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# **Appendix L**

## Sewer Feasibility Report



# Sewer Feasibility Report

## Victorville – Mojave Industrial Buildings 1-7 PSUB22-00167



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Date: 2023.10.16 09:41:43-0700'

October 2023



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## **Executive Summary**

As requested by the City of Victorville (City), David Evans and Associates (DEA) is tasked to evaluate the feasibility and potential impact of connecting the seven proposed industrial warehouses, located along Onyx Rd between Mojave Dr and Hopland St (Plan PSUB22-00167), to the City's existing sanitary sewer collection system. This Project will be referred to as the Mojave Industrial Development (Project). **Appendix A** provides a Site Plan of the project.<sup>1</sup> **Appendix B** includes a project vicinity map showing the subject project, the adjacent development proposed under Plan PSUB22-0074, and proposed sewers for additional undeveloped area west of the Project.

This area is currently classified as a Light Industrial (M-1) zone. The proposed project is seven light industrial buildings consisting of office (total 90,000 SF) and warehouse space (total 2,884,000 SF) on 171.8 acres of land. The contributing sewer flows will be analyzed based upon the Site Plan prepared by RGA Office of Architectural Design (see **Appendix A**). This study analyzes the proposed improvements as described here:

- For buildings 1-3, a new 8-inch pipe starting from the south end of Onyx Rd, just north of Mojave Drive, extending north where it connects to the proposed sewer anticipated to be installed by the Mojave and Onyx Development (Plan PSUB22-00074) at Cactus Road. (See **Appendix B** for a copy of the site plan for the sewer analysis for that project.) The City has indicated that buildings 1-3 will also require completion of 8" gravity sewer in Onyx south of Cactus to the point indicated as Manhole "New\_55".
- For buildings 4-6, a new 8-inch pipe starting from just north of the intersection of Cactus Rd and Onyx Rd, extending north to the intersection of Onyx Rd and Hopland St. A new 10-inch pipe extends east from the intersection of Onyx Rd and Hopland St where it connects to the existing sewer at the intersection of Hopland St and Brucite Rd.
- For building 7, a new 10-inch pipe starting at the intersection of Mesa Linda Ave and Hopland St, extending east where it connects to the proposed sewer for buildings 4-6 at the intersection of Onyx Rd and Hopland St.

This study will assume 15-feet of cover at the proposed manholes, similar to the existing 10-inch sewer line on Tawney Ridge Lane, due to the existing grade of the streets. The existing downstream sewer currently discharges to the Victor Valley Wastewater Reclamation Authority (VWVRA) Regional Wastewater Treatment Plant (WWTP); however, the City has indicated the desire to have sewer flows discharged to the City of Victorville's Industrial Wastewater Treatment Plant (IWWTP), therefore, it is required to realign a portion of the existing 18-inch sewer pipeline (SWRGM-008462, SWRGM-007961, SWRHM-007828, and SWRHM-007827) located east of Cobalt Road, and connect to the existing 27-inch pipeline that runs north to IWWTP. The developer shall coordinate with the City regarding this sewer re-alignment prior to developing the proposed Project<sup>2</sup>. **Appendix B** highlights the proposed sewer improvements and impacted downstream City sewer.

## **Analysis and Methodology**

InfoSewer is the modeling software used for this study. InfoSewer is an ArcGIS-integrated

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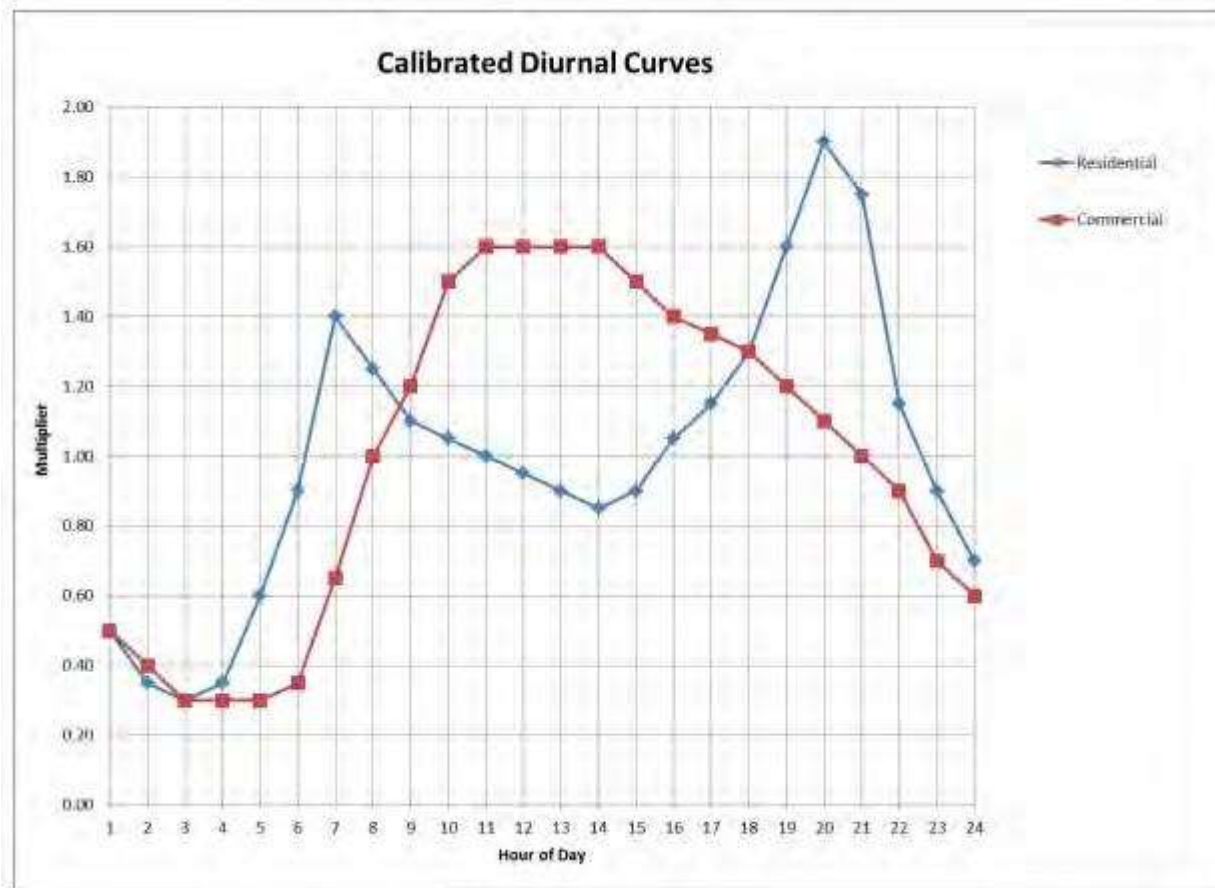
<sup>1</sup> A proposed utility plan for service to the seven buildings was not provided. Instead, the means of service is based on the study for the adjacent project west of Onyx, and an outline of desired sewer extensions by the City.

<sup>2</sup> This is only applicable if not yet addressed by the project west of Onyx Plan (PSUB22-0074).

computer program with the capability to perform both steady state analysis, and extended period simulations (EPS). For this project, the hydraulic model from the City of Victorville 2016 Sewer Master Plan (SMP) EPS was used to evaluate the hydraulic capacity of the downstream City sewers.

The variation of flows were captured in the hydraulic model using a diurnal curve method with a peaking factor of 1.6 for commercial developments. The SMP did not identify a peaking factor for light industrial developments, so the peaking factor for a commercial development was used for this study. See Figure (SMP Figure 3-1) from Victorville Sewer Master Plan dated December 2016 of aggregated data for typical residential flow patterns.

**Figure 3-1 Calibrated Diurnal Curves**



Two scenarios will be analyzed which include the proposed project plus “Existing (2015)” and “Future (2040) with septic land-use” scenarios<sup>3</sup>. The assumptions made in the original Sewer Master Plan (SMP) Report (i.e. flow, peaking factors, flow distribution, etc.) were kept consistent for this sewer feasibility study. The proposed sewer pipelines were created in the model to simulate the proposed improvements per the Site Plan. Discharge from Buildings 1, 2 and 3 were added to the sewer to be completed in Cactus by the project per Plan PSUB22-0074.

<sup>3</sup> Note: The SMP focused on 3 scenarios: Existing (2015), Future (2040) with Septic, and Future (2040) without Septic. These scenarios were additionally ran with proposed or recommended Capital Improvement Project (CIP). For purposes of this study, the two scenarios, the Existing (2015) and Future (2040) with Septic were used to model the Mojave and Onyx development. The new model assumes CIP Improvements are in place for the Future (2040).

Discharge from Building 4-7 will be at manhole “New\_65”. **Appendix C** includes references (capacity criteria, peaking factors, and unit flow factors) from the original SMP. Wastewater generation for this Project is summarized in Table 1.

**Table 1 - Estimated Wastewater Generation**

Project	Usage	Land Use	Project Unit Factor (gpd/tsf) <sup>[1]</sup>	Square Footage (SF)	Average flow (GPD)	Peaking Factor <sup>[2]</sup>	Peak Flow (gpd)
Mojave Industrial Development Buildings 1-7	Office	Office Professional	46	90,000	4,140	1.6	6,624
	Warehouse	Light Industrial	46	2,884,000	132,664		212,262
<b>Project Subtotal</b>				<b>2,974,000</b>	<b>136,804</b>	--	<b>218,886</b>
		Land Use	Unit factor (gpd/ac)	Area (ac)	Average flow (GPD)	Peaking Factor <sup>[2]</sup>	Peak Flow (gpd)
Potential future development	---	Light Industrial	800	213	<b>170,400</b>	1.6	<b>272,640</b>
<b>Sewer Basin Total</b>					<b>307,204</b>		<b>491,526</b>

[1] Calibration Factors based on "City of Victorville Sewer Master Plan" Table 2-2 "Calibrated Unit Flow Factors" Dated December 2016.

[2] Peaking Factor based on "City of Victorville Sewer Master Plan" Figure 3-1 "Calibrated Diurnal Curves" Dated December 2016. Peaking Factors only included residential and commercial but for the purpose of this study, the Commercial peaking factor was used.

Note that this model assumes that the proposed SMP Capital Improvement Projects (CIP) have been completed under the Future (2040) scenario. Without the CIP, the Future (2040) will be deficient in various stretches of pipe even without the introduction of the Mojave Industrial Development. **Appendix C** includes sections of pipe that are recommended for Capital Improvement Projects (CIP).

The capacity analysis in **Appendix D** consists of two (2) scenarios with the proposed sewer improvements, as described under the Project Description. The two scenarios consist of analyzing the proposed improvements and the system downstream of the proposed project to the IWWTP. A summary of each scenario is listed below:

1. *Existing System*– Total average flow from the project (136,804 gpd) analyzed from the proposed improvements to the IWWTP.
2. *Future (2040) System with CIP* – Total average flow from the project (136,804 gpd) analyzed from the proposed improvements to the IWWTP. Note that an allocated flow of 150,000 gpd was accounted for the future flows for this scenario in the SMP and was originally inserted at the most upstream manhole of the sewer line in Cactus Road. The model was updated with the Project’s flow (136,804 gpd) plus the potential flow from future development along Onyx Rd and Diamond Rd between Mojave Dr and Hopland St for this report.

