SEWER CAPACITY EVALUATION REPORT

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0012108.00

City of Pleasanton

November 2024

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1. INTRODUCTION

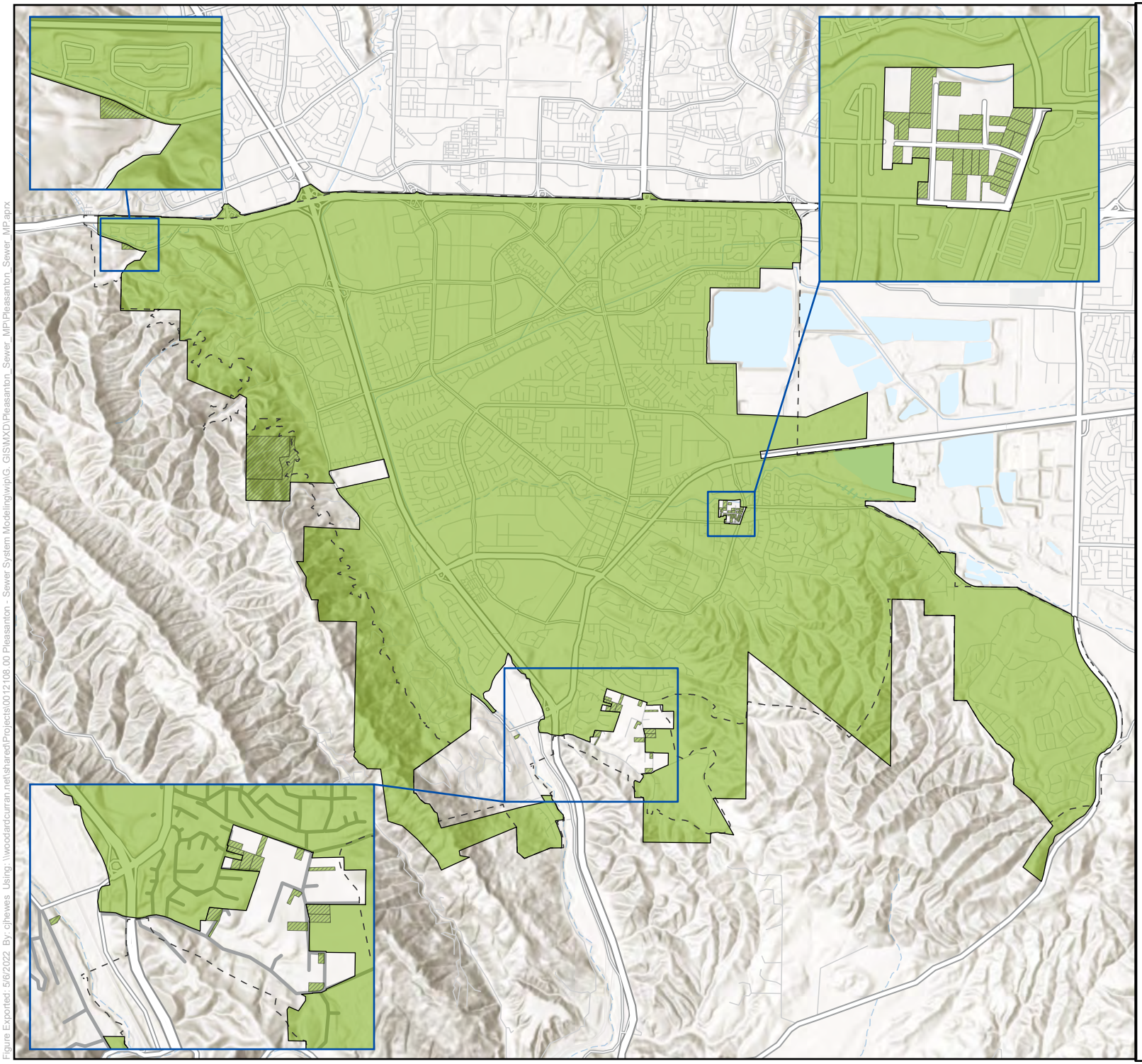
This Capacity Evaluation Report (2024 Capacity Evaluation) summarizes the development of the hydraulic model for the City of Pleasanton (City) sanitary sewer system and describes the capacity improvement projects identified to be included in the City's upcoming Capital Improvement Program. This report describes how the model is configured, discusses the development of the model network and the model loads, and describes the flow monitoring program and model calibration. The calibrated hydraulic model was used to analyze the capacity of the system, identify areas of capacity deficiencies, and develop recommendations for capacity improvements.

The City is located in southern Alameda County and covers approximately 25 square miles. The City's sanitary sewer system consists of approximately 258 miles of pipe, ranging from 4 to 60 inches in diameter, and 12 pumping stations. The majority of the system discharges to the Dublin San Ramon Services District (DSRSD) Regional Wastewater Treatment Facility (WWTF) located on Johnson Drive. The DSRSD plant has a design capacity of 8.5 million gallons per day (mgd) of dry weather flow allocated to the City of Pleasanton. The Ruby Hills development in the far southeastern part of the city discharges to the Livermore Water Reclamation Plant in accordance with the Interjurisdictional Agreement between the two cities. The City's service area is shown in Figure 1-1, and serves as the extent of this study.

Four City trunk sewer pipelines are tributary to the DSRSD WWTP: the Highland Oaks trunk sewer, which services the northwestern portion of the City; the East Amador Trunk Sewer (EATS, also known as the Cross-Town Interceptor), which services the northeastern and northern portions of the City; Lift Station 6 (LS-6) force main, which conveys flow from the central and eastern portions of the City; and the Lift Station 8 (LS-8) force main, which conveys flow from the southern portion of the City.

This 2024 Capacity Evaluation follows the 2007 Wastewater Master Plan[1] (2007 Master Plan). The 2007 Master Plan identified several wet weather capacity deficiencies, but overall noted that the system showed relatively few infiltration/inflow (I/I) problems. This report revisits several of the design assumptions made in the 2007 Master Plan, discusses updates to the land use and associated dry weather flows, and describes the development of a new all-pipes model in Autodesk's InfoWorks ICM™ sewer modeling software, calibrated to new flow monitoring data.

[1] Carollo, *Wastewater System Master Plan*, August 2007



City of Pleasanton
Sewer Collection System
Hydraulic Model Development

Figure 1-1: Existing Sewer Service Area

Legend

- City Limit
- Urban Growth Boundary
- Existing Sewer Service Area
- Out-of-Area Service Agreement

0 0.25 0.5 1 Miles

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Project #: 0012108.00
Map Created: October 2024

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2. HYDRAULIC MODEL OVERVIEW

This chapter provides an overview of the hydraulic model and modeling terminology and the model development process, further detailing the modeled sewer network and facilities. Subsequent chapters describe the flow monitoring program conducted for this study, the basis for estimating existing and future wastewater flows, and calibration of the model.

The modeling software used for the 2024 Capacity Evaluation model update was InfoWorks ICM™ (Version 2023.1), a fully dynamic hydraulic model that has been used for many other collection systems in the Bay Area, including Union Sanitary District, Central Contra Costa Sanitary District, and the Cities of San Jose, Sunnyvale, and Santa Clara. W&C used its own InfoWorks licenses for this work.

2.1 Modeling Terminology

Key modeling terms are defined below.

- **Network** refers to the representation of the physical facilities being modeled. Modeled network components include pipes, manholes, pump stations, etc.
- **Nodes** are primarily manholes, but also include pump station wet wells and outfalls (discharge points from the modeled system). Key data associated with nodes include manhole ground elevations and pump station wet well elevations and cross-sectional areas.
- **Pipes** or **conduits** are connections between nodes and include both gravity sewers and force mains. Key data associated with pipes are upstream and downstream node IDs, pipe length, diameter, roughness and headloss factors, and upstream and downstream invert elevations.
- **Pumps** are modeled individually, connecting pump station wet wells with the upstream node of associated force mains. Data associated with pumps include type (e.g., fixed or variable speed), on and off levels, pump capacities, and pump discharge curves.
- **Subcatchments** are areas that contribute flow to the modeled sewer network. Data associated with subcatchments include sanitary flow (computed based on population, water use, or other available data), type of diurnal sanitary flow profile (which is a function of land use), infiltration/inflow (I/I) parameters, and the node at which the flow from the subcatchment enters the modeled system.
- **Model loads** are the flows entering the modeled sewer system from each subcatchment. Model loads include residential and commercial sanitary or base wastewater flow (BWF), groundwater infiltration (GWI), and rainfall-dependent I/I (RDI/I). As a sum, they represent the total wastewater flow applied to the model.
- **Models** are the combination of a modeled network, its associated subcatchments and loads, and other data (e.g., rainfall, diurnal profiles, inflows from other areas, etc.) that comprise a specific model scenario.
- **Throttle Surcharges** happen in pipes during throttle conditions, or when peak flows are greater than full pipe capacity.
- **Backup Surcharges** happen when a lift station backs up and causes surcharge in upstream sewer pipes.

2.2 Hydraulic Model Network Development

The model network includes the pipes, manholes, and other physical facilities that comprise the modeled sewer system. This chapter describes the modeled system, including how the sewer facilities are represented in the model, the data attributes that describe the facilities, and the processes for validating that data.

2.2.1 Modeled System

The model network for the City developed for this study includes all pipes that are owned by the City. In total, the network includes about 258 miles of pipelines, 5.7 miles of which are force mains. The modeled network is summarized in **Table 2-1** and shown in **Figure 2-1**.

The City's sewer collection system receives flow from approximately 25,000 parcels across Pleasanton, including from the private Castlewood community. The Castlewood portion of the collection system is owned and operated by the private property owner's association. Flow from Castlewood is collected at LS-10 and pumped to Pleasanton through a 6-inch diameter force main that discharges to the gravity sewer on Marlyn Murphy Kane Trail and Laguna Creek Lane. Flow from the Castlewood area is ultimately pumped to the DSRSD treatment plant via LS-8

The flow from the Ruby Hills neighborhood of Pleasanton, is not conveyed to DSRSD but flows north and discharges to the Livermore Water Reclamation Plant. The City of Pleasanton owns and maintains the gravity sewer until it reaches Isabel Avenue, from where the flow is conveyed through sewers owned and operated by the City of Livermore to the Livermore Water Reclamation Plant.

Table 2-1: Modeled System Summary

Facility	Quantity	Size/Capacity
Gravity Sewer	1,335,370 ft. (252.9 miles)	6 to 60 inch
Force Main	29,945 ft. (5.7 miles)	6 to 18 inch
Pump Stations (see **Table 2-2**)	12	0.69 to 7.6 mgd

Figure 2-1: Modeled Network

Pleasanton Capacity Evaluation Report

East Amador Trunk Sewer (EATS)

EALS Pump Station

Highland Oaks Trunk Sewer

Ruby Hills neighborhood flows North to the Livermore Water Reclamation Center.

Ruby Hills Neighborhood

Castlewood Community

Pleasanton

Legend

Modeled Gravity Sewers
- >15in
- ≤15in

Non-City Maintained Sewer (Not Modeled)
- DSRSD
- LAVWMA
- Other Private Sewers
- City Force Main
- Private Force Main

Lift Stations
- City Lift Station
- DSRSD
- Private Lift Station

0 0.25 0.5 1 Miles

California State Parks, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, USFWS, Esri, NASA, NGA, USGS, FEMA, Bureau of Land Management, Esri, HERE, Garmin, INCREMENT P, Intermap, NGA, USGS

Map Created: May 2024

Figure Exported: 8/5/2024 By: nhanson Using: \\woodardcurran.net\shared\Projects\01210\8.00 Pleasanton - Sewer System Modeling\wip\G. GIS\MXD\Pro_Files\Pleasanton_Capacity_Report_Figs.aprx Layout: Fig 2-1 Model Network

2.2.2 Model Network Construction and Validation

The primary data used to create the model network was provided by the City as GIS shapefiles of the sewer system pipes, manholes, and other structures. Asset properties such as pipe diameter, length, invert elevations, and material were defined within the City's GIS.

For areas with missing data or in areas where more information was needed to construct the model, invert elevations were interpolated between known inverts, or additional PDF maps and as-built drawings were reviewed to find missing or verify suspect data.

The City's entire sewer system was imported to InfoWorks ICM. A fully connected all-pipe network was created which allowed modeled wastewater flows for individual parcels to load to their respective sewer. Additional discussion of load development and allocation is provided in **Chapter 4**.

The model construction and validation process included the following:

- The model network was checked for connectivity, i.e., verifying that correct upstream/ downstream manholes were identified for each pipe and that there were no missing links in the network.
- Manhole and pipeline network data, including rim and invert elevations and pipeline sizes, were refined from the City's GIS based on the following data sources:
    - Where invert elevation data were missing or inconsistent with nearby elevations, and not determined through as-built information, interpolated values between known values were used as appropriate. Interpolation was used to infer inverts for approximately 80 manholes out of 6,600 manholes included in the model, and generally limited to no more than 2 pipe segments in a row. Based on discussion with City staff, this level of inference was unlikely to significantly impact the model's accuracy for predicting significant surcharge.
    - Elevation data in the PDF maps and in the as-builts were adjusted as needed to the NAVD 88 datum. The adjustment used to convert from NGVD 29 to NAVD 88 was +2.49 feet.
    - A ground model was built using 1-meter digital elevation model (DEM) tiles downloaded from the USGS National Map[1] and was used to where rim elevation data was not included in the City's GIS data.
- Based on the data provided by the sources above, profiles were plotted for each series of pipe segments in the modeled network to visually check for missing or suspect data. Where data indicated a discrepancy (e.g., reverse slope), record drawings or other information was requested from the City, and an approach to resolve the discrepancy was identified.
- The sources of model data (e.g., PDF map, as-built/record drawings, etc.) were documented using "flags" in the model database.
- Each subcatchment represents a single assessor parcel in the City. Each subcatchment was first assigned to a pipe in the all-pipe network based on its proximity to the closest sewer main. The subcatchment load points were refined based on review of the GIS data and as part of the calibration process (discussed further in **Chapter 5**).

[1] Elevation data were downloaded from the USGS 3D Elevation Program (3DEP), available here: https://www.sciencebase.gov/catalog/item/5eaa4f2a82cefae35a220e0f (last updated 2013).

- All gravity pipelines were modeled assuming a Manning's n of 0.013 (except as needed during calibration; see **Chapter 5** for more details).

2.2.3 Pump Stations

All of the City's twelve active sewer system pump (lift) stations were included in the all-pipe network model (the East Amador Lift Station (EALS) which is owned by DSRSD was also included in the model). Pump data summary sheets provided by the City, available record drawings for the lift stations, and data from the 2007 Master Plan were used to configure the pump stations in the model. Pump on/off levels (converted to elevations) were based on the on/off wet well levels indicated in the pump station summary sheets and as-builts, or assumed values based on the previous model. Pump station firm capacity (with largest pump out of service) and total capacity (with all pumps active) were estimated for each pump station based on a comparison of the pump and system curves or the values listed in the 2007 Master Plan. A summary of the pump stations included in the model is presented in **Table 2-2**. As indicated in Table 2-2, LS-6 and LS-8 were evaluated in more detail due to backup surcharge during calibration. For a detailed discussion of these lift stations, see **Chapter 5.2.1**. Pump and system curves for LS-6, LS-7, and LS-8 are included in **Appendix A.**

Table 2-2: Modeled Lift Stations

Pump Station	Description	Force Main Diameter (inches)	Force Main Length (feet)	Firm Capacity (mgd)[a]	Total Capacity (mgd)[b]
LS-2	Oak Tree Farms	8, 14	214, 277	0.19	0.38
LS-4	Valley Business Park	10	354	0.55	1.1
LS-5	San Francisco	10	775	2.1	3.2
LS-6	Arroyo Mocho	20	2,700	5.2[c]	5.5[c]
LS-7	-	18	910	7.5[d]	9.2[d]
LS-8	Bernal Business Park	18	10,000	3.4[e]	4.4[e]
LS-10	Castlewood	6	855	0.35	0.69
LS-12	Sunol	6	1,900	0.49[f]	0.55[f]
LS-14	Happy Valley	4	1,145	0.22[f]	0.40[f]
LS-15	-	6	840	NA	NA
EALS	East Amador List			3.6	7.2

a. Firm capacity is defined as the capacity with the largest pump out of service. The values shown reflect the listed capacity of the lift stations based on the 2007 Master Plan, unless indicated otherwise.
b. Total capacity is defined as the capacity with all pumps in service. The values shown reflect the listed capacity of the lift stations based on the 2007 Master Plan, unless indicated otherwise.
c. Firm and total capacity listed for LS-6 are based on capacity prior to surcharging. LS-6's rated capacity based on pump curves is 6.6 mgd. During calibration, pump curves were derated by 15 percent based on observed flows and wet well level (as discussed further in Chapter 5). The City has recently replaced pump impellers of all S-6 pumps and will re-evaluate pump performance at a later date.
d. LS-7 capacity was estimated based on pump curves dated 11/11/2008. However, recent pump capacity test results were not available.
e. LS-8 capacity based on pump station flow data recorded during the 12/31/2022 storm event. Capacity indicated in the 2007 Master Plan was 4.0 and 6.1 mgd (firm and total capacity, respectively).
f. LS-12 capacity was estimated based on pump curves dated 10/3/2000. LS-14 capacity was estimated based on pump curves dated 11/4/2002.

3. FLOW MONITORING PROGRAM

To support the development of the hydraulic model, a temporary flow monitoring program was conducted as part of this study. The purpose of the flow monitoring program was to obtain data to quantify flows and characterize I/I in the system, and to calibrate the hydraulic model for both dry weather and wet weather conditions.

3.1 Flow Monitoring and Rain Gauge Sites

Prior to this Capacity Evaluation, flow monitoring was performed as part of the 2007 Master Plan and the 2012 Sanitary Sewer Flow Monitoring and Inflow/Infiltration Study. For the 2007 Master Plan, flow monitoring was conducted at 11 sites on sewers across the City during the 2003/2004 wet weather season, and five recording rain gauge were installed. For the 2012 Sanitary Sewer Flow Monitoring and Inflow/Infiltration Study, flow monitoring was conducted at 7 sites on sewers in the northwest part of the City (known as Flow Meter Basin 3 and 3A) during the 2011/2012 wet weather season, and one recording rain gauge was installed. This Capacity Evaluation flow monitoring program comprised 14 temporary gravity flow meters and 7 rain gauges (4 installed for the program and 3 existing City gauges) placed throughout the collection system for a period of two months from December 2022 through February 2023. V&A Consulting Engineers (V&A), under sub-contract to Woodard & Curran, installed the flow meters and rain gauges and conducted the monitoring.

Flow meter sites were selected to supplement and confirm the monitoring that was completed in 2003/2004 and 2011/2012. For example, where capacity issues were previously observed, additional meters were installed upstream within that tributary meter basin to further isolate flow and determine possible I/I locations. The location of the flow monitoring sites and rain gauges are shown in **Figure 3-1.** Note that some meters were located downstream of other meters. In those cases, the meter tributary areas are "incremental" (areas between the flow meter and tributary basins of the upstream flow meters). **Table 3-2** lists the flow meter locations and pipe diameters, and notes which meters are incremental (have upstream meters).

In addition to the temporary flow meters and rain gauges, the City also provided pump station flow data for the East Amador Lift Station, the Highland Oaks Siphon, LS-6, LS-7, and LS-8 as well as flow data into the DSRSD WWTP for the 2022/2023 flow monitoring period.

A schematic showing the temporary flow meters and pump stations is presented as **Figure 3-2**. Plots of the 2022/2023 flow monitoring data, including flow, velocity, and level, are provided as **Appendix C**.

There were several significant rainfall events during the 2022/2023 flow monitoring period, including events that exceeded the intensity of the 10-year design storm used in the 2007 Master Plan (see **Table 3-1** and **Chapter 4** for more detail on rainfall).

Table 3-1: Rainfall Summary[a]

Duration (hr)	12/26/2022 - 1/15/2023	
	Max Depth (in.)	Max Return Period[a]
1 hr	0.74	> 5 yr
6 hr	2.12	> 10 yr
12 hr	4.13	> 50 yr
24 hr	4.88	>25 yr
2-day	6.26	>25 yr
3-day	6.71	>25 yr
7-day	8.99	>25 yr
10-day	10.64	>25 yr
20-day	17.84	>200 yr

a. Maximum depth (in) and return period for Central Pleasanton from NOAA Atlas 14

Table 3-2: Flow Meter Locations

Flow Meter ID (FM ID)	Upstream FM ID(s)	Manhole ID[a]	Diameter (in)[b]	Location
FM01		40501433	24	7399 Johnson Dr
FM02	FM3, 3A	40501402	33	6852 Inglewood Ct
FM03	FM3A	40501094	27	4225 Hacienda Dr
FM03A		40501373	10	3869 Kamp Dr
FM04	FM6, 7, 9	40502342	27	3986 Petrified Forest Ct
FM05	FM7	40502097	30	6900 W Las Positas Blvd
FM06	FM7	40502824	18	6203 Hansen Dr
FM07		40503318	15	3955 Vineyard Ave
FM08	FM10, 10A, 11	40503680	27	6880 Koll Center Pkwy
FM09		40503986	18	7699 Bernal Ave
FM10	FM10A, 11	40504085	24	5001 Case Ave
FM10A		40504357	10	5420 Sunol Blvd
FM11		40503892	12	100 Abbie St
FM12		40504629	12	801 Piemonte Dr

a. Flow meters were placed in the downstream end of the influent pipe to the manhole.
b. GIS pipe diameter. Actual diameter as measured by V&A may be slightly different.

Figure 3-1: Flow Meter Locations

Pleasanton Capacity Evaluation Report

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Legend

- Flow Meter Locations
- Rain Gauge Locations
- Modeled Gravity Mains
- Private Force Main
- City Force Main
- Sewer Lift Station

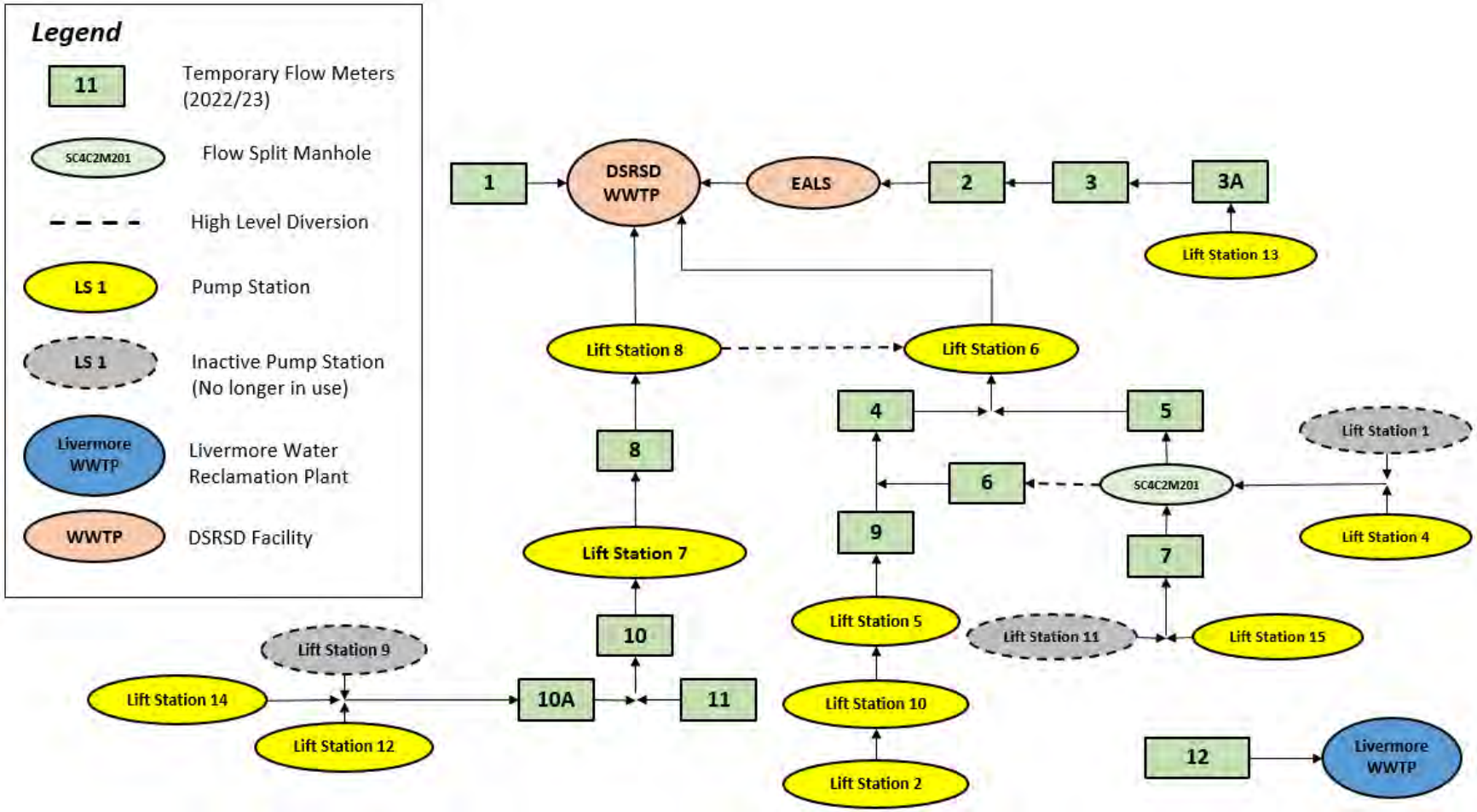
0 0.25 0.5 1 Miles

Woodard & Curran

THE CITY OF PLEASANTON

Map Created: May 2024

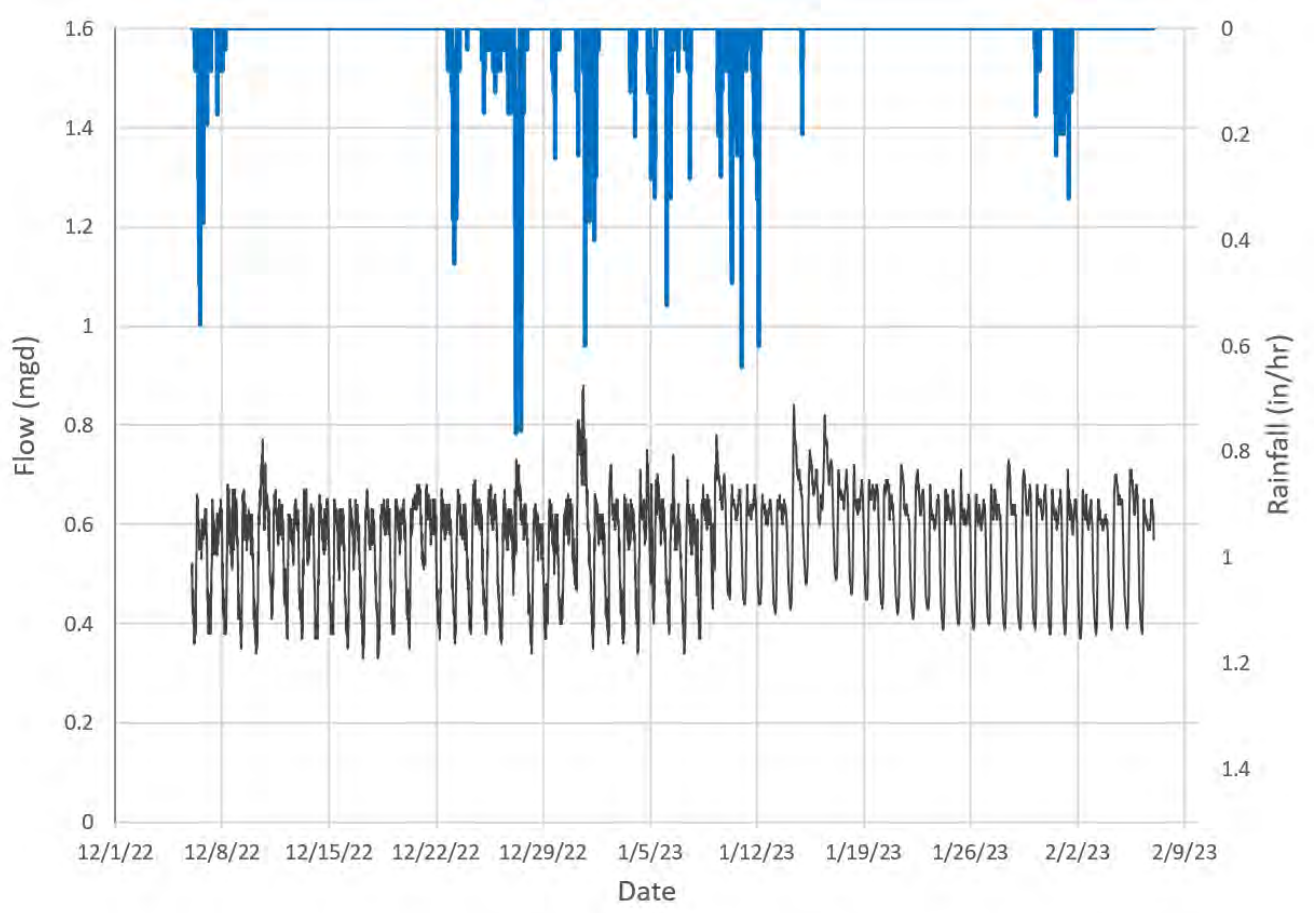
Figure 3-2: Flow Meter & Pump Station Schematic



3.2 Flow Monitoring Data

During the flow monitoring program, V&A routinely inspected the flow meters, and temporary flow meter data was uploaded on a continuous basis through the Claros™ online portal. In addition to V&A's internal data review and quality control procedures, Woodard & Curran staff periodically reviewed the preliminary flow meter data over the course of the monitoring program to inspect for changes in flow indicating potential problems with the flow meter (e.g., debris buildup on the sensor), change in system operation or potential customer discharges, or response to wet weather events. V&A provided "final" (quality controlled and adjusted data) after the conclusion of the program. **Figure 3-3** shows typical plots of measured flow and rainfall for one flow meter for the flow monitoring period. Several significant storms occurred during the monitoring period, particularly from late December through mid-January.

Figure 3-3: Plot of Typical Flow Data For Flow Monitoring Period



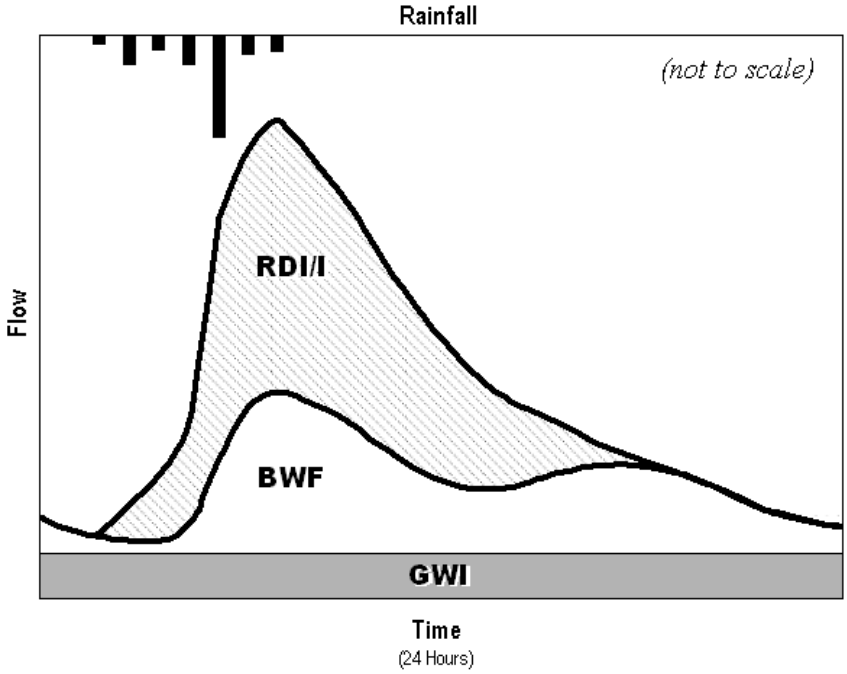
4. FLOW ESTIMATING METHODOLOGY

This chapter describes how wastewater flows were incorporated in the model. This chapter includes information on existing wastewater flows (base wastewater flows), future wastewater flows which account for proposed developments across the City, diurnal patterns for wastewater for residential and non-residential use, and groundwater infiltration.

4.1 Wastewater Flow Components

Wastewater flows include three components: base wastewater flow (BWF), groundwater infiltration (GWI), and rainfall-dependent infiltration/inflow (RDI/I), as illustrated conceptually in **Figure 4-1**.

Figure 4-1: Wastewater Flow Components



BWF represents the sanitary and process flow contributions from residential, commercial, institutional, and industrial users of the system. BWF varies throughout the day, but typically follows predictable diurnal patterns depending on the type of land use. (Note: in InfoWorks terminology, BWF is referred to as "foul flow".)

GWI is groundwater that infiltrates into defects in sewer pipes and manholes, particularly in winter and springtime in low-lying areas. GWI is typically seasonal in nature and remains relatively constant during specific periods of the year. However, rainfall typically has long-term impacts on GWI rates, as evidenced by measurable increases in GWI after prolonged periods of rainfall. (Note: in InfoWorks terminology, GWI is referred to as "baseflow".)

RDI/I is storm water inflow and infiltration that enter the system in direct response to rainfall events, either through direct connections such as holes in manhole covers or illegally connected roof leaders or area drains, or, more commonly, through defects in sewer pipes, manholes, and service laterals. RDI/I typically result in short term peak flows that recede relatively quickly after the rainfall ends. The magnitude of RDI/I flows are related to the intensity and duration of the rainfall, the relative soil moisture at the time of the rainfall event, and the condition of the sewers. (Note: in InfoWorks terminology, RDI/I is referred to as "runoff").

