432.871	4	429.2	1.58	1.58	YES	429.32	2.83	2.83	YES	429.47	4.69	4.69	YES
ST-STR-754	Inlet	426.5	431.5	5	428.29	2.48	20.99	YES	431.83	4.24	28.36	YES	432.13	6.94	30.99	YES
ST-STR-755	Spillway	433.27	433.27	0	433.27	0	0	YES	433.27	0	0	YES	433.27	0	0	YES

Existing Condition Junctions Results Summary Table

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		Invert Elevation (feet)	Rim Elevation (feet)	Depth (feet)	Max. HGL (2-year) (feet)	Max. Lateral Inflow (2-year) (cfs)	Max. Total Inflow (2-year) (cfs)	Surcharging (2-year)	Max. HGL (10-year) (feet)	Max. Lateral Inflow (10-year) (cfs)	Max. Total Inflow (10-year) (cfs)	Surcharging (10-year)	Max. HGL (100-year) (feet)	Max. Lateral Inflow (100-year) (cfs)	Max. Total Inflow (100-year) (cfs)	Surcharging (100-year)
ST-STR-756	Inlet	406.56	413.699	7.139	407.73	3.99	37.47	YES	408.04	7.21	58.8	YES	408.41	12.07	85.44	YES
ST-STR-757	Inlet	433.517	433.517	0	433.52	0	0	YES	433.52	0	0	YES	433.52	0	0	YES
ST-STR-758	Inlet	370.026	378.526	8.5	371.47	4	21.31	YES	372.19	7.18	39.25	YES	376.35	12.52	65.18	YES
ST-STR-759	Inlet	392.715	397.215	4.5	392.98	1.59	1.59	YES	393.06	2.84	2.84	YES	393.17	4.77	4.77	YES
ST-STR-76	DS Headwa	391.65	393.886	0	391.67	0.61	0.61	YES	391.67	0.92	0.92	YES	391.67	1.4	1.4	YES
ST-STR-760	Inlet	390.88	396.88	6	391.55	3.38	17.35	YES	391.79	6.16	31.43	YES	392.08	10.24	52.95	YES
ST-STR-761	Inlet	340.691	345.191	4.5	341.98	4.79	33.06	NO	342.66	8.01	60.35	YES	345.31	13.44	91.37	YES
ST-STR-762	Inlet	356.775	362.275	5.5	357.61	6.25	28.7	YES	357.95	11.29	52.97	YES	358.29	18.66	80.25	YES
ST-STR-763	Inlet	368.536	374.036	5.5	369.55	2.72	23.46	YES	369.98	4.87	43.27	YES	370.59	8.06	68.66	YES
ST-STR-764	Inlet	404.524	408.524	4	404.62	0.12	0.12	YES	404.64	0.19	0.19	YES	404.67	0.29	0.29	YES
ST-STR-765	Outlet, D-2	376.142	376.142	0	376.18	0	0.12	YES	376.18	0	0.18	YES	376.19	0	0.28	YES
ST-STR-766	Inlet	350.206	354.206	4	350.29	0.28	0.28	YES	350.31	0.45	0.45	YES	350.33	0.71	0.71	YES
ST-STR-767	Inlet	324.775	333.775	9	329.01	1.33	175.91	NO	334.71	2.25	321	NO	336.32	3.79	829.26	NO
ST-STR-768	Inlet	329.345	335.345	6	330.93	0.45	29.02	NO	335.08	0.72	50.41	NO	335.77	1.14	73.34	NO
ST-STR-769	Inlet	330.774	335.274	4.5	331.75	9.06	9.34	NO	335.64	16.01	16.46	NO	335.98	27.99	28.7	NO
ST-STR-770	Inlet	328.011	334.261	6.25	329.12	0.89	29.88	NO	334.4	1.45	52.4	NO	335.5	2.35	117.22	NO
ST-STR-771	Inlet	324.393	333.393	9	329.17	0.31	121.03	NO	334.65	0.48	363.82	NO	335.46	0.75	513.01	NO
ST-STR-772	Inlet	324.895	333.895	9	330.73	1.86	75.84	NO	335.19	3.26	117.4	NO	336.04	5.86	179.73	NO
ST-STR-773	Inlet	330.3	332.109	1.809	334.76	9.41	40.38	NO	335.13	16.21	64.47	NO	335.7	27.79	142.67	NO
ST-STR-774	Inlet	326.975	331.475	4.5	334.76	10.28	112.23	NO	335.2	17.29	192.17	NO	335.92	29.67	287.87	NO
ST-STR-775	Inlet	325.466	333.466	8	331.06	3.07	352.62	NO	334.89	5.19	370.97	NO	335.54	8.36	368.67	NO
ST-STR-776	Spillway	399	399	0	399	0	0	YES	399	0	0	YES	399	0	0	YES
ST-STR-777	Outlet, D-2	370.882	370.882	0	370.88	0	0	YES	370.88	0	0	YES	370.88	0	0	YES
ST-STR-778	Inlet	362.899	366.899	4	367.89	6.24	9.22	YES	368.12	11.14	13.72	YES	368.27	19.35	30.7	YES
ST-STR-779	Inlet	363.316	367.816	4.5	367.9	3.1	3.1	YES	368.08	5.51	5.51	YES	368.2	9.5	9.58	YES
ST-STR-78	DS Headwa	418.836	418.836	0	419.24	2.83	2.83	YES	419.35	4.49	4.49	YES	419.5	7.04	7.04	YES