A d/D ratio of 0.75 was used for capacity criteria on all pipe sizes in order to be consistent with the capacity criteria within the SMP. A d/D provides a ratio based upon maximum depth of sewer flow to pipe diameter.

## **Summary of Hydraulic Analysis**

Both hydraulic analyses shown below assume that the realignment and connection of the existing 18-inch sewer pipe east of Cobalt Road will be completed prior to the project development.

### *1. Existing System*

Under the existing condition, all gravity mains passed the 0.75 d/D criteria.

### *2. Future (2040) System with CIP*

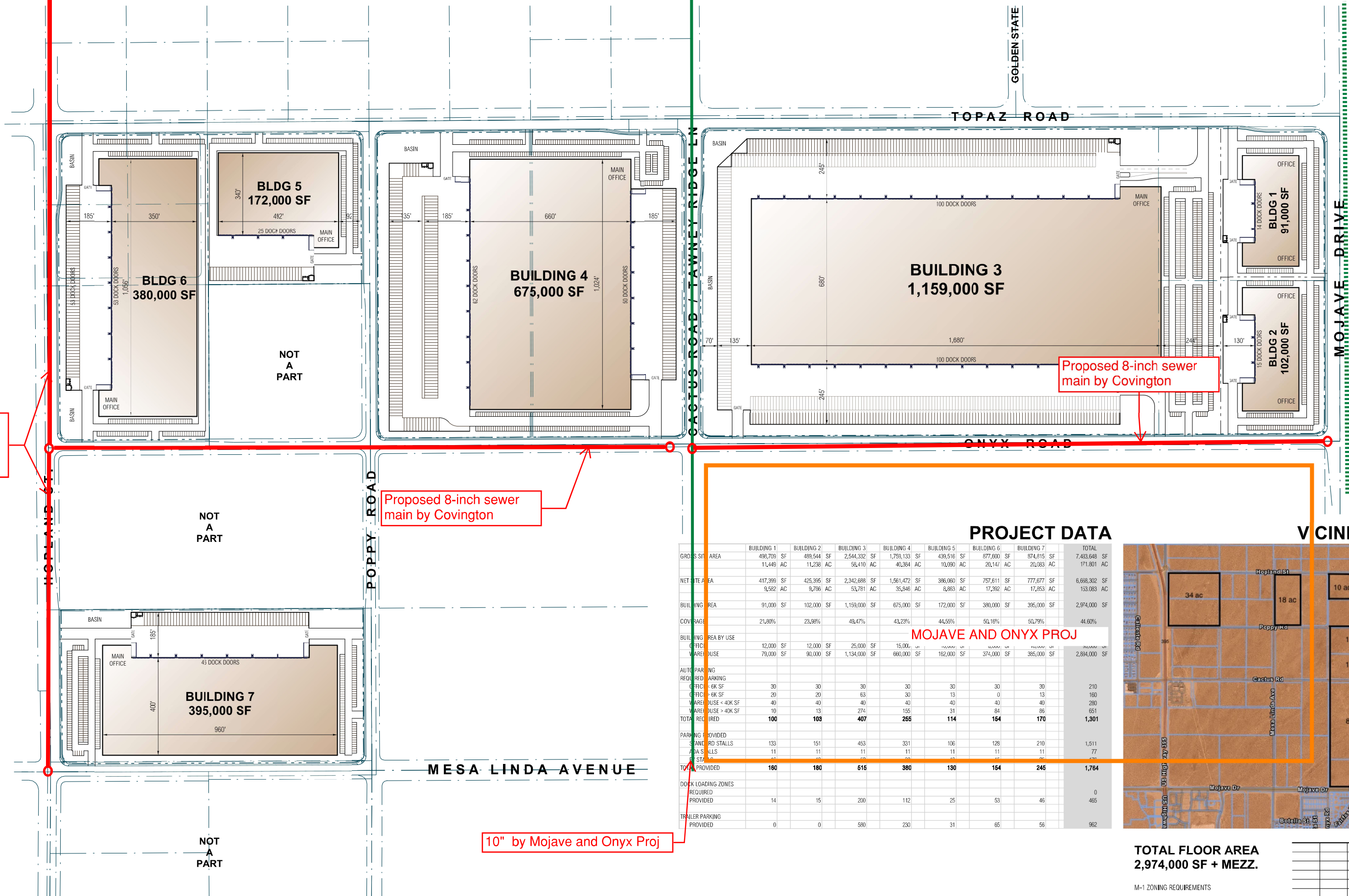
During the Future (2040) scenario with CIP, existing gravity main SWRGM-009450 between manholes SWRMH-008701 and SWRMH-008700 is expected to reach 0.76 d/D under peak conditions surpassing the 0.75 d/D criteria of the City. All other gravity mains passed the 0.75 d/D criteria.

## **Conclusions of Analysis and Recommendations**

Based on these findings, most of the existing City sewers, have sufficient capacity to convey the Project wastewater flows from the proposed sewer improvements at the seven Mojave Industrial buildings to the outfall at IWWTP. The proposed improvements include connection for Buildings 1, 2 and 3 to an 8-inch sewer along the north side of the Project site completed by project per Plan PSUB22-0074. Completion of Buildings 1, 2 and 3 will also require sewer extension south along Onyx Road from Cactus Road along the buildings' frontage. If the sewer main in Cactus Road east to Tawny Ridge Lane is not yet complete, the Project developers will need to complete that extension as well for service to Buildings 1, 2 and 3. Completion of Buildings 4 through 7 requires extension by the developers of 8-inch through 10-inch gravity sewer on Onyx Road north of Cactus Road and on Hopland Street from Mesa Linda Avenue east to Brucite Road and the existing sewer interceptor. The existing downstream sewer path leads to the VVWRA WWTP; however, the City has indicated the sewage flow from the Project site shall ultimately discharge to the IWWTP, thus requiring a re-alignment of the existing 18-inch sewer pipe located east of Cobalt Road, where it will connect to the existing 27-inch pipeline that runs north to IWWTP. The developer shall coordinate with the City regarding this sewer re-alignment prior to developing the proposed Project sewer improvements, if not yet completed by the developers of the project per Plan PSUB22-0074. During the Future (2040) scenario with CIP, existing gravity main SWRGM-009450 between manholes SWRMH-008701 and SWRMH-008700 is expected to reach 0.76 d/D under peak conditions surpassing the 0.75 d/D criteria of the City. It is recommended that the City monitor this section of gravity main moving forward.



**APPENDIX A**  
**SITE PLAN & UTILITY PLAN**



Proposed 10-inch sewer main by Covington

Proposed 8-inch sewer main by Covington

Proposed 8-inch sewer main by Covington

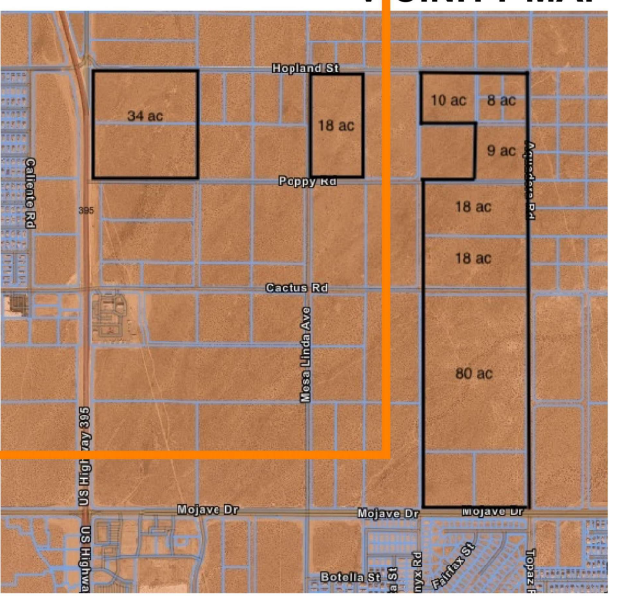
10" by Mojave and Onyx Proj

**PROJECT DATA**

	BUILDING 1	BUILDING 2	BUILDING 3	BUILDING 4	BUILDING 5	BUILDING 6	BUILDING 7	TOTAL
GROSS SF AREA	498,709 SF	489,544 SF	2,544,332 SF	1,759,133 SF	439,516 SF	877,800 SF	874,815 SF	7,483,848 SF
NET SITE AREA	11,449 AC	11,238 AC	58,410 AC	40,384 AC	10,090 AC	20,147 AC	20,083 AC	171,801 AC
NET SITE AREA	417,389 SF	425,395 SF	2,342,688 SF	1,561,472 SF	396,060 SF	757,611 SF	777,677 SF	6,698,302 SF
NET SITE AREA	9,562 AC	9,796 AC	53,781 AC	35,546 AC	8,893 AC	17,392 AC	17,853 AC	133,083 AC
BUILDING AREA	91,000 SF	102,000 SF	1,159,000 SF	675,000 SF	172,000 SF	380,000 SF	395,000 SF	2,974,000 SF
COVERAGE	21.80%	23.98%	49.47%	43.29%	44.55%	50.16%	50.79%	41.60%
BUILDING AREA BY USE								
OFFICE	12,000 SF	12,000 SF	25,000 SF	15,000 SF	112,000 SF	112,000 SF	112,000 SF	386,000 SF
WAREHOUSE	79,000 SF	90,000 SF	1,134,000 SF	660,000 SF	162,000 SF	374,000 SF	385,000 SF	2,834,000 SF
AUTO PARKING REQUIRED								
OFFICE - 6K SF	30	30	30	30	30	30	30	210
OFFICE - 6K SF	20	20	63	30	13	0	13	160
WAREHOUSE < 40K SF	40	40	40	40	40	40	40	280
WAREHOUSE > 40K SF	10	13	274	155	31	84	86	651
TOTAL PROVIDED	100	103	407	265	114	154	170	1,301
PARKING PROVIDED								
STANDARD STALLS	133	151	453	331	106	128	210	1,511
ADA STALLS	11	11	11	11	11	11	11	77
TOTAL PROVIDED	160	180	615	380	130	154	245	1,784
DOCK LOADING ZONES								
REQUIRED								0
PROVIDED	14	15	200	112	25	53	46	465
TRAILER PARKING PROVIDED	0	0	500	230	31	65	56	962