4.2 Base Wastewater Flow

Existing residential and non-residential base wastewater flows for the entire City were estimated using information compiled at the parcel level (approximately 25,000 parcels). The total residential and non-residential BWF for each model subcatchment were calculated by summing the BWF for each corresponding parcel.

Existing BWF Loads

Existing BWF was determined based on individual parcel water billing data provided by the City. Metered water use during the winter months most closely approximates wastewater generation, since outdoor water use is at a minimum. Therefore, meter readings averaged over winter months (January, February, March, April) from 2017 through 2021 (with 2020 being omitted due to its assumed irregular water usage due to COVID19 stay-at-home orders) were used as the basis for estimating residential and non-residential BWF.

In some cases, the model loads developed for the Master Plan were updated during dry weather calibration to better match observed flows. Slight differences between current system flows and the 2017-2021 consumption could be attributed to a few factors, such as the COVID-19 pandemic, water conservation, and conversion to recycled water for some industrial users. One of those adjustments included applying a cap of 300 gallons per day (gpd) to single-family residential accounts within the system to remove potential outliers with significantly higher water use, which could reflect irrigation during the winter months. This cap was used most extensively for the Ruby Hills neighborhood, which seemed to have significantly higher water usage even during the winter months. Return factors (typically 80 or 90 percent) were also applied to other residential and non-residential accounts in select parcels, based on the observed flow monitoring data. The wastewater return factor is defined as the proportion of water used that is returned to the wastewater collection system.

All water billing records were geocoded according to parcel assessor parcel number (APN) or to address where parcel APN did not match between the water meter shapefile and the water billing data. The geocoded consumption data was assigned a customer type (commercial or residential) based on the Use Code in the water billing data.

Future BWF Loads

Future BWF was estimated based on a list of 253 development projects that was compiled by Woodard & Curran by combining data from the 2020 Tri-Valley Demand Study[1], data from the City's Housing Element developed by the City's Community Development Department (CDD), and several East Pleasanton Specific Plan (EPSP) projects located near or outside the City's existing urban growth boundary . This list was updated again with the latest Housing Element developed by the CDD in 2022. These are planned projects that will likely be constructed in the near-term (within approximately 10 years). Flows were calculated based on the associated land use or zoning description that was provided by the City and applied flow factors summarized in **Table 4-1**. To estimate future flows associated with residentially zoned parcels, the number of units was multiplied by a flow factor. The flow factor for single family residential parcels (160 gpd/unit) was estimated based on the water billing data (i.e., average consumption of a single-family dwelling). Since unit count data for multi-family parcels was not available in the water billing data, a flow factor of approximately 80 percent of single family water usage was assumed for multifamily dwelling units. To estimate future flows associated with non-residential or commercial development for mixed use parcels, the square footage of the parcel was multiplied by an assumed floor-area-ratio (FAR) based on land use category and then multiplied by a typical flow factor of 0.1 gallons per day (gpd) per square foot.

Table 4-1: Unit Base Wastewater Flow Factors For Future Development

Development Type	Unit	BWF Factor (gpd/unit)
Single Family Residential (SFR)[a]	Dwelling Units	160
Multi-Family Residential (MFR)[b]	Dwelling Units	130
Accessory Dwelling Unit (ADU)[c]	Dwelling Units	130
Non-Residential (NR)	Square feet[d]	0.1
EPSP Non-Residential (NR)[e]	Square feet	0.05

a. Based on average billing data for single family water usage between 2017 and 2021 (excluding 2020).
b. Typical factor of 80% of single-family water usage.
c. ADU's assumed to have flow similar to multifamily units. However, potential future ADUs have not been included in future loading scenarios.
d. Square footage assumptions of future development matches the criteria outlined in the 2020 Tri-Valley Demand Study.
e. A special non-residential unit flow factor was used in the East Pleasanton Specific Plan (EPSP) plan area to match the assumed flows in the Water Master Plan for this area.

For developed parcels planned for redevelopment, it was assumed that the future BWF would replace the existing BWF, unless otherwise noted on the future development plans. For developed parcels that are not planned for redevelopment, the current flow based on water billing data was assumed to characterize their BWF in the future. Future flow assumptions broken out by residential versus non-residential and type of project are shown in **Table 4-2**.

1. Woodard & Curran, *2020 Tri-Valley Demand Study Municipal and Industrial Demand Study*, 2021

Table 4-2: Future Base Wastewater Flow Assumptions

Type of Development	Average Base Wastewater Flow		
	Existing (mgd)	Future (mgd)	Total BWF (mgd)
Residential	**4.03**	**0.76**	**4.79**
Single Family (including Castlewood)	3.11	0.18	3.29
Multifamily	0.92	0.58	1.50
Non-Residential	**1.30**	**0.34**	**1.63**
Total	**5.32**	**1.10**	**6.42**

The list of specific future developments within Pleasanton, including a map, locations, land uses, assumptions, and estimated flows, is provided as **Appendix D**.

BWF Diurnal Patterns

BWF varies throughout the day in a typical way, generally peaking early in the morning in most predominantly residential areas. Typical hourly peaks from residential areas tend to be about twice the average flow. Higher peaks can occur on atypical days of the year (e.g., on major holidays such as Thanksgiving or at halftime on Super Bowl Sunday). For Pleasanton, typical diurnal profiles were developed for residential and commercial/industrial (non-residential) wastewater flow, for both weekend and weekday conditions. The profiles are applied to the subcatchment BWF in the model. The residential profiles were developed based on monitored flows for primarily residential meter areas, and the non-residential profile is based on typical non-residential flow profiles for similar areas. The diurnal profiles used in the model are shown in **Figure 4-2** and **Figure 4-3**.

Figure 4-2: Residential Diurnal Profiles

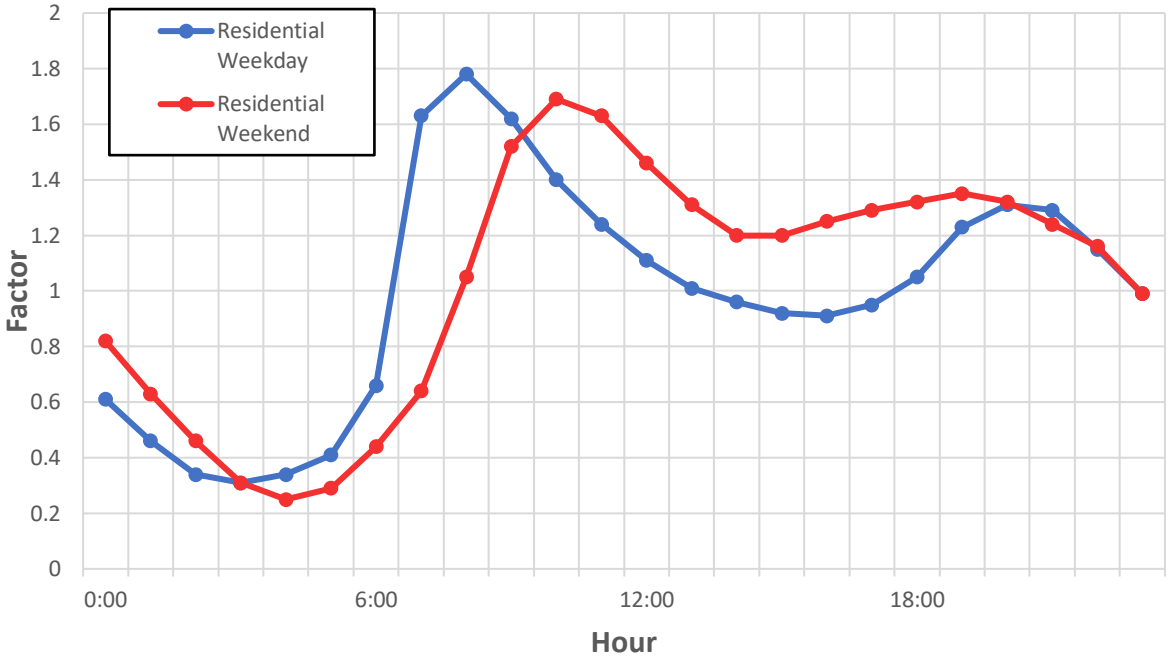
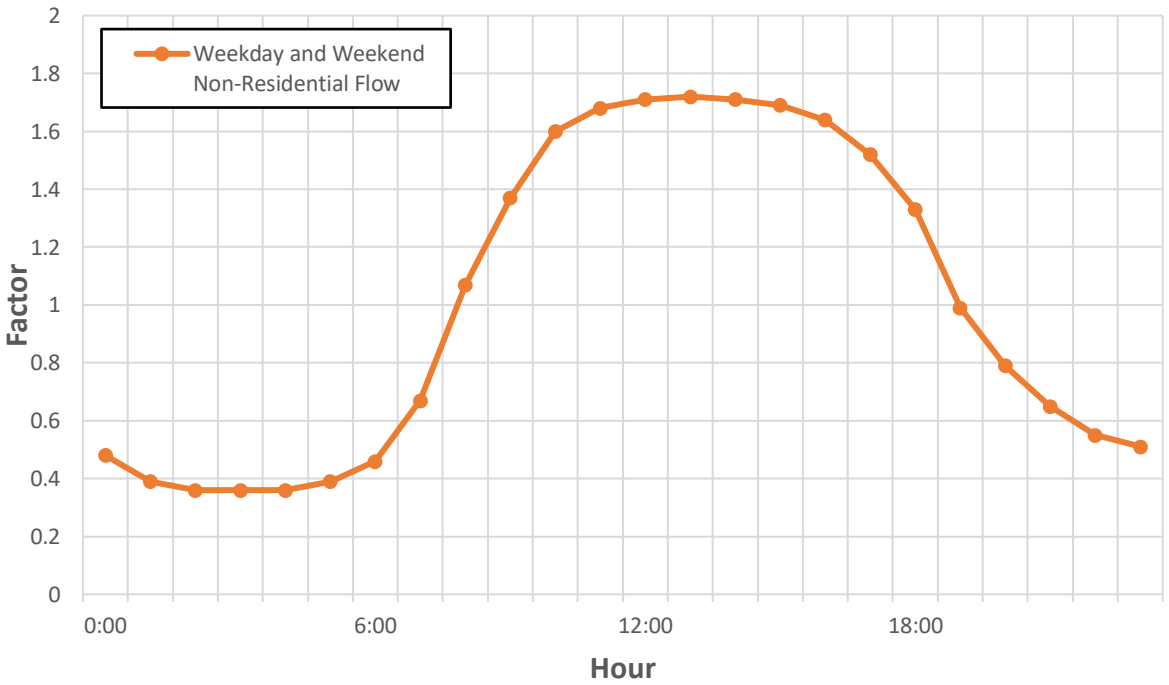


Figure 4-3: Weekday and Weekend Non-Residential Diurnal Profiles



4.3 Groundwater Infiltration

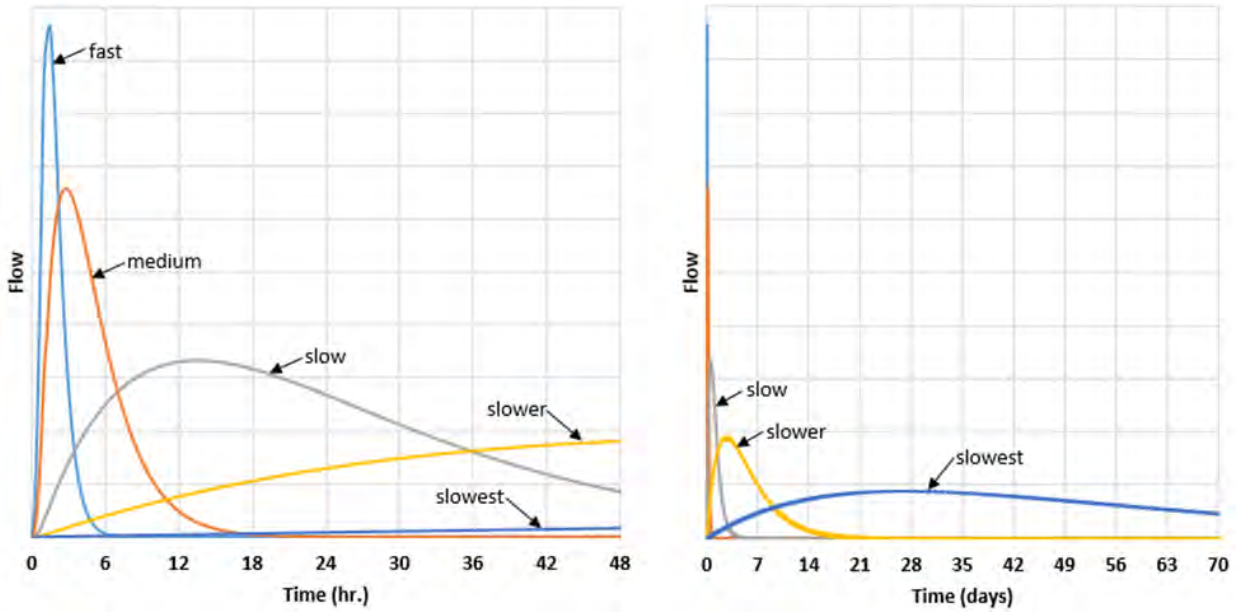
GWI represents a seasonal increase in wastewater flows due to infiltration into the sewers, typically in low-lying areas or areas close to creeks or other water bodies. GWI is applied in the model as a constant flow in addition to the BWF. The amount of GWI in any particular area of the sewer system is determined during model calibration by comparing the modeled flows to the actual observed dry weather (non-rainfall period) flows at points in the system where flow data are available (e.g., at flow meter sites). Where modeled BWF is less than monitored dry weather flow by a relatively constant value throughout the day, the difference is assumed to represent GWI. The GWI determined at the monitoring location is then distributed to the upstream meter tributary area on a weighted per-contributing area basis. For most parcels, the contributing area was set equal to the total parcel area. However, contributing areas for non-vacant single family residential parcels were capped at a maximum of 1 acre, and contributing areas for all other non-vacant parcels were capped at a maximum of 5 acres. Note that because GWI is seasonal in nature, the modeled GWI is intended to represent a typical GWI rate during the wet weather season (wintertime) rather than a dry season (summertime) GWI.

4.4 Rainfall-Dependent Infiltration and Inflow

RDI/I results from rainfall events that produce infiltration and inflow of storm water runoff into the sanitary sewer system. RDI/I can be quantified as the difference between the total flow during and immediately following a storm event and the non-rainfall "base flow" (BWF plus GWI) that is estimated to have occurred during the storm period. RDI/I varies depending on many factors including the magnitude and intensity of the storm event, area topography, type of soil and the degree of soil saturation (due to antecedent rainfall) prior to the storm event, and the condition of the sewers, manholes, and service laterals. RDI/I is usually expressed as a volume or a percentage of the rainfall volume (termed the "R value") entering the sewer system from subcatchment contributing areas for each of several flow components representing different response patterns to rainfall events (e.g., fast, medium, slow).

For this modeling effort, five RDI/I response components were used, with each component identified by a percentage of the total RDI/I volume and other parameters that reflect the timing of the flow response, as illustrated in **Figure 4-4**. The "fast" component of the hydrograph has the largest impact on the magnitude of the peak wet weather flow response, while the slower components can contribute significantly to the total volume of the RDI/I response. The slowest response component can extend out many days or weeks after the rainfall (alternately, this component could be represented as an increase in GWI). Summing all of the component hydrographs for the duration of the rainfall events results in the total RDI/I hydrograph for that area. R values and hydrograph parameters are determined through the process of wet weather model calibration, discussed in **Chapter 5.2** of this report, in which actual observed rainfall events are simulated in the hydraulic model, and the resulting model hydrographs are compared to the measured flows at the flow meter locations. The RDI/I parameters are adjusted as needed to achieve the best match of modeled to monitored flows. The same calibrated parameters are generally applied to all subcatchments within each meter area. Once calibrated, the model RDI/I parameters can be applied to a design storm to simulate wet weather flows for a design event.

Figure 4-4: RDI/I Hydrograph Components



5. MODEL CALIBRATION

This section discusses the results of model calibration. Model calibration is the process of comparing model-simulated flows to monitored (observed) flows and adjusting model parameters until a reasonably good match is achieved. During calibration, it is not expected that modeled flows match the observed (metered) flows for every meter location at all times, but modeled flows at most meters should reasonably match the flow volumes and peak flows in the observed data. Model calibration is achieved first through comparing modeled versus metered flows during a dry weather (non-rainfall) period to achieve an accurate prediction of BWF and GWI, and then during a wet weather period to estimate the RDI/I response.

5.1 Dry Weather Calibration

The 7-day dry period from December 15 through December 21, 2022, was used as the dry weather calibration period for comparing flow data from the 2022/2023 flow monitoring program to model simulated flows. The primary focus of the dry weather calibration was to confirm that the calculated average BWF based on winter water consumption was consistent with the measured flows at the meter locations. The other objectives of the dry weather calibration were to confirm the flow routing in the system, particularly in areas where flow can be diverted in more than one direction (flow splits), as well as to confirm the diurnal profiles used to represent the hourly variations in BWF. The diurnal curves shown in **Figure 4-2** were developed and/or confirmed based on the calibration.

GWI was added when the observed (metered) dry weather hydrographs were greater than the model-simulated hydrographs by a relatively constant value throughout the day. GWI was applied in 4 of the 14 flow meter areas; estimated rates ranging from about 100 gpd/acre up to 525 gpd/acre were applied uniformly throughout selected flow meter areas for a total of 0.61 mgd of additional flow to the system. It should be noted that it may be difficult to assess the actual amount of GWI in any given area, as the relative accuracy of the flow monitoring data, water consumption data, and other model assumptions may affect the amount of flow attributed to GWI. However, this methodology is considered adequate for modeling purposes.

Table 5-1 compares the model versus meter average dry weather flow at each meter location, and **Figure 5-1** and **Figure 5-2** show plots of model versus metered dry weather flow for the total flow at the LS-6, and FM01 respectively. In these graphs, the green line represents the monitored (observed) flow and the red line represents the model-simulated flow. As indicated in **Table 5-1**, the dry weather model calibration resulted in a reasonably good match of modeled to metered flow (within 10 percent at most locations). Note that FM-2 was used in place of EALS flow data since it appears the lift station flows are lower than expected based on the data from FM-2 and FM-3.

Dry weather calibration plots of model-predicted versus metered flows at all flow meter and pump station locations are provided as **Appendix E**.

Table 5-1: Dry Weather Flow Calibration Results

Location	Incremental[a]				Total[b]					
	Incremental Contributing Area (acre)	GWI (gpd/acre)	Return Factor Applied (%)	Modeled BWF (mgd)	Total Contributing Area (acre)	Model BWF (mgd)	Meter ADWF (mgd)[c]	Model ADWF (mgd)	Difference (mgd)[d]	Difference (%)[d]
FM01	564	354	100%	0.51	564	0.51	0.74	0.68	-0.06	9%
FM02	569	527	100%	0.65	1392	2.03	2.47	2.33	-0.14	6%
FM03	640	0	90%	1.25	822	1.38	1.33	1.38	0.05	-4%
FM03A	183	0	70%	0.14	183	0.14	0.13	0.14	0.01	-8%
FM04	340	0	70%	0.21	1190	0.61	0.81	0.89	0.08	-9%
FM05	718	0	70%	0.59	1242	1.08	0.70	0.78	0.07	-10%
FM06	245	0	70%	0.20	245	0.20	0.47	0.49	0.02	-3%
FM07	524	0	100%	0.49	524	0.49	0.39	0.39	-0.01	2%
FM08	141	355	100%	0.12	1048	0.89	1.02	0.95	-0.07	7%
FM09	605	0	70%	0.20	605	0.20	0.19	0.20	0.01	-4%
FM10	262	0	100%	0.37	907	0.78	0.71	0.69	-0.02	2%
FM10A	369	108	100%	0.20	369	0.20	0.28	0.28	0.00	0%
FM11	276	0	80%	0.21	276	0.21	0.15	0.16	0.01	-4%
FM12	450	0	60%	0.15	450	0.15	0.13	0.15	0.02	-13%

a. Represents the incremental area and base wastewater flow of the meter's incremental sewershed (i.e., does not include areas that are upstream of tributary meters). Calibration parameters (GWI and return factor), are applied to the incremental area.
b. As measured at the meter. Contributing area represents the entire area tributary to the meter (including the area of tributary meters).
c. Meter ADWF is reported based on the 2022/2023 flow monitoring program.
d. Difference is reported as model flow minus meter flow.

Figure 5-1: Dry Weather Calibration Graph (FM01)

Figure 5-2: Dry Weather Calibration Graph (LS-6)

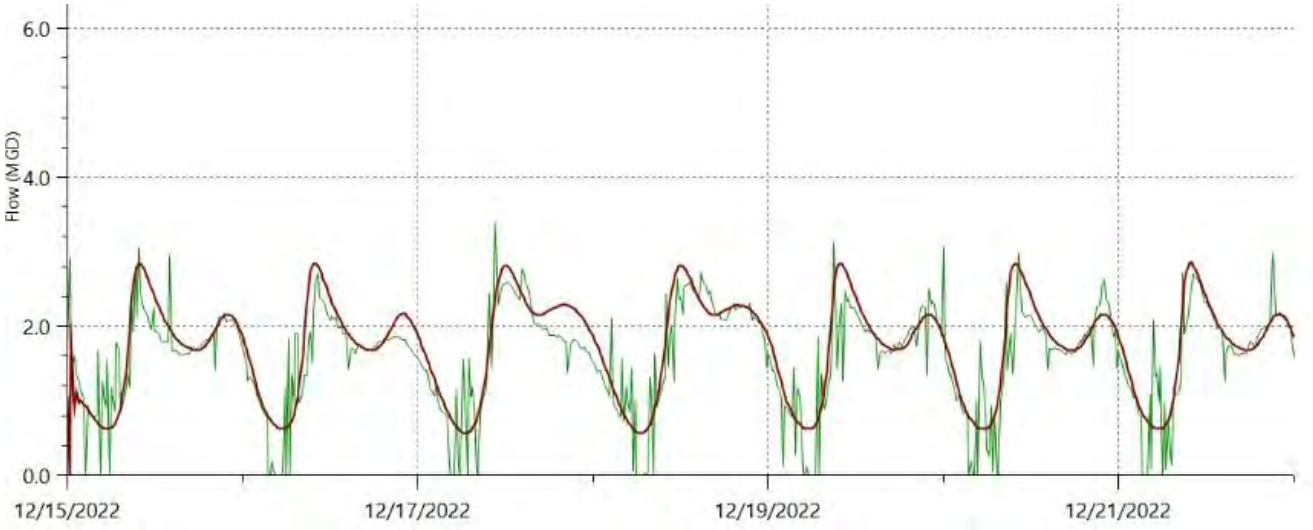


Table 5-2 summarizes the total estimated dry weather flow (DWF) within Pleasanton's sewer system based on the model calibration and the existing loads described previously.

Table 5-2: Dry Weather Flow Summary

Flow Component	Flow (mgd)
Residential BWF	4.03
Non-Residential BWF	1.30
Total Average BWF	**5.32**
Estimated GWI[a]	0.61
Total Average DWF	**5.93**

a. Calculated based on difference between metered non-rainfall period. Flows and estimated BWF calculated from winter water use data.

5.2 Wet Weather Calibration

During wet weather calibration, the percentage volume of each of five RDI/I components (pictured in **Figure 4-4**) are adjusted to simulate the volume and timing of RDI/I for monitored storm events in order to best match the overall wet weather hydrograph shape and magnitude of peak flows. To simulate a rainfall event in the model, rainfall is assigned to subcatchments using observed data from the closest available rain gauge. The model-predicted wet weather response, which is based on the assigned rainfall intensity and RDI/I components, is then compared to observed flows (typically either flow monitoring or pump station SCADA data). The flow monitoring program conducted in winter of 2022/2023 as part of this Capacity Evaluation (refer to **Chapter 3**) provided all the necessary data for wet weather calibration.

Through the wet weather calibration process, RDI/I hydrograph parameters were developed for each metered area. Wet weather calibration was primarily performed for the period from December 26, 2022, through January 17, 2023. Initial rainfall in late December allowed for wet antecedent conditions for the large December 31st storm event. Rainfall for key events referenced for the wet weather calibration is summarized in **Table 5-3**.

Table 5-3: Rainfall Events Referenced for Wet Weather Calibration[a]

Start of Event	End of Event	Duration (hr)	Total Rainfall (in)	Peak 1-Hour Intensity (in/hr)[b]	24-hour Max Rainfall (in)	24-hour Storm Return Period[c]
12/10/22	12/12/22	52	3.35	0.8	2.84	2 - 5 -yr
12/26/22	12/27/22	22	2.28	0.64	2.28	1 - 2 -yr
12/28/22	12/31/22	74	6.70	0.96	4.88	25 - 50 -yr
1/2/23	1/2/23	19	0.51	0.24	0.51	< 1-yr
1/4/23	1/5/23	26	2.30	0.72	1.86	< 1-yr
1/7/23	1/7/23	12	0.28	0.28	0.28	< 1-yr
1/8/23	1/8/23	21	1.89	0.64	1.89	1-yr
1/10/23	1/11/23	42	1.24	0.6	0.86	< 1-yr
1/13/23	1/16/23	80	4.33	0.64	2.24	1 - 2 -yr
1/18/23	1/18/23	11	0.23	0.16	0.23	< 1-yr
2/3/23	2/3/23	9	0.24	0.16	0.24	< 1-yr
2/4/23	2/5/23	29	1.17	0.44	0.93	< 1-yr

a. Rainfall totals are averaged from the 7 rainfall gauges installed during the flow monitoring period.
b. 1-hour intensity is reported as an hourly average of 15-minute rainfall data.
c. Approximate return period based on local NOAA 14 precipitation statistics and 24-hour rainfall total.

Results of the wet weather calibration for the wet weather flow periods discussed above are presented in **Appendix F,** which contains copies of the wet weather calibration graphs for the lift stations and flow meters. Graphs of the wet weather calibration results at FM-01 and LS-6 for the December-January wet weather calibration period are presented in **Figure 5-3** and **Figure 5-4**. The calibration graphs show that a reasonably good match was achieved at most flow meters for both peak flows and volume.

Figure 5-3: Wet Weather Calibration for December-January 2023 (FM01)

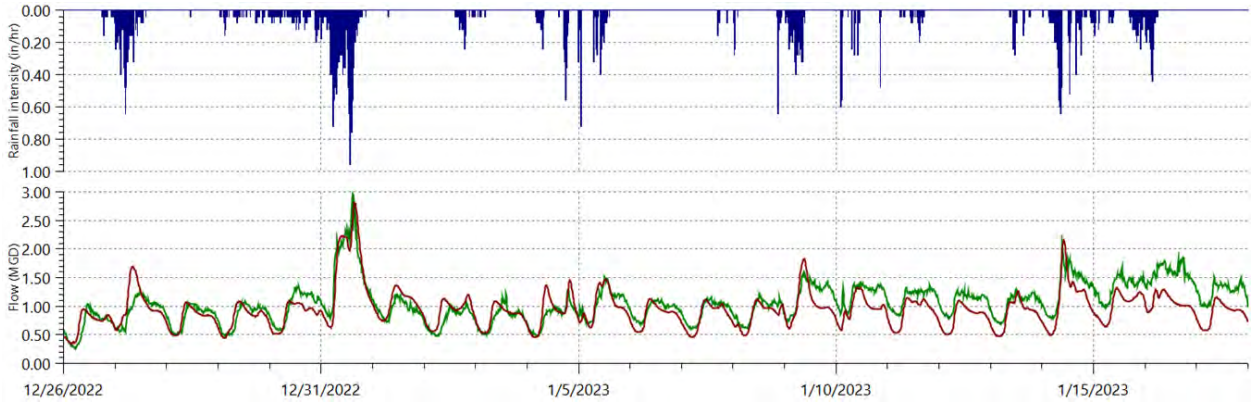
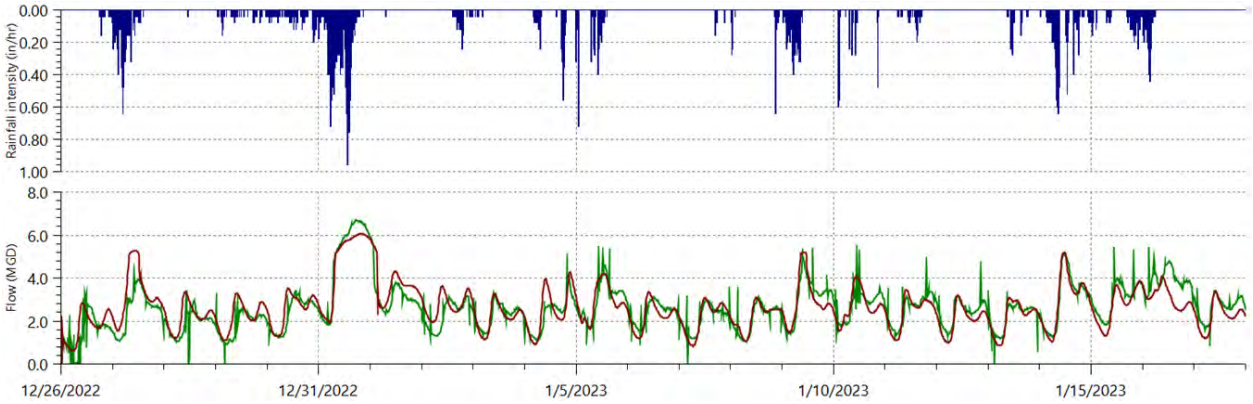


Figure 5-4: Wet Weather Calibration for December-January 2023 (LS-6)



5.2.1 Discussion of Specific Calibration Adjustments

Several flow meter areas required some specific calibration adjustments to better match surcharge conditions observed at the flow meters during the 12/31 event. LS-6 and LS-8 both backed up and resulted in upstream sewers surcharged during the event, indicating that the pump stations reached capacity and caused backup surcharge affecting upstream flowmeters (FM04, 05, 06, and 08). Flow meter 10A surcharged by approximately 3 feet during the event, likely due to capacity restrictions in the downstream sewer. The sections below discuss the specific approach to depth calibration for these meters.

5.2.1.1 Lift Station 8 and Flow Meter 8

As noted, LS-8 caused significant backup into upstream sewers during the 12/31 storm event. When LS-8 causes the upstream sewer to surcharge by approximately 8 feet, a bypass sewer located just upstream of

the pump station is activated, diverting some of the flow towards LS-6. Based on the level observed at FM08, this appeared to occur during the 12/31 event. The pump station was originally modeled using the pump curves provided by the City, and a Hazen-Williams coefficient of 100 was assumed for the force main, which matched the original testing performed in 2002. However, analysis of the runtime and flow data during the 12/31 event indicated substantially lower performance than predicted; therefore, in the model, the pumps have been derated by approximately 15 percent to more closely mimic actual performance.

In addition, FM08 flows appeared to be substantially lower than flows observed at the upstream meter (FM10) during wet weather periods, while flows observed by the LS-8 pump station meter were fairly consistent with FM10 flows. V&A was unable to find any reason for the discrepancy, so for calibration purposes, LS-8 flows were used rather than FM08 flows. However, the model is consistent with the surcharge observed by the FM08 depth data.

Further investigation and testing of the LS-8 pumps is recommended to assess pump performance and develop new pump curves as necessary.

5.2.1.2 Lift Station 6 and Flow Meters 5 and 6

LS-6 also caused significant backup during the 12/31 storm event, which resulted in significant surcharge at FM04, FM05 and FM06 (although no overflows). A pump station improvement project for LS-6 was completed in September 2010, which included new pumps. After installation, the pump impellers were modified by City staff to reduce ragging, though no subsequent testing was performed. The initial model for this pump station used the pump curves as originally designed for the improvement project, which resulted in minimal surcharging based on the anticipated flows. After reviewing pump station runtime, flow, and force main pressure data downstream of the pumps, the pump curves were derated in the model by about 15 percent to better approximate the surcharge and pump station capacity restrictions.

Further investigation and testing of the LS-6 pumps is recommended to assess pump performance and develop new pump curves.

5.2.1.3 Flow Meter 10A

As noted, FM10A surcharged by approximately 3 feet during the flow monitoring period. During initial calibration, it was not possible to match observed flows at the meter due to modeled capacity restrictions in the sewers both downstream and upstream of FM10A, resulting in excessive surcharge and model-predicted overflows upstream of the meter (restricting the ability of the model to convey flows to the FM10A location). Therefore, it was necessary to alleviate the capacity restriction in the model in order to better represent the flows actually being conveyed downstream. Manning's n values were decreased from 0.013 to 0.009 for the sewers on Sunol Boulevard (downstream and upstream of FM10A). However, because Manning's n values are subject to change based on changes in sediment composition and pipe condition, Manning's n was reverted to 0.013 for these segments for the design flow model runs discussed in Chapter 6.

6. CAPACITY ANALYSIS

The capacity performance of the system and potential need for capacity improvements were evaluated using the calibrated hydraulic model described in the previous chapters. This chapter discusses the criteria on which the capacity assessment was based and the results of the capacity analysis of the City's sanitary sewer system.

6.1 Design Flow and Performance Criteria

Sewer system capacity is assessed with respect to the system's performance under a design flow condition. The subsections below define the design flow criteria proposed for Pleasanton's capacity assessment and the criteria for assessing system performance and identifying system capacity deficiencies.

6.1.1 Design Storm Condition

The use of wet weather design events as the basis for sewer capacity evaluation is a well-accepted practice. The approach is to first calibrate a hydraulic model of the system to match wet weather flows from observed storm(s), and then apply the calibrated model to a design rainfall event to identify capacity deficiencies and size improvement projects. The design event may be synthesized from rainfall statistics or may be an actual historical rainfall event of appropriate duration and intensity. There is no regulatory standard for design return periods for wastewater collection systems; however, the majority of Bay Area agencies that have adopted a specific return period have selected return periods of 5, 10, or in some cases 20 years.