ST-STR-780	Inlet	376.3	381.8	5.5	378.49	4.89	54.27	YES	382.49	8.79	68.57	YES	382.83	15.06	90.07	YES
ST-STR-781	Inlet	399.731	404.231	4.5	400.13	2.55	2.55	YES	400.28	4.52	4.52	YES	400.45	7.5	7.5	YES
ST-STR-782	Headwall	383.948	386.948	3	387.51	3.44	44.38	YES	387.8	6.56	72.5	YES	388.18	10.93	132.09	YES
ST-STR-783	Inlet	399.593	404.68	5.087	400.93	4.89	41.86	YES	401.29	9.05	67.28	YES	401.99	16.26	126.98	YES
ST-STR-785	Inlet	420.768	423.768	3	420.95	0.65	0.65	YES	421	1.07	1.07	YES	421.07	1.71	1.71	YES
ST-STR-786	Inlet	388.848	392.348	3.5	388.85	0	0	YES	388.85	0	0	YES	389.14	0	0.03	YES
ST-STR-787	Inlet	377.131	386.131	9	380.4	6.57	156.87	YES	381.7	10.97	265.11	YES	383.86	17.8	457.37	YES
ST-STR-788	Inlet	381.03	386.03	5	381.25	1.19	1.19	YES	381.32	2.04	2.04	YES	382.33	3.39	3.68	YES
ST-STR-789	Inlet	374.125	378.625	4.5	374.55	2.75	2.75	YES	376.46	4.86	4.86	YES	378.05	8.27	8.27	YES
ST-STR-79	DS Headwa	454.192	454.234	0	454.42	0	0.72	YES	454.48	0	1.27	YES	454.55	0	2.1	YES
ST-STR-790	Inlet	375.234	377.234	2	376.24	3.29	3.29	YES	377.37	5.5	5.5	YES	378.11	9.05	29.16	YES
ST-STR-791	Inlet	372.628	377.128	4.5	374.43	4.41	7.14	YES	376.33	7.81	15.88	YES	377.64	13.15	27.31	YES
ST-STR-792	Inlet	371.628	376.628	5	374.39	3.43	10.58	YES	375.98	5.99	25.39	YES	377.16	10.47	41.76	YES
ST-STR-793	Inlet	359.277	361.277	2	361.62	2.88	2.88	YES	362.61	4.72	4.72	YES	363.65	7.66	8.27	YES
ST-STR-794	Headwall	393.3	395.169	1.869	393.99	1.28	1.28	YES	394.29	2.26	2.26	YES	395.57	3.7	3.7	YES
ST-STR-795	Inlet	392.971	395.971	3	393.45	1.79	3.05	YES	393.76	3.22	5.45	YES	395.21	5.48	8.2	YES
ST-STR-796	DS Headwa	382.401	385.401	3	383.18	8.34	36.22	YES	383.32	14.48	55.25	YES	383.51	23.53	88.19	YES
ST-STR-797	Channel co	376.515	379.515	3	377.85	0.17	36.17	YES	378.03	0.32	53.86	YES	378.29	0.55	86.47	YES

Existing Condition Junctions Results Summary Table

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ST-STR-798	Inlet	429.842	432.672	2.83	429.84	0	0	YES	429.84	0	0	YES	429.84	0	0	YES
ST-STR-800	Outlet, D-2	426.564	429.564	3	429.62	0.67	0.67	YES	429.64	1.15	1.15	YES	429.67	1.86	1.86	YES
ST-STR-801	Spillway	427.595	430.595	3	429.62	0	0.16	YES	429.64	0	0.02	YES	429.67	0	0.02	YES
ST-STR-802	Inlet	427.3	430.233	2.933	428.48	0.66	0.66	YES	430.21	1.18	1.18	YES	430.29	1.96	1.96	YES
ST-STR-803	Inlet	427.093	430.093	3	428.47	2.59	3.21	YES	430.17	4.61	5.78	YES	430.24	7.94	9.42	YES
ST-STR-804	Outlet, D-2	426.71	427.304	0.594	426.81	0	3.07	YES	426.83	0	4.52	YES	426.84	0	5.3	YES
ST-STR-805	Spillway	438.316	438.316	0	438.7	1.11	1.11	YES	438.78	1.94	1.94	YES	438.87	3.14	3.14	YES
ST-STR-806	Inlet	429.872	434.372	4.5	430.54	3.62	6.57	YES	430.91	6.48	13.01	YES	435.62	11.48	22.39	YES
ST-STR-807	Inlet	407.47	411.97	4.5	407.77	1.01	1.01	YES	408.09	1.59	1.59	YES	408.44	2.51	2.51	YES
ST-STR-809	Inlet	413.929	419.429	5.5	414.87	3.31	28.86	YES	415.1	5.54	42.56	YES	415.33	9.22	57.68	YES
ST-STR-810	Inlet	400	402.104	2.104	401.79	1.14	1.14	YES	401.8	1.84	1.84	YES	401.81	2.93	2.93	YES
ST-STR-811	Inlet	392.193	396.693	4.5	392.84	5.47	7.39	YES	397.18	9.14	24.48	YES	397.59	15.34	41.87	YES
ST-STR-812	Inlet	389.915	394.415	4.5	396.81	8.42	25.41	YES	397.22	14.05	57.76	YES	397.59	23.24	107.01	YES
ST-STR-813	Inlet	384.69	394.502	9.812	386.79	0.45	236.79	YES	387.8	0.71	444.63	YES	390.31	1.11	730.88	YES