**MOJAVE AND ONYX PROJ**

**VICINITY MAP**



**TOTAL FLOOR AREA 2,974,000 SF + MEZZ.**

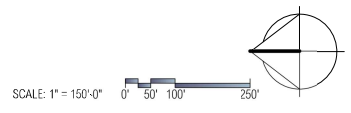
M-1 ZONING REQUIREMENTS

MAX COVERAGE:	60%
FRONT YARD SETBACK:	10'
SIDE / REAR SETBACK:	0'
STREET SIDE / REAR SETBACK:	10'
INTERIOR SIDE:	0'
INTERIOR REAR:	0'
SETBACK FROM RESIDENTIAL:	30'
MAX. BUILDING HEIGHT:	50'
PARKING REQUIRED:	
OFFICE < 6K SF	1/200 SF
OFFICE > 6K SF	1/300 SF
WAREHOUSE < 40K SF	1/1000 SF
WAREHOUSE > 40K SF	1/4000 SF

MARK	DATE	DESCRIPTION
	12/8/22	SCHEMATIC DESIGN
RG		

RG PROJECT NO:	21136.00
CAD FILE NAME:	21136-00-A1-1
DRAWN BY:	CS
CHKD BY:	CS
COPYRIGHT:	RG, OFFICE OF ARCHITECTURAL DESIGN
SHEET TITLE:	



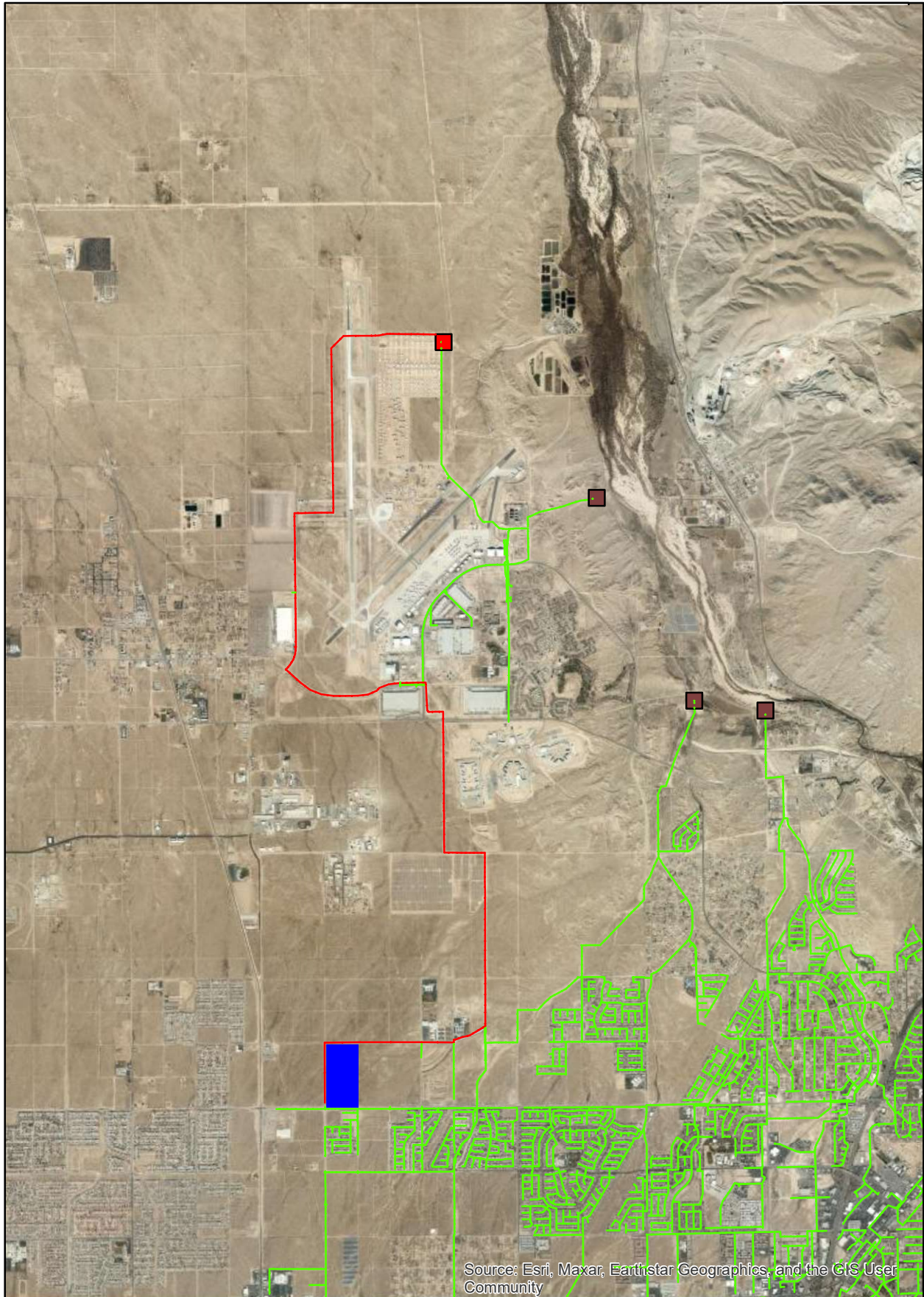
**MOJAVE INDUSTRIAL PARK**  
VICTORVILLE, CA

**SCHEMATIC SITE PLAN**  
12/8/22

APPENDIX B  
IMPACTED CITY SEWER LOCATIONS  
AND CONNECTION POINTS



City of Victorville  
Mojave and Onyx Development  
Downstream Impacts (Cactus Road Sewer Path)



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

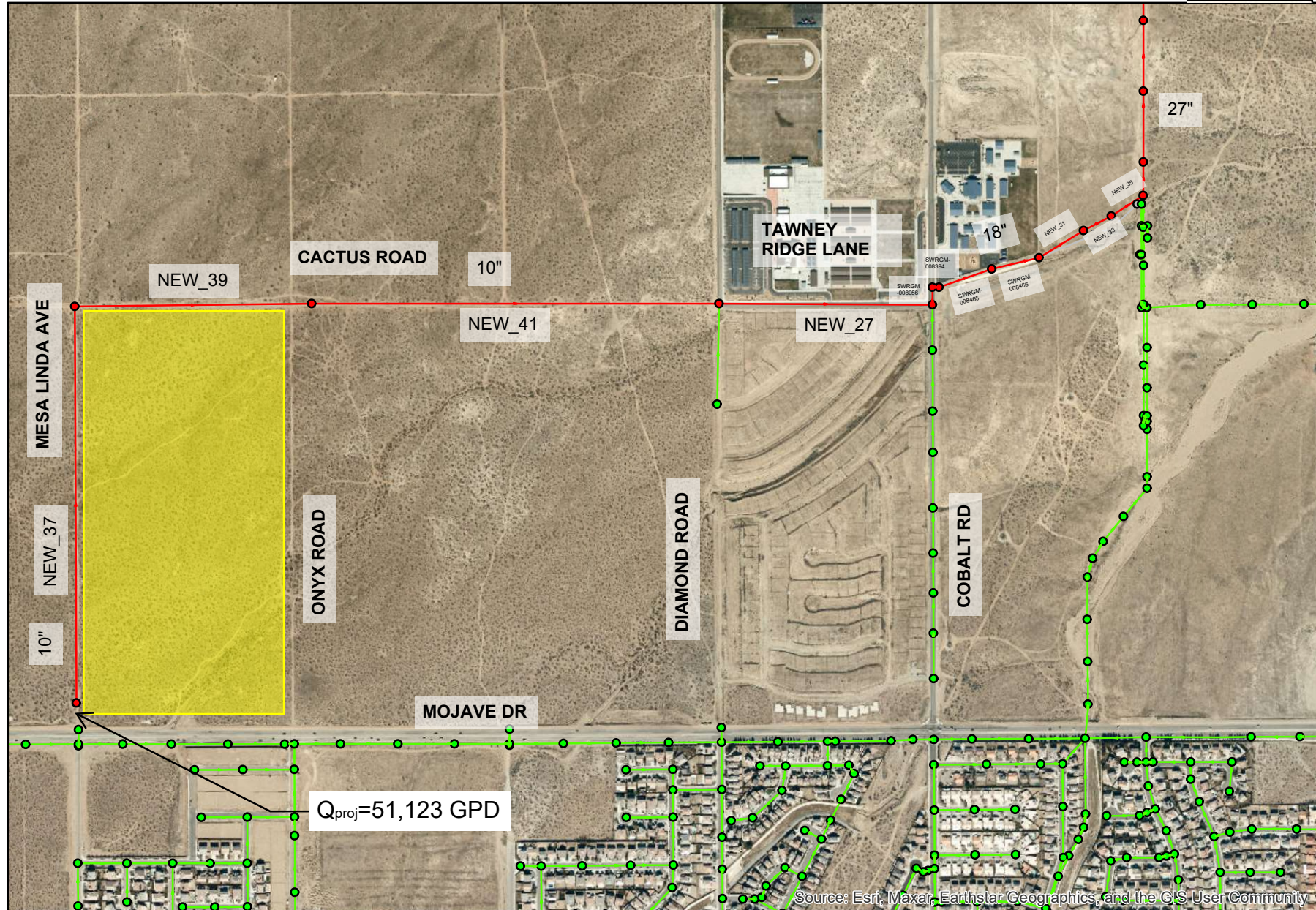
**Legend**

- Outlet
- Other Sewer Mains
- Project
- Impacted Sewer Mains (Main Branch)