The temporal rainfall distribution of a design storm may be based on a synthetic storm or an actual historical event. Commonly used synthetic storm distributions include nested storms or "SCS" storm distribution. Nested storm distributions incorporate design rainfall intensities for a given return period for all durations within the total storm duration. They represent a synthetic storm distribution that is generated by placing the highest rainfall intensity at the center of the storm. Lower intensities are placed on alternating sides of the peak, until a complete curve is developed. This distribution is referred to as a nested storm because depths are nested inside each other. Another common distribution is an "SCS" storm distribution, a dimensionless rainfall distribution developed by the U.S. Department of Agriculture (USDA) Soil Conservation Service (SCS), now known as the Natural Resources Conservation Service (NRCS)[1]. The SCS developed four synthetic rainfall distributions, with each distribution representative of a specific region of the U.S. Pleasanton falls within the "Type I" area, which includes southern and central California as well as the Bay Area.

Both nested and SCS design storms are considered conservative storms, intended for capacity analysis or facility design. These types of design storms do not represent statistical average values but are a more conservative or "worst case" temporal distribution for a storm of a given return period and duration.

Six storm events based on different return periods and temporal rainfall distributions that could be used as the design event for the capacity evaluation are listed below.

- A 10-year, 24-hour spatially varied design event developed using the SCS Type IA distribution.

[1] U.S. Department of Agriculture, Natural Resources Conservation Service, Urban Hydrology for Small Watersheds TR-55, Appendix B, June 1986.

- A 10-year, 24-hour spatially varied design event developed for the 2007 Master Plan.
- A 10-year, 24-hour spatially varied design event developed using a nested distribution. Based on NOAA Atlas 14 statistics.
- A 25-year, 24-hour spatially varied design event developed using a nested distribution. Based on NOAA Atlas 14 statistics.
- A 20-year, 6-hour spatially varied design event developed using the DSRSD design storm.
- A storm matching the 12/31/22 calibration storm. Based on NOAA Atlas 14 data this storm appears to be between a 25-year and 50-year, 24-hour storm.

Three of the design events considered were developed using rainfall statistics from NOAA Atlas 14-point precipitation frequency estimates[1] for the Pleasanton area. **Table 6-1** summarizes the total volume and peak intensity for each of these potential design events, as well as the predicted peak flow to the DSRSD WWTP when each design storm is simulated in the model. Note that the NOAA precipitation frequency estimates vary across the service area; values presented in **Table 6-1** represent the rainfall depth and intensity near the center of Pleasanton, but the modeled design storm rainfall would incorporate the spatial variation.

Table 6-1: Potential Design Storm Characteristics

Return Period/Duration	Temporal Distribution	Volume (in)	Duration (hours)	Peak Hour Intensity (in/hr)[a]	Modeled Peak 1-hour Flow at DSRSD WWTP (mgd)[b]
10-yr, 24-hr	SCS-IA	3.79[a]	24	0.54	14.7
2007 Master Plan, 10-yr, 24-hr	Unknown	4.82	24	1.04	20.8
10-yr, 24-hr	Nested	3.10[a]	24	0.7	16.8
25-yr, 24-hr	Nested	3.78[a]	24	0.85	20.8
20-yr, 6-hr (DSRSD)	Unknown	2.19	6	0.71	14.4
12/31/22 Calibration Storm	Monitored Storm	4.88[a]	24	0.64	20.8

a. Rainfall volume and intensity would vary spatially across the City.
b. Peak flows limited due to backup at LS-6 and LS-8.

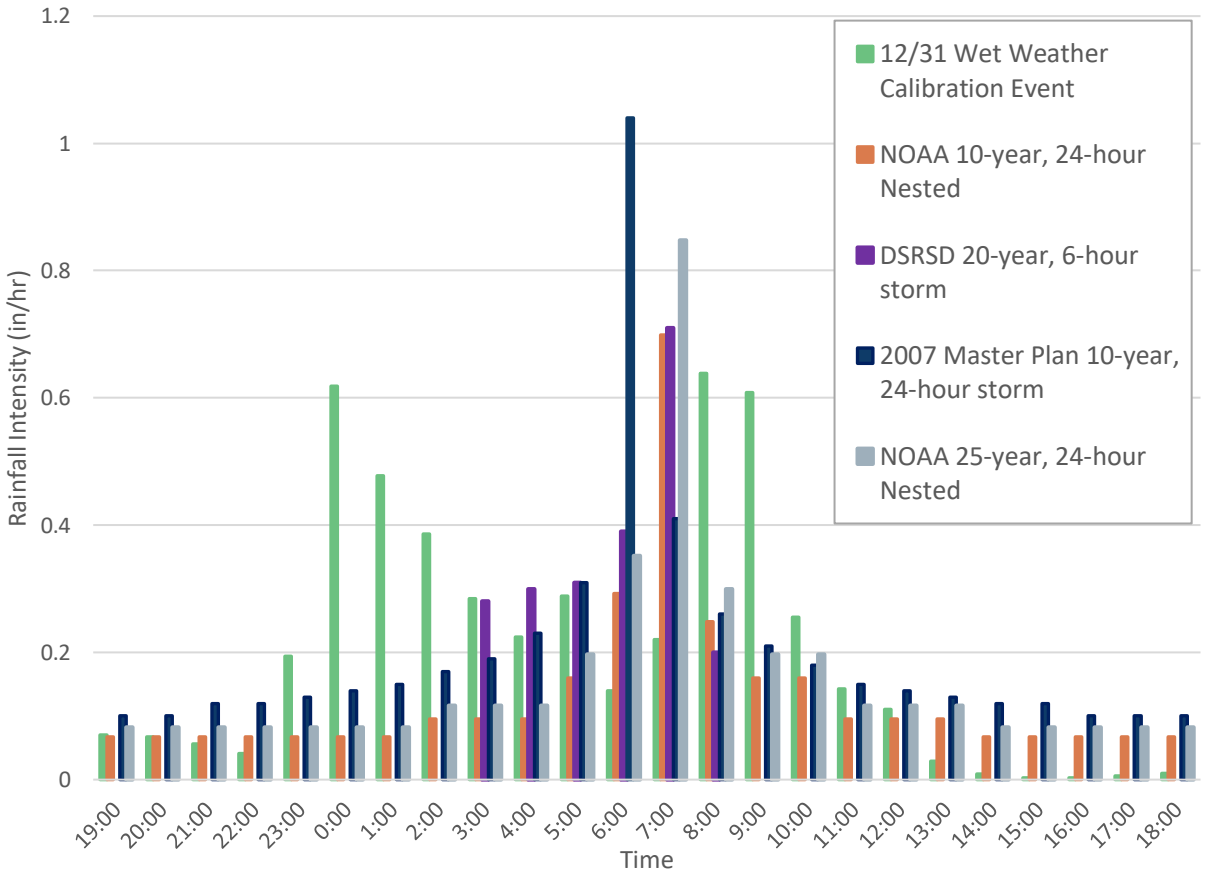
Figure 6-1 shows how the rainfall distributions (volume and intensity) compare for five of the different storm events considered and indicates that the 10-year, 24-hour 2007 Master Plan design event is the most intense.

The timing of the design storm also affects the resulting peak wastewater flows. The design storms considered were all timed to generate peak rainfall-dependent infiltration and inflow (RDI/I) at roughly the same time as peak BWF ("peak-on-peak"). The peak-on-peak timing generates a higher total peak wet weather flow than if the peak RDI/I generated by the design storm occurred at the time of the average or

[1] NOAA Atlas 14 Volume 6 Version 2.0 data available at: https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=ca

minimum BWF. Timing the storm to produce peak-on-peak results is generally thought to create a wastewater flow return period that is greater than the return period of the design rainfall event itself (e.g., the peak flow during a 10-year storm event occurring at the same time as peak BWF would occur less often than a 10-year storm occurring at any other time during the day). Therefore, peak-on-peak timing is a conservative assumption.

Figure 6-1: Comparison of Potential Design Storms



[1] Hour 7 represents 7 a.m. on a typical BWF diurnal profile. Peak BWF occurs at 8 a.m. allowing for peak RDI/I to coincide with peak BWF.

To facilitate selection of an appropriate design storm for the 2024 Capacity Evaluation, the model was run for the existing conditions scenario to simulate the flows in the system under each storm. Table 6-1 compares the resulting PWWF at the downstream end of the system (at the DSRSD WWTP) for each event. After discussions with City staff, it was decided that the design storm for this capacity evaluation should approximately match the peak modeled flows from the 12/31, calibration storm, while still being a synthetic, more statistically supportable storm, rather than an actual storm event. Using a synthetic design storm allows for a relatively straightforward path to updates to reflect future changes to precipitation frequency statistics.

To select a design storm that best met these criteria, a simple scoring matrix comparing the different design storms was developed, as shown in **Table 6-2** below. The selected categories for comparison included if its temporal distribution was understood and statically supported, total volume of rainfall in a 24-hour period,

storm duration, peak hour intensity, and peak 1-hour flow at the DSRSD treatment plant. The ideal storm would match the calibration event in all or most criteria while being a statically repeatable storm.

Table 6-2: Design Storm Comparison Matrix

Return Period/Duration	Criteria[a]					Total Score
	Statistics Based Rainfall Event	Total Rainfall Volume	Storm Duration	Peak Hour Intensity	Modeled Peak 1-hour Flow at DSRSD	
12/31/22 Calibration Storm[b]	0	5	5	5	5	NA
SCS-1A[c], 10-yr, 24-hr	3	3	5	4	2	17
2007 Master Plan[d], 10-yr, 24-hr	2	5	5	2	5	19
Nested 10-yr, 24-hr	5	2	5	4	3	19
Nested 25-yr, 24-hr	**5**	**3**	**5**	**3**	**5**	**21**
20-yr, 6-hr (DSRSD)[d]	2	2	1	4	2	11

a. The criteria were scored from 1 – 5, with 5 being best. A higher score was given to storms that most closely resembled the calibration storm.
b. The calibration storm is the standard by which other storms are compared.
c. The SCS-1A method is a statistically based storm that is now out of date, but still widely used.
d. It is unclear what statistical method was used to develop these storms.

Based on the findings in the design storm scoring matrix, the City selected the 25-year, 24-hour spatially varied nested design rainfall event, with "peak-on-peak" timing, for this study, as it closely matches the results from the 12/31, calibration event. It should be noted that using the 25-year, 24-hour nested design event in combination with an assumed wet antecedent condition (as reflected in the model calibration approach described in **Chapter 5**) results in relatively conservative predicted peak wet weather flows, and is generally more conservative than the design storms used by most agencies in the Bay Area. Using a more conservative design storm should result in a somewhat reduced risk of capacity-driven overflows.

6.1.2 Capacity Deficiency Criteria

Capacity deficiency or performance criteria are used to determine when the capacity of a sewer pipeline or pump station is exceeded to the extent that a capacity improvement project (e.g., a relief sewer, larger replacement sewer, or pump station expansion) is required. Capacity deficiency criteria are sometimes called "trigger" criteria in that they trigger the need for a capacity improvement project. These criteria may differ from "design criteria" that are applied to determine the size of a new facility, which may be more conservative than the trigger criteria.

It is important that the capacity deficiency criteria be coordinated with the peak design flow criteria. For example, if the peak design flow considers only peak dry weather flow (PDWF) and little or no I/I, the deficiency criteria should be conservative (e.g., require pipes to flow less than full under dry weather flow to allow capacity for I/I that may increase the flow under a wet weather condition). On the other hand, if

the peak design flow includes I/I from a large, relatively infrequent design storm event, it is appropriate to allow the sewers to flow full or even surcharged to some extent, since the peak flows will be infrequent and brief in duration.

For this Capacity Evaluation, a capacity deficiency was identified under the following conditions:

- Any pipe exceeding a flow depth to pipe diameter ratio (d/D) of 0.75 under PDWF.
- Any modeled overflows or surcharge reaching to within about 3 feet of manhole rims under design storm PWWF. However, if surcharge in existing trunk sewers is triggered solely by future development, then the City would consider any surcharge to be a capacity deficiency requiring a relief project before additional development could be connected to the system.

Note that any new pipes proposed would need to be designed to convey design storm PWWF at a d/D of 0.75 or less, where feasible.

Because the design condition represents a relatively infrequent storm event, the criterion applied allowed surcharging up to about 3 feet of the manhole rims under the 25-year, 24-hour nested design storm PWWF. While 3 feet is less conservative than some agencies use, the City has chosen a larger design storm; therefore, more modeled surcharge would be expected. Additionally, this criteria is more conservative than the City's 2007 Master Plan criteria, which used 1 foot within the manhole rim to define deficiencies. However, if an improvement project is developed, the improvement project would be sized to eliminate all surcharging at the capacity deficiency location. **Table 6-3** summarizes some common capacity deficiency criteria used by South Bay Area agencies.

Table 6-3: Common Capacity Deficiency Criteria for California Agencies in the South Bay Area

Agency (year of report)	PDWF	PWWF
City of Santa Clara (2016)	No surcharge allowed (d/D ≤ 1.0)	- Pipe cover < 6 feet: No surcharge allowed (d/D ≤ 1.0) - Pipe cover ≥ 6 feet: Surcharge up to 1 foot above crown allowed
City of San Jose (2013)	No surcharge allowed (d/D ≤ 0.9)	- Diameter < 18-inch: Minimal surcharge allowed (d/D ≤ 1.1) - Diameter ≥ 18-inch: Surcharge allowed up to 20 percent of the cover over the pipe, with at least 4 feet of freeboard (interceptor system uses different criteria, not applicable to typical system)
City of Sunnyvale (2023)	No surcharge allowed (d/D ≤ 1.0)	Minimum freeboard = 5 feet (no stormwater scenarios). No overflows allowed (with stormwater scenarios)
City of Mountain View (2010)	Unknown	- Diameter ≤ 12-inch: Allowed to flow ½ full (d/D ≤ 0.5) - Diameter > 12-inch: Allowed to flow ¾ full (d/D ≤ 0.75)
City of Milpitas (2021)	Unknown	Minimum freeboard = 5 feet
West Valley Sanitation District (2018)	- Diameter ≤ 15-inch: Allowed to flow ¾ full (d/D ≤ 0.75) - Diameter > 15-inch: No surcharge allowed (d/D ≤ 1.0)	- Diameter ≤ 15-inch: No surcharge allowed (d/D ≤ 1.0), except on a case-by-case basis for deep pipes. - Diameter > 15-inch: Surcharge allowed up to 1 foot above crown, where freeboard ≥ 5 feet.

For this capacity evaluation, pump stations were considered capacity deficient if the peak design flow would result in backup and surcharging reaching within about 3 feet of upstream manhole rims with the largest pump out of service. Force mains are considered to be deficient if the velocity under peak design flow exceeds 8 to 10 feet per second (fps).

6.2 Capacity Analysis Results

The calibrated model was run for existing and future conditions to identify areas of the system that fail to meet the specified performance criteria under PDWF and the design storm PWWF. **Figure 6-2** and **Figure 6-3** present model results for future PDWF and design storm PWWF conditions. The figures show pipes that are not surcharged, as well as pipes that are predicted to surcharge due to a throttle condition (peak flow greater than full pipe capacity) or due to backwater from a downstream throttle.

The model did not predict capacity issues under existing or future PDWF conditions; therefore, the remaining capacity analysis discussion in this report focuses on the design storm PWWF results.

6.3 Gravity Sewer System Capacity Deficiencies and Improvement Projects

Based on the criteria presented in **Chapter 6.1.2** and the results of the capacity evaluation, there are two areas that may be considered capacity deficient under existing design storm PWWF conditions, and two additional areas that would become capacity deficient in the future based on increased flows due to future development. **Table 6-4** summarizes the results for these four areas under the future load scenario. Capacity projects to address each of these capacity deficient areas are described in detail below.

Table 6-4: Summary of Model-Predicted Gravity Sewer Capacity Deficiencies

Deficiency Location	Exist. Diam. (in)	Predicted Deficiency [Freeboard, (ft), Overflow (gal[a])]	Capacity Project Number	Project Description	Estimated Project Cost
Sunol Boulevard from Junipero Street to manholes SC6B2M409, SC6D2M200, and SC6D2M300 near Monaco Drive	10	Overflow 1,800	1A	Connect existing Sunol Boulevard sewer to the private sewer northwest of Sunol Boulevard and Valley Avenue intersection.	$2,792,000
			1B	Upsize existing sewer in Sunol Boulevard.	$1,528,000
Various pipe segments along Bernal Avenue, Vineyard Avenue, and Palomino Drive	8	2.8 N/A	2A	Connect sewer in Bernal Ave to existing 18-inch sewer in Nevada street via pipe bridge over Arroyo Valle.	$2,792,000
			2B	Convey flow from the intersection of Bernal Avenue and Vineyard Avenue down Vine Street.	$1,528,000
			2C	Proposed relief sewer on Vineyard Avenue to convey flow north to 1st Street to LS-6 sewershed.	$5,566,000
			2D	Proposed relief sewer on Vineyard Avenue to convey flow north to 1st Street to LS-7 sewershed.	$5,566,000
Sewer along Stoneridge Mall Road and Stonedale Drive Sewer	10	12[b] N/A	3	Upsize existing 10-inch sewer in Stoneridge Mall Road and Stonedale Drive to 15-inch.	$3,000,000
Upsize Sewer Pipes on Kamp and Stoneridge Drives	10	9.2[b] N/A	4	Upsize existing 10-inch sewer in Kamp Drive and Stoneridge Drive to 12-inch.	$2,019,000

a. Under future flow conditions.
b. Project required because of surcharge that is triggered solely by future development.

Figure 6-2: Dry Weather Capacity Results

Pleasanton Capacity Evaluation Report

N

Legend

- EALS Pump Station
- Sewer Lift Station

Modeled Pipe Surcharge

- d/D ≤ 0.74
- d/D > 0.75
- City Force Main

0 0.25 0.5 1 Miles

Woodard & Curran

THE CITY OF PLEASANTON

Map Created: October 2024

Figure 6-3: Wet Weather Capacity Results

Pleasanton Capacity Evaluation Report

Surcharge caused by future development. Capacity project 3.

Backup surcharge at lift stations 6 and 8. No capacity projects are required because there is no surcharge within 3ft of a manhole rim.

Surcharge caused by future development. Capacity project 4.

Surcharge within 3ft of the Manhole rim. Capacity Project 2.

Modeled Overflow at MHs SC6B2M409, SC6D2M200, and SC6D2M300. Capacity Project 1.

EALS Pump Station

Legend

Gravity Main Surcharge State

- No Surcharge (d/D < 1)
- Backup Surcharge (d/D = 1)
- Throttle Surcharge (d/D = 1)
- City Force Main
- Private Force Main
- Modeled Overflow

0 0.25 0.5 1 Miles

Map Created: October 2024

6.3.1 Capacity Project 1 - Sunol Boulevard

As indicated in **Table 6-4** and **Figure 6-3**, the model predicts an overflow at manholes SC6B2M409, SC6D2M200, and SC6D2M300. This section of pipe had its Manning's roughness coefficient (n) value adjusted during calibration as discussed in **Chapter 5.2.1** of this report. For the capacity assessment, the Manning's roughness coefficient value was changed back to the standard value of 0.013 to be more conservative. A profile of the modeled pipe section is shown in **Appendix F**. The predicted overflow is due to throttle surcharge from manholes SC6B2M409 to SC6D2M100 along Sunol Boulevard, a result of existing capacity and pipe condition. A section of Sunol Boulevard was also identified as capacity deficient in the 2007 Master Plan. Two alternatives were identified to increase capacity and avoid overflows. Each alternative is summarized below and in **Table 6-5**. A map showing the alternatives is included in **Appendix F**.

6.3.1.1 Alternative 1A – Sunol-Valley Connector

Alternative 1A would increase capacity by connecting the existing sewer Sunol Boulevard to the private sewer located in the former railroad easement northwest of the intersection of Sunol Boulevard and Valley Avenue. The existing sewer in the easement would need to be upsized to accommodate the additional flow, but this alternative would avoid major construction in Sunol Boulevard and would not require bypass pumping.

6.3.1.2 Alternative 1B – Upsize Sunol Boulevard Sewers

Alternative 1B would increase capacity by upsizing the existing sewer in Sunol Boulevard. This alternative would require bypass pumping and construction in Sunol Boulevard. No new alignment would be required, but construction would impact local traffic, and utility coordination would be required when the pipe is upsized.

Table 6-5: Summary of Sunol Boulevard Capacity Improvement Projects

Project ID	Existing Diameter (in)	New Diameter (in)	Length of New Pipe (ft)	Estimated Construction Cost[a]	Estimated Project Cost[b]
1A	10	12	3,000	$2,234,000	$2,792,000
1B	10	15	1,400	$1,222,000	$1,528,000

a. Based on March 2024 ENR CCI Index. Includes assumptions for traffic control (10%), mobilization and demobilization (5%), and construction contingency (30%).
b. Includes assumptions for Engineering, Administration, and Legal costs. These costs are added as an additional 25% to the Estimated Construction Cost.

Alternative 1B is the preferred alternative based on its relatively lower project cost and would avoid the potential difficulties of taking ownership of the non-City sewer located in the former railroad easement under Alternative 1A.

6.3.2 Capacity Project 2 – Arroyo Valle (Bernal Avenue, Vineyard Avenue, and Palomino Drive)

As shown in **Table 6-4** and **Figure 6-3**, the model predicts surcharge to within 3-feet of the manhole rim on Palomino Drive during the design storm event. A profile of the modeled pipe section is shown in **Appendix F**. This surcharge is due to a combination of throttle surcharge and backup surcharge along the sewer parallel to Arroyo Valle, Bernal Avenue, and Palomino Drive. However, most of the modeled surcharge is well below the 3-foot capacity deficiency threshold**.** Much of the existing flow is routed through backyard/easement sewers parallel to Arroyo Valle, which presents a construction challenge when upsizing pipe, and it may be beneficial to reduce flows in these sewers because of the pipe's proximity to the Arroyo. A section of Bernal Avenue was identified as capacity deficient in the 2007 Master Plan. Several alternatives were identified for this deficiency, which are summarized below and in **Table 6-6**. A map of alternatives is included in **Appendix F**.

6.3.2.1 Alternative 2A – Bernal Avenue Pipe Bridge

Alternative 2A would increase capacity by connecting the sewer in Bernal Ave to the existing 18-inch sewer in Nevada street via a pipe bridge over Arroyo Valle. This alternative would use the new 18-inch trunk main in Nevada Street and matches the concept laid out in the 2007 Master Plan. However, at the time of this writing, it is understood that the sewer on the Bernal Avenue bridge has been removed and replaced with a water main. This alternative therefore assumes a new pipe bridge would be required on the Bernal Avenue bridge parallel to the water main in a separate casing. This alternative would convey flow to 1st Street and relieve capacity deficiencies in Vine Street, Vineyard Avenue, Bernal Avenue, and Palomino Drive. This alternative would also reduce the total flow in the sewers that parallel the Arroyo in the existing backyards.

6.3.2.2 Alternative 2B – Vineyard Street Relief Sewer

Alternative 2B would relieve the capacity deficiencies in Bernal Avenue and in the developments north of Vine Street by conveying flow from the intersection of Bernal Avenue and Vineyard Avenue down Vine Street and connecting to the sewer northwest of Birch Creek Terrace. The sewer on Vine Street may be difficult to construct as the street is narrow and divided into two parts by what appears to be a small section of private land between the two east-west sections of the street. Based on a preliminary investigation, it appears that the City has an existing easement through this area, but fencing and structures may have been built on top of the existing easement and sewer. This alternative would reduce total flow in the sewers that parallel the Arroyo compared to the existing conditions but would reconnect to the existing sewer in an easement northwest of Birch Creek Terrace. Therefore, total flows from MH 40503318 to MH 40503336 would match existing conditions.

6.3.2.3 Alternative 2C – Vine Street Relief Sewer (LS-6 Sewershed)

Alternative 2C proposes a relief sewer west on Vineyard Avenue to relieve flow from the connection at Bernal Avenue and Vineyard Avenue and convey the flow north to 1st Street. Due to existing invert elevations, this sewer would be relatively deep, and costs have been adjusted to account for the depth required for this sewer. This alternative would convey flow to the Lift Station 6 sewershed which currently backs up quite significantly during the design storm. A similar alterative (Alternative 2D)would convey flow to the Lift Station 7 sewershed, which is less heavily impacted. This alternative would also reduce the total flow in the sewers that parallel the Arroyo in the existing backyards.

6.3.2.4 Alternative 2D – Vine Street Relief Sewer (LS-7 Sewershed)

Alternative 2D proposes a relief sewer west on Vineyard Avenue to relieve flow from the connection at Bernal Avenue and Vineyard Avenue and convey the flow north to 1st Street. Due to existing invert elevations, this sewer would be relatively deep, and costs have been adjusted to account for the depth required for this sewer. This alternative would convey flow to the Lift Station 7 sewershed. This alternative would also reduce the total flow in the sewers that parallel the Arroyo in the existing backyards. The relative costs for alternatives 2C and 2D are nearly identical. However, alternative 2D may be preferred over alternative 2C, due to limited capacity at LS-6 (though both alternatives are substantially more expensive than alternative 2B).

Table 6-6: Summary of Arroyo Valle Capacity Improvement Projects

Project ID	Existing Diameter (in)	New Diameter (in)	Length of New Pipe (ft)	Estimated Construction Cost[a]	Estimated Project Cost[b]
2A	10	12	3,000	$2,234,000	$2,792,000
2B	10	15	1,400	$1,222,000	$1,528,000
2C	No existing pipe replaced	12	4,500	$4,452,000	$5,566,000
2D	No existing pipe replaced	12	4,500	$4,452,000	$5,566,000

a. Based on March 2024 ENR CCI Index. Includes assumptions for traffic control (10%), mobilization and demobilization (5%), and construction contingency (30%).
b. Includes assumptions for Engineering, Administration, and Legal costs. These costs are added as an additional 25% to the Estimated Construction Cost.

6.3.3 Capacity Project 3 – Stoneridge Mall

As shown in **Table 6-4** and **Figure 6-3**, the model predicts surcharge on Stoneridge Drive during the design storm event under future conditions, including the Housing Element Rezone Site 2 at the Stoneridge Shopping Center. A profile of the modeled pipe section is shown in **Appendix F**. This surcharge is due to a combination of throttle surcharge and backup surcharge along the sewer located along Stoneridge Mall Road and Stonedale Drive. However, although all of the modeled surcharge is well below the 3-foot threshold (freeboard under PWWF would be about 12 feet)**,** this section of pipe triggers a capacity project because the surcharge is caused by new developments upstream of the pipe, where there was no previous surcharge. This would require the sewer segment to be upsized per the City's criteria. This sewer was not identified as capacity deficient in the 2007 Master Plan. The project is summarized below and in **Table 6-7**. A map is included in **Appendix F**.

The Stoneridge Mall project will increase capacity by upsizing the existing 10-inch sewer Stoneridge Mall Road and Stonedale Drive to a 15-inch sewer. This project would require bypass pumping and construction along Stoneridge Mall Road, Stoneridge Drive, and Stonedale Drive Sewer.

Table 6-7: Summary of Stoneridge Mall Capacity Improvement Project

Project ID	Existing Diameter (in)	New Diameter (in)	Length of New Pipe (ft)	Estimated Construction Cost[a]	Estimated Project Cost[b]
3	10	15	1,300	$2,400,000	$3,000,000

a. Based on March 2024 ENR CCI Index. Includes assumptions for traffic control (10%), mobilization and demobilization (5%), and construction contingency (30%).
b. Includes assumptions for Engineering, Administration, and Legal costs. These costs are added as an additional 25% to the Estimated Construction Cost.

6.3.4 Capacity Project 4 – Upsize Sewers in Kamp Drive and Stoneridge Drive

As shown in **Table 6-4** and **Figure 6-3**, the model predicts surcharge on Stoneridge Drive during the design storm event. A profile of the modeled pipe section is shown in **Appendix F**. This surcharge is due to a combination of throttle surcharge and backup surcharge along the sewer parallel to Stoneridge Mall Road and Stonedale Drive Sewer. However, although all the modeled surcharge is well below the 3-foot threshold (freeboard under PWWF would be about 9 feet)**,** this section of pipe triggers a capacity project because the surcharge is caused by new developments upstream of the pipe, where there was no previous surcharge. This would require the sewer segment to be upsized per the City's criteria. This project was identified as capacity deficiency in the 2007 Master Plan. The project is summarized below and in **Table 6-8**. A map is included in **Appendix F**.

The Kamp Drive and Stoneridge Drive capacity project would increase capacity by upsizing the existing 10-inch sewer in Kamp Drive and Stoneridge Drive to a 12-inch sewer. This alternative would require bypass pumping and construction along Kamp Drive and Stoneridge Drive.

Table 6-8: Summary of Kamp and Stoneridge Drive Capacity Improvement Project

Project ID	Existing Diameter (in)	New Diameter (in)	Length of New Pipe (ft)	Estimated Construction Cost[a]	Estimated Project Cost[b]
4	10	12	1,200	$1,615,000	$2,019,000

a. Based on March 2024 ENR CCI Index. Includes assumptions for traffic control (10%), mobilization and demobilization (5%), and construction contingency (30%).
b. Includes assumptions for Engineering, Administration, and Legal costs. These costs are added as an additional 25% to the Estimated Construction Cost.

6.4 Pump Station and Force Main Capacity Analysis Results

Based on the criteria presented in **Chapter 6.1.2** and the results of the capacity evaluation, LS-6 and LS-8 are not considered capacity deficient. Model results are summarized in **Table 6-9** and described in detail below.

Table 6-9: Summary Of Pump Station And Force Main Model Results

Lift Station	Future Model PWWF (mgd)	Model Firm Capacity (mgd)[a]	Predicted Upstream Freeboard (ft)	Capacity Deficiency?
LS-2	0.09	0.19	9.4	No
LS-4	0.15	0.55	17	No
LS-5	1.5	2.1	19	No
LS-6	6.0	5.2[b]	4.3	No[g]
LS-7	4.3	7.5	20	No[g]
LS-8	4.6	3.4[c]	8.1	No[g]
LS-10	0.17	0.35	31	No
LS-12	0.35	0.55	22	No
LS-14	0.13	0.22[d]	10	No
LS-15	0.46	N/A[e]	21	No
EALS	8.05	N/A[f]	20	N/A

a. Firm capacity is defined as the capacity with the largest pump out of service. Unless otherwise noted, firm capacity is based on Table 6.3 of the 2007 Master Plan.
b. Based on SCADA data, LS-6 Firm capacity without backup surcharge is approximately 5 mgd. However the station can flow up to approximately 6.1 mgd without causing backup surcharge to exceed the City's criteria. LS-6's rated capacity based on pump curves is 6.6 mgd. LS-6 is discussed further below.
c. LS-8 firm capacity as reported in the 2007 Master Plan is 4.0 mgd, but backup surcharge is diverted through an upstream diversion structure to a gravity sewer flowing to LS-6. Review of SCADA data indicated actual capacity is consistent with reported capacity. LS-8 is discussed further below.
d. LS-14 firm capacity is based on pump curve and record drawing information provided by the City.
e. Where total capacity and firm capacity was not known from pump testing, as-builts, or the 2007 Master Plan, the modeled pumps were set as "pass through" pumps, or pumps with an extremely high firm capacity to so no backups would occur under PDWF or PWWF.
f. Capacity limitations of EALS was not modeled. See below for further discussion.
g. Although modeled PWWF would exceed firm capacity, backup surcharge would not exceed City's capacity deficiency criteria.

6.4.1 Lift Station 6

During the 12/31, event, LS-6 appeared to reach capacity and stayed at capacity for approximately 3 hours, resulting in significant backup surcharge. This prompted further investigation – when comparing the SCADA flow rate and pump speed, the pumps all appeared to fall short of the "Guaranteed" speed shown on the LS-6 pump curves provided by the City. Each pump conveyed approximately 1,000 gpm of flow when running at full speed but based on the lift station's system curve and the system curve included in the conformed design documents, the expected flow rate for each pump was 1,600 gpm. This reduced flow was true for all the pumps at the lift station. A brief supplemental investigation into the pressure readings for each pump was performed. Based on the results, there were no signs of obstructions or unexpected

headloss in the forcemain. This could mean that the issue is the pumps themselves, but further investigation is necessary for determining the root cause. As shown in **Table 6-9**, LS-6 had an expected firm capacity of approximately 6.6 mgd with four (4) of its five (5) pumps running.

However, the LS-6 wet well and upstream sewers are relatively deep, which allows the station to surcharge significantly without overflowing. Further, because the force main is relatively flat, the reduction in static head as the water level in the wet well rises substantially increases the capacity of the pump station. As a result, although the station is expected to surcharge significantly during the design event, the surcharge is not predicted to exceed the City's capacity criteria.

The existing forcemain downstream of LS-6 was not predicted to experience velocities of greater than 6.5 fps, and therefore would not require any capacity improvements.

6.4.2 Lift Station 8

During the 12/31, calibration storm event, LS-8 reached its capacity and caused flow to back up several feet into the upstream sewer network for several hours. The flow at the LS-8 maxed out at 4.29 mgd (2,970 gpm). Based on the SCADA data provided by the City, all three pumps ran during the wet weather calibration storm. It is also unclear which pumps are currently installed in LS-8. Based on the provided SCADA data, pump 1 conveyed an average of 2,020 gpm, while pumps 2 and 3 conveyed 1,210 and 1,520 gpm respectively. Assuming a firm capacity using pumps 2 and 3 (largest pump out of service), the lift station does not have the firm capacity to convey the design storm without backing up into the sewer system. There is a high flow bypass located upstream of LS-8 that allows flow to enter the LS-6 sewershed. The backup into the sewer system also did not result in a predicted freeboard of less than 3 feet at any of the upstream manholes effected by the backup surcharge. This indicates that a capacity improvement is not required for LS-8. It should also be noted that this pump station was also listed as capacity deficient in the 2007 Master Plan.