ST-STR-814	Inlet	391.401	396.401	5	391.74	0.16	4.17	YES	392.06	0.25	15.71	YES	392.76	0.39	34.88	YES
ST-STR-815	Inlet	391.814	396.814	5	392.02	0.64	1.05	YES	392.06	1.05	1.6	YES	392.14	1.7	2.98	YES
ST-STR-816	Inlet	375.706	385.206	9.5	378.67	2.35	240.91	YES	380.04	3.83	453.76	YES	383.38	6.13	724.91	YES
ST-STR-817	Inlet	377.7	395.716	18.016	379.83	9.64	65.27	YES	380.9	16.3	133	YES	384.39	27.58	267.15	YES
ST-STR-819	Inlet	384.852	390.852	6	385.33	0.4	48.51	YES	385.38	0.63	85.11	YES	385.44	0.97	128.85	YES
ST-STR-821	Inlet	374.668	379.668	5	377.09	3.88	51.03	YES	377.99	6.4	49.99	YES	378.89	10.45	49.68	YES
ST-STR-822	Inlet	374.011	378.011	4	378.73	1.27	36.54	YES	379	1.99	32.93	YES	379.34	3.1	60.16	YES
ST-STR-823	Inlet	374.808	377.808	3	376.88	0.53	1.36	YES	377.9	0.87	1.33	YES	378.57	1.4	3.98	YES
ST-STR-824	Inlet	374.258	379.258	5	376.82	10.42	41.01	YES	377.91	17.1	49.56	YES	378.81	27.92	61.32	YES
ST-STR-825	Inlet	373.397	373.41	0	376.72	3.56	242.17	YES	377.86	6.03	470.59	YES	378.76	9.96	728.53	YES
ST-STR-826	Inlet	371.507	380.507	9	373.22	3.36	63.29	YES	373.76	5.37	106.53	YES	374.83	8.52	180.16	YES
ST-STR-827	Inlet	358.75	367.496	8.746	360.73	2.93	109.85	YES	361.83	4.89	200.16	YES	369.27	8.09	382.69	YES
ST-STR-828	Inlet	361.887	369.887	8	363.97	5.6	81.39	YES	364.89	9.33	152.78	YES	370.58	15.43	247.02	YES
ST-STR-829	Headwall	363.095	363.095	0	363.78	0	3.18	YES	364.1	0	5.22	YES	364.53	0	8.47	YES
ST-STR-83	DS Headwa	416.707	421.707	5	417.96	0	15.11	YES	419.64	0	27.05	YES	429.08	0	44.4	YES
ST-STR-830	Inlet	351.038	356.038	5	351.43	0.4	3.48	YES	351.61	0.64	6.01	YES	352.58	1.01	8.98	YES
ST-STR-831	Inlet	346.053	352.053	6	349.62	2.96	11.68	YES	351.54	4.87	21.22	YES	352.81	7.95	146.81	YES
ST-STR-832	Inlet	347.115	352.115	5	349.63	5.88	9.08	YES	351.53	9.58	14.9	YES	353.2	15.5	171.24	YES
ST-STR-833	Inlet	344	348.189	4.189	344.42	8.04	8.04	YES	344.7	13.82	13.83	YES	348.13	24.79	52.34	YES
ST-STR-834	Inlet	366.766	372.266	5.5	367.72	2.69	29.26	YES	368.05	4.47	49.27	YES	369.1	7.33	81.48	YES
ST-STR-835	Inlet	352.16	359.345	7.185	353.81	4.38	33.39	YES	358.72	7.11	75.8	YES	360.52	11.42	174.41	YES
ST-STR-836	Inlet	351.67	359.394	7.724	353.64	2.41	58.46	YES	358.7	3.98	129.04	YES	360.65	6.5	136.94	YES
ST-STR-837	Inlet	369.755	375.755	6	370.73	1.77	26.5	YES	371.04	2.95	44.68	YES	371.5	4.85	74.02	YES
ST-STR-838	Inlet	366.5	371.112	4.612	367.04	3.2	3.2	YES	367.2	5.25	5.25	YES	367.4	8.51	8.51	YES
ST-STR-839	Inlet	358.056	364.556	6.5	359.06	0.22	24.16	YES	359.23	0.33	32.97	YES	359.39	0.49	41.77	YES
ST-STR-84	Unimprove	420.284	425.284	5	421.16	14.18	14.18	YES	421.56	25.52	25.52	YES	431.22	43.31	43.31	YES
ST-STR-840	Inlet	336.3	341.436	5.136	342.37	1.91	136.11	NO	343.19	3.03	230.79	YES	344.99	4.8	435.4	YES
ST-STR-841	Inlet	337.2	342.84	5.64	343.75	10.26	104.41	YES	344.53	17.05	195.04	YES	346.04	28.14	446.21	YES
ST-STR-842	Headwall	334.553	334.553	0	338.02	2.99	269.85	NO	339.78	4.62	534.42	NO	342.19	7.15	1512.7	NO
ST-STR-843	Outlet, D-2	357.328	357.328	0	357.46	0	0	YES	357.5	0	0.51	YES	358.88	0	149.2	YES

Existing Condition Junctions Results Summary Table

Facility ID	Type	Dimensions			2-year				10-year				100-year			