City of Victorville  
 Mojave and Onyx Development  
 Adjacent Sewers



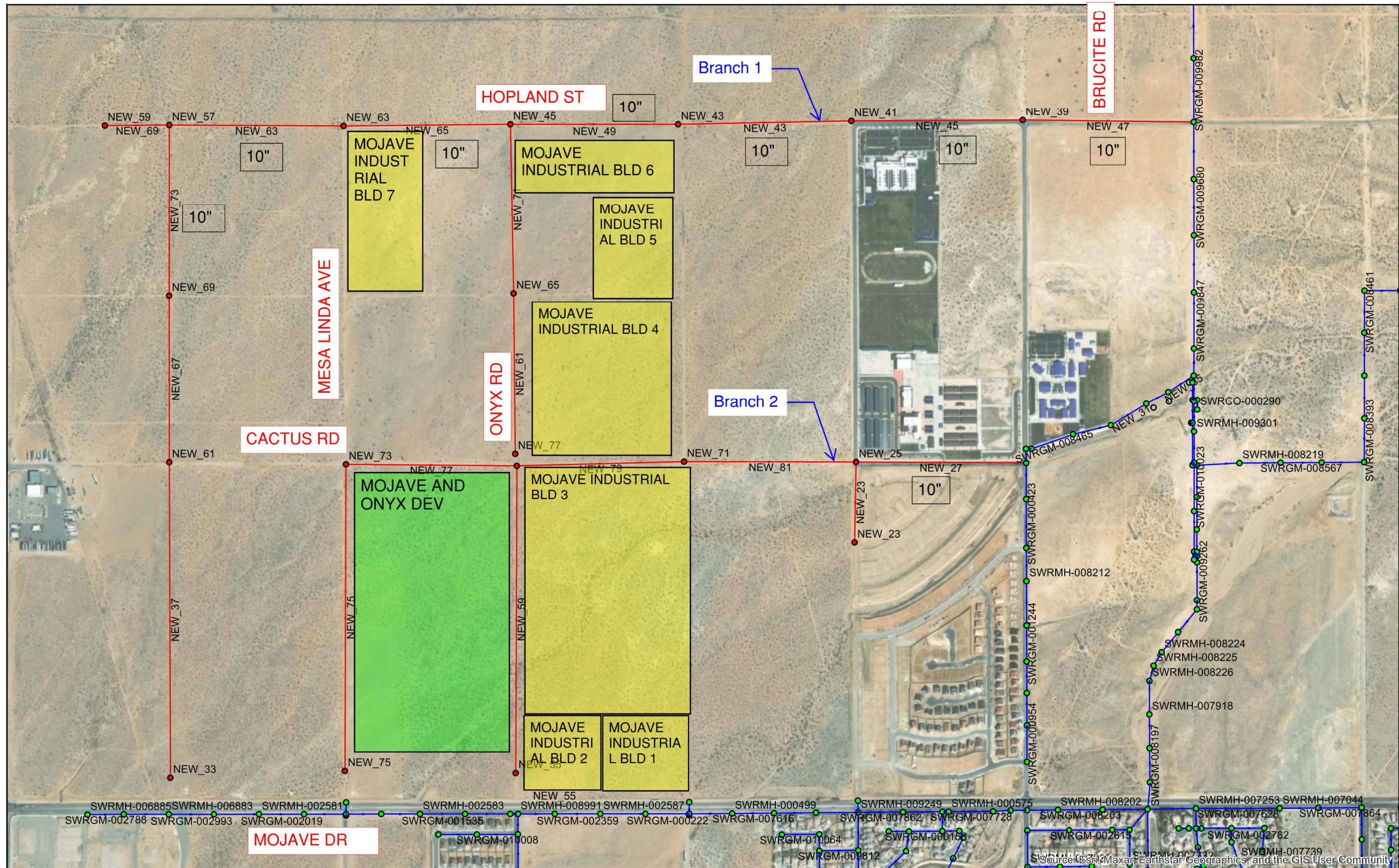
**Legend**

- Other Manhole
- Impacted Manhole
- Other Sewer Mains
- Impacted Sewer Mains (Main Branch)
- Project



DAVID EVANS  
 AND ASSOCIATES INC.





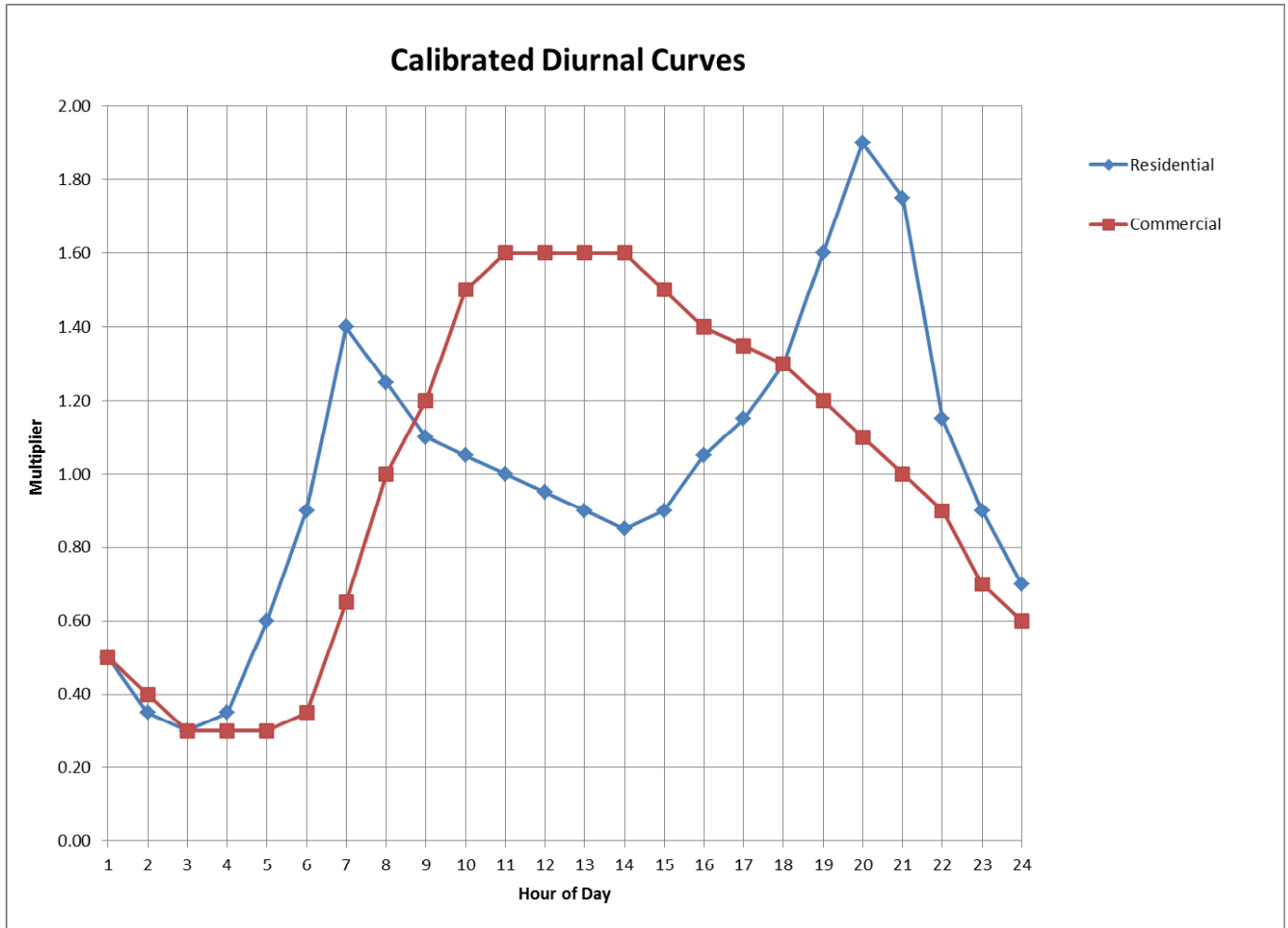
**EXHIBIT: PROPOSED SEWER PIPING FOR BETWEEN MOJAVE DR AND HOPLAND ST**

\*Pipes without sizing label are 8-inches



APPENDIX C  
CITY OF VICTORVILLE SEWER MASTER  
PLAN CAPACITY CRITERIA, PEAKING  
FACTORS, UNIT FACTORS, AND CIP  
EXHIBITS

Figure 3-1 Calibrated Diurnal Curves



The residential curve is primarily extracted from the measured flow data at meter site No. 2 with an adjusted and higher peaking factor of 1.9 at about 8 pm to account for flow attenuation effect that was embedded in the measured flow data. The commercial curve was initially developed from the metering data for other projects and was adjusted during the model calibration to better match the observed flow hydrographs.

Table 3-3 summarizes the calibration results. Figures 3-2 through 3-6 show the comparison of the model results and the field measurement for each site graphically.

Overall, the calibrated model was able to predict average flow and peak flow at the five outfalls within 10% and peak d/D ratios within 0.1. The possible causes for the variances of the model results include uncertainty about invert elevations in the original GIS, instrument errors associated with the metering equipment and the underlying assumptions in the model software.



**3.3 Capacity Criteria**

Criteria were established to determine adequacy of existing sewers and to size new sewers in terms of their hydraulic capacity while minimizing the likelihood of a sewer overflow. The hydraulic capacity criteria were developed based on maximum depth to diameter (d/D) ratios under dry weather flow (DWF) conditions in the calibrated hydraulic model.

For identifying deficiency of existing sewers, the maximum allowable d/D ratio to convey peak dry weather flow (PDWF) was set to 0.75 for all sizes of sewers. The deficiency criteria of triggering the need for a project often differ from the criteria for sizing new sewers, which are typically more conservative.

For sizing new proposed sewers, a maximum allowable d/D ratio of 0.5 was applied to 12-inch and smaller sizes and a d/D ratio of 0.65 was used for 15-inch and larger sizes. They are consistent with the typical sewer sizing criteria published by agencies in the region. A lower d/D threshold is typically applied to smaller pipes because they are more likely to experience greater variations in PDWF and blockages due to debris, etc. The remaining capacity of the proposed sewers is reserved for potential infiltration and inflow during rain events.

Table 3-4 summarizes the criteria that were used for evaluating capacity of the sewers in this Master Plan. Although the existing sewers with a d/D ratio between 0.5 and 0.75 were not identified as deficient and recommended for upsizing, future continuing monitoring of these sewers is recommended.

**Table 3-4 Sewer Capacity Criteria**

Purpose	Pipe Size	Maximum Allowable d/D
Identifying Deficiency of Existing Sewer under PDWF	Any size	0.75
Sizing of Proposed Sewers under PDWF	12-inch and smaller <sup>1</sup>	Between 0.5 and 0.65
	15-inch and larger <sup>2</sup>	Between 0.65 and 0.75

Notes:

1. At a d/D of 0.5, the remaining capacity of circular pipes is 50%. In some areas where the slope of existing sewers is relatively flat, the threshold was relaxed to allow d/D up to 0.65 in lieu of recommending a larger size for the entire project.
2. At a d/D of 0.65, the remaining capacity of circular pipes is about 25%. In some areas where the slope of existing sewers is relatively flat, the threshold was relaxed to allow d/D up to 0.75 in lieu of recommending a larger size for the entire project.