The existing force main downstream of LS-8 was not predicted to experience velocities of greater than 4 fps, and therefore would not require any capacity improvements.

6.4.3 East Amador Lift Station (EALS) and East Amador Relief Sewer (EARS)

East Amador Lift Station is owned and operated by DSRSD, although it conveys flows only from the City of Pleasanton. During the 12/31, calibration storm event, EALS reached its capacity and caused flow to back up to within 8 feet of the manhole rim into the upstream sewer network for several hours. The backup into the sewer system did not result in a predicted freeboard of less than 3 feet at any of the upstream manholes effected by the backup surcharge.

This pump station was identified as a capacity deficiency in the 2007 Master Plan, with an existing PWWF of 6.7 mgd, projected future PWWF of 7.6 mgd, firm capacity of 3.6 mgd, and a total capacity of 7.2 mgd. The current version of the model predicts an existing PWWF of 7.4 mgd and a future PWWF of 8.0 mgd. No improvements have been implemented at this pump station since the 2007 Master Plan.

Based on these results, it is likely that a capacity improvement for EALS is needed.

East Amador Relief Sewer was constructed by the City of Pleasanton in 1984 but has not been used. The elevation of the sewer is several feet below the elevation of the Cross-Town Interceptor, which drains into EALS and runs roughly parallel to EARS. Therefore, activating the sewer would require a new lift station and

additional piping to convey flow to either EALS or the WWTF. In the 2007 Master Plan, the Cross-Town Interceptor was not identified as a capacity deficiency, although that report noted that future growth could result in a need for additional sewer capacity. The 2007 Master Plan recommended activation of EARS and installing a new EARS PS and force main in lieu of an upgrade of EALS.

The current master plan also does not project any capacity deficiencies in the Cross-Town Interceptor. Based on sensitivity analyses performed for the City with alternative growth scenarios in East Pleasanton, it is not anticipated that there will be a need for relief of the Cross-Town Interceptor. Therefore, the City should consider options for abandoning EARS.

As EALS is not owned by the City, capacity of EALS has not been re-evaluated in the current study. The City should work with DSRSD to assess the condition and capacity of the pump station to determine future improvement needs.

6.5 Siphon Deficiencies and Condition

Based on the future loads scenario, all of the City's siphons have sufficient capacity for the future loads PWWF scenario except for the Nobhill siphon. The model-predicted backup surcharge upstream of the siphon is approximately 1-inch, so a capacity project is not recommended. The flow each siphon conveys is listed in **Table 6-10** below. Note the results assume the siphons are clean and free of major debris. If siphons become clogged, their capacity would be reduced and may result in back up of flow into upstream sewers. Placing SmartCovers® or similar depth sensors upstream of siphons is recommended to monitor for sediment-related backups.

Table 6-10: Siphon Flow

Siphon Name	Number of Barrels	Future Loads ADWF (mgd)	Future Loads PWWF (mgd)	Modeled Surcharge Upstream of the Siphon during PWWF[a]
Amberwood	Single	0.2	0.4	No
Highland Oaks	Double	1.0	2.3	No
Laguna Creek	Double	0.01	0.02	No
Meadowlark	Single	0.1	0.4	No[b]
Nobhill	Double	0.7	1.2	Yes[c]
Laguna Vista	Single	0.1	0.6	No
S-8	Double	0.3	2.1	No[b]
West Los Positas	Single	0.4	0.6	No

a. The model does not account for any sediment accumulation in the siphon.
b. The model shows surcharge upstream and downstream of the siphon. The siphon itself has capacity for the PWWF.
c. Nobhill siphon is slightly under capacity during PWWF in the future loads scenario. The siphon causes a backup of approximately 1 inch in the upstream sewer.

At this time, there is no condition information available for the City's siphons, as it can be difficult to clean and inspect siphons. An inspection and cleaning program is recommended for the siphons to understand their condition; that program will be discussed in a sperate study focused on sewer system condition.

6.6 Capacity Results Identified in the 2007 Master Plan

A capacity analysis was performed as part of the 2007 Master Plan. A summary of the projects identified as part of that analysis are included in **Appendix G.** Appendix G also compares the results of the 2007 Master Plan with the results from the current model. Differences between identified projects are due to a combination of factors including:

- Some projects identified in the 2007 Master Plan have already been implemented.
    - Lift Station 6 was upgraded
- Different design storm intensities.
    - The peak rainfall for the design storm used in the 2007 Master Plan (0.19 inches/hour) is 22 percent is higher than the 25-year nested design storm based on NOAA Atlas 14 rainfall statistics used in this analysis (for details on why the 25-year design storm was selected see Chapter 6.1.1). This difference in peak rainfall and I/I assumptions results in slightly different wet weather behavior between the two models.
- Number of pipes in the model (all pipe model vs a trunk model).
    - Because the model used for this capacity evaluation is an all-pipe model, the additional pipes provide storage in the sewer system as downstream pipes begin to surcharge. This additional storage was not accounted for in the 2007 Master Plan model, which was a built using primarily 10-inch or larger pipes. This extra storage helps reduce surcharge and may be a factor for why some projects were not flagged as capacity improvements in this study.
- Different future load assumptions.
    - In the 2007 Master Plan, future ADWF at buildout was determined to be 7.91 mgd compared to the 6.42 mgd calculated for this Capacity Evaluation, while existing flows are fairly similar. The 2007 Master Plan used a generalized approach for estimating future loads, based on typical land use-based flow factors and the City's potential service area (including some areas outside of the City boundary) to estimate future loads, while the current master plan used parcel specific data for each proposed development. This difference in approach resulted in higher flow estimates in the 2007 Master Plan , which were likely a large driver for several of the capacity projects that were not identified as capacity deficiencies in this study.

6.7 Infiltration/Inflow

A summary of modeled flows for the 25-year, 24-hour nested design storm, including the resulting peak I/I and peak wet weather flow (PWWF), I/I per linear foot of pipe, and wet weather peaking factor for each flow meter area, is presented in **Table 6-10** below. I/I was not assumed to increase in future load scenarios because most of the new developments will connect to existing sewer mains, and laterals installed as part of future developments will likely be constructed of more watertight, plastic materials and are therefore assumed to contribute minimal I/I. It is also assumed that increases in I/I due to deterioration of existing sewers would be offset by reductions in I/I due to the City's ongoing sewer repair and rehabilitation efforts, keeping I/I levels at approximately their current rates.

Table 6-11: Design Flow I/I and Peaking Factor by Flow Meter

Flow Meter ID	Upstream Meter	Approximate Sewer Length (miles)[b]	ADWF (mgd)	Peak I/I (mgd)	Peak WWF (mgd)	Peak I/I (gpd/ft)	Peaking Factor[a]
FM01		27.0	1.10	2.20	3.31	21.0	3.0
FM02	FM3, 3A	21.1	1.43	2.21	3.64	22.8	2.5
FM03	FM3A	33.4	2.21	0.93	3.14	8.1	1.4
FM03A		8.4	0.25	0.44	0.69	62.7	2.8
FM04	FM6, 7, 9	20.6	0.43	1.28	1.71	36.7	4.0
FM05	FM7	37.8	1.07	1.32	2.39	11.2	2.2
FM06	FM7	9.7	0.31	0.73	1.04	66.2	3.4
FM07		17.9	0.85	2.15	3.01	37.4	3.5
FM08[c]	FM10, 10A, 11	7.8	0.25	1.07	1.33	126.5	5.2
FM09		16.5	0.36	1.15	1.52	47.9	4.2
FM10	FM10A, 11	14.7	0.62	2.07	2.68	56.2	4.4
FM10A		11.9	0.42	1.10	1.52	57.3	3.6
FM11		11.2	0.36	0.81	1.18	55.0	3.2
FM12		16.4	0.25	0.19	0.44	20.5	1.8

a. Peaking factor is the ratio of ADWF to Peak I/I Flow
b. This is incremental sewer length by flow meter basin (i.e., it does not include the length of sewers that are upstream of the tributary area).
c. Note the I/I rate is high for FM08, but the incremental sewer length is relatively small.

There are no I/I reduction projects recommended in this report. It would difficult to identify specific areas or pipe segments that contribute the highest amounts of I/I to the system without more extensive flow monitoring and field investigations. I/I issues are also often caused by infiltration or inflow from privately owned laterals. So, even if leaky City-owned pipes are repaired, a large source of I/I may remain. Therefore, while I/I reduction may reduce the need for capacity improvement projects, elimination of the need for any specific project cannot be assured. That said, the City should always look for ways to reduce I/I in the system through ongoing sewer rehabilitation efforts and encouraging property owners to maintain their sewer laterals in good condition. Should I/I flows appear to increase significantly in the future, the City may want to implement a targeted I/I investigation and correction program at that time.

APPENDICES

APPENDIX A – PUMP AND SYSTEM CURVES

PERFORMANCE CURVE

PRODUCT	TYPE
NP3202.090	MT

DATE	PROJECT	CURVE NO	ISSUE
2006-07-27	City Of Pleasanton PS-6	63-641-00-6040	4

	1/1-LOAD	3/4-LOAD	1/2-LOAD
POWER FACTOR	0.85	0.82	0.73
EFFICIENCY	89.5 %	90.0 %	89.5 %
MOTOR DATA	---	---	---

RATED POWER	45	hp
STARTING CURRENT ...	330	A
RATED CURRENT ...	55	A
RATED SPEED	1170	rpm
TOT.MOM.OF INERTIA ...	0.48	kgm2
NO. OF BLADES	2	

IMPELLER DIAMETER: 354 mm

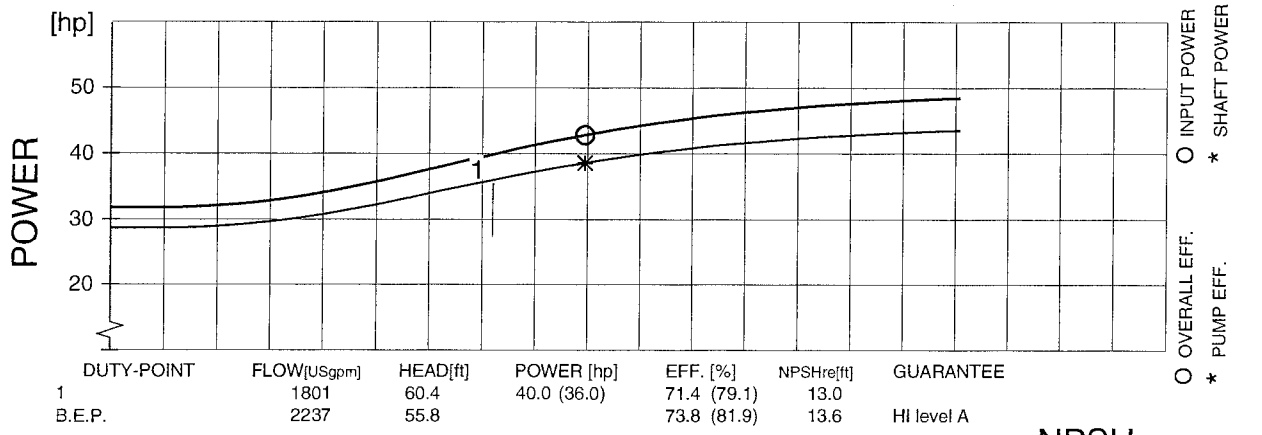
MOTOR #	STATOR	REV
30-23-6AA	01D	12

FREQ.	PHASES	VOLTAGE	POLES
60 Hz	3	460 V	6

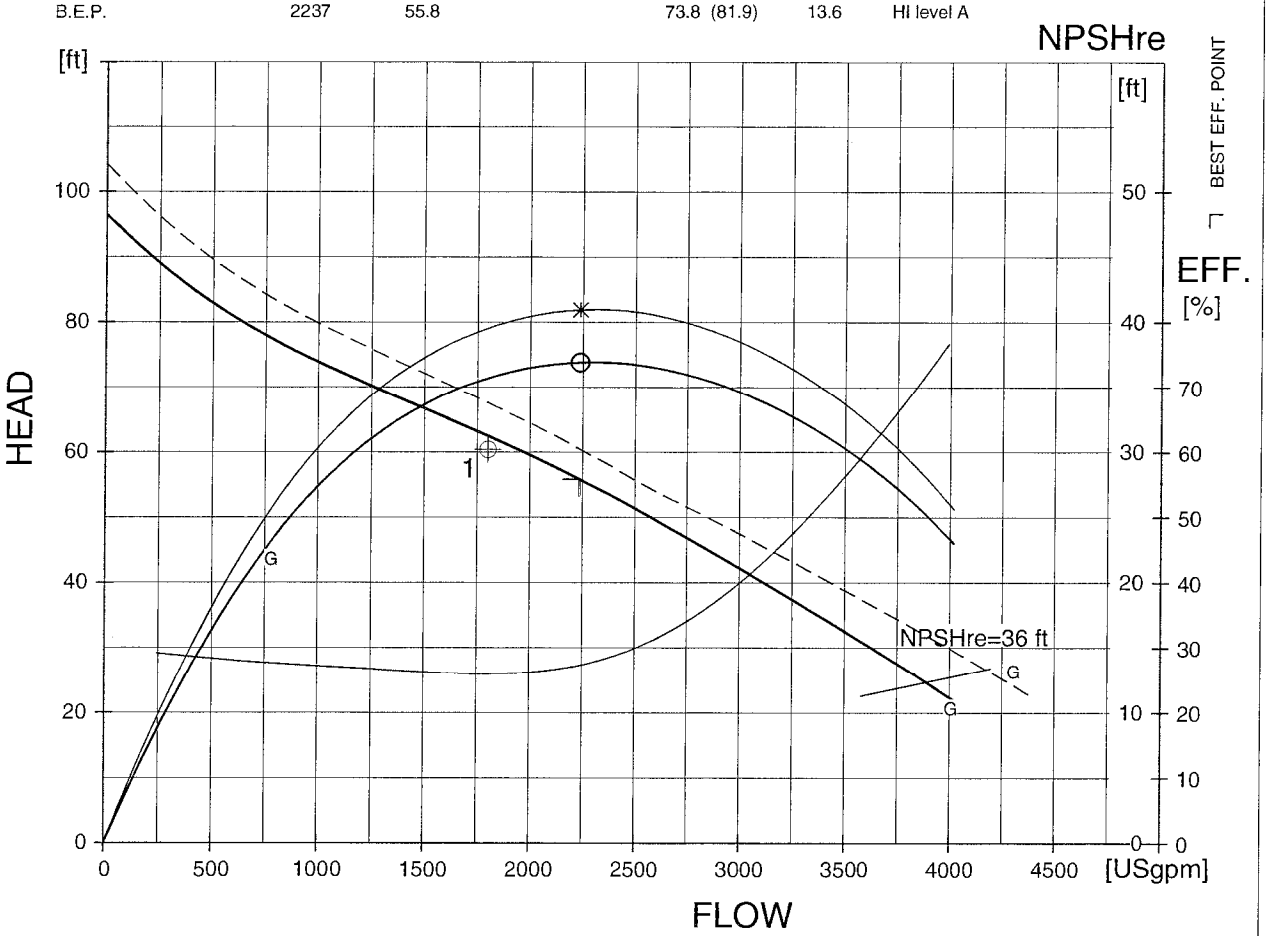
GEARTYPE	RATIO
---	---

COMMENTS

INLET/OUTLET	IMP. THROUGHLET
-/ 8 inch	---



DUTY-POINT	FLOW[USgpm]	HEAD[ft]	POWER [hp]	EFF. [%]	NPSHre[ft]	GUARANTEE
1	1801	60.4	40.0 (36.0)	71.4 (79.1)	13.0	
B.E.P.	2237	55.8		73.8 (81.9)	13.6	HI level A



NPSHre = NPSH3% + min. operational margin

Performance with clear water and ambient temp 40 °C

GUARANTEE BETWEEN LIMITS (G) ACC. TO

HI level A

GUARANTEE

FLYPS3.1.5.4 (20060324)

PERFORMANCE CURVE

PRODUCT	TYPE
NP3202.090	MT

DATE	PROJECT	CURVE NO	ISSUE
2006-07-27	City Of Pleasanton PS-6	63-641-00-6040	4

	1/1-LOAD	3/4-LOAD	1/2-LOAD
POWER FACTOR	0.85	0.82	0.73
EFFICIENCY	89.5 %	90.0 %	89.5 %
MOTOR DATA	---	---	---

RATED POWER	45	hp
STARTING CURRENT ...	330	A
RATED CURRENT ...	55	A
RATED SPEED	1170	rpm
TOT.MOM.OF INERTIA ...	0.48	kgm2
NO. OF BLADES	2	

IMPELLER DIAMETER: 354 mm

MOTOR #	STATOR	REV
30-23-6AA	01D	12

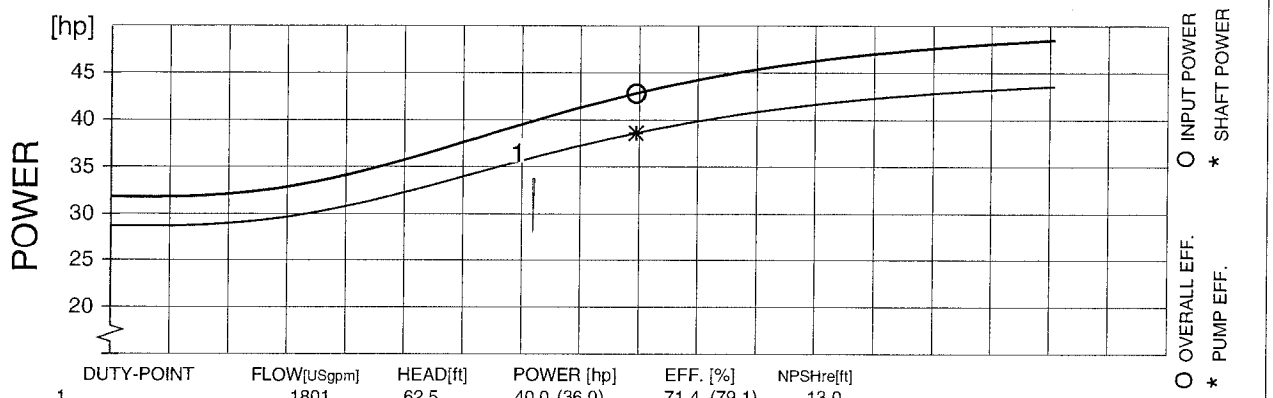
FREQ.	PHASES	VOLTAGE	POLES
60 Hz	3	460 V	6

GEARTYPE	RATIO
---	---

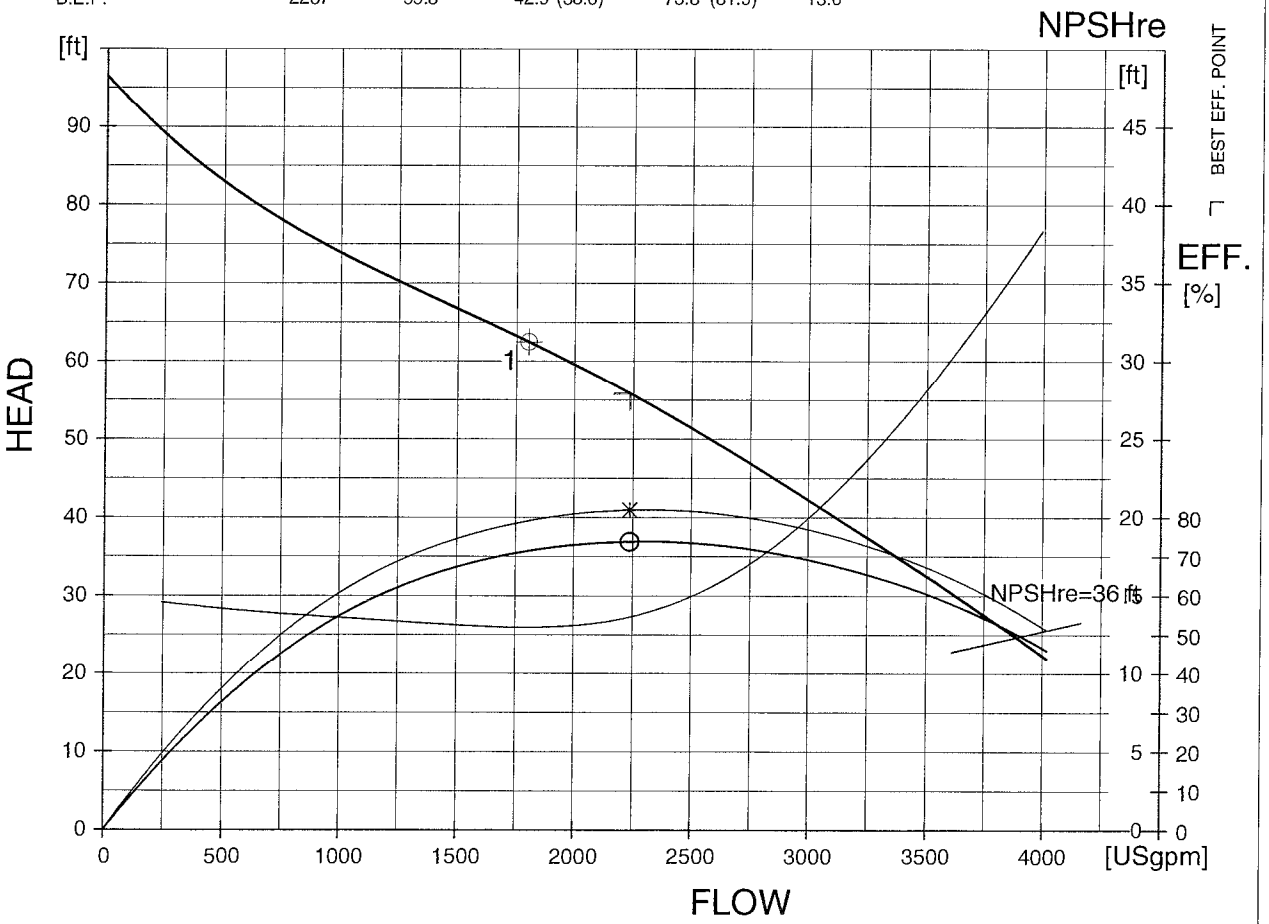
COMMENTS

INLET/OUTLET: -/ 8 inch

IMP. THROUGHLET: ---



DUTY-POINT	FLOW[USgpm]	HEAD[ft]	POWER [hp]	EFF. [%]	NPSHre[ft]
1	1801	62.5	40.0 (36.0)	71.4 (79.1)	13.0
B.E.P.	2237	55.8	42.9 (38.6)	73.8 (81.9)	13.6



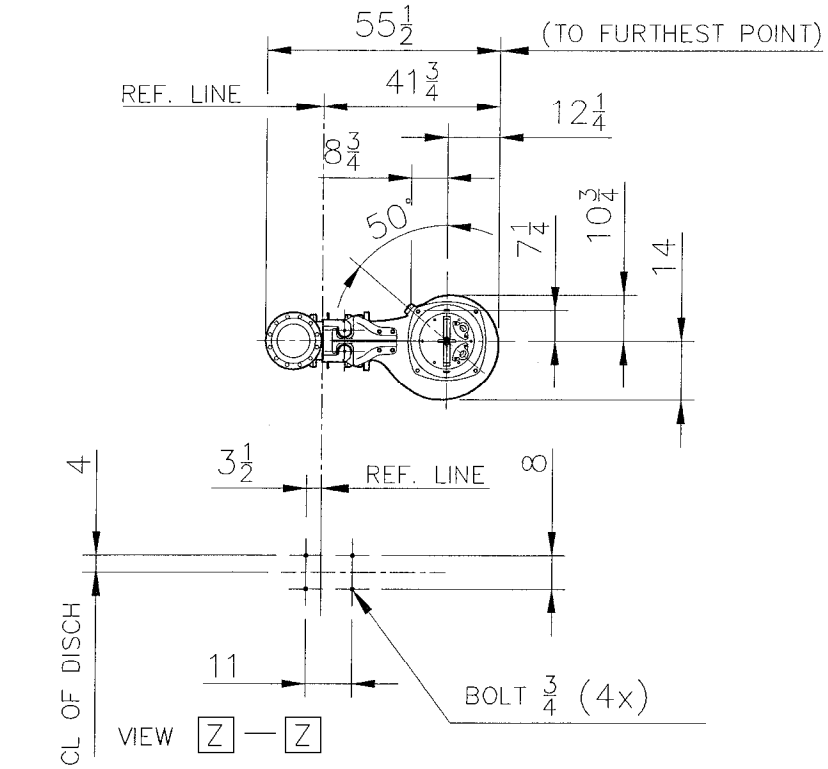
NPSHre = NPSH3% + min. operational margin

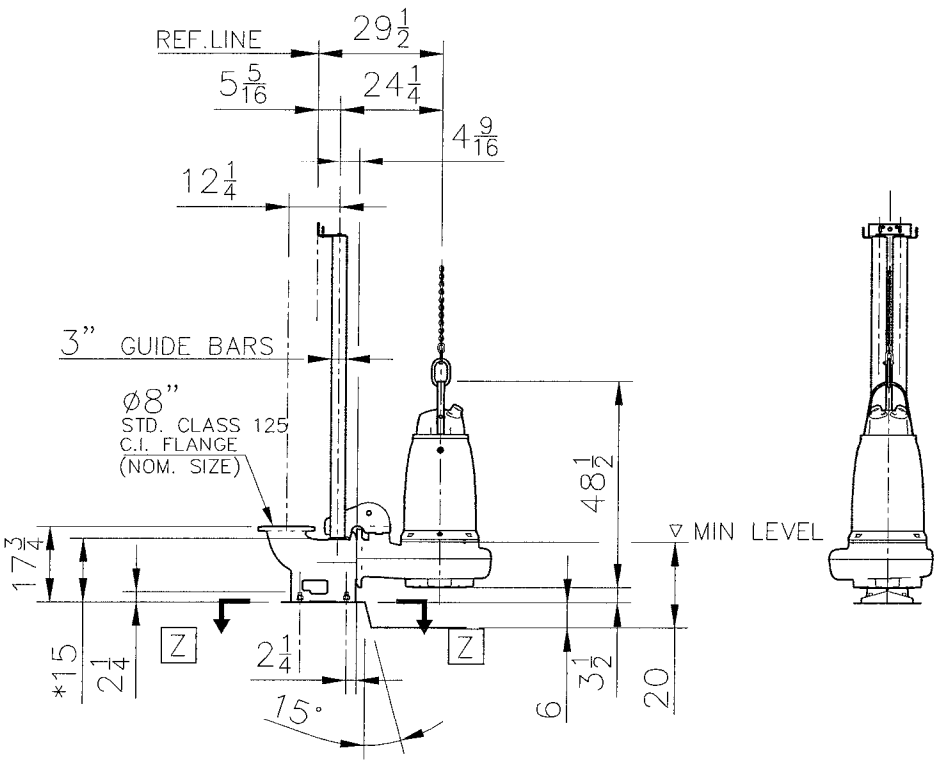
Performance with clear water and ambient temp 40 °C

HI B Curve

AVERAGE

FLYPS3.1.5.4 (20060324)

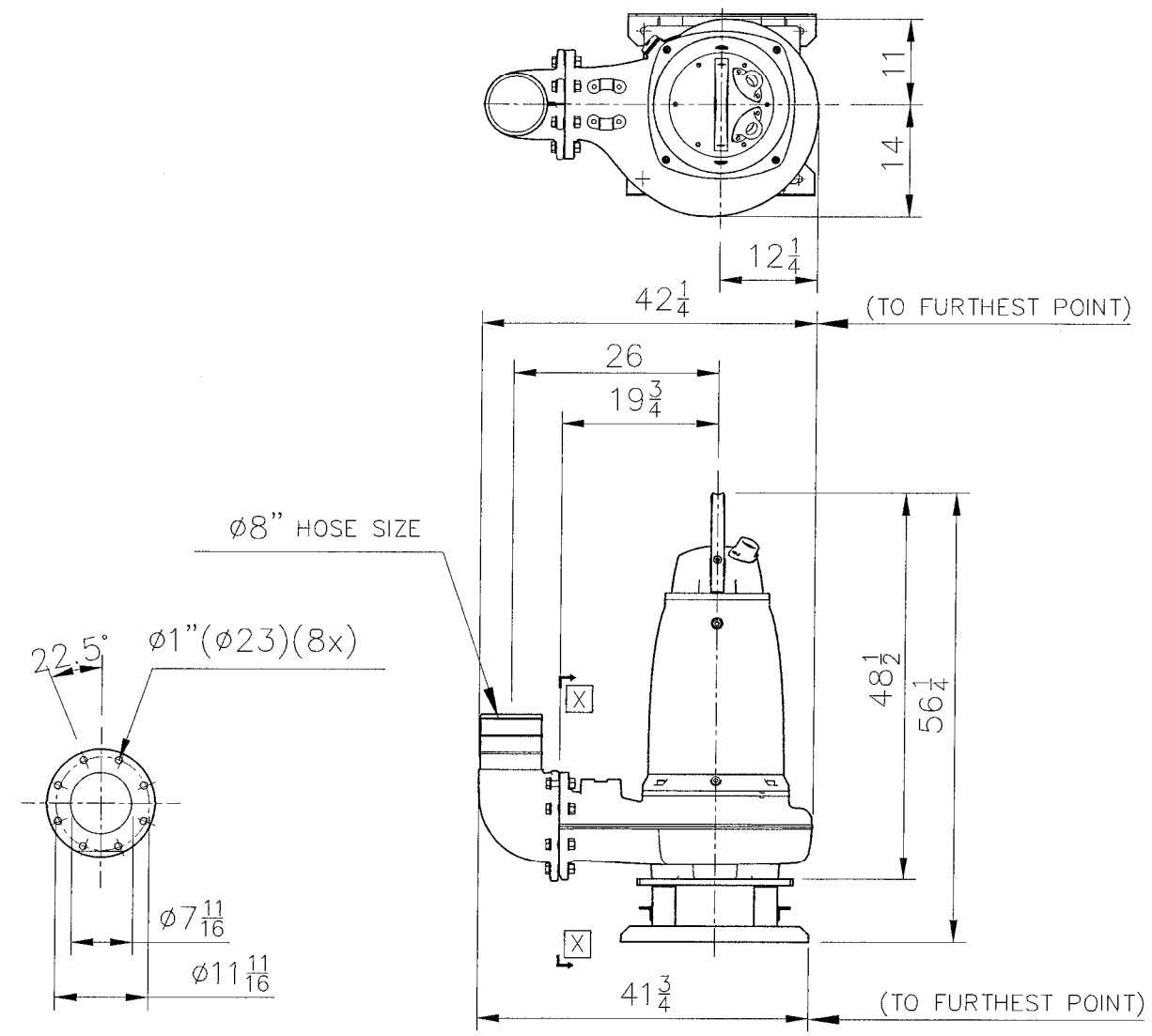




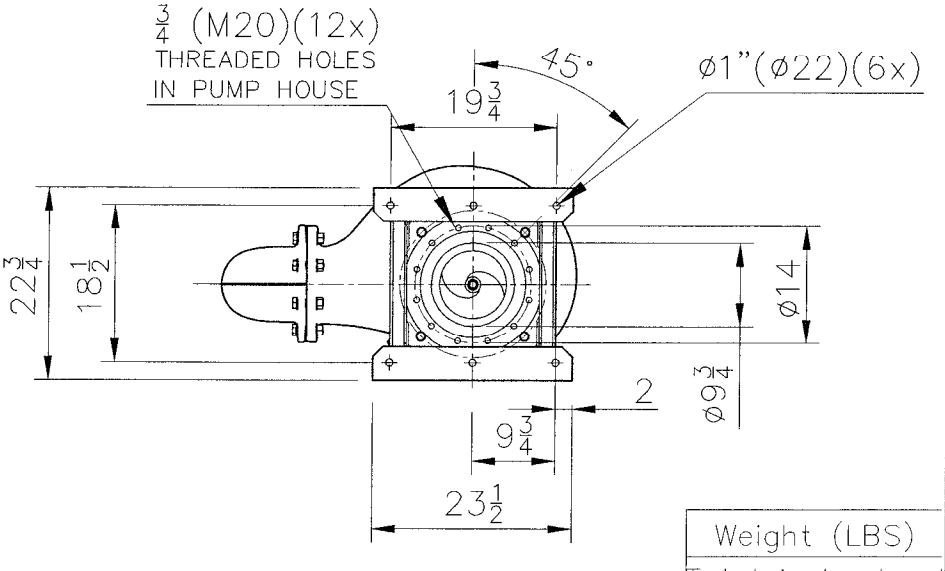
* DIMENSION TO ENDS OF GUIDE BARS

Weight (LBS)	
Pump with cooling jocket	Disch
1289	222
Pump without cooling jacket	
1178	

FLYGT AUTOCAD DRAWING	Denomination: Dimensional drwg NP 3202 MT 60HZ DN200/ DN200	Drawn by SZK	Checked by to	Date 010731
		Scale 1:40		Reg no 5399
		666 45 00		A



VIEW X – X



Weight (LBS)
Total incl. stand
1356

FLYGT AUTOCAD DRAWING	Denomination: Dimensional drwg NS 3202 MT 60HZ DN200/ dia200	Drawn by SZK	Checked by to	Date 010806
		Scale 1:20		Reg no 5399
		666 47 00		B

CITY OF PLEASANTON
CALIFORNIA

SANITARY SEWER LIFT STATION
S-6 REPLACEMENT

PROJECT NO. 012027

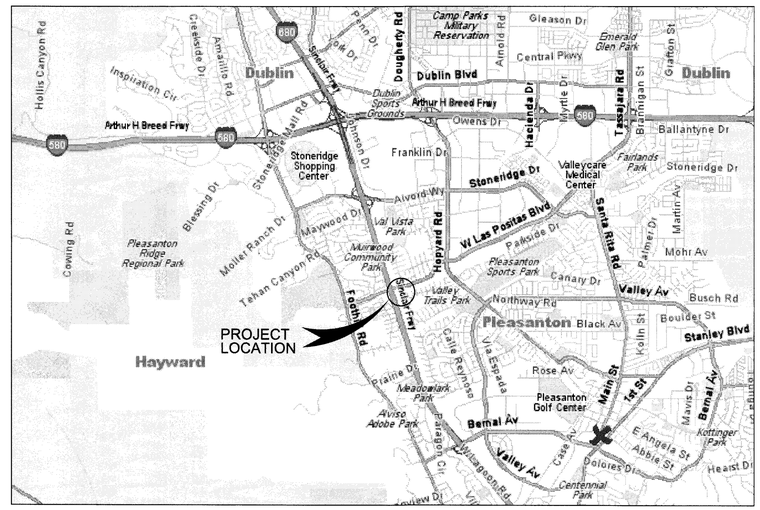
VOLUME 4 of 6
DRAWINGS

LOCATION MAP

CONFORMED DOCUMENTS
SEPTEMBER 2010

THE CITY OF
PLEASANTON

carollo



VICINITY MAP

The undersigned has approved this document for and on behalf of Carollo Engineers, P.C.