		Invert Elevation (feet)	Rim Elevation (feet)	Depth (feet)	Max. HGL (2-year) (feet)	Max. Lateral Inflow (2-year) (cfs)	Max. Total Inflow (2-year) (cfs)	Surcharging (2-year)	Max. HGL (10-year) (feet)	Max. Lateral Inflow (10-year) (cfs)	Max. Total Inflow (10-year) (cfs)	Surcharging (10-year)	Max. HGL (100-year) (feet)	Max. Lateral Inflow (100-year) (cfs)	Max. Total Inflow (100-year) (cfs)	Surcharging (100-year)
ST-STR-844	Headwall	351.106	351.106	0	351.11	0	0	YES	351.11	0	0	YES	351.42	0	30.11	YES
ST-STR-845	Inlet	419.952	443.952	24	420.55	0.24	9.19	YES	420.72	0.37	15.14	YES	420.95	0.57	25.1	YES
ST-STR-846	Inlet	414.319	417.319	3	417.96	0.24	9.3	YES	417.99	0.36	15.37	YES	418.03	0.55	25.47	YES
ST-STR-849	Inlet	399.285	404.285	5	400.34	0.23	10.76	YES	402.55	0.35	18.79	YES	403.86	0.54	28.87	YES
ST-STR-85	DS Headwa	451.16	451.91	0	451.22	0	4.94	YES	451.24	0	9.1	YES	451.27	0	15.78	YES
ST-STR-850	Inlet	417.67	422.42	4.75	418.43	10.59	10.59	YES	418.73	18.53	18.53	YES	424.26	31.83	31.83	YES
ST-STR-851	Inlet	392.505	397.005	4.5	397.32	3.26	39.2	YES	397.88	5.39	113.68	YES	398.31	8.77	187.7	YES
ST-STR-853	Inlet	393.591	401.341	7.75	401.4	7.79	46.63	YES	401.79	13.15	50.43	YES	401.98	22.08	55.66	YES
ST-STR-854	Inlet	394.708	402.658	7.95	402.31	0.3	113.4	YES	402.99	0.49	136.63	YES	403.24	0.79	164.58	YES
ST-STR-855	Inlet	398.472	403.472	5	403.03	2.31	11.14	YES	403.87	3.85	16.49	YES	404.15	6.36	33.65	YES
ST-STR-856	Inlet	412.093	416.593	4.5	416.88	3.55	19.31	YES	417.16	6.18	36.61	YES	417.31	10.31	60.59	YES
ST-STR-857	Inlet	413.654	418.154	4.5	417.03	6.59	6.59	YES	418.18	11.43	11.45	YES	418.36	19.08	20.07	YES
ST-STR-858	Inlet	402.25	406.25	4	406.63	0.94	1.79	YES	406.79	1.5	1.5	YES	407.01	2.38	2.55	YES
ST-STR-859	Inlet	400.607	405.607	5	406.6	8.43	25.33	YES	406.76	14.25	42.14	YES	406.94	24.18	67.79	YES
ST-STR-860	Inlet	400.821	405.821	5	406.66	5.84	34.87	YES	406.85	9.69	50.68	YES	407.04	15.98	75.24	YES
ST-STR-861	Inlet	403.359	407.859	4.5	408.61	22.64	22.64	YES	408.68	39.86	39.86	YES	408.77	72.26	72.26	YES
ST-STR-862	Inlet	403.209	407.709	4.5	407.67	7.58	7.7	YES	407.86	12.81	17.68	YES	407.99	21.69	29.26	YES
ST-STR-863	Inlet	414.978	420.478	5.5	415.92	9.24	12	YES	416.84	16.62	21.97	YES	420.65	28.85	39.47	YES
ST-STR-864	Inlet	412.957	418.457	5.5	414.15	2.99	15.51	YES	416.34	5.38	28.15	YES	418.64	9.43	51.66	YES
ST-STR-865	Inlet	406.412	411.412	5	411.71	5.5	20.95	YES	411.86	9.26	37.2	YES	411.94	15.44	51.5	YES
ST-STR-866	Inlet	405.405	409.905	4.5	410.68	1.47	30.64	YES	411.06	2.4	65.98	YES	411.34	3.88	102.06	YES
ST-STR-867	Inlet	410.082	414.582	4.5	413.17	1.33	10.05	YES	414.88	2.21	17.74	YES	415.19	3.57	38.68	YES
ST-STR-868	Inlet	415.434	419.934	4.5	417.79	4.58	4.59	YES	419.93	7.89	7.93	YES	420.15	13.15	13.25	YES
ST-STR-869	Inlet	413.722	417.722	4	417.81	14.86	15.12	YES	417.95	26.35	26.84	YES	418.08	46.63	51.91	YES
ST-STR-870	Inlet	405.18	409.214	4.034	409.77	3.34	35.11	YES	409.83	5.58	37.17	YES	409.88	9.13	40.4	YES
ST-STR-871	Inlet	404.78	410.315	5.535	409.33	0.95	34.12	YES	409.53	1.54	33.81	YES	409.63	2.46	34.04	YES
ST-STR-872	Inlet	406.82	411.683	4.863	412.06	4.15	91.95	YES	412.08	7.02	95.93	YES	412.1	11.52	101.16	YES
ST-STR-873	Inlet	410	415.479	5.479	416.62	0.78	61.04	YES	416.74	1.25	84.48	YES	416.87	1.96	124.02	YES
ST-STR-874	Inlet	410.867	416.867	6	416.8	1.23	68.88	YES	416.92	2.04	92.45	YES	416.96	3.31	98.92	YES
ST-STR-875	Inlet	412.032	416.282	4.25	416.58	0.57	0.57	YES	416.69	0.94	0.94	YES	416.8	1.53	1.53	YES