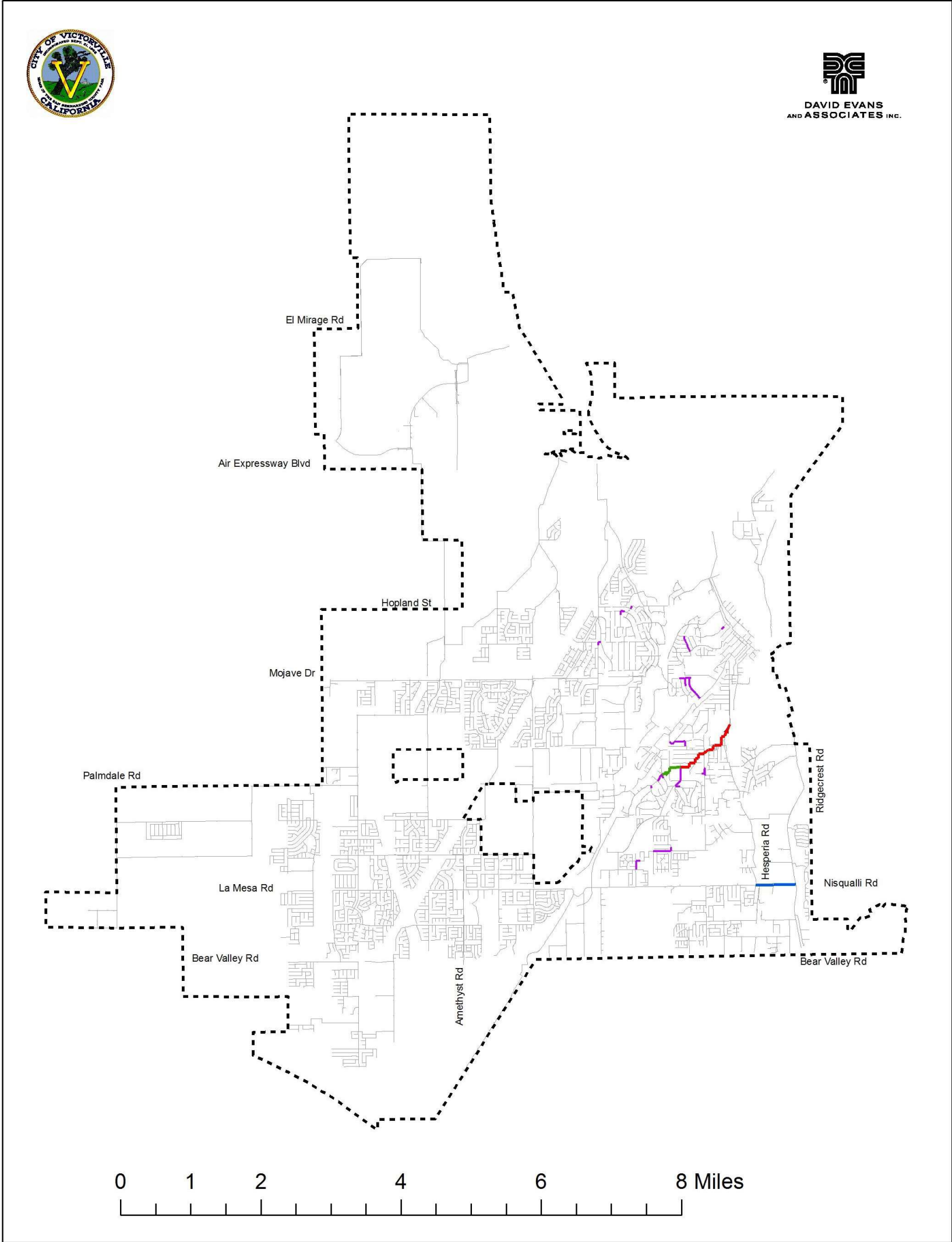
Table 2-4 shows the final calibrated per-acre unit flow factors for the various land use categories and the resultant per-dwelling-unit and per-thousand-square-foot unit factors for residential and non-residential land uses respectively. According to Table 1-3 in Chapter 1, the average household size is 3.63 persons in 2015. In addition, as shown in Table 1-2, Low Density Residential accounts for over 75% of City’s residential uses. Based on the calibrated unit flow factor for low density residential (260 gpd/du) and the average household size of 3.63 persons, the estimated average per capital wastewater flow is about 72 gpd/capita.

**Table 2-4 Calibrated Unit Flow Factors**

Land Use Category	Descriptions	gpd/ac	Average FAR per GIS	gpd/tsf	Median Housing Density per GP (DU/ac)	gpd/DU
Very Low Density Residential	single-family detached homes	600	n/a	n/a	2	300
Low Density Residential	single-family detached homes	1,300	n/a	n/a	5	260
Mix Density Residential	single family detached or multi-family attached for infill development,	1,600	n/a	n/a	8	200
Medium Density Residential	attached townhomes	1,800	n/a	n/a	10	180
High Density Residential	apartments	2,400	n/a	n/a	16	150
Mixed Use	multi-family and commercial	6,000	n/a	n/a	40	150
Commercial	retail commercial, service commercial, etc.	2,000	0.40	115	n/a	n/a
Office Professional	offices	800	0.40	46	n/a	n/a
Light Industrial	warehouses and wholesale activities	800	0.40	46	n/a	n/a
Heavy Industrial	manufacturing activities	1,600	0.40	92	n/a	n/a
Specific Plan	primarily residential development with some non-residential development	1,600	n/a	n/a	varies	n/a
Institutional	schools, city and county buildings	600	n/a	n/a	n/a	n/a
Open Space	easements, parks, golf courses, , etc.	0	n/a	n/a	n/a	n/a



Figure 6-1 Recommended Capital Improvement Project Locations (Existing Conditions)



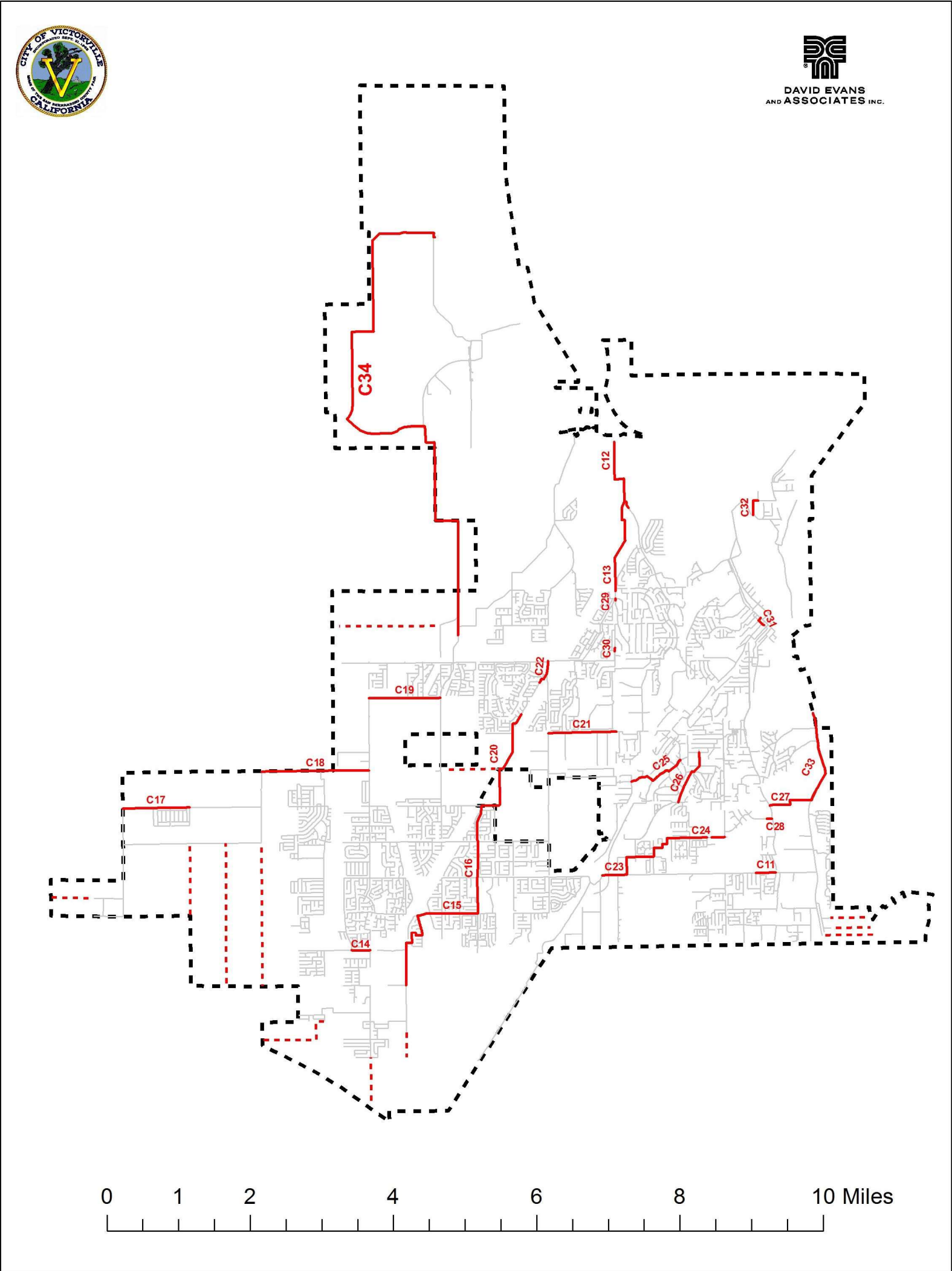
**Legend**

Recommended Capacity Improvement CIP (Existing Condition)

- C1
- C2
- C3
- Structural Rehabilitation CIP\_Optimized
- Other City Sewer
- VICTORVILLE\_CITY\_BOUNDARY

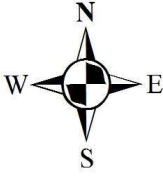


Figure 6-3 Recommended Capacity Improvement Project Locations (2040 Conditions - Scenario 1)



**Legend**

- Recommended Capacity Improvement CIP (2040)
- - - Projected Extension Sewer
- Other City Sewer
- VICTORVILLE\_CITY\_BOUNDARY



APPENDIX D  
SEWER CAPACITY ANALYSIS

**Downstream Mojave Industrial Buildings Run Future (2040) w/ Septic and CIP (Sthly Branch 1 Buildings 1-3)**

Pipe ID	U/S MH ID	D/S MH ID	Size (inch)	Length (ft)	Slope (ft/ft)	2016 SMP Peak Flow (mgd)	2016 SMP Maximum d/D	With Parcel J Project Peak Flow (mgd)	With Parcel J Project Connection Maximum d/D	d/D Criteria	Remark
NEW_75	NEW_75	NEW_73	8	2,375	0.0088	NEW PIPE	NEW PIPE	0.082	0.24	0.75	PASS
NEW_77	NEW_73	NEW_37	8	1,327	0.006	NEW PIPE	NEW PIPE	0.082	0.27	0.75	PASS
NEW_59	NEW_55	NEW_37	8	2,380	0.0097	NEW PIPE	NEW PIPE	0.099	0.26	0.75	PASS
NEW_79	NEW_37	NEW_71	8	1,299	0.0054	NEW PIPE	NEW PIPE	0.181	0.42	0.75	PASS
NEW_81	NEW_71	NEW_25	8	1,335	0.0165	NEW PIPE	NEW PIPE	0.181	0.31	0.75	PASS
NEW_23	NEW_23	NEW_25	8	624	0.0273	NEW PIPE	NEW PIPE	0.004	0.04	0.75	PASS
NEW_27	NEW_25	SWRMH-002617	10	1,319	0.007	NEW PIPE	NEW PIPE	0.277	0.35	0.75	PASS