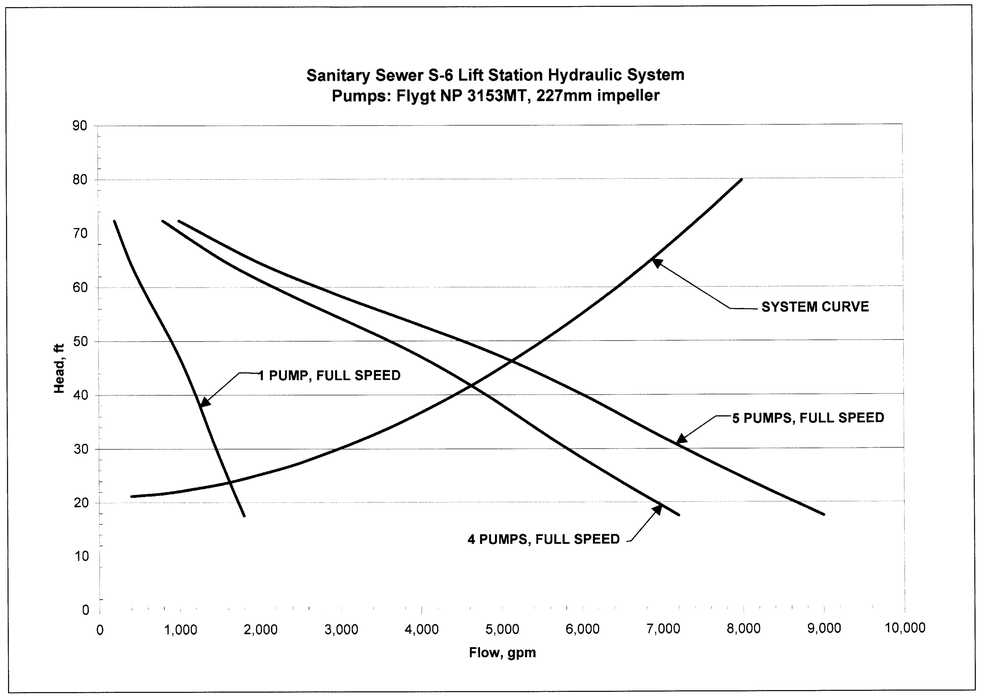
Partner

JOB NO.
7967A.10
DRAWING NO.
G-1
SHEET NO.
1 OF 45

Last Opened by: 3-22-09 03:39pm MGabel

FILENAME: Last Saved By: ${GETPROP}??

SHT NO.	DWG NO.	DESCRIPTION
		GENERAL
1	G - 1	Cover Sheet
2	G - 2	Sheet Index & Design Criteria
3	G - 3	General Structural and Architectural Notes
4	G - 4	Quality Assurance Plan
5	G - 5	Quality Assurance Plan
6	G - 6	Quality Assurance Plan
7	G - 7	Quality Assurance Plan
8	G - 8	Staging and Access Plan
		Typicals
9	T - 1	General - 1
10	T - 2	General - 2
11	T - 3	General - 3
		Demolition
12	D - 1	Site Plan
		Civil
13	C - 1	Site Plan - Yard Piping
14	C - 2	Site Plan - Paving & Grading
15	C - 3	Site Details
		Architectural
16	A - 1	MCC Building Elevations
17	A - 2	Door & Window Schedule & Details
		Structural/Mechanical
18	S/M - 1	MCC Building - Ground Level Plan & Roof Plan
19	S/M - 2	MCC Building - Sections and Details
20	S/M - 3	Pump Station - Bottom Plan
21	S/M - 4	Pump Station - Top Plan and Section
22	S/M - 5	Pump Station - Sections
23	S/M - 6	Pump Station - Sections
24	S/M - 7	Pump Station - Details
		Plumbing
25	P - 1	MCC Building Plumbing Plan
		Electrical
26	GE - 1	Electrical Symbol Legend
27	GE - 2	Electrical Abbreviations
28	E - 1	Site Power Plan
29	E - 2	Luminaire and Panelboard Schedule
30	E - 3	MCC and Switchboard One Line Diagram
31	E - 4	MCC and Switchboard Elevations
32	E - 5	Pump Station Power and Control Plan
33	E - 6	MCC Building Power Plan
34	E - 7	MCC Building Lighting and Grounding Plan
		Instrumentation
35	GN - 1	Symbols and Legend I
36	GN - 2	Symbols and Legend II
37	GN - 3	System Block Diagram
38	GN - 4	Typical Loop Diagrams/Control Panel Power Diagram
39	GN - 5	PLC Panel Elevation
40	GN - 6	Control Schematics
41	GN - 7	Control Schematics
42	N - 1	Pump Station Pumps 1 & 2
43	N - 2	Pump Station Pumps 3 & 4
44	N - 3	Pump Station Pump 5 & 6
45	N - 4	Standby Generator and Misc. Alarms



DESIGN CRITERIA

PUMP STATION LOCATION	6900 W. LAS POSITAS BLVD
TYPE	SUBMERSIBLE TRENCH-STYLE (5 PUMPS)
CAPACITY	
RELIABLE	6.6 MGD @ 42' TDH
TOTAL	7.6 MGD @ 45' TDH
LEVEL CONTROL TYPE	ULTRASONIC LEVEL W/ FLOAT BACKUP
OVERFLOW POINT	
OVERFLOW DISCHARGE	ARROYO MOCHO CANAL
AVERAGE TIME TO OVERFLOW	
AUXILIARY POWER TYPE	STATIONARY DIESEL GENERATOR
OUTPUT	200 Kw
FUEL TANK CAPACITY	300 GALLONS
TRANSFER SWITCH	AUTOMATIC
ALARM TELEMETRY TYPE	RADIO
EPA RELIABILITY CLASS	I
FORCE MAIN LENGTH, TYPE	2,750' OF 20" PVC
PROFILE	GENERALLY ASCENDING EXCEPT FOR CROSSING UNDER CHANNEL "G"
DISCHARGE LOCATION	DUBLIN SAN RAMON SERVICES DISTRICT (DSRSD) WASTEWATER TREATMENT PLANT
AIR RELEASE VALVES	ONE AT HIGH POINT PRIOR TO CHANNEL "G"
AVERAGE DETENTION	37 MIN @ 1,200 GPM

DATE: $TIME$

LAST SAVED BY: jones

REV	DATE	BY	DESCRIPTION
			CONFORMED DOCUMENTS FOR CONSTRUCTION

PROJECT NO.

FILE NAME: _title_blks.CEL

DESIGNED BMC
DRAWN MJG/EDL
CHECKED TPY
DATE SEPT 2010

ORIGINAL STAMPED BY TODD PHILLIP YAMELLO 06/30/12 C69274

carollo

THE CITY OF PLEASANTON

CITY OF PLEASANTON

SANITARY SEWER LIFT STATION S-6 REPLACEMENT

GENERAL

SHEET INDEX, ABBREVIATIONS & DESIGN CRITERIA

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 7967A.10
DRAWING NO. G-2
SHEET NO. 2 OF 45

Sewer Department Pump and Motor Assembly Inventory

11-Feb-02 Pump Station Number S7 Pump Number 1

Motor

Equipment IDNumber LSS07MOT1

Manufacturer GE HP 20 Volts 230/460 Amps 55.2/27.

Model # 5K6235XM39A Final Connection 460 Volts RPM 1165

Serial # FRJ613283 Service Factor 1.15 Type K Insul CL

Catalog # Code G Phase 3 Frame C286HP

Lower Bearing 629A310 Upper Bearing K598349 Shaft

Pump/Motor Combo No Ambient Temp 40 C

Remarks

Pump

Equipment ID Number LSS07PMP1

Make Fairbanks Morse/Colt Industries Capacity (GPM) 1400 TDH 33 feet

Model/Stock # B5444 Impeller Number 11.0 (si Size 8x10

Serial # K3D1087161-2 Material Volute diam

Catalog # Column Suction diam

Pump/Motor Combo No Stages 1 Casting Nozzle (Disch diam)

Remarks Frame: T40

PUMP SUCTION PIPING ELEVATION 299'

FORCE MAIN DISCHARGE ELEVATION 319'

Sewer Department Pump and Motor Assembly Inventory

11-Feb-02 Pump Station Number S7 Pump Number 2

Motor

Equipment IDNumber LSS07MOT2

Manufacturer GE HP 20 Volts 230/460 Amps 55.2/27.

Model # 5K6235XM39A Final Connection 460 Volts RPM 1165

Serial # FRJ613281 Service Factor 1.15 Type K Insul CL

Catalog # Code G Phase 3 Frame C286HP

Lower Bearing 629A310 Upper Bearing K598349 Shaft

Pump/Motor Combo No Ambient Temp 40 C

Remarks

Pump

Equipment ID Number LSS07PMP2

Make Fairbanks Morse/Colt Industries Capacity (GPM) 1400 TDH 33 feet

Model/Stock # B5444 Impeller Number 11.0 (si Size 8x10

Serial # K3D1087161-3 Material Volute diam

Catalog # Column Suction diam

Pump/Motor Combo No Stages 1 Casting Nozzle (Disch diam)

Remarks Frame: T40

Sewer Department Pump and Motor Assembly Inventory

11-Feb-02 Pump Station Number S7 Pump Number 3

Motor

Equipment IDNumber LSS07MOT3

Manufacturer GE HP 20 Volts 230/460 Amps 55.2/27.

Model # 5K6235XM39A Final Connection 460 Volts RPM 1165

Serial # FRJ613282 Service Factor 1.15 Type K Insul CL

Catalog # Code G Phase 3 Frame C286HP

Lower Bearing 629A310 Upper Bearing K598349 Shaft

Pump/Motor Combo No Ambient Temp 40 C

Remarks

Pump

Equipment ID Number LSS07PMP3

Make Fairbanks Morse/Colt Industries Capacity (GPM) 1400 TDH 33 feet

Model/Stock # B5444 Impeller Number 11.0 (si Size 8x10

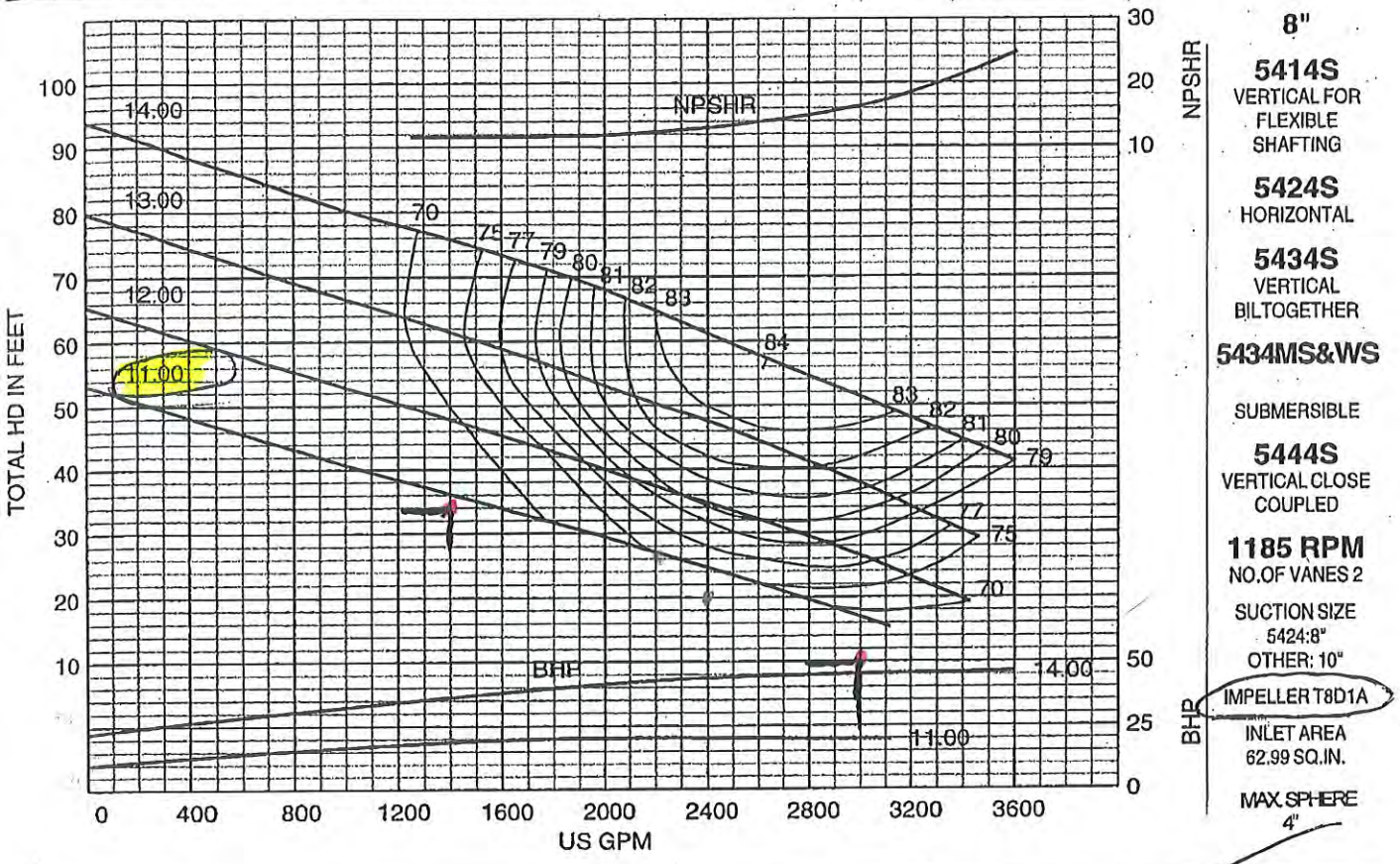
Serial # K3D1087161-1 Material Volute diam

Catalog # Column Suction diam

Pump/Motor Combo No Stages 1 Casting Nozzle (Disch diam)

Remarks Frame: T40

5-7 STATION



8"

5414S
VERTICAL FOR FLEXIBLE SHAFTING

5424S
HORIZONTAL

5434S
VERTICAL BILTOGETHER

5434MS&WS
SUBMERSIBLE

5444S
VERTICAL CLOSE COUPLED

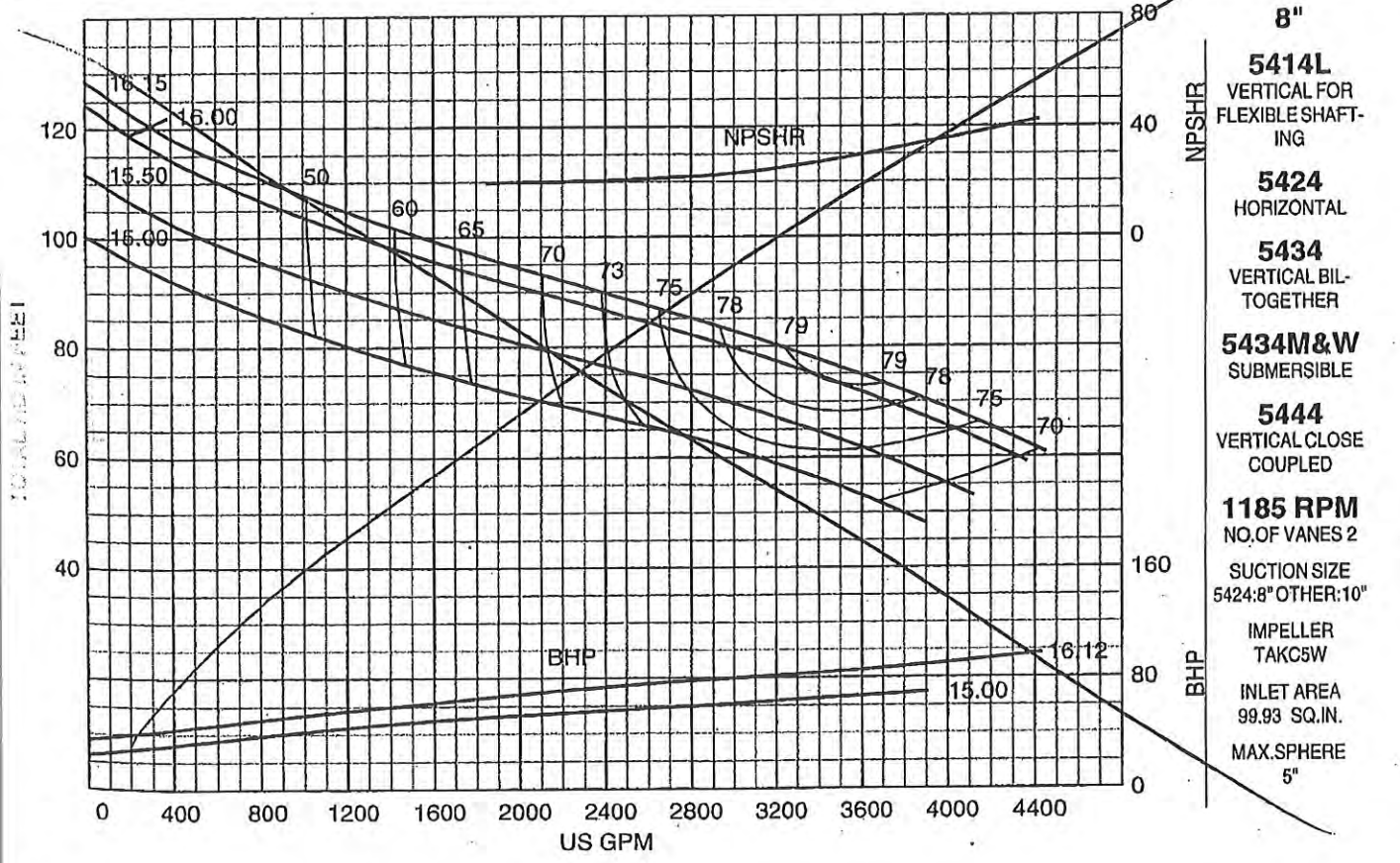
1185 RPM
NO.OF VANES 2

SUCTION SIZE
5424:8"
OTHER: 10"

IMPELLER T8D1A

INLET AREA
62.99 SQ.IN.

MAX.SPHERE
4"



8"

5414L
VERTICAL FOR FLEXIBLE SHAFTING

5424
HORIZONTAL

5434
VERTICAL BILTOGETHER

5434M&W
SUBMERSIBLE

5444
VERTICAL CLOSE COUPLED

1185 RPM
NO.OF VANES 2

SUCTION SIZE
5424:8" OTHER:10"

IMPELLER
TAKC5W

INLET AREA
99.93 SQ.IN.

MAX.SPHERE
5"

PUMP REPAIR SERVICE CO.

May 13, 2009

City of Pleasanton
3333 Busch Road
P. O. Box 520
Pleasanton, CA 94566-0802

Attn: Jeff Ballou

SUBJECT: STATION S7

Dear Jeff,

These pumps were sold in 1979 with two design conditions 1400 GPM @ 33' TDH and 3000 GPM @ 10' TDH with a pump shut off head at 53' TDH. After test running the three **Fairbank Morse** sewage pumps, we found the following. Unfortunately, without the flow meter working during these tests there was no way to get the pumping capacities.

#1 Pump running at 1165 RPM
Discharge 10 PSI = 23.00 TDH
Suction 3 PSI = 6.93 TDH
Total Pump Head 16.07
Pump Shut Off Head 19 PSI – 43.89

#2 Pump running at 1165 RPM
Discharge 7 PSI = 16.17 TDH
Suction 3 PSI = 6.93 TDH
Total Pump Head 9.24
Pump Shut Off Head 17 PSI = 39.27

I believe this pump may have some debris caught in the eye of the impeller.

#3 Pump running at 1165 RPM
Discharge 10 PSI = 13.86
Suction 3 PSI = 6.93
Total Pump Head 16.07
Pump Shut Off Head 19 PSI = 43.89

ESTABLISHED 1941
PO BOX 34327 SAN FRANCISCO, CA 94134-0327 415.467.2150 FAX 415.467.7442

Sewer Department Pump and Motor Assembly Inventory

11-Feb-02 **Pump Station Number S8** **Pump Number 1, 2 & 3**

Motor

Equipment IDNumber LSS08MOT1

Manufacturer GE **HP** 60 **Volts** 230/460 **Amps** 147/73

Model # 5K404AL352M **Final Connection** 460 Volts **RPM** 1180

Serial # GR302022 **Service Factor** 1.15 **Type** K **Insul CL**

Catalog # **Code** G **Phase** 3 **Frame** 404 TS

Lower Bearing 65BC02J **Upper Bearing** 65BC02J **Shaft**

Pump/Motor Combo No **Ambient Temp**

Remarks

Pump

Equipment ID Number LSS08PMP1

Make Fairbanks Morse/Colt Industries **Capacity (GPM)** 1400 **TDH** 80

Model/Stock # B5424 **Impeller Number** **Size** 15 inch

Serial # K3D1087160-3 **Material** **Volute diam**

Catalog # **Column** **Suction diam**

Pump/Motor Combo No **Stages** 1 **Casting** **Nozzle (Disch diam)**

Remarks Frame T40; 8"

Colt Industries Pump Division

cc: Phil Bouldin
Mile Neal

FACTORY PUMP SPECIFICATIONS AND BILL OF MATERIAL

5-8 STATION

DATE ENTERED	DATE PROMISED	DATE SHIPPED	MOTOR S/N	PUMP SERIAL NO.
2-15-79	309			K3D1-087160

CUSTOMER'S NAME: Elmer FREETHY CO — CUSTOMER P.O.: 1906-78-24 — K3D1-087160-1

BUILD 3 PUMPS ON THIS ORDER AND NO OTHER PUMPS ON THIS ORDER — SPEC. WRITER: L. Bilenus — CHECKED: — K3D1-087160-2

PUMP DESCRIPTION		GENERAL	OPERATING CONDITIONS		
SIZE 8"	DIS. POS. 7	SUCTION PROJ.	GPM 1400/3000	TDH 80/50 (35/21)	CERTIFIED CURVES * ☒ YES ☐ NO
FIGURE NO. B5424		DISCH. PROJ.	SUCTION LIFT / SUCTION HEAD		CURVES APPR'D. BEFORE SHPM'T. ☐ YES ☒ NO
PUMP FITTING IF	ROTATION CW	TUBE PROJ.	PUMP RPM 1160 (F/L)	MTR. S.F. 1.15	WITNESS TEST ☐ YES ☒ NO
CURVE NO. K3D1-087160	GUARANTEE YES (NO)	SUCTION SIZE	MTR. HP 60	MTR. TYPE Horiz-OLP	HYDRO TEST PSI-70 ☒ YES ☐ NO
SHIP ASSEMBLED ☒ YES ☐ NO		DISCH. SIZE 8"	IMPELLER T8D1CR	DIA. OR "D" DIM. 15.00"	DATE PUMP TESTED
DRIVER MOUNTED BY FACTORY - [redacted]		MIN. END PLAY	SOLID OVERLOAD YES NO	SP GRAVITY	TESTED BY

SPECIAL INSTRUCTIONS

Pump w/ brz glands & 450 BHN sleeve
Motor: 993X087160 9906 F
GE 60HP @ 1200 RPM 3/60/460V w/ Thermisters FR-404T
Dynamic Balance Impellers & Ret: T8D1D
* Test 1-Pump Only

Suc C/O

SETTING PLAN — SPECIAL AND VARIABLE PARTS ON THIS ORDER

QUANTITY	SYMBOL	MATERIAL	LEVEL CODE	PRODUCT CODE	DESCRIPTION	REFERENCE	LINE

PAGE 1 OF 6

5-8 STATION

8"

5414L
VERTICAL FOR FLEXIBLE SHAFTING

5424L
HORIZONTAL

5434L
VERTICAL BILTOGETHER

5434ML&WL
SUBMERSIBLE

5444L
VERTICAL CLOSE COUPLED

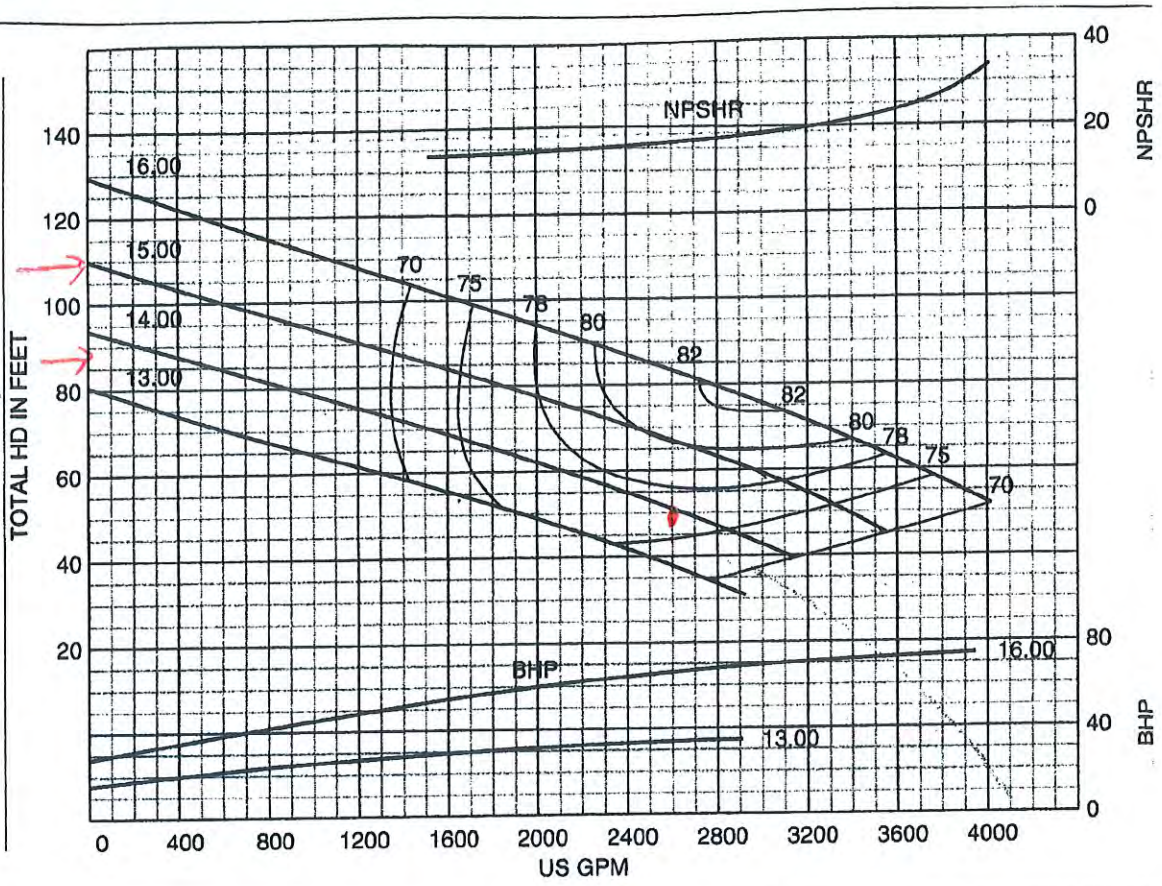
1185 RPM
NO.OF VANES 2

SUCTION SIZE
5424:8"
OTHER: 10"

IMPELLER T8D1D

INLET AREA
72.94 SQ.IN.

MAX.SPHERE 4"



15 OD impellers ORiginal Trim

13½ OD impellers new Trim

Future
M40806?

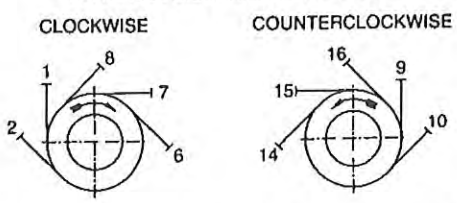
⚠ WARNING

DO NOT OPERATE THIS MACHINE WITHOUT PROTECTIVE GUARD IN PLACE ANY OPERATION OF THIS MACHINE WITHOUT PROTECTIVE GUARD CAN RESULT IN SEVERE BODILY INJURY.

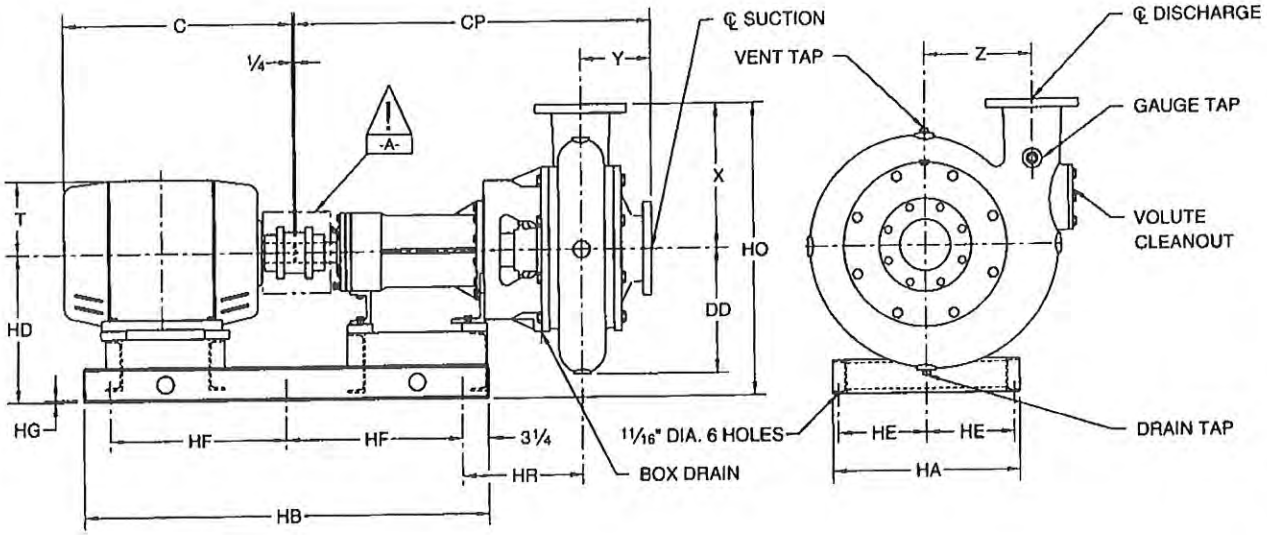
-A- SUPPLIED BY FMPC -B- SUPPLIED BY OTHERS

MOTOR DIMENSIONS	
C	T

AVAILABLE DISCHARGE POSITIONS



POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED
CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN



Design Conditions: 2500 GPM @ 50' TDH.

PUMP	FRAME		SUCT	DISCH	X	Y	Z	CP	DD	HA	HB	HD	HE	HF	HG	HO	HR
	PUMP	MOTOR															
6" B5424	T40	143T-184T	6	6	17	8⅜	12 13/16	42⅜	15½	22¼	36½	17½	10½	15	¼	34½	14¼
6" B5424	T40	213T-254T	6	6	17	8⅜	12 13/16	42⅜	15½	22¼	42½	17½	10½	18	¼	34½	14¼
6" B5424	T40	256T-364TS	6	6	17	8⅜	12 13/16	42⅜	15½	22¼	48½	17½	10½	21	¼	34½	14¼
6" B5424	T40	365T-404TS	6	6	17	8⅜	12 13/16	42⅜	15½	30½	54½	17½	14½	24	5/16	34½	14¼
8" B5424S(3)	T40	254T	8	8	16	9⅛	10 13/16	43⅝	14⅛	22¼	42½	19	10½	18	¼	35	14¾
8" B5424S(3)	T40	256T-364TS	8	8	16	9⅛	10 3/16	43⅝	14⅛	22¼	48½	19	10½	21	¼	35	14¾
8" B5424L(4)	T40	256T-364TS	8	8	18	9⅛	14	43⅝	17	22¼	48½	19	10½	21	¼	37	14¾
8" B5424L(4)	T40	365T-404TS	8	8	18	9⅛	14	43⅝	17	30½	54½	19	14½	24	5/16	37	14¾

NOTES.
(1) ALL FLANGES ARE 125# ANSI DRILLING UNLESS NOTED
(2) ALL DIMENSIONS ARE IN INCHES UNLESS NOTED.
(3) FOR USE WITH IMPELLER DESIGN T8D1A.
(4) FOR USE WITH IMPELLER DESIGNS T8D1D OR TAKC5W
(5) 5400'S AND 5400K'S ARE DIMENSIONALLY IDENTICAL.
(6) BASES ARE DESIGNED TO BE COMPLETELY FILLED WITH GROUT.
(7) SUCTION GAUGE CONNECTIONS ARE NOT AVAILABLE AND SHOULD BE LOCATED ON ADJACENT SUCTION PIPING.
(8) NOT FOR CONSTRUCTION, INSTALLATION, OR APPLICATION PURPOSES UNLESS CERTIFIED. DIMENSIONS SHOWN MAY VARY DUE TO NORMAL MANUFACTURING TOLERANCES.