ST-STR-876	Inlet	425.151	430.651	5.5	431.6	3.42	67.18	YES	435.2	5.59	112.44	YES	436.85	8.76	130.81	YES
ST-STR-877	Inlet	421.968	427.968	6	423.85	0.34	67.79	YES	424.5	0.55	90.91	YES	426.62	0.87	96.92	YES
ST-STR-878	Inlet	422.201	426.201	4	422.41	0.63	0.63	YES	422.46	1.01	1.01	YES	422.53	1.59	1.59	YES
ST-STR-879	Inlet	428.029	433.529	5.5	428.37	3.93	3.93	YES	428.47	6.53	6.53	YES	429.37	10.51	54.58	YES
ST-STR-88	Discharge	354.395	355.168	0	354.87	1.04	10.75	YES	355.04	1.82	20.55	YES	355.21	2.91	33.81	YES
ST-STR-881	Inlet	411.23	417.693	6.463	416.98	8.79	60.81	YES	417.39	14.81	80.14	YES	417.81	24.34	94.78	YES
ST-STR-882	Inlet	412	416.672	4.672	417.25	1.31	58.64	YES	417.94	2.14	76.03	YES	418.37	3.44	120.65	YES
ST-STR-883	Inlet	418.32	424.569	6.249	419.62	1.06	54.36	YES	419.97	1.76	83.99	YES	421.43	2.83	151.69	YES
ST-STR-884	Headwall	430.872	430.872	0	431.14	0.91	0.91	YES	431.21	1.47	1.47	YES	431.58	2.31	5.66	YES
ST-STR-885	Inlet	420.895	424.895	4	421.11	0.96	0.96	YES	421.17	1.52	1.52	YES	421.31	2.37	2.37	YES
ST-STR-887	Outlet, D-2	422.027	422.027	0	422.03	0	0	YES	422.03	0	0	YES	422.03	0	0	YES
ST-STR-888	Inlet	417.06	422.06	5	417.66	3.66	3.66	YES	417.95	6.07	6.07	YES	418.38	9.79	9.79	YES
ST-STR-889	Inlet	412.804	416.804	4	417.62	3.38	7.03	YES	417.95	5.81	26.62	YES	418.37	9.81	46.79	YES
ST-STR-890	Unimprove	437.993	437.993	0	437.99	0	0	YES	437.99	0	0	YES	437.99	0	0	YES

Existing Condition Junctions Results Summary Table

Facility ID	Type	Dimensions			2-year				10-year				100-year			
		Invert Elevation (feet)	Rim Elevation (feet)	Depth (feet)	Max. HGL (2-year) (feet)	Max. Lateral Inflow (2-year) (cfs)	Max. Total Inflow (2-year) (cfs)	Surcharging (2-year)	Max. HGL (10-year) (feet)	Max. Lateral Inflow (10-year) (cfs)	Max. Total Inflow (10-year) (cfs)	Surcharging (10-year)	Max. HGL (100-year) (feet)	Max. Lateral Inflow (100-year) (cfs)	Max. Total Inflow (100-year) (cfs)	Surcharging (100-year)
ST-STR-893	Inlet	429.309	433.809	4.5	429.85	4.14	6.19	YES	430.08	7.33	11.48	YES	432.46	12.33	22.38	YES
ST-STR-894	Inlet	428.139	433.639	5.5	429.45	1.59	15.55	YES	430.04	2.56	27.91	YES	435.36	4.05	49.88	YES
ST-STR-895	Conduit co	426.879	434.879	8	427.8	0	15.43	YES	428.19	0	27.51	YES	444.45	0	40.03	YES
ST-STR-896	Inlet	322.549	327.049	4.5	323.25	1.54	3	NO	323.47	2.45	4.87	NO	323.71	3.88	7.86	NO
ST-STR-897	Inlet	322.336	326.836	4.5	322.68	2.85	6.08	NO	322.78	4.9	10.25	NO	322.9	8.18	16.55	NO
ST-STR-898	Manhole	299.6	302.837	3.237	303.79	0	26.77	NO	304.11	0	25.88	NO	304.38	0	24.17	NO
ST-STR-899	Manhole	312.596	317.596	5	313	0	5.24	NO	313.13	0	9.35	NO	313.3	0	15.69	NO
ST-STR-900	Manhole	432.002	438.002	6	432.54	0	5.42	YES	432.72	0	9.57	YES	432.97	0	16.51	YES
ST-STR-901	Manhole	430.556	435.556	5	431.08	0	5.43	YES	431.26	0	9.57	YES	431.51	0	16.57	YES
ST-STR-902	Manhole	425.727	430.727	5	426.56	0	16.34	YES	426.89	0	29.3	YES	427.34	0	48.94	YES
ST-STR-903	Manhole	423.35	431.35	8	424.1	4.23	23.14	YES	424.34	7.51	39.65	YES	424.71	12.75	70.81	YES
ST-STR-904	Manhole	432.444	437.444	5	432.72	0	2.56	YES	432.83	0	5.07	YES	433.05	0	12.72	YES
ST-STR-905	Manhole	435.348	440.348	5	435.77	0	2.56	YES	435.94	0	5.09	YES	436.32	0	12.72	YES
ST-STR-906	Manhole	272	278.442	6.442	273.67	0	3.02	NO	274.25	0	4.22	NO	277.59	0	38.37	NO