**Downstream Mojave Industrial Buildings Run Future (2040) w/ Septic and CIP (Nthly Branch 2 Buildings 4-7)**

Pipe ID	U/S MH ID	D/S MH ID	Size (inch)	Length (ft)	Slope (ft/ft)	2016 SMP Peak Flow (mgd)	2016 SMP Maximum d/D	With Parcel J Project Peak Flow (mgd)	With Parcel J Project Connection Maximum d/D	d/D Criteria	Remark
NEW_61	NEW_77	NEW_65	8	1,243	0.0064	NEW PIPE	NEW PIPE	0.049	0.20	0.75	PASS
NEW_71	NEW_65	NEW_45	8	2,641	0.0084	NEW PIPE	NEW PIPE	0.204	0.30	0.75	PASS
NEW_49	NEW_45	NEW_43	10	1,302	0.0069	NEW PIPE	NEW PIPE	0.181	0.37	0.75	PASS
NEW_43	NEW_43	NEW_41	10	1,346	0.0068	NEW PIPE	NEW PIPE	0.298	0.37	0.75	PASS
NEW_45	NEW_41	NEW_39	10	1,328	0.0069	NEW PIPE	NEW PIPE	0.298	0.37	0.75	PASS
NEW_47	NEW_39	SWRMH-009295	10	1,329	0.0069	NEW PIPE	NEW PIPE	0.298	0.37	0.75	PASS

**Downstream Mojave Industrial Buildings Run Future Existing w/ CIP (Main Trunkline to Outfall)**

Pipe ID	U/S MH ID	D/S MH ID	Size (inch)	Length (ft)	Slope (ft/ft)	2016 SMP Peak Flow (mgd)	2016 SMP Maximum d/D	With Parcel J Project Peak Flow (mgd)	With Parcel J Project Connection Maximum d/D	d/D Criteria	Remark
SWRGM-008056	SWRMH-002617	SWRMH-008232	18	109	0.006	0.000	0.00	0.084	0.09	0.75	PASS
SWRGM-008394	SWRMH-008232	SWRMH-008229	18	42	0.006	0.000	0.00	0.084	0.09	0.75	PASS
SWRGM-008465	SWRMH-008229	SWRMH-008230	18	344	0.0063	0.000	0.00	0.084	0.09	0.75	PASS
SWRGM-008466	SWRMH-008230	SWRMH-008231	18	300	0.0115	0.031	0.05	0.099	0.09	0.75	PASS
NEW_31	SWRMH-008231	NEW_29	18	323	0.0035	0.031	0.07	0.099	0.12	0.75	PASS
NEW_33	NEW_29	NEW_31	18	193	0.0035	0.031	0.07	0.099	0.12	0.75	PASS
NEW_35	NEW_31	NEW_27	18	235	0.0028	0.031	0.07	0.099	0.12	0.75	PASS
NEW_29	NEW_27	SWRMH-009299	27	208	0.0038	2.408	0.32	2.465	0.33	0.75	PASS
SWRGM-009847	SWRMH-009299	SWRMH-009298	27	438	0.002	2.407	0.38	2.465	0.39	0.75	PASS
SWRGM-009684	SWRMH-009298	SWRMH-009297	27	438	0.002	2.407	0.38	2.465	0.39	0.75	PASS
SWRGM-009680	SWRMH-009297	SWRMH-009296	27	438	0.002	2.407	0.38	2.465	0.39	0.75	PASS
SWRGM-009867	SWRMH-009296	SWRMH-009295	27	438	0.002	2.407	0.38	2.465	0.39	0.75	PASS
SWRGM-009982	SWRMH-009295	SWRMH-009294	27	496	0.002	2.407	0.38	2.583	0.40	0.75	PASS
SWRGM-009850	SWRMH-009294	SWRMH-009293	27	500	0.002	2.407	0.38	2.583	0.40	0.75	PASS
SWRGM-009668	SWRMH-009293	SWRMH-009292	27	320	0.002	2.407	0.38	2.583	0.40	0.75	PASS
SWRGM-009647	SWRMH-009292	SWRMH-009291	27	442	0.002	2.407	0.38	2.583	0.40	0.75	PASS
SWRGM-010125	SWRMH-009291	SWRMH-009290	27	442	0.002	2.407	0.38	2.582	0.40	0.75	PASS
SWRGM-009813	SWRMH-009290	SWRMH-009289	27	442	0.002	2.407	0.38	2.582	0.40	0.75	PASS
SWRGM-009510	SWRMH-009289	SWRMH-008645	27	438	0.002	2.407	0.38	2.582	0.40	0.75	PASS
SWRGM-009942	SWRMH-008645	SWRMH-008644	27	438	0.002	2.407	0.38	2.582	0.40	0.75	PASS
SWRGM-009571	SWRMH-008644	SWRMH-008643	27	438	0.002	2.407	0.38	2.582	0.40	0.75	PASS
SWRGM-010051	SWRMH-008643	SWRMH-008642	27	397	0.002	2.407	0.38	2.582	0.40	0.75	PASS
SWRGM-009725	SWRMH-008642	SWRMH-008641	27	397	0.002	2.407	0.38	2.582	0.40	0.75	PASS
SWRGM-010263	SWRMH-008641	SWRMH-008640	27	397	0.002	2.407	0.38	2.582	0.40	0.75	PASS
SWRGM-009914	SWRMH-008640	SWRMH-008635	27	311	0.002	2.407	0.38	2.582	0.40	0.75	PASS
SWRGM-010252	SWRMH-008635	SWRMH-008636	27	311	0.002	2.407	0.38	2.582	0.40	0.75	PASS
SWRGM-010086	SWRMH-008636	SWRMH-008637	27	351	0.002	2.407	0.38	2.582	0.40	0.75	PASS
SWRGM-009798	SWRMH-008637	SWRMH-008638	27	351	0.002	2.407	0.38	2.582	0.40	0.75	PASS
SWRGM-009568	SWRMH-008638	SWRMH-008639	27	351	0.002	2.407	0.38	2.582	0.40	0.75	PASS
SWRGM-009767	SWRMH-008639	SWRMH-008634	27	504	0.002	2.407	0.38	2.582	0.40	0.75	PASS
SWRGM-010105	SWRMH-008634	SWRMH-008633	27	504	0.002	2.407	0.38	2.582	0.40	0.75	PASS
SWRGM-009808	SWRMH-008633	SWRMH-008632	27	560	0.002	2.407	0.38	2.582	0.40	0.75	PASS
SWRGM-009518	SWRMH-008632	SWRMH-008631	27	314	0.002	2.407	0.38	2.582	0.40	0.75	PASS
SWRGM-009759	SWRMH-008631	SWRMH-008630	27	309	0.002	2.407	0.38	2.582	0.40	0.75	PASS
SWRGM-009885	SWRMH-008630	SWRMH-008629	27	500	0.002	2.407	0.38	2.582	0.40	0.75	PASS

SWRGM-009493	SWRMH-008629	SWRMH-008628	27	500	0.002	2.407	0.38	2.582	0.40	0.75	PASS
SWRGM-009985	SWRMH-008628	SWRMH-008627	27	500	0.002	2.407	0.38	2.582	0.40	0.75	PASS
SWRGM-009902	SWRMH-008627	SWRMH-008626	27	500	0.002	2.407	0.38	2.582	0.40	0.75	PASS
SWRGM-010130	SWRMH-008626	SWRMH-008625	27	500	0.002	2.407	0.38	2.582	0.40	0.75	PASS
SWRGM-010200	SWRMH-008625	SWRMH-008624	27	500	0.0036	2.407	0.33	2.582	0.34	0.75	PASS
SWRGM-010159	SWRMH-008624	SWRMH-008623	27	588	0.0038	2.407	0.32	2.582	0.33	0.75	PASS
SWRGM-009919	SWRMH-008623	SWRMH-008704	27	306	0.0036	2.407	0.33	2.582	0.34	0.75	PASS
SWRGM-009707	SWRMH-008704	SWRMH-008703	27	284	0.003	2.407	0.34	2.582	0.36	0.75	PASS
SWRGM-009576	SWRMH-008703	SWRMH-008702	27	82	0.0022	2.407	0.37	2.582	0.39	0.75	PASS
SWRGM-009635	SWRMH-008702	SWRMH-008701	27	430	0.0023	2.407	0.37	2.582	0.38	0.75	PASS
SWRGM-009450	SWRMH-008701	SWRMH-008700	27	809	0.0012	2.407	0.44	2.582	0.46	0.75	PASS
SWRGM-009656	SWRMH-008700	SWRMH-008699	27	433	0.0021	2.407	0.38	2.582	0.39	0.75	PASS
SWRGM-009961	SWRMH-008699	SWRMH-008698	27	519	0.0017	2.407	0.40	2.582	0.42	0.75	PASS
SWRGM-009448	SWRMH-008698	SWRMH-008697	27	497	0.0017	2.407	0.40	2.582	0.42	0.75	PASS
SWRGM-009473	SWRMH-008697	SWRMH-008696	27	401	0.0028	2.407	0.35	2.582	0.36	0.75	PASS
SWRGM-010231	SWRMH-008696	SWRMH-008695	27	163	0.005	2.407	0.30	2.582	0.31	0.75	PASS
SWRGM-010141	SWRMH-008695	SWRMH-008694	27	381	0.003	2.407	0.34	2.582	0.36	0.75	PASS
SWRGM-010102	SWRMH-008694	SWRMH-008693	27	423	0.0027	2.407	0.35	2.582	0.37	0.75	PASS
SWRGM-009834	SWRMH-008693	SWRMH-008692	27	500	0.0023	2.407	0.37	2.582	0.38	0.75	PASS
SWRGM-009689	SWRMH-008692	SWRMH-008691	27	500	0.0023	2.407	0.37	2.582	0.38	0.75	PASS
SWRGM-009895	SWRMH-008691	SWRMH-008690	27	500	0.0023	2.407	0.37	2.582	0.38	0.75	PASS
SWRGM-009702	SWRMH-008690	SWRMH-008689	27	500	0.0023	2.407	0.37	2.582	0.38	0.75	PASS
SWRGM-009681	SWRMH-008689	SWRMH-008688	27	500	0.0023	2.407	0.37	2.582	0.38	0.75	PASS
SWRGM-009481	SWRMH-008688	SWRMH-008687	27	397	0.0023	2.407	0.37	2.582	0.38	0.75	PASS
SWRGM-009744	SWRMH-008687	SWRMH-008686	27	397	0.0031	2.407	0.34	2.582	0.35	0.75	PASS
SWRGM-009801	SWRMH-008686	SWRMH-008817	27	250	0.0034	2.407	0.33	2.582	0.34	0.75	PASS
SWRGM-009971	SWRMH-008817	SWRMH-008815	27	250	0.0034	2.407	0.33	2.582	0.34	0.75	PASS
SWRGM-009688	SWRMH-008815	SWRMH-008813	27	250	0.0034	2.407	0.33	2.582	0.34	0.75	PASS
SWRGM-010226	SWRMH-008813	SWRMH-008811	27	287	0.0035	2.406	0.33	2.582	0.34	0.75	PASS
SWRGM-010277	SWRMH-008811	SWRMH-008810	27	446	0.0035	2.406	0.33	2.582	0.34	0.75	PASS
SWRGM-009554	SWRMH-008810	SWRMH-008808	27	512	0.0031	2.406	0.34	2.582	0.35	0.75	PASS
SWRGM-009760	SWRMH-008808	SWRMH-008806	27	401	0.0039	2.406	0.32	2.582	0.33	0.75	PASS
SWRGM-009743	SWRMH-008806	SWRMH-008804	27	439	0.0035	2.406	0.33	2.582	0.34	0.75	PASS
SWRGM-009946	SWRMH-008804	SWRMH-008802	27	440	0.0035	2.406	0.33	2.582	0.34	0.75	PASS
SWRGM-009454	SWRMH-008802	SWRMH-008800	27	500	0.0035	2.406	0.33	2.582	0.34	0.75	PASS
SWRGM-009453	SWRMH-008800	SWRMH-008798	27	500	0.0035	2.406	0.33	2.582	0.34	0.75	PASS
SWRGM-009932	SWRMH-008798	SWRMH-008796	27	476	0.0045	2.406	0.31	2.582	0.32	0.75	PASS
SWRGM-009597	SWRMH-008796	SWRMH-008794	27	500	0.0035	2.406	0.33	2.582	0.34	0.75	PASS
SWRGM-009572	SWRMH-008794	SWRMH-008792	27	500	0.0054	2.406	0.29	2.582	0.30	0.75	PASS
SWRGM-009469	SWRMH-008792	SWRMH-008790	27	500	0.0053	2.406	0.30	2.582	0.31	0.75	PASS
SWRGM-010258	SWRMH-008790	SWRMH-008788	27	275	0.002	2.406	0.38	2.582	0.40	0.75	PASS
SWRGM-009520	SWRMH-008788	SWRMH-008785	27	300	0.002	2.406	0.38	2.581	0.40	0.75	PASS
SWRGM-010155	SWRMH-008785	SWRMH-008783	27	300	0.002	2.406	0.38	2.581	0.40	0.75	PASS
SWRGM-010163	SWRMH-008783	SWRMH-008781	27	500	0.002	2.406	0.38	2.581	0.40	0.75	PASS
SWRGM-009890	SWRMH-008781	SWRMH-008780	27	499	0.002	2.406	0.38	2.581	0.40	0.75	PASS
SWRGM-009612	SWRMH-008780	SWRMH-008778	27	381	0.002	2.406	0.38	2.581	0.40	0.75	PASS