CUSTOMER: City of Pleasanton				P O NO		Fairbanks Morse Pump Corporation
JOB NAME: STATION 58 Pump #2				TAG NAME		SETTING PLAN 6" & 8" B5424 WITH STRUCTURAL BASE
PUMP SIZE AND MODEL		GPM	TDH / RPM	ROTATION	DISCH POS	
MOTOR	HP	FRAME	PHASE / HERTZ	VOLTS	ENCLOSURE	
CERTIFIED FOR		CERTIFIED BY		DATE		DWG NO 5420S029 REV NO 0

Sanitary Sewer Station S-8

Pump Flow & Pressure Test Results

Static Discharge Pressure (all pumps off) was **14 PSI** with 7.7 ft. in Wet Well 3

Pump	Flow/GPM	PSI
# 1	2440	24 PSI
# 2	2300	22 PSI
# 3	2350	24 PSI
# 1 & # 2	3790	34 PSI
# 1, 2 & 3	3800	36 PSI

55 52

2500 GPM @ 50'

Pressures below were with pump running against closed discharge valve.

# 1	0	50 PSI
# 2	0	47 PSI
# 3	0	45 PSI

APPENDIX B – PLOTS OF FLOW MONITORING DATA

Figure B-1: Meter 1 Flow Monitoring Depth and Flow Plot

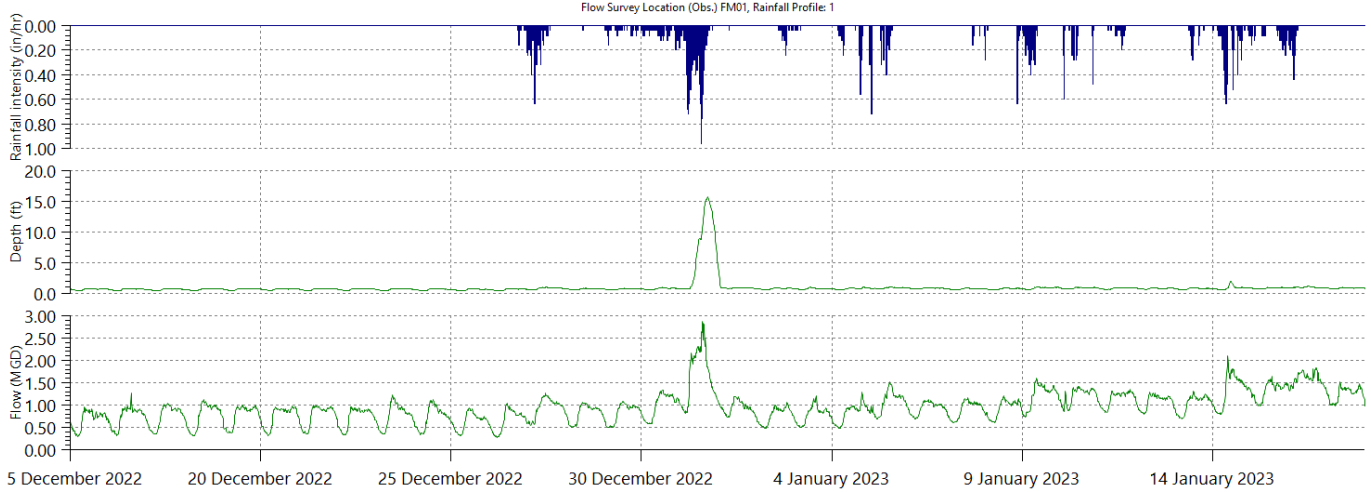


Figure B-2 Meter 2 Flow Monitoring Depth and Flow Plot

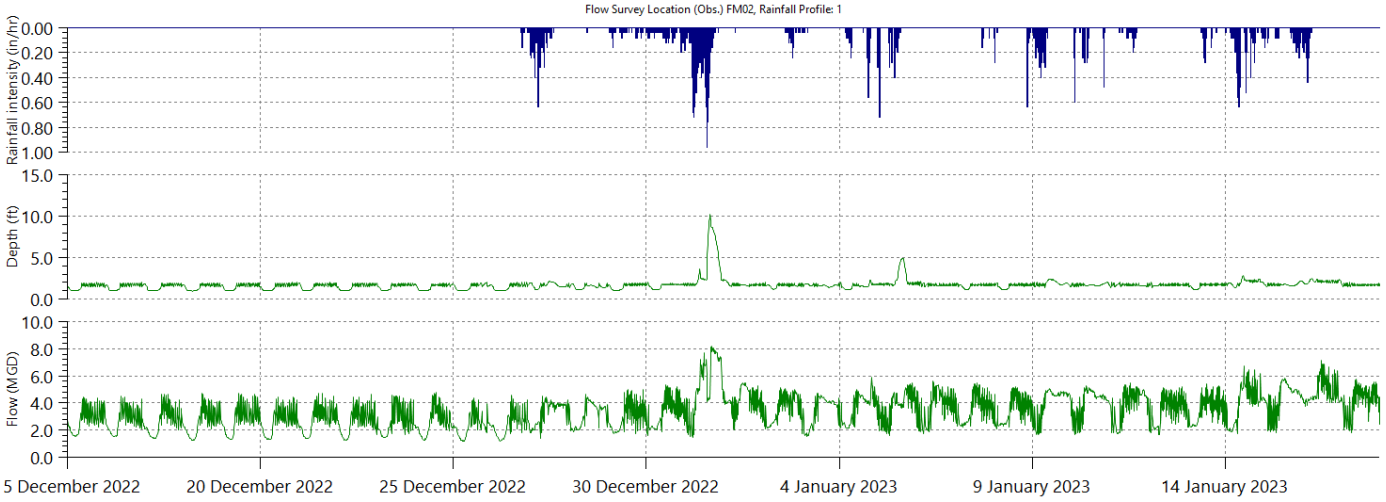


Figure B-3: Meter 3 Flow Monitoring Depth and Flow Plot

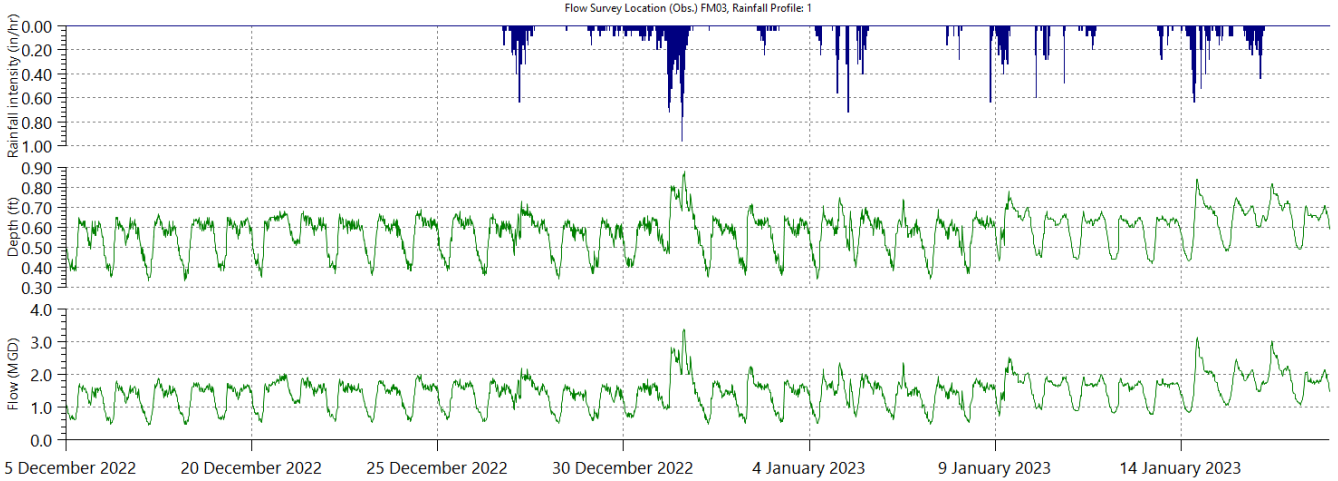


Figure B-4: Meter 3A Flow Monitoring Depth and Flow Plot

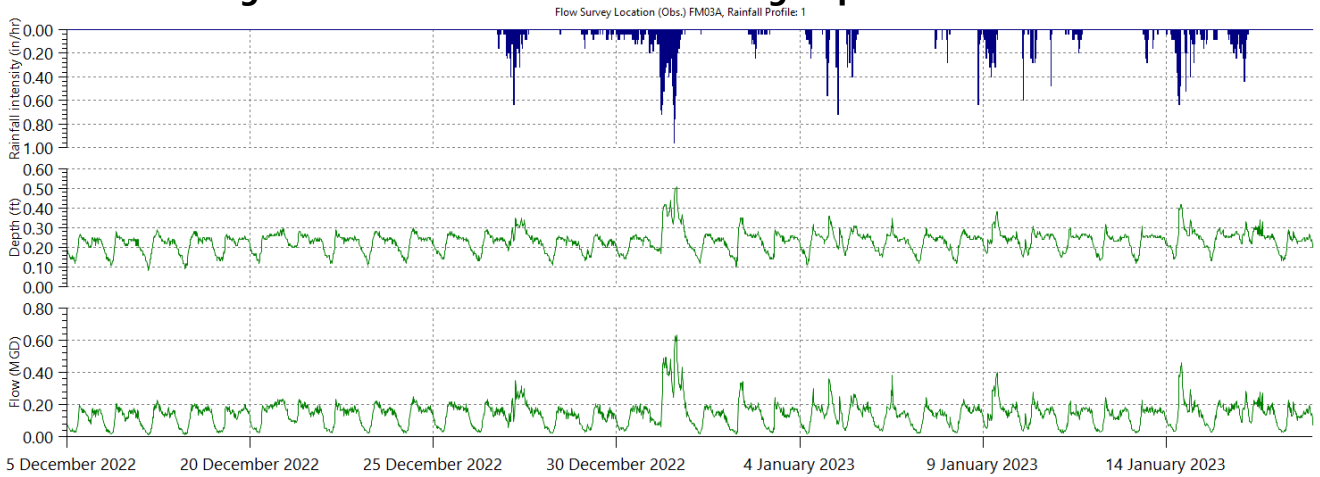


Figure B-5 Meter 4 Flow Monitoring Depth and Flow Plot

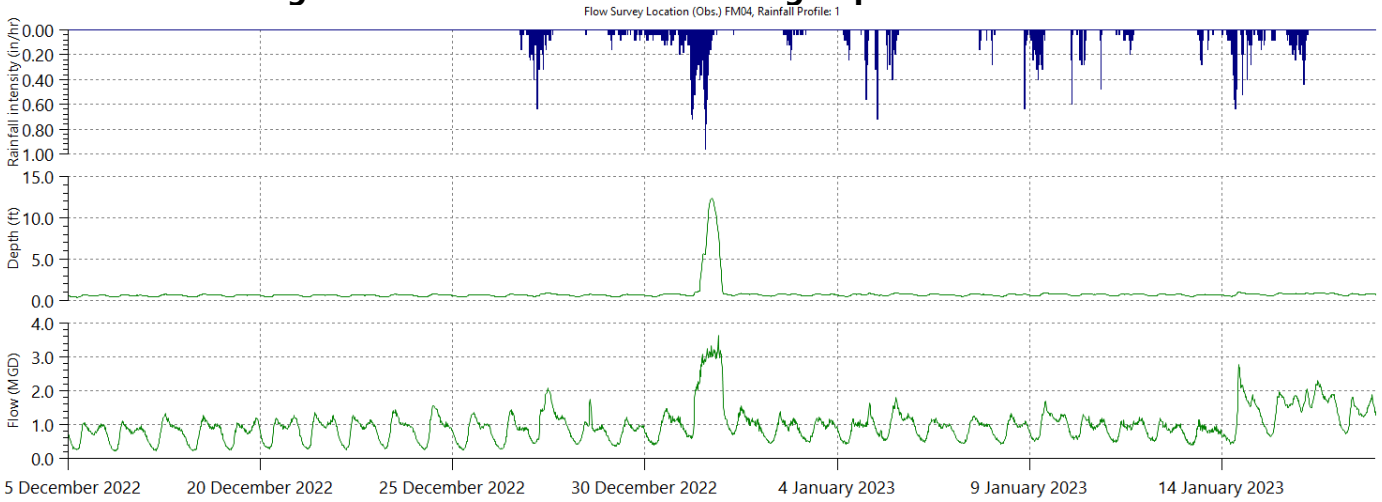


Figure B-6: Meter 5 Flow Monitoring Depth and Flow Plot

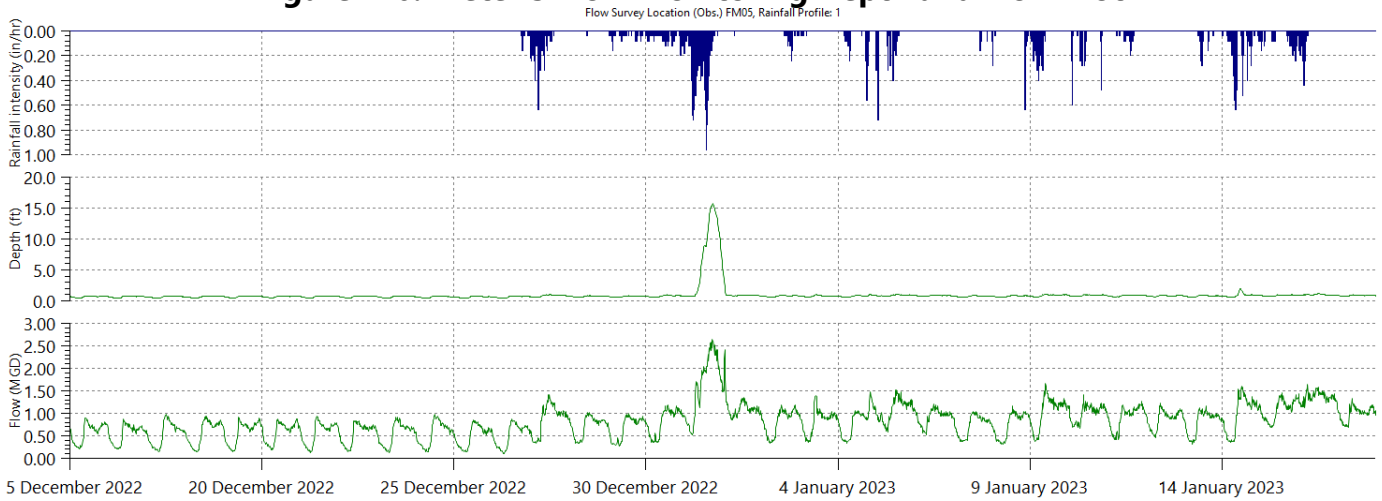


Figure B-7: Meter 6 Flow Monitoring Depth and Flow Plot

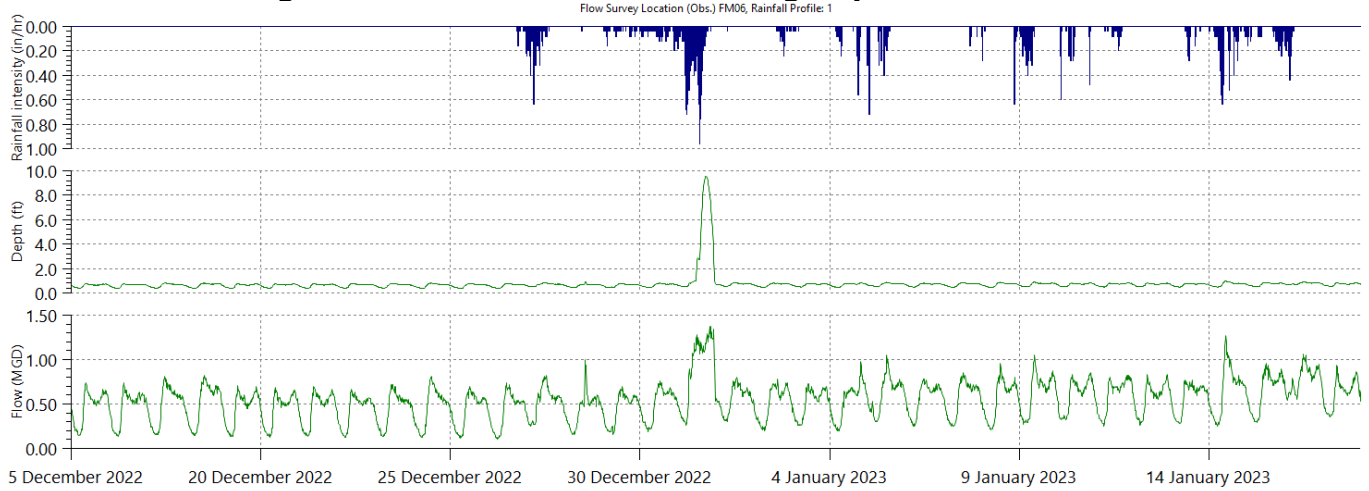


Figure B-8: Meter 7 Flow Monitoring Depth and Flow Plot

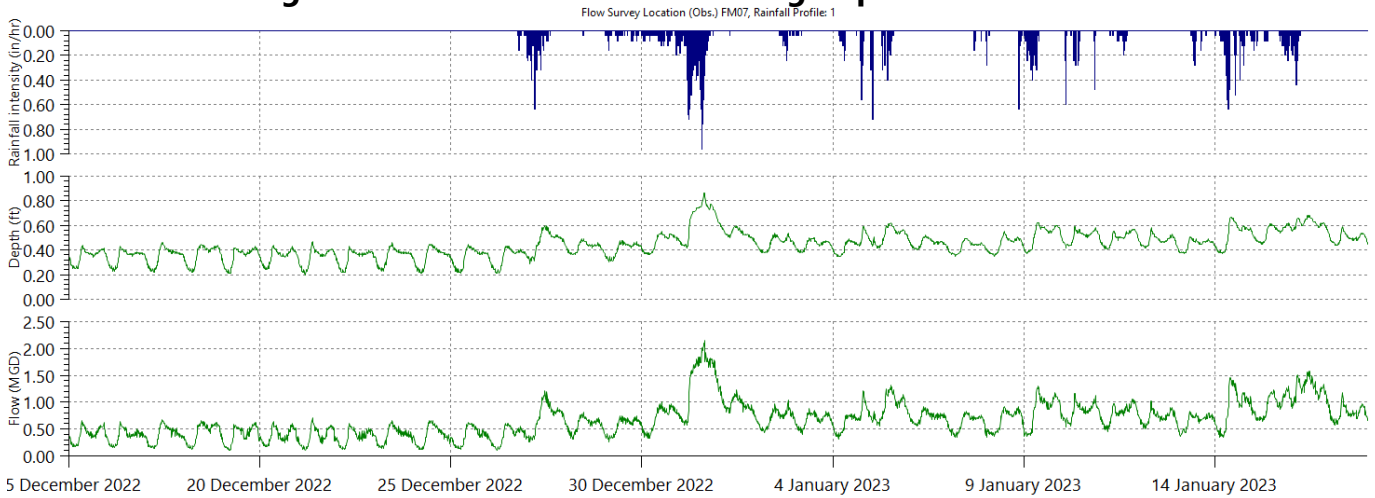


Figure B-9: Meter 8 Flow Monitoring Depth and Flow Plot

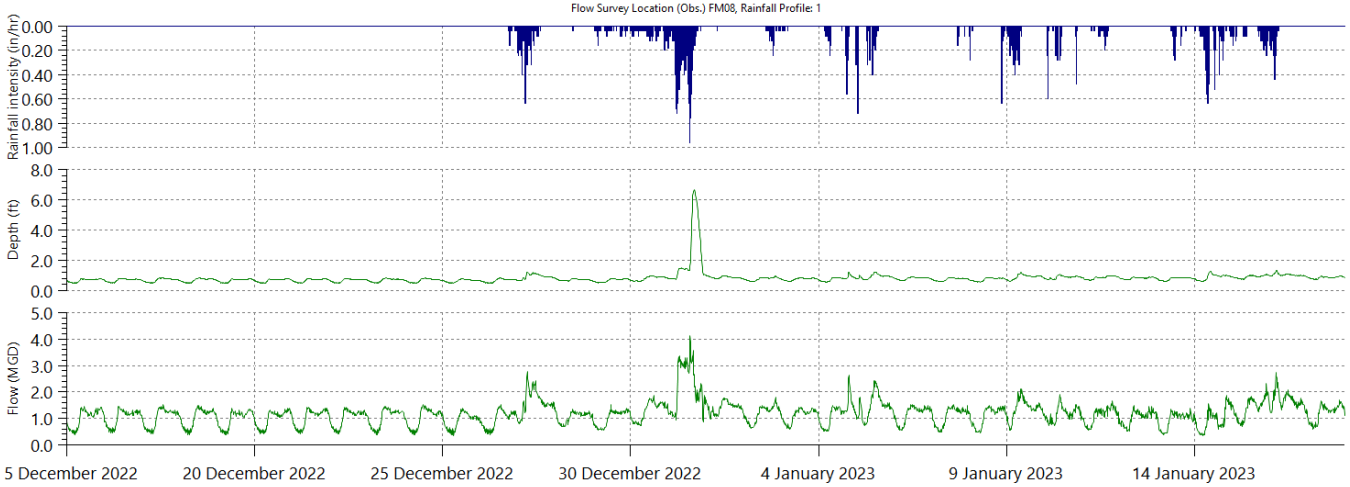


Figure B-10: Meter 9 Flow Monitoring Depth and Flow Plot

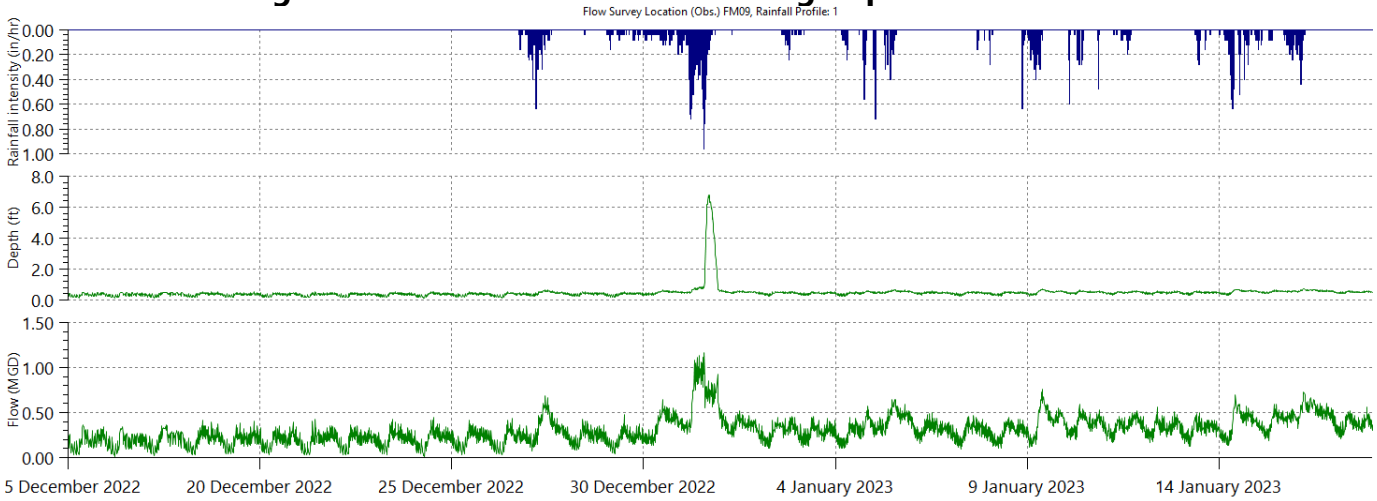


Figure B-11: Meter 10 Flow Monitoring Depth and Flow Plot

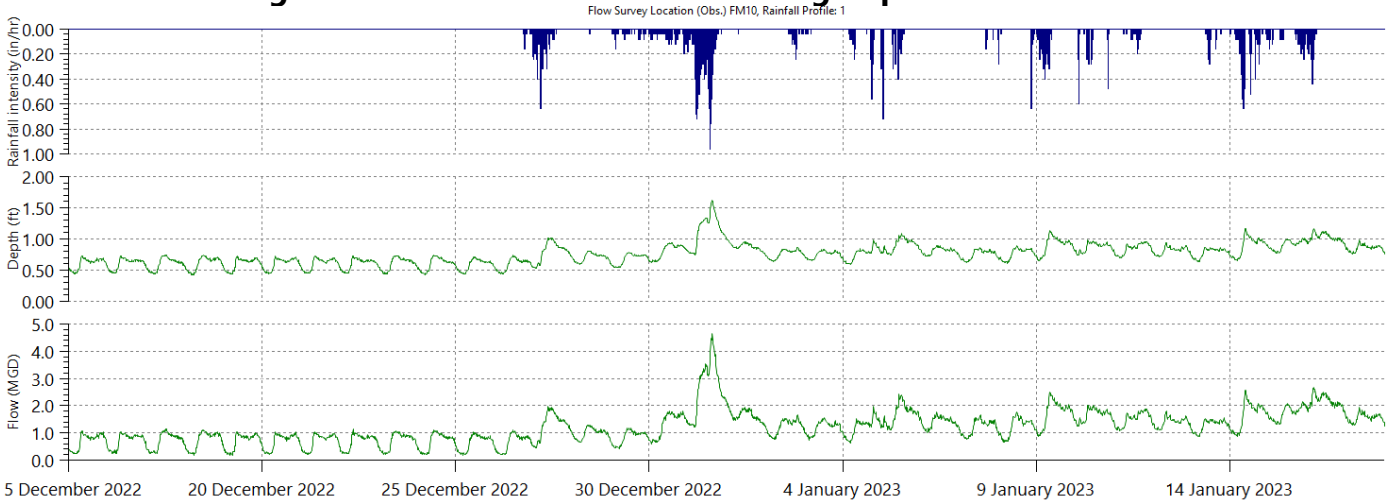


Figure B-12: Meter 10A Flow Monitoring Depth and Flow Plot

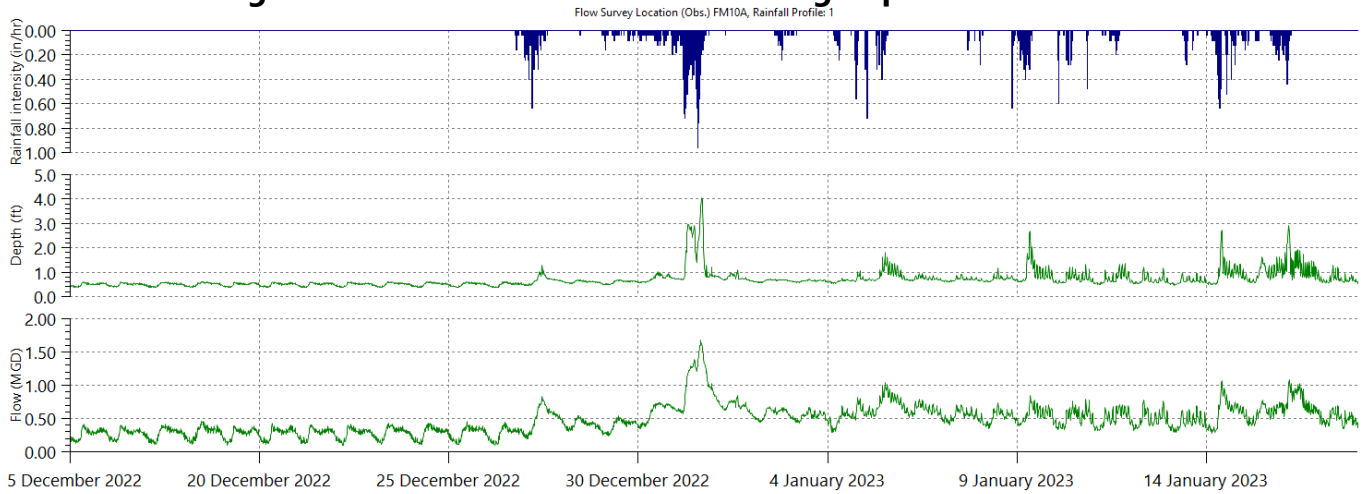


Figure B-13: Meter 11 Flow Monitoring Depth and Flow Plot

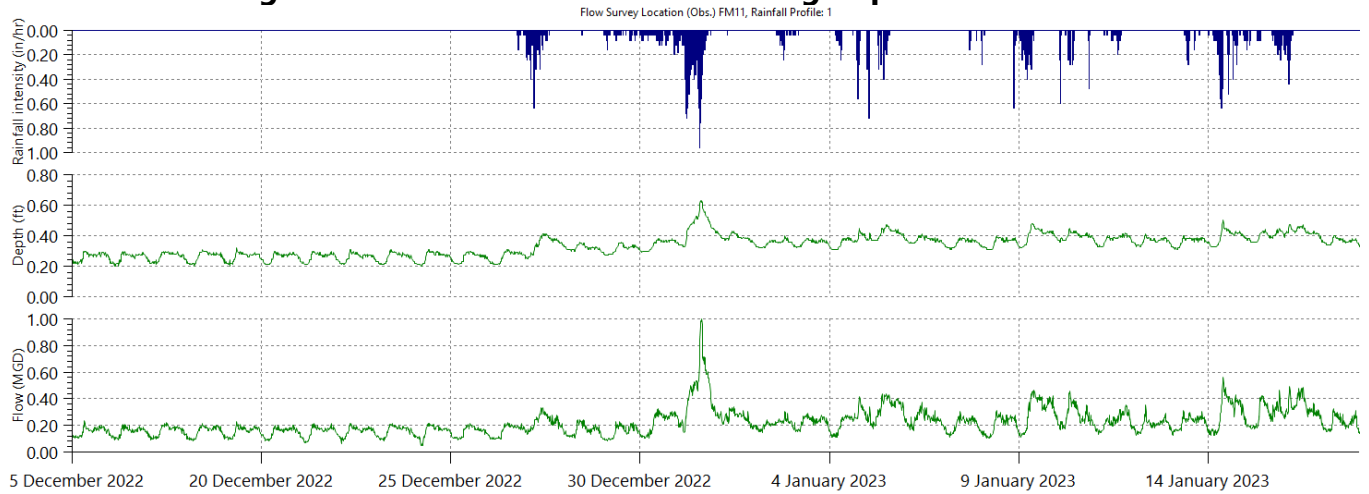
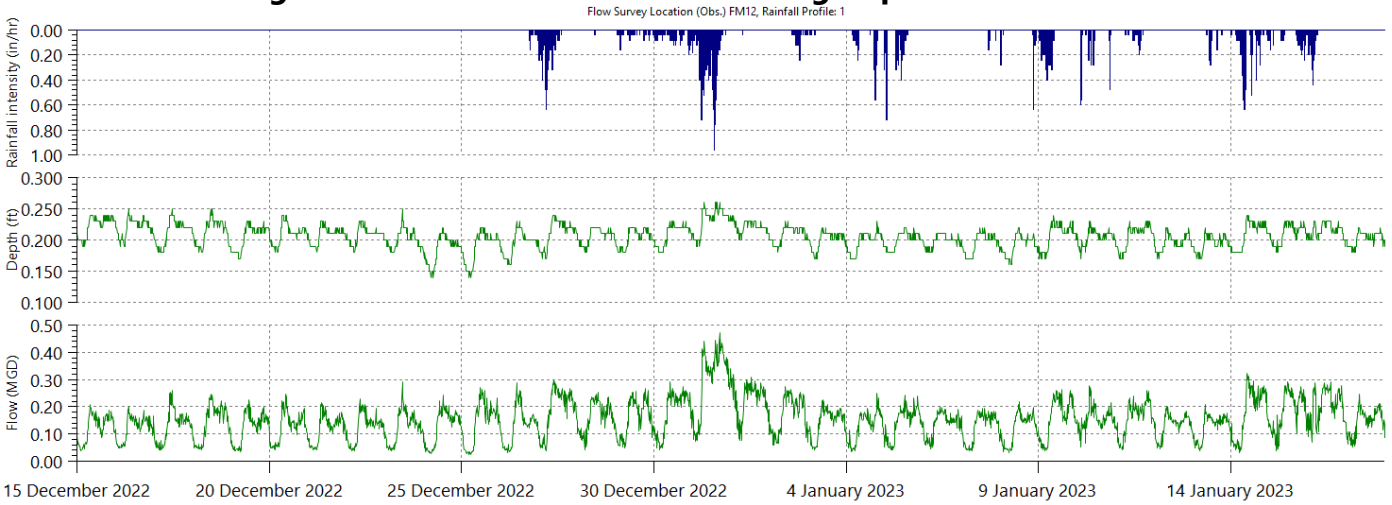


Figure B-14: Meter 12 Flow Monitoring Depth and Flow Plot



APPENDIX C – FUTURE DEVELOPMENTS

City of Pleasanton Sewer System

Sewer System
Sanitary Sewer
Future Load Subcatchments

N

Legend

- EALS Pump Station
- City Force Main
- Private Force Main
- Private Gravity Main
- Conduit
- Existing Subcatchments
- Future Load Subcatchments

0 0.25 0.5 1 Miles

Woodard & Curran

Project #: 0012108
Map Created: June 2023

Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk. **Data Sources:**

Esri, NASA, NGA, USGS, FEMA, California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, Bureau of Land Management, Esri, HERE, Garmin, INCREMENT P, NGA, USGS

Figure Exported: 6/30/2023 By: rhanson Using: \\woodardcurran.net\shared\Projects\0012108.00 Pleasanton - Sewer System Modeling\wip\G_GIS\MXD\Pro_Files\FM_Sewer_Basins_10032022.aprx Layout: Future Loads Layout