ST-STR-907	Manhole	324	333.876	9.876	328.93	0	462.21	NO	333.79	0	598.36	NO	334.52	0	628.1	NO
ST-STR-908	Manhole	430.86	442.36	11.5	431.45	0	4.05	YES	431.65	0	6.91	YES	431.89	0	10.37	YES
ST-STR-909	Manhole	426	432.852	6.852	426.32	0	4.53	YES	426.41	0	7.7	YES	426.51	0	11.8	YES
ST-STR-91	Headwall	330.069	330.07	0	330.75	8.44	8.44	NO	330.98	14.67	14.67	NO	331.35	25.17	25.17	NO
ST-STR-910	Manhole	395.839	400.839	5	396.25	0	4.52	YES	396.38	0	7.69	YES	398.34	0	11.79	YES
ST-STR-911	Manhole	438	448.002	10.002	446.62	0	84.31	YES	446.81	0	86.01	YES	446.92	0	86.11	YES
ST-STR-912	Manhole	490.482	495.982	5.5	490.68	0	0.57	YES	490.77	0	0.98	YES	490.87	0	1.76	YES
ST-STR-913	Manhole	398.481	401.481	3	399.17	0	24.01	YES	399.35	0	38.95	YES	399.44	0	48.34	YES
ST-STR-914	Manhole	418.019	422.519	4.5	418.71	0	7.55	YES	418.93	0	12.04	YES	419.34	0	18.87	YES
ST-STR-915	Manhole	426.7	431.73	5.03	427.3	0	6.84	YES	427.49	0	10.91	YES	427.76	0	17.16	YES
ST-STR-916	Manhole	415.614	420.114	4.5	416.24	0	7.55	YES	416.43	0	12.04	YES	416.76	0	18.7	YES
ST-STR-917	Manhole	451.193	455.693	4.5	451.62	0	5.28	YES	451.73	0	8.38	YES	451.88	0	13.11	YES
ST-STR-918	Manhole	462.78	467.28	4.5	463.24	0	4.32	YES	463.37	0	6.86	YES	463.54	0	10.72	YES
ST-STR-919	Manhole	474	478.951	4.951	474.33	0	2.11	YES	474.42	0	3.39	YES	474.53	0	5.3	YES
ST-STR-920	Manhole	404.289	411.289	7	406.25	0	56.16	YES	410.33	0	104.15	YES	411.7	0	174.88	YES
ST-STR-921	Manhole	378.433	382.933	4.5	378.67	0	2.78	YES	378.74	0	4.75	YES	378.83	0	7.91	YES
ST-STR-922	Manhole	344.724	349.224	4.5	345.2	0	5.64	YES	345.36	0	9.75	YES	345.58	0	16.34	YES
ST-STR-923	Manhole	368.338	379.338	11	369.04	0	19.39	YES	369.27	0	34.32	YES	369.6	0	60.39	YES
ST-STR-924	Manhole	363.218	368.218	5	364.06	0	17.2	YES	364.41	0	31.14	YES	366.87	0	47.57	YES
ST-STR-925	Manhole	350.907	355.907	5	351.86	0	17.19	YES	352.3	0	31.11	YES	356.59	0	44.34	YES
ST-STR-927	Manhole	449.329	455.579	6.25	451.66	0	5.57	YES	455.51	0	8.06	YES	456.25	0	7.12	YES
ST-STR-928	Manhole	429.398	434.398	5	429.66	0	1.36	YES	429.74	0	2.37	YES	429.84	0	3.9	YES
ST-STR-929	Manhole	422.949	427.949	5	423.25	0	1.34	YES	423.34	0	2.32	YES	423.46	0	3.86	YES
ST-STR-93	DS Headwa	351.706	351.864	0	352.1	0	9.61	YES	352.75	0	39.4	YES	353.17	0	66.87	YES
ST-STR-930	Manhole	406.516	413.516	7	409.59	0	46.04	YES	413.7	0	67.57	YES	414.18	0	65.85	YES
ST-STR-931	Manhole	402.785	408.785	6	405.36	0	69.89	YES	406.75	0	79.64	YES	407.16	0	81.72	YES
ST-STR-932	Manhole	418.779	424.779	6	419.53	0	18.07	YES	419.79	0	32.36	YES	420.25	0	57.54	YES
ST-STR-933	Manhole	409.263	415.263	6	410.19	0	17.99	YES	414.08	0	32.23	YES	415.42	0	57.63	YES
ST-STR-934	Manhole	410	418.734	8.734	415.6	0	56.59	YES	418.8	0	83.12	YES	420.66	0	101.81	YES
ST-STR-935	Manhole	408.252	414.252	6	413.8	0	54.73	YES	415.05	0	64.54	YES	415.46	0	64.68	YES

Existing Condition Junctions Results Summary Table

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ST-STR-936	Manhole	420.883	425.383	4.5	422.04	11.29	11.29	YES	425.9	19.11	19.11	YES	426.38	31.95	31.95	YES
ST-STR-937	Manhole	435.535	442.035	6.5	436.42	0	23.48	YES	436.73	0	41.67	YES	437.2	0	55.78	YES
ST-STR-938	Manhole	425.01	435.788	10.778	427.02	0	36.37	YES	433.83	0	54.07	YES	435.06	0	60.28	YES
ST-STR-939	Manhole	439.3	444.362	5.062	445.56	0	17.92	YES	446.18	0	30.52	YES	446.27	0	32.8	YES