SWRGM-009512	SWRMH-008778	SWRMH-008776	27	500	0.002	2.406	0.38	2.581	0.40	0.75	PASS
SWRGM-009663	SWRMH-008776	SWRMH-008773	27	500	0.002	2.406	0.38	2.581	0.40	0.75	PASS
SWRGM-010174	SWRMH-008773	SWRMH-008771	27	470	0.002	2.406	0.38	2.581	0.40	0.75	PASS
SWRGM-009998	SWRMH-008771	SWRMH-008769	27	500	0.002	2.406	0.38	2.581	0.40	0.75	PASS
SWRGM-009866	SWRMH-008769	SWRMH-008767	27	500	0.0072	2.406	0.27	2.581	0.28	0.75	PASS
SWRGM-009526	SWRMH-008767	SWRMH-008765	27	500	0.0072	2.406	0.27	2.581	0.28	0.75	PASS
SWRGM-009627	SWRMH-008765	SWRMH-008763	27	500	0.0072	2.406	0.27	2.581	0.28	0.75	PASS
SWRGM-009924	SWRMH-008763	SWRMH-008761	27	500	0.0072	2.406	0.27	2.581	0.28	0.75	PASS
SWRGM-010122	SWRMH-008761	SWRMH-008759	27	388	0.0072	2.406	0.27	2.581	0.28	0.75	PASS
SWRGM-010094	SWRMH-008759	SWRMH-008757	27	500	0.0071	2.406	0.27	2.581	0.28	0.75	PASS
SWRGM-009723	SWRMH-008757	SWRMH-008755	27	500	0.0022	2.406	0.37	2.581	0.39	0.75	PASS
SWRGM-009654	SWRMH-008755	SWRMH-008753	27	500	0.0015	2.406	0.41	2.581	0.43	0.75	PASS
SWRGM-009999	SWRMH-008753	SWRMH-008751	27	499	0.0015	2.406	0.41	2.581	0.43	0.75	PASS
SWRGM-009552	SWRMH-008751	SWRMH-008749	27	358	0.0015	2.406	0.41	2.581	0.43	0.75	PASS
SWRGM-009793	SWRMH-008749	SWRMH-008747	27	358	0.0015	2.406	0.41	2.581	0.43	0.75	PASS
SWRGM-009592	SWRMH-008747	SWRMH-008745	27	600	0.0015	2.406	0.41	2.581	0.43	0.75	PASS
SWRGM-010063	SWRMH-008745	SWRMH-008743	27	580	0.0015	2.406	0.41	2.581	0.43	0.75	PASS
SWRGM-010078	SWRMH-008743	SWRMH-008741	27	261	0.0015	2.406	0.42	2.581	0.43	0.75	PASS
SWRGM-010132	SWRMH-008741	SWRMH-008739	27	350	0.0015	2.406	0.41	2.581	0.43	0.75	PASS
SWRGM-009524	SWRMH-008739	SWRMH-008737	27	250	0.0014	2.406	0.42	2.581	0.43	0.75	PASS
SWRGM-010266	SWRMH-008737	SWRMH-008735	27	500	0.0015	2.406	0.41	2.581	0.43	0.75	PASS
SWRGM-009952	SWRMH-008735	SWRMH-008733	27	500	0.0015	2.406	0.41	2.581	0.43	0.75	PASS
SWRGM-010183	SWRMH-008733	SWRMH-008731	27	500	0.0015	2.406	0.41	2.581	0.43	0.75	PASS
SWRGM-010113	SWRMH-008731	SWRMH-008729	27	500	0.0015	2.406	0.41	2.581	0.43	0.75	PASS
SWRGM-010165	SWRMH-008729	SWRMH-008727	27	314	0.0015	2.406	0.42	2.581	0.43	0.75	PASS
SWRGM-010201	SWRMH-008727	SWRNJ-000196	27	73	0.0027	2.515	0.36	2.691	0.37	0.75	PASS

**Downstream Mojave Industrial Buildings Run Future (2040) w/ Septic and CIP (Main Trunkline to Outfall)**

Pipe ID	U/S MH ID	D/S MH ID	Size (inch)	Length (ft)	Slope (ft/ft)	2016 SMP Peak Flow (mgd)	2016 SMP Maximum d/D	With Parcel J Project Peak Flow (mgd)	With Parcel J Project Connection Maximum d/D	d/D Criteria	Remark
SWRGM-008056	SWRMH-002617	SWRMH-008232	18	109	0.006	0.190	0.14	0.390	0.20	0.75	PASS
SWRGM-008394	SWRMH-008232	SWRMH-008229	18	42	0.006	0.190	0.14	0.390	0.20	0.75	PASS
SWRGM-008465	SWRMH-008229	SWRMH-008230	18	344	0.0063	0.190	0.14	0.390	0.20	0.75	PASS
SWRGM-008466	SWRMH-008230	SWRMH-008231	18	300	0.0115	0.220	0.13	0.421	0.17	0.75	PASS
NEW_31	SWRMH-008231	NEW_29	18	323	0.0035	0.220	0.17	0.421	0.24	0.75	PASS
NEW_33	NEW_29	NEW_31	18	193	0.0035	0.220	0.17	0.421	0.23	0.75	PASS
NEW_35	NEW_31	NEW_27	18	235	0.0028	0.220	0.18	0.421	0.25	0.75	PASS
NEW_29	NEW_27	SWRMH-009299	27	208	0.0038	10.741	0.50	10.913	0.50	0.75	PASS
SWRGM-009847	SWRMH-009299	SWRMH-009298	27	438	0.002	10.741	0.61	10.913	0.62	0.75	PASS
SWRGM-009684	SWRMH-009298	SWRMH-009297	27	438	0.002	10.855	0.62	11.028	0.62	0.75	PASS
SWRGM-009680	SWRMH-009297	SWRMH-009296	27	438	0.002	10.855	0.62	11.028	0.63	0.75	PASS
SWRGM-009867	SWRMH-009296	SWRMH-009295	27	438	0.002	10.855	0.62	11.028	0.62	0.75	PASS
SWRGM-009982	SWRMH-009295	SWRMH-009294	27	496	0.002	10.855	0.62	11.213	0.63	0.75	PASS
SWRGM-009850	SWRMH-009294	SWRMH-009293	27	500	0.002	10.855	0.62	11.213	0.63	0.75	PASS
SWRGM-009668	SWRMH-009293	SWRMH-009292	27	320	0.002	10.855	0.62	11.212	0.63	0.75	PASS
SWRGM-009647	SWRMH-009292	SWRMH-009291	27	442	0.002	10.855	0.62	11.212	0.63	0.75	PASS
SWRGM-010125	SWRMH-009291	SWRMH-009290	27	442	0.002	10.855	0.62	11.212	0.63	0.75	PASS
SWRGM-009813	SWRMH-009290	SWRMH-009289	27	442	0.002	10.855	0.62	11.212	0.63	0.75	PASS
SWRGM-009510	SWRMH-009289	SWRMH-008645	27	438	0.002	10.855	0.62	11.212	0.63	0.75	PASS
SWRGM-009942	SWRMH-008645	SWRMH-008644	27	438	0.002	10.855	0.62	11.212	0.63	0.75	PASS
SWRGM-009571	SWRMH-008644	SWRMH-008643	27	438	0.002	10.855	0.62	11.212	0.63	0.75	PASS
SWRGM-010051	SWRMH-008643	SWRMH-008642	27	397	0.002	10.855	0.62	11.212	0.63	0.75	PASS
SWRGM-009725	SWRMH-008642	SWRMH-008641	27	397	0.002	10.855	0.62	11.212	0.63	0.75	PASS
SWRGM-010263	SWRMH-008641	SWRMH-008640	27	397	0.002	10.855	0.62	11.212	0.63	0.75	PASS
SWRGM-009914	SWRMH-008640	SWRMH-008635	27	311	0.002	10.855	0.62	11.212	0.63	0.75	PASS
SWRGM-010252	SWRMH-008635	SWRMH-008636	27	311	0.002	10.855	0.62	11.212	0.63	0.75	PASS
SWRGM-010086	SWRMH-008636	SWRMH-008637	27	351	0.002	10.855	0.62	11.212	0.63	0.75	PASS
SWRGM-009798	SWRMH-008637	SWRMH-008638	27	351	0.002	10.855	0.62	11.212	0.63	0.75	PASS
SWRGM-009568	SWRMH-008638	SWRMH-008639	27	351	0.002	10.855	0.62	11.212	0.63	0.75	PASS
SWRGM-009767	SWRMH-008639	SWRMH-008634	27	504	0.002	10.855	0.62	11.212	0.63	0.75	PASS
SWRGM-010105	SWRMH-008634	SWRMH-008633	27	504	0.002	10.855	0.62	11.212	0.63	0.75	PASS
SWRGM-009808	SWRMH-008633	SWRMH-008632	27	560	0.002	10.855	0.62	11.212	0.63	0.75	PASS
SWRGM-009518	SWRMH-008632	SWRMH-008631	27	314	0.002	10.855	0.62	11.212	0.63	0.75	PASS
SWRGM-009759	SWRMH-008631	SWRMH-008630	27	309	0.002	10.855	0.62	11.212	0.63	0.75	PASS
SWRGM-009885	SWRMH-008630	SWRMH-008629	27	500	0.002	10.855	0.62	11.212	0.63	0.75	PASS