Development Address	Existing Land Use	Data Source General	Data Source Detailed	Development Type	Housing Units Added	Commerical Development Type	Commercial Square Footage Added	Project Descrption	Development Status
1008, 1300, 1400, 1500, 1600, & 1700 Stoneridge Mall Rd	CM - COMMERCIAL	Potential Housing Sites for 2023-2031 Inventory Rezoning 2023.02	APN provided by City of Pleasanton CDD	Residential-Multi-Family	900				
3300 Busch Rd	CM - COMMERCIAL	Potential Housing Sites for 2023-2031 Inventory Rezoning 2023.02	APN provided by City of Pleasanton CDD	Residential- Single-Family	490				
1008 Stoneridge Mall Road	CM - COMMERCIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Residential- Multi-Family/Apartments	486			Application for a PUD development plan to construct 486 apartment units and related site improvements including a new parking structure at the northwest corner of Stoneridge Mall Road and Stoneridge Mall Road.	Under Review
5511, 5515, 5675 Sunol Boulevard	CM - COMMERCIAL	Potential Housing Sites for 2023-2031 Inventory Rezoning 2023.02	APN provided by City of Pleasanton CDD	Residential-Multi-Family	459				
Stoneridge Residential	Vacant	Development applications received 2022 from City of Pleasanton		Residential-Multi-Family	360				
725 Main St.	CM - COMMERCIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Commercial	0		4,503	Application for Design Review to construct an approximately 4,503-square-foot, two-story commercial building on a vacant lot.	Under Construction
4900 & 5000 Hopyard Rd	CM - COMMERCIAL	Potential Housing Sites for 2023-2031 Inventory Rezoning 2023.02	APN provided by City of Pleasanton CDD	Residential-Multi-Family	330				
Avalon Bay	Vacant	Development applications received 2022 from City of Pleasanton		Residential-Multi-Family	299				
4515 Rosewood Dr	Vacant	Potential Housing Sites for 2023-2031 Inventory Rezoning 2023.02	APN provided by City of Pleasanton CDD	Residential-Multi-Family	250				
5805 Owens Drive	CM - COMMERCIAL	Potential Housing Sites for 2023-2031 Inventory Rezoning 2023.02	APN provided by City of Pleasanton CDD	Residential-Multi-Family	150				
3300 Busch Rd	CM - COMMERCIAL	Potential Housing Sites for 2023-2031 Inventory Rezoning 2023.02	APN provided by City of Pleasanton CDD	Residential-Multi-Family	150				
4141 Foothill Road	Vacant	CDD Update 2022-09-29	APN added via lookup of development address in 2022 Assessor Parcel dataset	Residential- Single-Family	111			Preliminary Review application for 1) annexation, 2) rezoning the property from Unincorporated to PUD-LDR and PUD-BMR, and 3) a Planned Unit Development (PUD) development plan to construct a 111-home age-qualified community with 89 single-family detached homes, 22 affordable senior court-yard detached and duet homes and related on-and off-site improvements at 4141 Foothill Road.	Under Review
4750 First St	CM - COMMERCIAL	Potential Housing Sites for 2023-2031 Inventory Rezoning 2023.02	APN provided by City of Pleasanton CDD	Residential Multi-Family	112				
4131 & 4141 Foothill Rd	SF - SINGLE FAMILY RESIDENTIAL	Potential Housing Sites for 2023-2031 Inventory Rezoning 2023.02	APN provided by City of Pleasanton CDD	Residential- Single-Family	90				
1801, 1803, 1807, 1809, 1811 Santa Rita Road & 4295, 4285, 4303, 4305 Valley Avenue	CM - COMMERCIAL	Potential Housing Sites for 2023-2031 Inventory Rezoning 2023.02	APN provided by City of Pleasanton CDD	Residential-Multi-Family	110				
5724 W Las Positas Blvd	CM - COMMERCIAL	Potential Housing Sites for 2023-2031 Inventory Rezoning 2023.02	APN provided by City of Pleasanton CDD	Residential Multi-Family	97				
2694 Stoneridge Dr.	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020	Commercial	0			PUD development plan to construct a 201-stall parking lot for vehicle display/inventory to be shared by Stoneridge Chrysler-Jeep-Dodge-Ram and a future auto dealership.	Under Construction
4003-4011 Pimlico Dr	CM - COMMERCIAL	Potential Housing Sites for 2023-2031 Inventory Rezoning 2023.02	APN provided by City of Pleasanton CDD	Residential-Multi-Family	92				
3200 Santa Rita Rd.	CM - COMMERCIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Commercial	0	Fire Station	8,740	Application for Design Review to demolish and replace the existing Fire Station 3 and construct a new 8,740-square-foot facility with apparatus bays, living quarters, and related site/landscaping improvements.	Approved

Development Address	Existing Land Use	Data Source General	Data Source Detailed	Development Type	Housing Units Added	Commerical Development Type	Commercial Square Footage Added	Project Descrption	Development Status
6455 Owens Dr.	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020	Commercial	0	Retail	10,980	Application for a PUD development plan to demolish an existing restaurant building at 6455 Owens Dr. and construct a single-story multi-tenant commercial building totaling approximately 10,000-square-feet in area.	Under Review
7200 Johnson Drive	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Commercial	0	Retail (warehouse, Costco)	148,613	Application for Design Review to construct a new 148,613-square-foot Costco. Application is on hold and will be reconsidered by the City Council in late 2019 pending completion of supplemental environmental review for the Johnson Drive Economic Development Zone due to a legal challenge. (Please also see Item 38, for additional information on the JDEDZ Lawsuit)	Under Review
7280 Johnson Drive	MF - MULTI-FAMILY RESIDENTIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset Measured parcel area in AC Parcel Viewer at 180,000 sq ft (total size) and converted to 57,600 sq ft via average FAR of 32% from General Plan for Business Park GPLU.	Commercial		Hotel	57,600	Application for Design Review to construct two new hotels with 231 rooms and a drive-through coffee shop. Application is on hold and will be reconsidered by the City Council in Late 2019 pending completion of supplemental environmental review for the Johnson Drive Economic Development Zone. (Please also see Item 38, for additional information on the JDEDZ Lawsuit).	Under Review
4309 Hacienda Dr	CM - COMMERCIAL	Potential Housing Sites for 2023-2031 Inventory Rezoning 2023.02	APN provided by City of Pleasanton CDD	Residential-Multi-Family	60				
Terminus of Lund Ranch Road	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development project in Assessor Parcel GIS layer	Residential- Single-Family	43			Applications for: (1) PUD rezoning and development plan approvals to construct 43 single-family two-story homes and related site improvements on the approximately 195-acre Lund Ranch II property located at 1500 Lund Ranch Rd.; (2) Development Agreement to vest entitlements for the project; (3) certification of the Final Environmental Impact Report (EIR) prepared for the project; (4) Growth Management Agreement; and (5) Affordable Housing Agreement. Project includes approximately 160-acres of dedicated open space. Project submitted to June 7, 2016 ballot following February 2016 City Council approval; majority of voters supported project moving ahead.	Approved
2350 Santa Rita Rd.	CM - COMMERCIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Commercial	0	Carpenter's Training Center	87,000	Application for a PUD development plan to demolish the existing 67,000-square-foot building and construct a new 87,000-square-foot two-story Carpenter's Training Center.	Under Construction
1700 Stoneridge Mall Road	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Commercial	0	Retail, gym	255,420	Application for Design Review approval to demolish the existing Sears Department store (approximately 176,151-square feet) and construct up to 255,420-square-feet (79,269-square-feet of net increase) of new retail, cinema, specialty, and health club facility uses.	Approved
4400 Black Ave	CM - COMMERCIAL	Potential Housing Sites for 2023-2031 Inventory Rezoning 2023.02	APN provided by City of Pleasanton CDD	Residential Multi-Family	52				
2025 Santa Rita Rd	CM - COMMERCIAL	Potential Housing Sites for 2023-2031 Inventory Rezoning 2023.02	APN provided by City of Pleasanton CDD	Residential Multi-Family	46				
4884 Harrison Street	Vacant	Development applications received 2022 from City of Pleasanton	APN added via lookup of development address in 2022 Assessor Parcel dataset	Residential-Multi-Family	46				
4001 Stoneridge Dr	Vacant	Potential Housing Sites for 2023-2031 Inventory Rezoning 2023.02	APN provided by City of Pleasanton CDD	Residential Multi-Family	44				
4780 Chabot Dr	CM - COMMERCIAL	Potential Housing Sites for 2023-2031 Inventory Rezoning 2023.02	APN provided by City of Pleasanton CDD	Residential-Multi-Family	41				
1087 and 11033 Dublin Canyon Rd	Vacant	Potential Housing Sites for 2023-2031 Inventory Rezoning 2023.02	APN provided by City of Pleasanton CDD	Residential- Single-Family	31				

Development Address	Existing Land Use	Data Source General	Data Source Detailed	Development Type	Housing Units Added	Commerical Development Type	Commercial Square Footage Added	Project Descrption	Development Status
3780 Stanley Blvd., future 3701 Nevada St.	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020	Residential Multi-Family	31			Application for a PUD development plan to construct an affordable 31 unit multi-family residential community for individuals with special needs including a 5,000-square-foot community building with associated site improvements on a vacant property to be dedicated to the city as part of Homestead at Irby Ranch.	Under Construction
Vineyard Ave, btwn. Thiessen St and Manoir Ln	Vacant	Potential Housing Sites for 2023-2031 Inventory Rezoning 2023.02	APN provided by City of Pleasanton CDD	Residential- Single-Family	25				
4400-4460 Rosewood Dr.	CM - COMMERCIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Mixed-Use Development	30.5	Retail	752	Application for a PUD development plan to construct 305 apartment units and 7,520-square-feet of retail space on the approximately 8.4-acre southern portion of the Rosewood Commons property. A parking garage and additional surface parking will be constructed on the remaining 52.5-acres to serve the existing office uses.	Approved
4400-4460 Rosewood Dr.	CM - COMMERCIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Mixed-Use Development	30.5	Retail	752	Application for a PUD development plan to construct 305 apartment units and 7,520-square-feet of retail space on the approximately 8.4-acre southern portion of the Rosewood Commons property. A parking garage and additional surface parking will be constructed on the remaining 52.5-acres to serve the existing office uses.	Approved
3760 Hopyard Road	CM - COMMERCIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Commercial	0	Gas Station/Car wash	4,324	Application for a PUD development plan to: 1) demolish the existing auto service, Shell service station, canopy and 7-11 store buildings; 2) construct an approximately 1,290 square-foot car wash building, an approximately 3,034 square foot 7-11 store and canopy; and 3) construct related on- and off-site improvements.	Approved
4400-4460 Rosewood Dr.	CM - COMMERCIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Mixed-Use Development	30.5	Retail	752	Application for a PUD development plan to construct 305 apartment units and 7,520-square-feet of retail space on the approximately 8.4-acre southern portion of the Rosewood Commons property. A parking garage and additional surface parking will be constructed on the remaining 52.5-acres to serve the existing office uses.	Approved
4400-4460 Rosewood Dr.	CM - COMMERCIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Mixed-Use Development	30.5	Retail	752	Application for a PUD development plan to construct 305 apartment units and 7,520-square-feet of retail space on the approximately 8.4-acre southern portion of the Rosewood Commons property. A parking garage and additional surface parking will be constructed on the remaining 52.5-acres to serve the existing office uses.	Approved
4400-4460 Rosewood Dr.	CM - COMMERCIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Mixed-Use Development	30.5	Retail	752	Application for a PUD development plan to construct 305 apartment units and 7,520-square-feet of retail space on the approximately 8.4-acre southern portion of the Rosewood Commons property. A parking garage and additional surface parking will be constructed on the remaining 52.5-acres to serve the existing office uses.	Approved
3716 Stanley Blvd.	CM - COMMERCIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Commercial	0	Storage	205,027	Applications for Design Review and Conditional Use Permit to demolish existing storage facility buildings and office, and construct three new buildings totaling approximately 205,027-square-feet for Public Storage.	Under Review

Development Address	Existing Land Use	Data Source General	Data Source Detailed	Development Type	Housing Units Added	Commerical Development Type	Commercial Square Footage Added	Project Descrption	Development Status
4400-4460 Rosewood Dr.	CM - COMMERCIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Mixed-Use Development	30.5	Retail	752	Application for a PUD development plan to construct 305 apartment units and 7,520-square-feet of retail space on the approximately 8.4-acre southern portion of the Rosewood Commons property. A parking garage and additional surface parking will be constructed on the remaining 52.5-acres to serve the existing office uses.	Approved
Johnson Drive Economic Development Zone (JDEDZ)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020	Commercial				The Johnson Drive Economic Development Zone is currently the subject of a lawsuit. The Petitioner in this lawsuit alleges that the air quality analysis contained in the Supplemental Environmental Impact Report for the JDEDZ was incomplete. The Petitioner also alleges that the economic analysis for the project should have been recirculated for public review. Given the inherent delay associated with litigation involving the California Environmental Quality Act, the City has agreed to set aside the approvals so that supplemental environmental review can take place. Once this supplemental environmental review is complete, additional public comment will occur, and the City Council will consider reapproving the project. Although this project has already been subject to extensive environmental review, the City believes that this is the most effective way to provide the public and public officials with information and allow for reconsideration of the project. Costco is in support of this approach and is a signatory to the stipulation.	Under Review
Climate Action Plan	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020	Other				The City of Pleasanton's Council approved 2019-2020 Work Plan includes preparation of an updated Climate Action Plan (CAP 2.0). The City's original CAP was adopted in 2012 and outlines local actions to reduce greenhouse gas (GHG) emissions, enhance environmental sustainability, and prepare for climate change. As with Pleasanton's 2012 Climate Action Plan, CAP 2.0 will continue to respond to the impacts of climate change through local actions that promote adaptation and resilience by significantly reducing the City's greenhouse gas emissions. Accounting for new state laws, the policy focus for CAP 2.0 will be to close the gap between GHG emission reduction targets and Pleasanton's projected emissions.	Under Review
Lions Wayside/Delucchi Park Master Plan – Permitting	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020	Other				Development of final design and construction documents for the parks master plan is pending state and federal permitting to underground the "channel" at Lions Wayside Park. City staff met with the permitting agencies and are currently developing options for the park improvements that do not require undergrounding of the channel due to the regulatory agencies' position that it will not be allowed.	Under Review
Bicycle and Pedestrian Master Plan High Priority Corridor	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020	Transportation/Traffic Project				The Pedestrian and Bicycle Master Plan, created in January 2010 was updated and adopted by City Council in June 2017. The update created an "All users and abilities" approach to facility design and provided a corridor construction priority. West Las Positas Boulevard was identified as the highest priority corridor and design is underway to develop bicycle and pedestrian improvements along the corridor.	Under Review

Development Address	Existing Land Use	Data Source General	Data Source Detailed	Development Type	Housing Units Added	Commerical Development Type	Commercial Square Footage Added	Project Descrption	Development Status
Overcrossing Improvement Plan for Pedestrians and Bicycles	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020	Transportation/Traffic Project				City Council at its September 13, 2016 meeting awarded the Freeway Overcrossing Improvement Plan project. This plan identified needed improvements and an implementation strategy to improve bicycle and pedestrian facilities at the freeway overcrossings. Included with project deliverables is a set of plans for each overcrossing that will be used for future construction. The were completed and presented to City Council in December of 2018.	Completed
Bernal Avenue at Nevada Street Traffic Signal Installation	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020	Transportation/Traffic Project				Nevada Street is currently under construction to connect Stanley Boulevard to Bernal Aenue. When completed the increased volume on Nevada Street requires a traffic signal to be constructed at Bernal Avenue. When properly used, traffic signals are valuable devices for the control of vehicular and pedestrian traffic. They assign the right-of-way to the various traffic movements and profoundly influence traffic flow while reducing the frequency and severity of certain types of crashes, especially right-angle collisions.	Under Review
Automated Traffic Signal Performance Measures	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020	Transportation/Traffic Project				The City was awarded the Innovative Deployments to Enhance Arterials (IDEA) Challenge Grant. This grant encourages local agencies to implement cutting edge technological solutions to help improve travel time, safety, and traffic operations reliability for all modes of transportation. The City will implement Automated Traffic Signal Performance Measures (ATSPM) technology that can measure the performance of a single signalized intersection or a corridor of signalized intersections, as well as, provide origin and destination data of vehicles. Some performance measures include, but are not limited to, travel time, travel speed, traffic volumes, and delay. The data can be measured against historical data to better understand traffic trends, efficiency, and understand travel patterns, all of which will aid staff in improving overall traffic operations. Lastly, this project will look to integrate other traffic related data, such as Waze, to achieve a comprehensive set of information between the city's traffic signals and the road user themselves. This technology will be installed at approximately 45 signalized intersections.	Under Review
Sunol Boulevard Interchange	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020	Transportation/Traffic Project				The Sunol Boulevard Interchange is in the Caltrans Right of Way, but any improvements to local interchanges are funded by the local agency. The City issued a request for proposals in late 2017 to design a set of signalized intersections at the two ramp locations. The Project Study Report- Project Developement Study (PSR-PDS) document has been officially signed off by Caltrans on January 17, 2020. The PSR-PDS is the initial document required for the Caltrans project development process.	Under Review

Development Address	Existing Land Use	Data Source General	Data Source Detailed	Development Type	Housing Units Added	Commerical Development Type	Commercial Square Footage Added	Project Descrption	Development Status
Internally Illuminated Street Name Sign Replacement with LED	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020	Transportation/Traffic Project				The city's internally illuminated street name signs (IISNS) are becoming faded and require replacement. The city is in its fourth year of a 5-year plan to replace the existing fluorescent tube IISNS with LED IISNS. The LED signs consume less power which will reduce the power cost per intersection as well as the carbon footprint of the city. Installation of the IISNS started in May 2016. Over 100 signs have already been replaced. The focus this year will continue to be on the most faded signs which are along several arterials in the city. The 2019 installations are complete.	Under Review
Owens at Iron Horse Trail Crossing Modification	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020	Transportation/Traffic Project				Staff presented the results of the six-month study to City Council in January 2018 and Council recommended that an adaptive signal timing system be purchased to address the one-two minutes per day where congestion remains. A Capital Improvement Program (CIP) to install adaptive signal system was added to the 2018/19 CIP.	Completed
Intersections of Stanley/Valley/Bernal, Santa Rita/Valley, Santa Rita/Stoneridge	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020	Transportation/Traffic Project				Installation of next generation traffic signal equipment for signal performance, conflict analysis, origin-destination studies, multi-modal traffic safety, and connected vehicle applciations.	Under Construction
West Las Positas	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020	Transportation/Traffic Project				Residents along West Las Positas (between Fairlands Elementary School and Staples Ranch) have called for concerns about speeding. This section of West Las Positas was evaluated as part of the Traffic Calming program and was the top ranked street eligible for traffic calming. An inital public meeting was held on December 5, 2018 to describe the program, the data collected and next steps should the neighborhood wishes to continue forward with the program.	Under Review
Junipero Street and Independence Drive	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020	Transportation/Traffic Project				In November 2015, City Council directed staff to meet with the residents of Junipero Street and Independence Drive to discuss potential solutions to their traffic-related concerns. Staff began meeting with the neighborhood in March 2016. Staff and the steering committee met through the summer of 2016 and developed a traffic calming plan which included traffic signal metering, radar speed signs, new crosswalks, speed reduction on Independence Drive, six speed lumps and a major modification to the arterial intersection of Bernal Avenue at Sunol Boulevard/ First Street. The plan was presented to City Council in September 2017 and construction was completed in the winter of 2017 with the exception of the arterial intersection improvements. The arterial intersection design is underway (March of 2018) and design completion is expected in the spring of 2020. Prior to the completion of the design, alternatives will be presented to the surrounding neighborhoods and the Pleasanton Unified School District to receive feedback (Winter 2019).	Under Review

Development Address	Existing Land Use	Data Source General	Data Source Detailed	Development Type	Housing Units Added	Commerical Development Type	Commercial Square Footage Added	Project Descrption	Development Status
Vintage Hills Elementary	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020	Transportation/Traffic Project				This project addresses two concerns for the Vintage Hills Elementary School community and surrounding neighborhood. 1) Residents of Concord Street requested traffic calming measures to address speeding concerns that are present outside of school hours. The Concord Street steering committee has elected to install three speed lumps along Concord Street between Palomino Drive and Touriga Drive. In addition, curb-extensions (bulb-outs) are proposed at the intersection of Palomino Drive and Concord Drive. This will reduce the crossing distance on Palmino Drive and Concord Drive for school related pedestrians walking to Vintage Hills Elementary. It also requires motorists to slow down as they turn through the intersection. Currently, the steering committee is collecting the required petition signatures for the speed lumps and bulb-out proposal. 2) Community members of Vintage Hills Elementary School are concerned about safety going to and leaving school.	Under Review
Touriga Drive	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020	Transportation/Traffic Project				The Touriga Drive residents have been part of two previous Neighborhood Traffic Calming Programs that included the installation of several radar speed signs. Speed lumps were proposed in both of the previous programs, but the speed lumps never received the required neighborhood support for installation. While speeds were reduced as a result of the radar speed sign installations, sections of Touriga Drive continue to experience speeds above the posted limit. In early 2019 residents of Touriga Drive expressed continued concerns of speeding on between Chablis Court and Palomino Drive. The residents believed that enough neighborhood support for speed lumps was in place to allow for the expedited speed lump program to be implemented. Speeds were measured and found to be higher than the average residential streets and an Expedited Speed Lump petition was created for Touriga Drive. The petition included three speed lumps between Chablis Court and Palomino Drive.	Completed
State Route 84	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020	Transportation/Traffic Project				SR 84 from Pigeon Pass to I-680 has completed environmental review and Caltrans adopted the environmental document in the summer of 2018. Preliminary engineering and design has started . The design process and right of way acquisition will take approximately two years with construction to follow in 2021. Construction of the segment of SR 84 from Pigeon Pass to I-680 will be the final segment in a series of improvements to widen SR 84 to expressway standards from I-580 in Livermore to I-680 in Sunol. Environmental review of the SR 84 project began in 2002, and completion of this final segment will conclude this nearly 20-year project.	Under Review

Development Address	Existing Land Use	Data Source General	Data Source Detailed	Development Type	Housing Units Added	Commerical Development Type	Commercial Square Footage Added	Project Descrption	Development Status
Bart to Ace	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020	Transportation/Traffic Project				In October 2017 the Governor signed Assembly Bill 758 which created The Tri-Valley – San Joaquin Valley Regional Rail Authority. This new authority has been created for the sole purpose of connecting Bart to ACE. The Authority has selected a hybrid powered, multiple-unit vehicle technology with the ability to convert to fully electric power in the future Valley Link is proposing to provide a new rail service from the existing Dublin / Pleasanton BART Station to San Joaquin County, utilizing existing rights-of-way in the center of the I-580 corridor to provide connectivity between ACE and Bart. Valley Link is proposed to provide frequent, all-day regional rail service with future expansion all the way to Lathrop in the Central Valley As a first phase in the Valley Link project, the Authority has recommended an initial segment serving the RM3 project corridor, originating from a BART connection at Dublin/Pleasanton Station and continuing to a proposed	Under Review
680 Express Lane Projects	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020	Transportation/Traffic Project				The 680 Express Lane is two separate projects. One will construct a new 15-mile express lane from SR 237 in Milpitas to SR 84 in Sunol. The second will extend the express lane from SR 84 to Alcosta.	Approved
East Pleasanton Specific Plan Area Boundary	Vacant	Zone 7 Demand Study	East Pleasanton Specific Plan Revision 1 November 2014, Figure 5.1 Land Use Plan						
Downtown Specific Plan Area Boundary	Vacant	Zone 7 Demand Study	(no data provided in v1 of model, but can be updated at a later date)						
East Bernal Specific Plan Area Boundary	Vacant	Zone 7 Demand Study	(no data provided in v1 of model, but can be updated at a later date)						
Hacienda Specific Plan Area Boundary	Vacant	Zone 7 Demand Study	(no data provided in v1 of model, but can be updated at a later date)						
Happy Valley Specific Plan Area Boundary	Vacant	Zone 7 Demand Study	(no data provided in v1 of model, but can be updated at a later date)						
Laguna Oaks Specific Plan Area Boundary	Vacant	Zone 7 Demand Study	(no data provided in v1 of model, but can be updated at a later date)						
North Sycamore Specific Plan Area Boundary	Vacant	Zone 7 Demand Study	(no data provided in v1 of model, but can be updated at a later date)						
Stoneridge Drive Specific Plan Area Boundary	Vacant	Zone 7 Demand Study	(no data provided in v1 of model, but can be updated at a later date)						
Vineyard Corridor Specific Plan Area Boundary	Vacant	Zone 7 Demand Study	(no data provided in v1 of model, but can be updated at a later date)						
West Bernal Specific Plan Area Boundary	Vacant	Zone 7 Demand Study	(no data provided in v1 of model, but can be updated at a later date)						
1701 Springdale Dr	CM - COMMERCIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 Description and Commerical_SF updated based on Septmeber 2022 CDD Update Parcel # updated manually from review of AC parcel viewer (no tabular data in Nov 2022 dataset)	Commercial/Master Planned Campus		Commercial	381,000	Applications for a Planned Unit Development (PUD) Rezoning and Development Plan to: (1) demolish the existing approximately 163,500-square-foot commercial buildings; (2) rezone the subject parcel from C-R (p) (Regional Commercial - peripheral sites) District to PUD-C-O (Planned Unit Development – Commercial-Office) District; and (3) construct up to three new multi-story research and development, office and laboratory buildings totaling approximately 381,000-square-feet, a parking structure, and related site improvements over multiple phases.	Under Review

Development Address	Existing Land Use	Data Source General	Data Source Detailed	Development Type	Housing Units Added	Commerical Development Type	Commercial Square Footage Added	Project Descrption	Development Status
4400-4460 Rosewood Dr.	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Mixed-Use Development	30.5	Retail	752	Application for a PUD development plan to construct 305 apartment units and 7,520-square-feet of retail space on the approximately 8.4-acre southern portion of the Rosewood Commons property. A parking garage and additional surface parking will be constructed on the remaining 52.5-acres to serve the existing office uses.	Approved
4400-4460 Rosewood Dr.	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Mixed-Use Development	30.5	Retail	752	Application for a PUD development plan to construct 305 apartment units and 7,520-square-feet of retail space on the approximately 8.4-acre southern portion of the Rosewood Commons property. A parking garage and additional surface parking will be constructed on the remaining 52.5-acres to serve the existing office uses.	Approved
4400-4460 Rosewood Dr.	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Mixed-Use Development	30.5	Retail	752	Application for a PUD development plan to construct 305 apartment units and 7,520-square-feet of retail space on the approximately 8.4-acre southern portion of the Rosewood Commons property. A parking garage and additional surface parking will be constructed on the remaining 52.5-acres to serve the existing office uses.	Approved
4400-4460 Rosewood Dr.	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Mixed-Use Development	30.5	Retail	752	Application for a PUD development plan to construct 305 apartment units and 7,520-square-feet of retail space on the approximately 8.4-acre southern portion of the Rosewood Commons property. A parking garage and additional surface parking will be constructed on the remaining 52.5-acres to serve the existing office uses.	Approved
3949 Bernal Ave	CM - COMMERCIAL	Potential Housing Sites for 2023-2031 Inventory Rezoning 2023.02	APN provided by City of Pleasanton CDD	Residential- Single-Family	19				
1000 Minnie St	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Residential- Single-Family	13		-	Applications for General Plan Amendment, Specific Plan Amendment, PUD development plan, Growth Management, and subdivision to rezone the site and construct a 39 single-family home development on the approximately 31-acre portion of the 154-acre site.	Under Review
1000 Minnie St	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Residential- Single-Family	13		-	Applications for General Plan Amendment, Specific Plan Amendment, PUD development plan, Growth Management, and subdivision to rezone the site and construct a 39 single-family home development on the approximately 31-acre portion of the 154-acre site.	Under Review
1000 Minnie St	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Residential- Single-Family	13		-	Applications for General Plan Amendment, Specific Plan Amendment, PUD development plan, Growth Management, and subdivision to rezone the site and construct a 39 single-family home development on the approximately 31-acre portion of the 154-acre site.	Under Review
10807, 11033 and the two western parcels on Dublin Canyon Road	SF - SINGLE FAMILY RESIDENTIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Residential- Single-Family	11		-	Applications for: (1) annexation of four parcels totaling approximately 128.5-acres; (2) amend General Plan Land Use designations to correspond to proposed residential and open space areas; (3) rezone the property from unincorporated and pre-zoned Agriculture to Low Density Residential and Open Space; (4) a PUD development plan to construct 33 single-family homes, including demolition and replacement of two existing homes, with private open space, and dedication of 72.1-acres of land to the East Bay Regional Park District (EBRPD), and construct an EBRPD staging area with trail connections to the Pleasanton Ridge.	Under Review

Development Address	Existing Land Use	Data Source General	Data Source Detailed	Development Type	Housing Units Added	Commerical Development Type	Commercial Square Footage Added	Project Descrption	Development Status
10807, 11033 and the two western parcels on Dublin Canyon Road	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Residential- Single-Family	11		-	Applications for: (1) annexation of four parcels totaling approximately 128.5-acres; (2) amend General Plan Land Use designations to correspond to proposed residential and open space areas; (3) rezone the property from unincorporated and pre-zoned Agriculture to Low Density Residential and Open Space; (4) a PUD development plan to construct 33 single-family homes, including demolition and replacement of two existing homes, with private open space, and dedication of 72.1 acres of land to the East Bay Regional Park District (EBRPD), and construct an EBRPD staging area with trail connections to the Pleasanton Ridge.	Under Review
10807, 11033 and the two western parcels on Dublin Canyon Road	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Residential- Single-Family	11		-	Applications for: (1) annexation of four parcels totaling approximately 128.5-acres; (2) amend General Plan Land Use designations to correspond to proposed residential and open space areas; (3) rezone the property from unincorporated and pre-zoned Agriculture to Low Density Residential and Open Space; (4) a PUD development plan to construct 33 single-family homes, including demolition and replacement of two existing homes, with private open space, and dedication of 72.1 acres of land to the East Bay Regional Park District (EBRPD), and construct an EBRPD staging area with trail connections to the Pleasanton Ridge.	Under Review
536 and 550 St. John St. and adjacent vacant parcel	SF - SINGLE FAMILY RESIDENTIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Residential- Multi-Family/Townhomes	12		-	Applications for a PUD development plan to rezone three parcels (total area approximately 31,800-square-feet), subdivide the lot, retain and relocate the existing historic single-family residence on-site, and construct 10 two-story townhomes.	Completed
475 St. John Street	CM - COMMERCIAL	CDD Update 2022-09-29	APN added via lookup of development address in 2022 Assessor Parcel dataset	Mixed-Use Development	7		3,342	(1) rezone the properties from Central-Commercial (C-C) to PUD-MU; (2) development plan approval to: (a) retain the two-story single-family home; (b) demolish the detached accessory dwelling unit, Barone's restaurant, and all other structures and site modifications; and (c) construct 14 attached single-family homes, two commercial buildings with a public courtyard, and related site improvements.	Under Review
493 St. John Street	SF - SINGLE FAMILY RESIDENTIAL	CDD Update 2022-09-29	APN added via lookup of development address in 2022 Assessor Parcel dataset	Mixed-Use Development	7		3,342	(1) rezone the properties from Central-Commercial (C-C) to PUD-MU; (2) development plan approval to: (a) retain the two-story single-family home; (b) demolish the detached accessory dwelling unit, Barone's restaurant, and all other structures and site modifications; and (c) construct 14 attached single-family homes, two commercial buildings with a public courtyard, and related site improvements.	Under Review
2188 Foothill Rd.	SF - SINGLE FAMILY RESIDENTIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Residential- Single-Family	6		-	Application for a PUD development plan to subdivide an approximately 12-acre site into up to seven lots for custom single-family homes, and develop a hiking/biking trail connecting to Augustin Bernal Park.	Under Review
124/126 Spring Street	CM - COMMERCIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Mixed-Use Development	6		4,418	Application for Design Review to construct six new, three-story, micro-units behind the existing commercial building.	Under Review

Development Address	Existing Land Use	Data Source General	Data Source Detailed	Development Type	Housing Units Added	Commerical Development Type	Commercial Square Footage Added	Project Descrption	Development Status
4791 Augustine St.	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020	Mixed-Use Development	6		1,800	Application for PUD development plan to rezone, demolish all existing structures, and construct an approximately 2,000-square-foot, three-story mixed-use building with office/retail space on the first floor and three apartments on the second and third floors; and construct three, three-story, detached single-family homes, one with ground-floor commercial space.	Under Construction
1851 Rose Ave.	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Residential- Single-Family	4.75		-	Application for a PUD development plan to construct 19 single-family homes and related site improvements on an approximately 9.02-acre property.	Under Construction
1851 Rose Ave.	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Residential- Single-Family	4.75		-	Application for a PUD development plan to construct 19 single-family homes and related site improvements on an approximately 9.02-acre property.	Under Construction
1851 Rose Ave.	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Residential- Single-Family	4.75		-	Application for a PUD development plan to construct 19 single-family homes and related site improvements on an approximately 9.02-acre property.	Under Construction
1851 Rose Ave.	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Residential- Single-Family	4.75		-	Application for a PUD development plan to construct 19 single-family homes and related site improvements on an approximately 9.02-acre property.	Under Construction
273 Spring St.	CM - COMMERCIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020	Mixed-Use Development	5		1,822	Application for a Planned Unit Development (PUD) development plan to rezone site, demolish an existing 910-square-foot single-story commercial building on the site, and construct an approximately 1,822-square-foot commercial building with two attached, three-story multi-family residential units; and three, three story multi-family residential units in a separate building at the rear of the site. Units range between approximately 1,988-2,482-square-feet.	Under Construction
273 SPRING ST, PLEASANTON, CA 94566 & 281 SPRING ST, PLEASANTON, CA 94566	CM - COMMERCIAL	Zone 7 Demand Study	City of Pleasanton Housing Element Annual Progress Report 2020	Residential Multi-Family	5				
990 Sycamore Road	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Residential- Single-Family	4		-	Applications for: 1) an amendment to the North Sycamore Specific Plan (NSSP) to: a) change the land use designation of an approximately 1.01-acre portion of the site from Planned Unit Development – Agricultural (PUD-A) to Planned Unit Development – Low Density Residential (PUD-LDR); b) allow the proposed PUD-LDR lots to access from Sycamore Creek Way; c)realign the planned public trail on the project site; 2) PUD development plan approval for a five-lot single-family residential development with related on- and off-site improvements; and 3) Vesting Tentative Subdivision Map approval to subdivide the 3.28-acre parcel into five residential lots for four new homes and one existing home.	Under Review
715 Rose Avenue	SF - SINGLE FAMILY RESIDENTIAL	CDD Update 2022-09-29	APN added via lookup of development address in 2022 Assessor Parcel dataset	Residential- Multi-Family/Apartments	4			Application for Design Review approval to retain the single-family home, demolish the detached garage, and construct two new, two-story detached structures with three new dwelling units on the property.	Approved