ST-STR-94	DS Headwa	357.631	357.905	0	360.11	0	142.72	YES	361.06	0	244.27	YES	361.74	0	386.43	YES
ST-STR-940	Manhole	443.716	448.216	4.5	445.43	0	2.77	YES	446.22	0	4.81	YES	447.45	0	7.74	YES
ST-STR-941	Manhole	444.423	449.423	5	446.3	0	18.17	YES	448.71	0	30.52	YES	449.19	0	32.86	YES
ST-STR-942	Manhole	437	441.109	4.109	440.36	0	9.07	YES	440.64	0	10.44	YES	440.96	0	12.51	YES
ST-STR-943	Manhole	437.424	442.924	5.5	440.36	0	0.35	YES	440.64	0	0.61	YES	440.97	0	1.35	YES
ST-STR-944	Manhole	440.387	445.887	5.5	440.39	0	0	YES	440.66	0	0.3	YES	440.99	0	0.68	YES
ST-STR-945	Manhole	429.443	433.943	4.5	430.82	0	4.6	YES	432.25	0	7.94	YES	433.98	0	12.45	YES
ST-STR-946	Manhole	427.63	431.63	4	430.61	0	8.91	YES	431.49	0	10.19	YES	431.93	0	13.02	YES
ST-STR-947	Manhole	414	418.996	4.996	415.48	0	16.97	YES	415.98	0	29.82	YES	417.57	0	53.5	YES
ST-STR-948	Manhole	394.5	398.179	3.679	398.46	0	17.09	YES	399.42	0	17.15	YES	399.44	0	17.15	YES
ST-STR-949	Manhole	446.5	448.756	2.256	446.77	0	1.41	YES	446.86	0	2.52	YES	446.97	0	4.14	YES
ST-STR-950	Manhole	436.479	440.479	4	441.01	0	14.38	YES	441.28	0	24.16	YES	441.43	0	26.52	YES
ST-STR-951	Manhole	402.186	407.686	5.5	403.16	0	20.3	YES	403.56	0	32.17	YES	405.64	0	43.76	YES
ST-STR-952	Manhole	410.204	423.704	13.5	411.44	0	20.41	YES	411.85	0	32.34	YES	413.08	0	41.4	YES
ST-STR-953	Manhole	403.119	408.619	5.5	404.49	0	20.35	YES	405.02	0	32.27	YES	406.89	0	43.56	YES
ST-STR-954	Manhole	446	450.986	4.986	446.68	0	3.22	YES	448.58	0	5.66	YES	451.06	0	7.84	YES
ST-STR-955	Manhole	432.991	441.491	8.5	433.76	11.47	11.52	YES	434.02	20.46	20.55	YES	434.38	35.18	35.32	YES
ST-STR-956	Manhole	393.833	405.833	12	394.89	0	15.28	YES	395.28	0	27.54	YES	395.79	0	46	YES
ST-STR-957	Manhole	361.937	367.437	5.5	367.76	0	57.55	YES	368.32	0	71.77	YES	368.48	0	72.92	YES
ST-STR-958	Manhole	358.664	363.664	5	362.03	0	2.95	YES	362.97	0	2.97	YES	363.86	0	3.63	YES
ST-STR-959	Manhole	407.013	412.513	5.5	408.92	0	28.81	YES	409.4	0	42.52	YES	409.81	0	57.63	YES
ST-STR-96	DS Headwa	375.242	375.242	0	375.56	0	21.61	YES	375.73	0	42.72	YES	376.09	0	88.85	YES
ST-STR-960	Manhole	400.53	407.53	7	401.83	0	29.83	YES	402.14	0	45.01	YES	402.44	0	59.92	YES
ST-STR-961	Manhole	387.809	395.809	8	392.68	0	190.93	YES	394.39	0	218.89	YES	395.77	0	236.54	YES
ST-STR-962	Manhole	381.46	396.953	15.493	383.34	0	61.41	YES	384.24	0	124.82	YES	386.97	0	255.95	YES
ST-STR-963	Manhole	377.241	388.741	11.5	379.16	0	66.77	YES	380.44	0	132.98	YES	383.95	0	267.53	YES
ST-STR-964	Manhole	369.19	376.19	7	369.95	0	63.35	YES	370.17	0	106.49	YES	371.25	0	177.08	YES
ST-STR-965	Manhole	361.412	370.412	9	362.93	0	79.32	YES	363.6	0	147.69	YES	369.99	0	225.67	YES
ST-STR-966	Manhole	344.826	353.326	8.5	349.62	0	172.77	YES	351.52	0	295.03	YES	352.67	0	359.78	YES
ST-STR-967	Manhole	344	351.647	7.647	349.06	0	174.16	YES	350	0	299.2	YES	351.13	0	351.33	YES
ST-STR-968	Manhole	350.585	361.585	11	353.41	0	163.27	YES	358	0	292.58	YES	360.42	0	340.91	YES
ST-STR-969	Manhole	338.9	343.9	5	344.04	0	50.23	YES	344.33	0	32.96	YES	350.28	0	121.54	YES
ST-STR-97	Outlet	421.023	421.342	0	421.14	4.4	9.63	YES	421.19	7.79	18.79	YES	421.26	13.44	32.48	YES
ST-STR-970	Manhole	395.022	399.022	4	396.09	0	3.54	YES	398.38	0	5.76	YES	400	0	8.85	YES
ST-STR-971	Manhole	392.774	400.524	7.75	400.07	0	157.31	YES	400.75	0	156.07	YES	401.07	0	157.35	YES