SWRGM-009493	SWRMH-008629	SWRMH-008628	27	500	0.002	10.854	0.62	11.212	0.63	0.75	PASS
SWRGM-009985	SWRMH-008628	SWRMH-008627	27	500	0.002	10.854	0.62	11.212	0.63	0.75	PASS
SWRGM-009902	SWRMH-008627	SWRMH-008626	27	500	0.002	10.854	0.62	11.212	0.63	0.75	PASS
SWRGM-010130	SWRMH-008626	SWRMH-008625	27	500	0.002	10.854	0.62	11.212	0.63	0.75	PASS
SWRGM-010200	SWRMH-008625	SWRMH-008624	27	500	0.0036	10.854	0.51	11.212	0.52	0.75	PASS
SWRGM-010159	SWRMH-008624	SWRMH-008623	27	588	0.0038	10.854	0.50	11.212	0.51	0.75	PASS
SWRGM-009919	SWRMH-008623	SWRMH-008704	27	306	0.0036	10.920	0.51	11.278	0.52	0.75	PASS
SWRGM-009707	SWRMH-008704	SWRMH-008703	27	284	0.003	10.920	0.54	11.278	0.56	0.75	PASS
SWRGM-009576	SWRMH-008703	SWRMH-008702	27	82	0.0022	10.920	0.60	11.278	0.61	0.75	PASS
SWRGM-009635	SWRMH-008702	SWRMH-008701	27	430	0.0023	10.920	0.59	11.278	0.60	0.75	PASS
SWRGM-009450	SWRMH-008701	SWRMH-008700	27	809	0.0012	10.920	0.74	11.278	0.76	0.75	FAIL
SWRGM-009656	SWRMH-008700	SWRMH-008699	27	433	0.0021	10.920	0.61	11.278	0.62	0.75	PASS
SWRGM-009961	SWRMH-008699	SWRMH-008698	27	519	0.0017	10.920	0.66	11.278	0.67	0.75	PASS
SWRGM-009448	SWRMH-008698	SWRMH-008697	27	497	0.0017	10.920	0.65	11.278	0.67	0.75	PASS
SWRGM-009473	SWRMH-008697	SWRMH-008696	27	401	0.0028	10.920	0.55	11.278	0.56	0.75	PASS
SWRGM-010231	SWRMH-008696	SWRMH-008695	27	163	0.005	10.920	0.47	11.278	0.48	0.75	PASS
SWRGM-010141	SWRMH-008695	SWRMH-008694	27	381	0.003	10.920	0.54	11.278	0.55	0.75	PASS
SWRGM-010102	SWRMH-008694	SWRMH-008693	27	423	0.0027	10.920	0.56	11.278	0.57	0.75	PASS
SWRGM-009834	SWRMH-008693	SWRMH-008692	27	500	0.0023	10.920	0.59	11.278	0.60	0.75	PASS
SWRGM-009689	SWRMH-008692	SWRMH-008691	27	500	0.0023	10.920	0.59	11.277	0.60	0.75	PASS
SWRGM-009895	SWRMH-008691	SWRMH-008690	27	500	0.0023	10.979	0.59	11.337	0.61	0.75	PASS
SWRGM-009702	SWRMH-008690	SWRMH-008689	27	500	0.0023	10.979	0.59	11.337	0.61	0.75	PASS
SWRGM-009681	SWRMH-008689	SWRMH-008688	27	500	0.0023	10.979	0.59	11.337	0.61	0.75	PASS
SWRGM-009481	SWRMH-008688	SWRMH-008687	27	397	0.0023	10.979	0.59	11.337	0.61	0.75	PASS
SWRGM-009744	SWRMH-008687	SWRMH-008686	27	397	0.0031	10.979	0.54	11.337	0.55	0.75	PASS
SWRGM-009801	SWRMH-008686	SWRMH-008817	27	250	0.0034	10.979	0.52	11.337	0.53	0.75	PASS
SWRGM-009971	SWRMH-008817	SWRMH-008815	27	250	0.0034	10.978	0.52	11.337	0.53	0.75	PASS
SWRGM-009688	SWRMH-008815	SWRMH-008813	27	250	0.0034	10.978	0.52	11.337	0.53	0.75	PASS
SWRGM-010226	SWRMH-008813	SWRMH-008811	27	287	0.0035	10.978	0.52	11.337	0.53	0.75	PASS
SWRGM-010277	SWRMH-008811	SWRMH-008810	27	446	0.0035	10.978	0.52	11.337	0.53	0.75	PASS
SWRGM-009554	SWRMH-008810	SWRMH-008808	27	512	0.0031	10.978	0.54	11.337	0.55	0.75	PASS
SWRGM-009760	SWRMH-008808	SWRMH-008806	27	401	0.0039	10.978	0.50	11.337	0.51	0.75	PASS
SWRGM-009743	SWRMH-008806	SWRMH-008804	27	439	0.0035	10.978	0.52	11.337	0.53	0.75	PASS
SWRGM-009946	SWRMH-008804	SWRMH-008802	27	440	0.0035	10.978	0.52	11.337	0.53	0.75	PASS
SWRGM-009454	SWRMH-008802	SWRMH-008800	27	500	0.0035	10.978	0.52	11.337	0.53	0.75	PASS
SWRGM-009453	SWRMH-008800	SWRMH-008798	27	500	0.0035	10.978	0.52	11.337	0.53	0.75	PASS
SWRGM-009932	SWRMH-008798	SWRMH-008796	27	476	0.0045	11.031	0.49	11.390	0.49	0.75	PASS
SWRGM-009597	SWRMH-008796	SWRMH-008794	27	500	0.0035	11.031	0.52	11.390	0.53	0.75	PASS
SWRGM-009572	SWRMH-008794	SWRMH-008792	27	500	0.0054	11.031	0.46	11.390	0.47	0.75	PASS
SWRGM-009469	SWRMH-008792	SWRMH-008790	27	500	0.0053	11.031	0.46	11.390	0.47	0.75	PASS
SWRGM-010258	SWRMH-008790	SWRMH-008788	27	275	0.002	11.031	0.63	11.390	0.64	0.75	PASS
SWRGM-009520	SWRMH-008788	SWRMH-008785	27	300	0.002	11.031	0.63	11.390	0.64	0.75	PASS
SWRGM-010155	SWRMH-008785	SWRMH-008783	27	300	0.002	11.031	0.63	11.390	0.64	0.75	PASS
SWRGM-010163	SWRMH-008783	SWRMH-008781	27	500	0.002	11.031	0.62	11.390	0.64	0.75	PASS
SWRGM-009890	SWRMH-008781	SWRMH-008780	27	499	0.002	11.031	0.62	11.390	0.64	0.75	PASS
SWRGM-009612	SWRMH-008780	SWRMH-008778	27	381	0.002	11.031	0.63	11.390	0.64	0.75	PASS

SWRGM-009512	SWRMH-008778	SWRMH-008776	27	500	0.002	11.031	0.62	11.390	0.64	0.75	PASS
SWRGM-009663	SWRMH-008776	SWRMH-008773	27	500	0.002	11.031	0.62	11.390	0.64	0.75	PASS
SWRGM-010174	SWRMH-008773	SWRMH-008771	27	470	0.002	11.031	0.62	11.390	0.64	0.75	PASS
SWRGM-009998	SWRMH-008771	SWRMH-008769	27	500	0.002	11.031	0.62	11.390	0.64	0.75	PASS
SWRGM-009866	SWRMH-008769	SWRMH-008767	27	500	0.0072	11.031	0.42	11.390	0.43	0.75	PASS
SWRGM-009526	SWRMH-008767	SWRMH-008765	27	500	0.0072	11.031	0.42	11.390	0.43	0.75	PASS
SWRGM-009627	SWRMH-008765	SWRMH-008763	27	500	0.0072	11.031	0.42	11.390	0.43	0.75	PASS
SWRGM-009924	SWRMH-008763	SWRMH-008761	27	500	0.0072	11.031	0.42	11.390	0.43	0.75	PASS
SWRGM-010122	SWRMH-008761	SWRMH-008759	27	388	0.0072	11.031	0.42	11.390	0.43	0.75	PASS
SWRGM-010094	SWRMH-008759	SWRMH-008757	27	500	0.0071	11.031	0.43	11.390	0.43	0.75	PASS
SWRGM-009723	SWRMH-008757	SWRMH-008755	27	500	0.0022	11.031	0.60	11.390	0.62	0.75	PASS
SWRGM-009654	SWRMH-008755	SWRMH-008753	27	500	0.0015	11.031	0.69	11.390	0.71	0.75	PASS
SWRGM-009999	SWRMH-008753	SWRMH-008751	27	499	0.0015	11.031	0.68	11.390	0.70	0.75	PASS
SWRGM-009552	SWRMH-008751	SWRMH-008749	27	358	0.0015	11.031	0.69	11.390	0.71	0.75	PASS
SWRGM-009793	SWRMH-008749	SWRMH-008747	27	358	0.0015	11.031	0.69	11.390	0.71	0.75	PASS
SWRGM-009592	SWRMH-008747	SWRMH-008745	27	600	0.0015	11.031	0.69	11.390	0.71	0.75	PASS
SWRGM-010063	SWRMH-008745	SWRMH-008743	27	580	0.0015	11.031	0.69	11.390	0.71	0.75	PASS
SWRGM-010078	SWRMH-008743	SWRMH-008741	27	261	0.0015	11.031	0.70	11.390	0.71	0.75	PASS
SWRGM-010132	SWRMH-008741	SWRMH-008739	27	350	0.0015	11.031	0.69	11.390	0.71	0.75	PASS
SWRGM-009524	SWRMH-008739	SWRMH-008737	27	250	0.0014	11.031	0.70	11.390	0.72	0.75	PASS
SWRGM-010266	SWRMH-008737	SWRMH-008735	27	500	0.0015	11.031	0.69	11.390	0.71	0.75	PASS
SWRGM-009952	SWRMH-008735	SWRMH-008733	27	500	0.0015	11.031	0.69	11.390	0.71	0.75	PASS
SWRGM-010183	SWRMH-008733	SWRMH-008731	27	500	0.0015	11.031	0.69	11.390	0.71	0.75	PASS
SWRGM-010113	SWRMH-008731	SWRMH-008729	27	500	0.0015	11.031	0.69	11.389	0.71	0.75	PASS
SWRGM-010165	SWRMH-008729	SWRMH-008727	27	314	0.0015	11.031	0.69	11.389	0.71	0.75	PASS
SWRGM-010201	SWRMH-008727	SWRNJ-000196	27	73	0.0027	11.325	0.57	11.687	0.58	0.75	PASS