ST-STR-972	Manhole	398.11	403.861	5.751	402.7	0	114.09	YES	403.43	0	114.72	YES	403.65	0	112.3	YES
ST-STR-973	Manhole	400.48	407.482	7.002	407.65	0	53.94	YES	408.29	0	57.31	YES	408.52	0	60.1	YES
ST-STR-974	Manhole	404.601	410.601	6	410.85	0	35.62	YES	411.14	0	36.9	YES	411.33	0	36.27	YES
ST-STR-975	Manhole	409.018	415.018	6	411.88	0	20.53	YES	412.64	0	23.39	YES	412.89	0	22.59	YES
ST-STR-976	Manhole	413.486	417.986	4.5	417.13	0	12.81	YES	417.84	0	11.82	YES	417.99	0	11.66	YES

Existing Condition Junctions Results Summary Table

Facility ID	Type	Dimensions			2-year				10-year				100-year			
		Invert Elevation (feet)	Rim Elevation (feet)	Depth (feet)	Max. HGL (2-year) (feet)	Max. Lateral Inflow (2-year) (cfs)	Max. Total Inflow (2-year) (cfs)	Surcharging (2-year)	Max. HGL (10-year) (feet)	Max. Lateral Inflow (10-year) (cfs)	Max. Total Inflow (10-year) (cfs)	Surcharging (10-year)	Max. HGL (100-year) (feet)	Max. Lateral Inflow (100-year) (cfs)	Max. Total Inflow (100-year) (cfs)	Surcharging (100-year)
ST-STR-977	Manhole	409.5	415.863	6.363	416.52	0	95.24	YES	416.62	0	97.57	YES	416.7	0	99.35	YES
ST-STR-978	Manhole	423.528	431.528	8	425.19	0	67.62	YES	425.66	0	91.11	YES	427.65	0	102.22	YES
ST-STR-979	Manhole	424.778	430.278	5.5	426.63	0	59.97	YES	427.42	0	78.06	YES	429.28	0	81.18	YES
ST-STR-98	DS Headwa	422.256	423.639	0	422.29	0	3.73	YES	422.31	0	6.69	YES	422.33	0	10.15	YES
ST-STR-980	Manhole	412.36	423.23	10.87	417.59	0	58.46	YES	418.49	0	90.13	YES	420.07	0	156.8	YES
ST-STR-981	Manhole	417.79	425.391	7.601	419.18	0	56.53	YES	419.56	0	90.21	YES	421.28	0	156.92	YES
ST-STR-982	Manhole	419.322	425.322	6	420.22	0	9.7	YES	420.51	0	15.98	YES	421.3	0	25.79	YES
ST-STR-984	Conduit co	380.345	389.345	9	383.07	0	154.07	YES	384.22	0	261.3	YES	386.14	0	356.76	YES
ST-STR-985	Headwall	413.305	413.305	0	414.18	1.54	15.8	YES	414.4	2.5	23.64	YES	414.61	3.92	31.98	YES
ST-STR-986	Conduit co	400.134	406.134	6	406.71	0	53.7	YES	406.89	0	52.8	YES	407.08	0	51.34	YES
ST-STR-987	Headwall	431.976	435.976	4	435.58	1.81	33.42	YES	435.84	3.03	36.17	YES	436.07	4.88	39.58	YES
ST-STR-988	Inlet	337.529	338.727	1.198	337.99	3.45	3.45	NO	338.19	6.34	6.34	NO	338.64	10.74	10.74	NO
ST-STR-989	Headwall	299.416	299.416	0	302.9	26.22	313.07	NO	303.76	47.33	386.5	NO	304.92	86.57	723.4	NO
ST-STR-990	Headwall	437.593	437.593	0	438.23	5.72	5.72	YES	438.7	9.95	9.95	YES	439.56	17.71	17.71	YES
ST-STR-991	Headwall	412.966	412.966	0	413.63	4.93	27.13	YES	413.84	9.04	47.39	YES	414.15	14.79	83.7	YES
ST-STR-992	Headwall	362.82	366.82	4	362.99	3.86	4.12	YES	363.07	6.76	7.42	YES	363.16	11.91	13.69	YES
ST-STR-993	Headwall	330.897	335.897	5	332.3	3.48	37.31	NO	333.45	6.03	66.66	NO	333.76	9.79	69.65	NO
ST-STR-994	Headwall	408.368	408.368	0	408.71	0.66	0.91	YES	408.85	1.2	1.66	YES	409.05	1.95	2.7	YES
ST-STR-995	Conduit co	402.459	407.959	5.5	403.36	0	18.94	YES	403.59	0	29.02	YES	404.55	0	40.87	YES
ST-STR-996	Headwall	495.702	495.702	0	495.78	0.28	0.28	YES	495.8	0.46	0.46	YES	495.83	0.74	0.74	YES
ST-STR-997	Headwall	488.148	488.148	0	488.86	31.91	33.89	YES	489.13	57.94	61.37	YES	489.54	107.15	112.87	YES
ST-STR-998	Headwall	398.897	398.897	0	400.32	1.01	16.52	YES	400.68	1.9	28.67	YES	400.78	3.17	50.09	YES
ST-STR-999	Headwall	452.563	452.563	0	453.23	4.94	4.94	YES	453.69	9.1	9.1	YES	455.26	15.82	15.82	YES