Development Address	Existing Land Use	Data Source General	Data Source Detailed	Development Type	Housing Units Added	Commerical Development Type	Commercial Square Footage Added	Project Descrption	Development Status
11249 Dublin Canyon Rd.	SF - SINGLE FAMILY RESIDENTIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020	Residential- Single-Family	2		-	Applications for: (1) PUD development plan for three single-family residential lots (one existing single-family residence and two new single-family residences); (2) Minor Subdivision approval to subdivide the existing 2.91-acre parcel into three parcels; and (3) Growth Management allocation.	Under Construction
3987 Stanley Boulevard	SF - SINGLE FAMILY RESIDENTIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020 APN added via lookup of development address in 2020 Assessor Parcel dataset	Residential- Single-Family	3		-	Application for a PUD development plan to demolish an existing residence and construct three new 1,837-square-feet two-story single family homes.	Approved
4212 First Street	SF - SINGLE FAMILY RESIDENTIAL	CDD Update 2022-09-29	APN added via lookup of development address in 2022 Assessor Parcel dataset	Residential- Single-Family	3			Application for a Planning Unit Development and Rezoning, General Plan Amendment, and Tentative Tract Map, to demolish an existing service station and single-family dwelling and construct six new detached two-story single-family homes with associated site improvements.	Under Review
4226 First Street	CM - COMMERCIAL	CDD Update 2022-09-29	APN added via lookup of development address in 2022 Assessor Parcel dataset	Residential- Single-Family	3			Application for a Planning Unit Development and Rezoning, General Plan Amendment, and Tentative Tract Map, to demolish an existing service station and single-family dwelling and construct six new detached two-story single-family homes with associated site improvements.	Under Review
6900 Valley Trails Dr.	SF - SINGLE FAMILY RESIDENTIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021	Residential Single-Family	1.2			Application for a PUD	Under construction
6900 Valley Trails Dr.	SF - SINGLE FAMILY RESIDENTIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021	Residential Single-Family	1.2			Application for a PUD	Under construction
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	SF - SINGLE FAMILY RESIDENTIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	SF - SINGLE FAMILY RESIDENTIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	SF - SINGLE FAMILY RESIDENTIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
6900 Valley Trails Dr.	SF - SINGLE FAMILY RESIDENTIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021	Residential Single-Family	1.2			Application for a PUD	Under construction
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	SF - SINGLE FAMILY RESIDENTIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	SF - SINGLE FAMILY RESIDENTIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		

Development Address	Existing Land Use	Data Source General	Data Source Detailed	Development Type	Housing Units Added	Commerical Development Type	Commercial Square Footage Added	Project Descrption	Development Status
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"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	SF - SINGLE FAMILY RESIDENTIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	SF - SINGLE FAMILY RESIDENTIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	SF - SINGLE FAMILY RESIDENTIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
6900 Valley Trails Dr.	SF - SINGLE FAMILY RESIDENTIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021	Residential Single-Family	1.2			Application for a PUD	Under construction
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	SF - SINGLE FAMILY RESIDENTIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	SF - SINGLE FAMILY RESIDENTIAL	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
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6900 Valley Trails Dr.	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021	Residential Single-Family	1.2			Application for a PUD	Under construction

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"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-	Application for a PUD development plan to construct an affordable 31 unit multi-family residential community for individuals with special needs including a 5,000-square-foot community building with associated site improvements on a vacant property to be dedicated to the city as part of Homestead at Irby Ranch.	Under Construction
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
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"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		

Development Address	Existing Land Use	Data Source General	Data Source Detailed	Development Type	Housing Units Added	Commerical Development Type	Commercial Square Footage Added	Project Descrption	Development Status
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
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Development Address	Existing Land Use	Data Source General	Data Source Detailed	Development Type	Housing Units Added	Commerical Development Type	Commercial Square Footage Added	Project Descrption	Development Status
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
APN_941 140000213	Vacant	Zone 7 Demand Study	Small corner of large DSRSD parcel that falls within COP service area causing issues with RW lookup tab default Online Year (buildout) projections.	No Development, value adjusted for zone 7 demand study. No foul flow generated for ICM model					
APN_941 140102302	Vacant	Zone 7 Demand Study	Small corner of large DSRSD parcel that falls within COP service area causing issues with RW lookup tab default Online Year (buildout) projections.	No Development, value adjusted for zone 7 demand study. No foul flow generated for ICM model					

Development Address	Existing Land Use	Data Source General	Data Source Detailed	Development Type	Housing Units Added	Commerical Development Type	Commercial Square Footage Added	Project Descrption	Development Status
APN_941 157000403	Vacant	Zone 7 Demand Study	Small corner of large DSRSD parcel that falls within COP service area causing issues with RW lookup tab default Online Year (buildout) projections.	No Development, value adjusted for zone 7 demand study. No foul flow generated for ICM model					
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
11300 Dublin Canyon Rd.	CM - COMMERCIAL	CDD Update 2022-09-29	APN added via lookup of development address in 2022 Assessor Parcel dataset Parcel # updated manually from review of AC parcel viewer (no tabular data in Nov 2022 dataset)	Commercial	0	Church	34,763	Application for Planned Unit Development (PUD) Major Modification, Minor Subdivision, and Conditional Use Permit to construct and operate a 9,742-square-foot Greek Orthodox Church and 24,971-square-foot community center at 11300 Dublin Canyon Road	Approved
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
3000 Busch Road	CM - COMMERCIAL	CDD Update 2022-09-29		Commercial	0		185,000	Applications for: 1) Design Review to construct an approximately 711, 800-square-foot sortation center; and 2) Conditional Use Permit approval to operate a light industrial use exceeding 75,000 gross square-feet in area; OR Applications for: 1) Design Review approval to construct an approximately 185,000-square-foot delivery station ; and 2) Conditional Use Permit approval to operate a light industrial use exceeding 75,000 gross square-feet in area.	Under Review
236 Ray Street	CM - COMMERCIAL	CDD Update 2022-09-29	APN added via lookup of development address in 2022 Assessor Parcel dataset	Other				Application for Administrative Design Review approval to construct an approximately 25-foot tall, 1,510-square-foot two-story detached accessory structure with a carport in the rear yard of an existing residence at 236 Ray Street.	Approved

Development Address	Existing Land Use	Data Source General	Data Source Detailed	Development Type	Housing Units Added	Commerical Development Type	Commercial Square Footage Added	Project Descrption	Development Status
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		

Development Address	Existing Land Use	Data Source General	Data Source Detailed	Development Type	Housing Units Added	Commerical Development Type	Commercial Square Footage Added	Project Descrption	Development Status
"3988 First St. and 3878 and 3780 Stanley Blvd." and "3780 Stanley Blvd., future 3701 Nevada St." (combined two projects from CDD Update)	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 - selected all parcels within PUD-HDR Ordinance 2157 region in City's website.	Residential- Single-Family	1.102803738		-		
3459 Old Foothill Rd.	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, February 2020	Residential- Single-Family	1		-	Minor Modification to the approved PUD for the Austin property, consisting of eight new single-family home lots.	Approved
3459 Old Foothill Rd.	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 This is the existing parcel from the parcel map provided by Zone 7 in early 2020 for initial model. It has been subdivided in Alameda County records as of April 2021 when last checked. Indivdiual 8 units have been added in rows below.	Residential Single-Family	1			Minor modification to approved PUD	Under construction
3459 Old Foothill Rd.	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 This is a single lot - contained within one existing parcel from the parcel map provided by Zone 7 in early 2020 for initial model. It has been subdivided in Alameda County records as of April 2021 when last checked. Indivdiual 8 units have been added separately.	Residential Single-Family	1			Minor modification to approved PUD	Under construction
3459 Old Foothill Rd.	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 This is a single lot - contained within one existing parcel from the parcel map provided by Zone 7 in early 2020 for initial model. It has been subdivided in Alameda County records as of April 2021 when last checked. Indivdiual 8 units have been added separately.	Residential Single-Family	1			Minor modification to approved PUD	Under construction
3459 Old Foothill Rd.	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 This is a single lot - contained within one existing parcel from the parcel map provided by Zone 7 in early 2020 for initial model. It has been subdivided in Alameda County records as of April 2021 when last checked. Indivdiual 8 units have been added separately.	Residential Single-Family	1			Minor modification to approved PUD	Under construction
3459 Old Foothill Rd.	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 This is a single lot - contained within one existing parcel from the parcel map provided by Zone 7 in early 2020 for initial model. It has been subdivided in Alameda County records as of April 2021 when last checked. Indivdiual 8 units have been added separately.	Residential Single-Family	1			Minor modification to approved PUD	Under construction

Development Address	Existing Land Use	Data Source General	Data Source Detailed	Development Type	Housing Units Added	Commerical Development Type	Commercial Square Footage Added	Project Descrption	Development Status
3459 Old Foothill Rd.	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 This is a single lot - contained within one existing parcel from the parcel map provided by Zone 7 in early 2020 for initial model. It has been subdivided in Alameda County records as of April 2021 when last checked. Indivdiual 8 units have been added separately.	Residential Single-Family	1			Minor modification to approved PUD	Under construction
3459 Old Foothill Rd.	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 This is a single lot - contained within one existing parcel from the parcel map provided by Zone 7 in early 2020 for initial model. It has been subdivided in Alameda County records as of April 2021 when last checked. Indivdiual 8 units have been added separately.	Residential Single-Family	1			Minor modification to approved PUD	Under construction
3459 Old Foothill Rd.	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 This is a single lot - contained within one existing parcel from the parcel map provided by Zone 7 in early 2020 for initial model. It has been subdivided in Alameda County records as of April 2021 when last checked. Indivdiual 8 units have been added separately.	Residential Single-Family	1			Minor modification to approved PUD	Under construction
3459 Old Foothill Rd.	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 This is a single lot - contained within one existing parcel from the parcel map provided by Zone 7 in early 2020 for initial model. It has been subdivided in Alameda County records as of April 2021 when last checked. Indivdiual 8 units have been added separately.	Residential Single-Family	1			Minor modification to approved PUD	Under construction
3459 Old Foothill Rd.	Vacant	Zone 7 Demand Study	City of Pleasanton Community Development Department Update report, April 2021 This is a single lot - contained within one existing parcel from the parcel map provided by Zone 7 in early 2020 for initial model. It has been subdivided in Alameda County records as of April 2021 when last checked. Indivdiual 8 units have been added separately.	Residential Single-Family	1			Minor modification to approved PUD	Under construction
Arroyo Lago	Vacant	East Pleasanton Assumed Future Loads		Residential Single-Family	243				
Steelwave North	Vacant	East Pleasanton Assumed Future Loads		Commercial/Industrial			300,000		
Steelwave B	Vacant	East Pleasanton Assumed Future Loads		Commercial/Industrial			1,370,615		
"Amazon"	Vacant	East Pleasanton Assumed Future Loads		Commercial/Industrial			830,471		

APPENDIX D – DRY WEATHER MODEL CALIBRATION GRAPHS

Figure D-1: Flow Meter 1 Dry Weather Calibration

Figure D-2: Flow Meter 2 Dry Weather Calibration

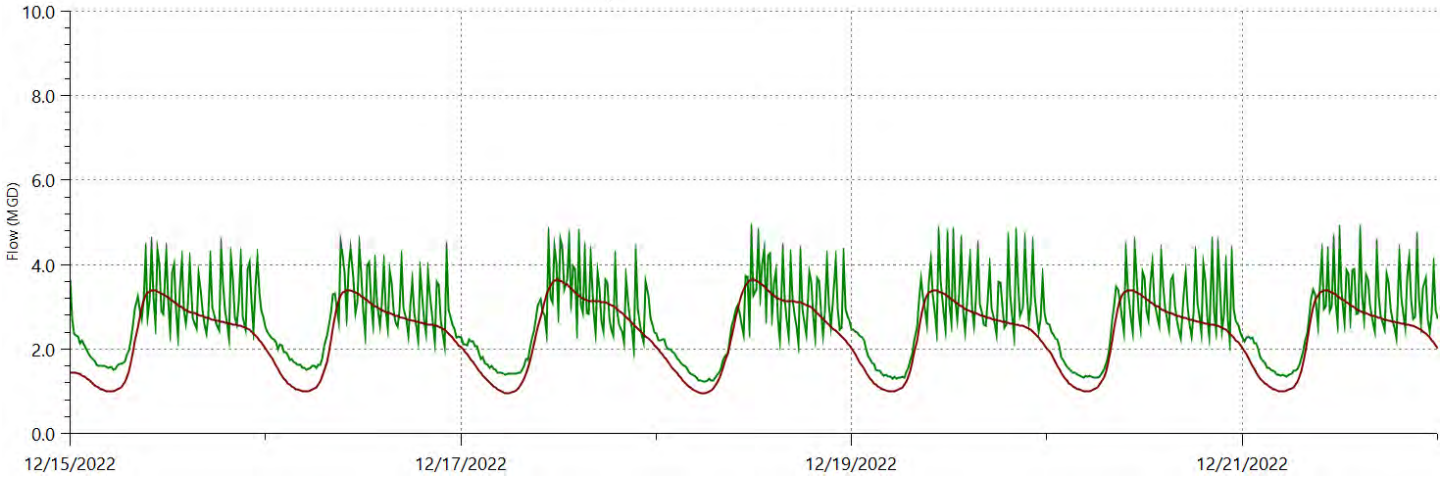


Figure D-3: Flow Meter 3 Dry Weather Calibration

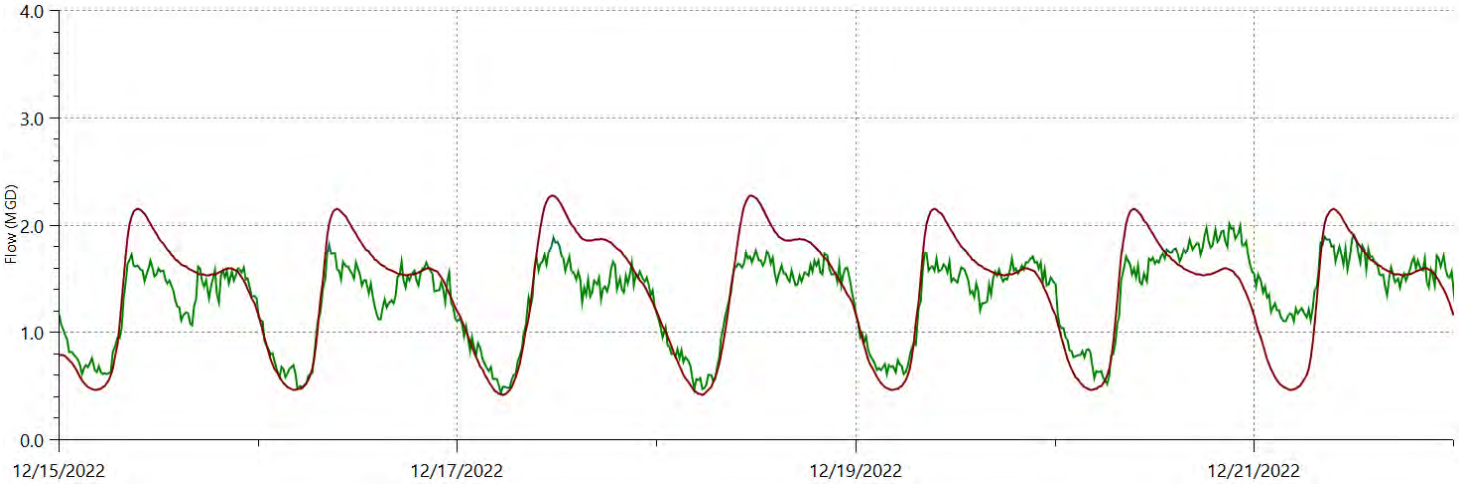


Figure D-4: Flow Meter 3A Dry Weather Calibration

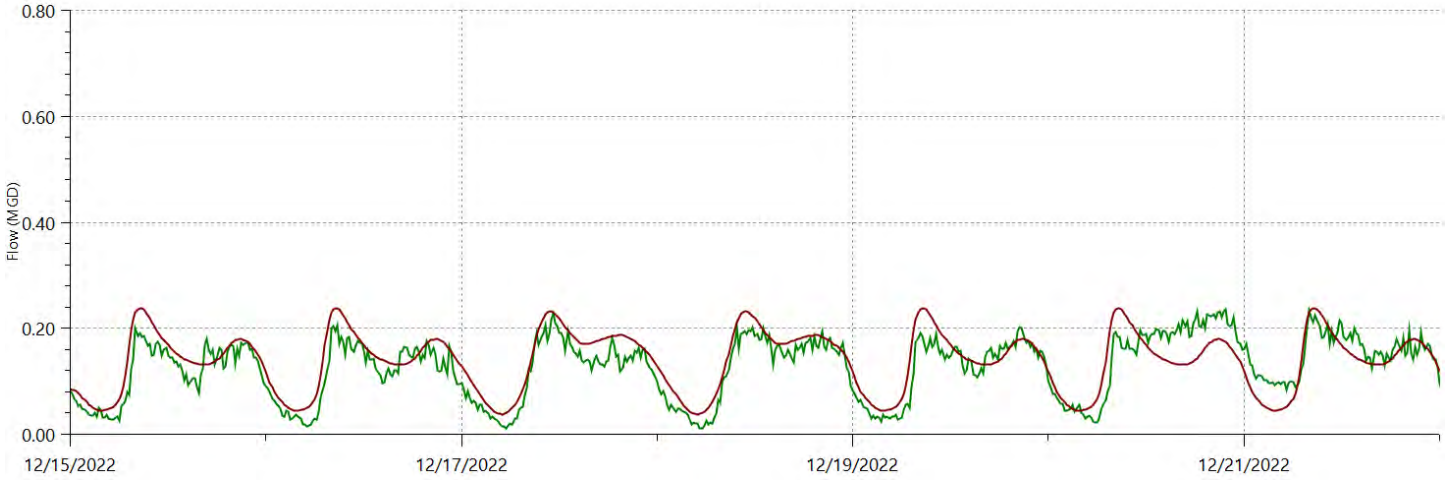


Figure D-5: Flow Meter 4 Dry Weather Calibration

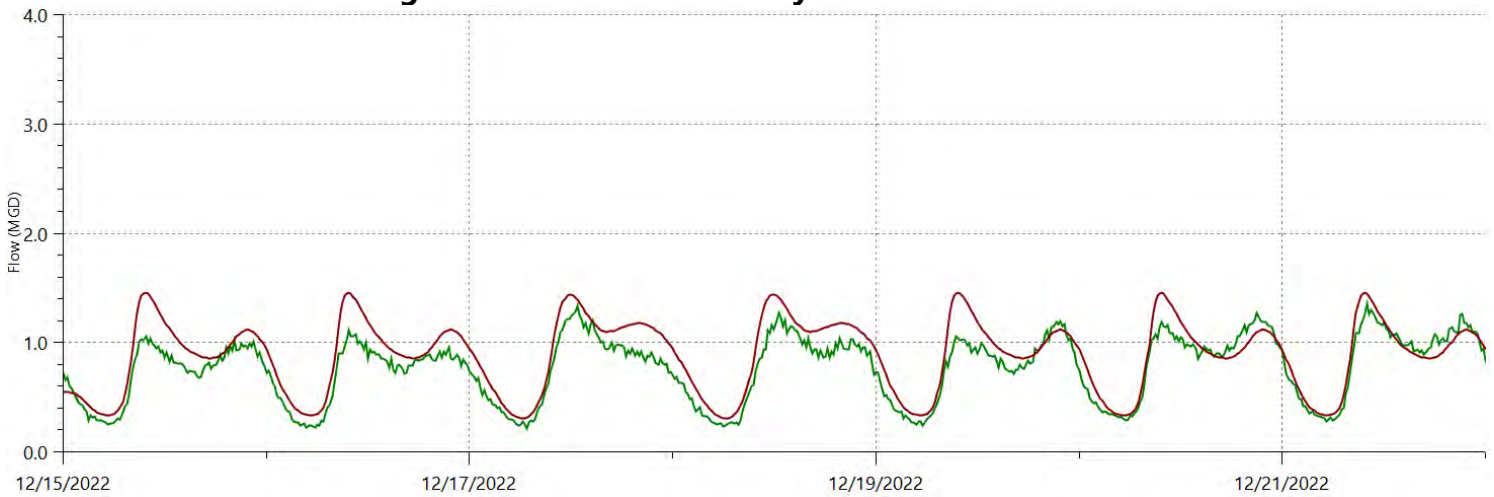


Figure D-6: Flow Meter 5 Dry Weather Calibration

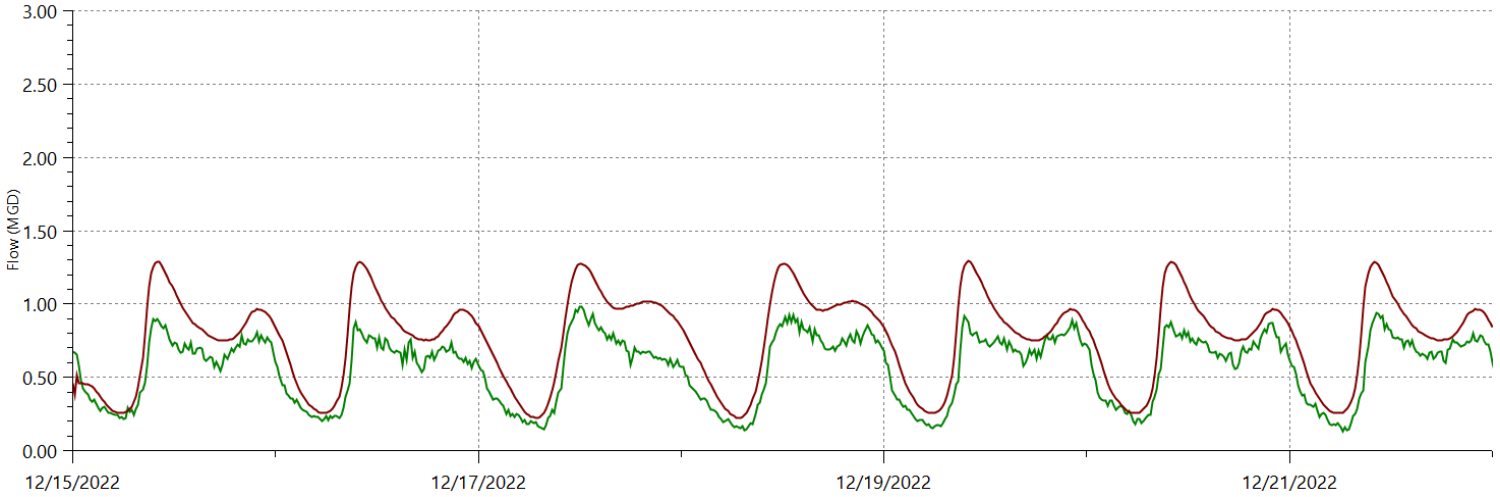


Figure D-7: Flow Meter 6 Dry Weather Calibration

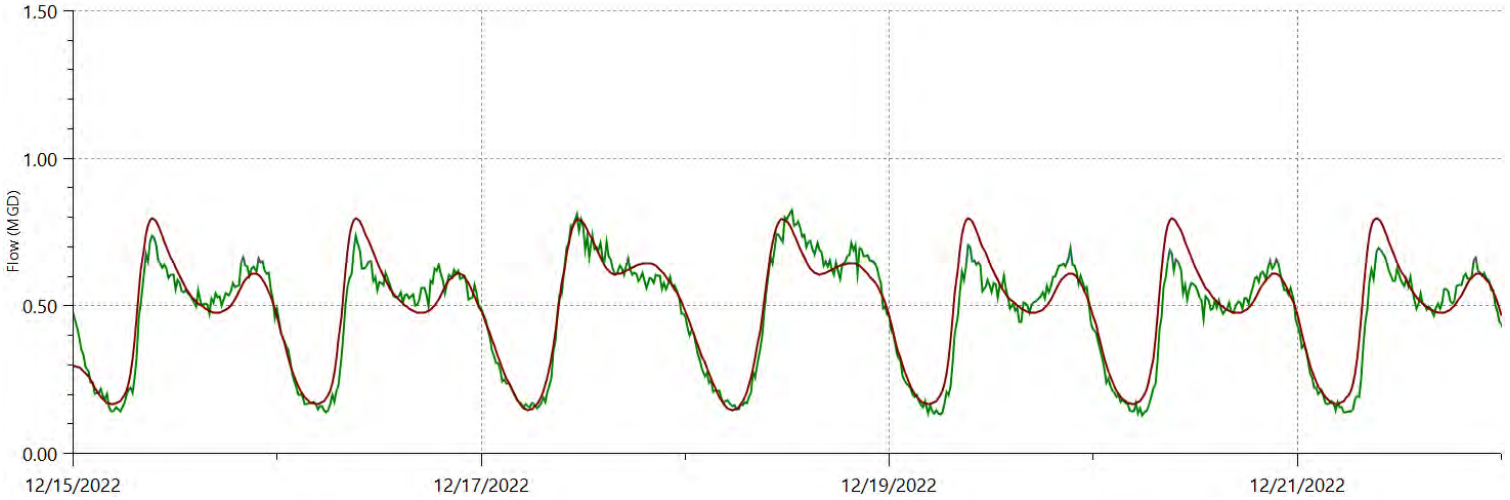


Figure D-8: Flow Meter 7 Dry Weather Calibration

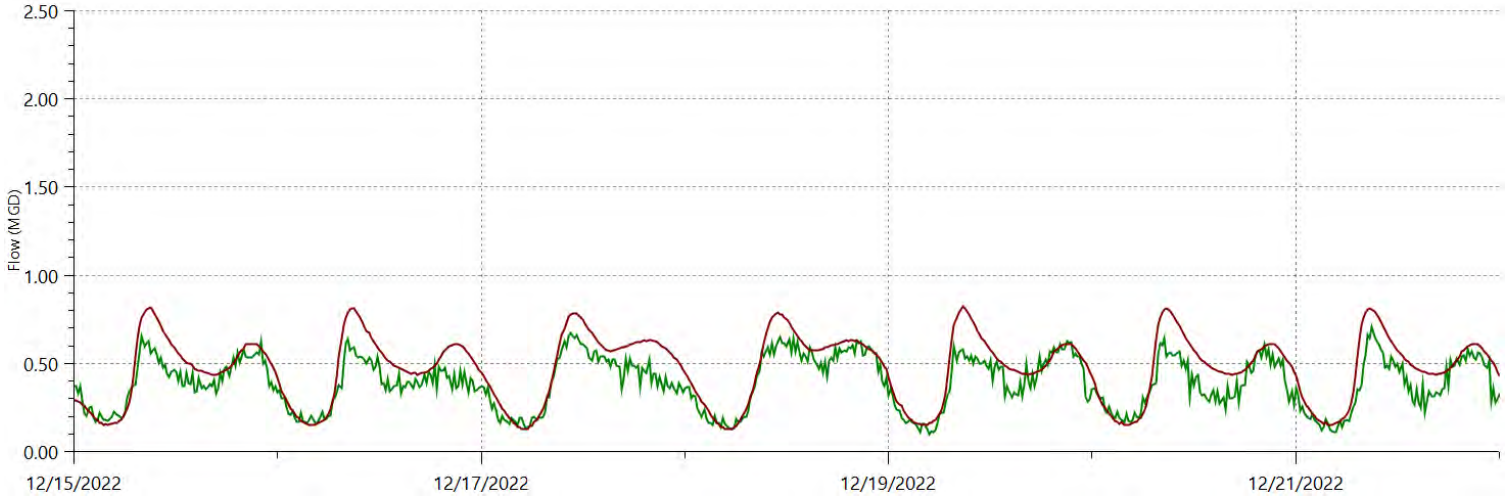


Figure D-9: Flow Meter 8 Dry Weather Calibration

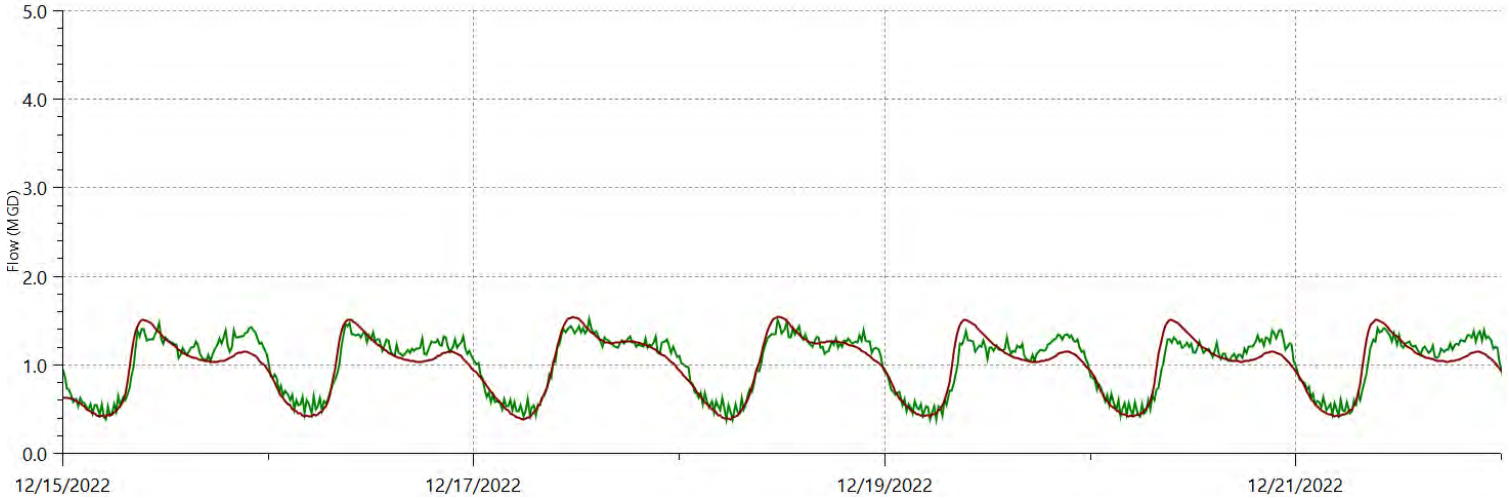


Figure D-10: Flow Meter 9 Dry Weather Calibration

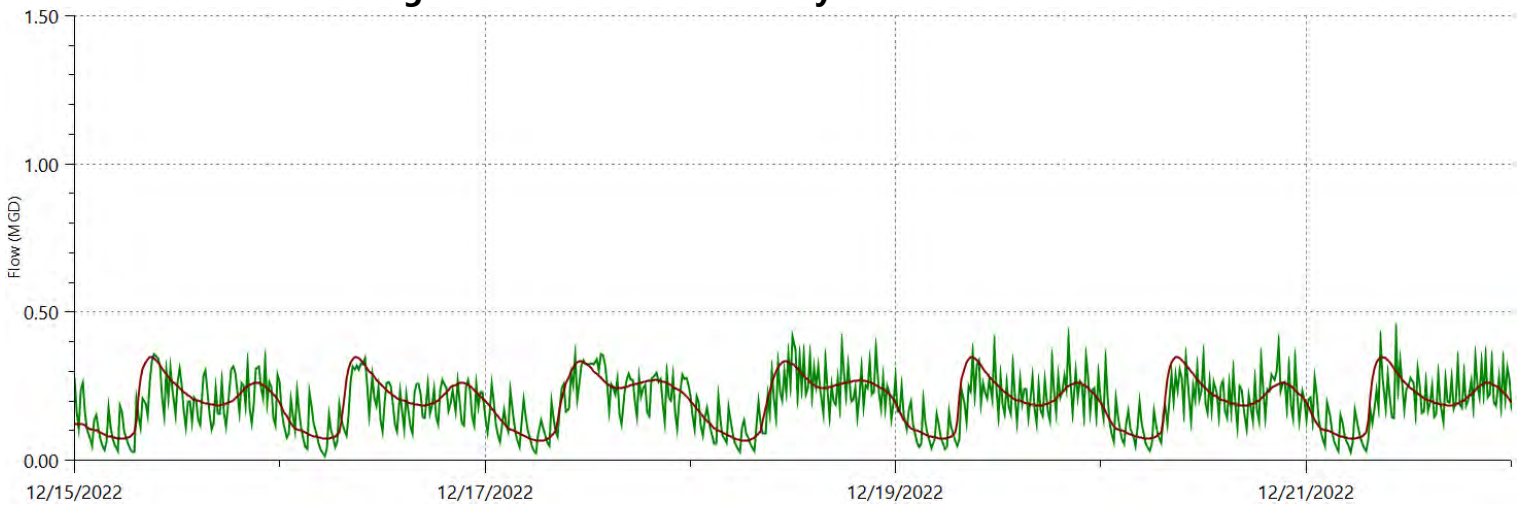


Figure D-11: Flow Meter 10 Dry Weather Calibration

Figure D-12: Flow Meter 10A Dry Weather Calibration

Figure D-13: Flow Meter 11 Dry Weather Calibration

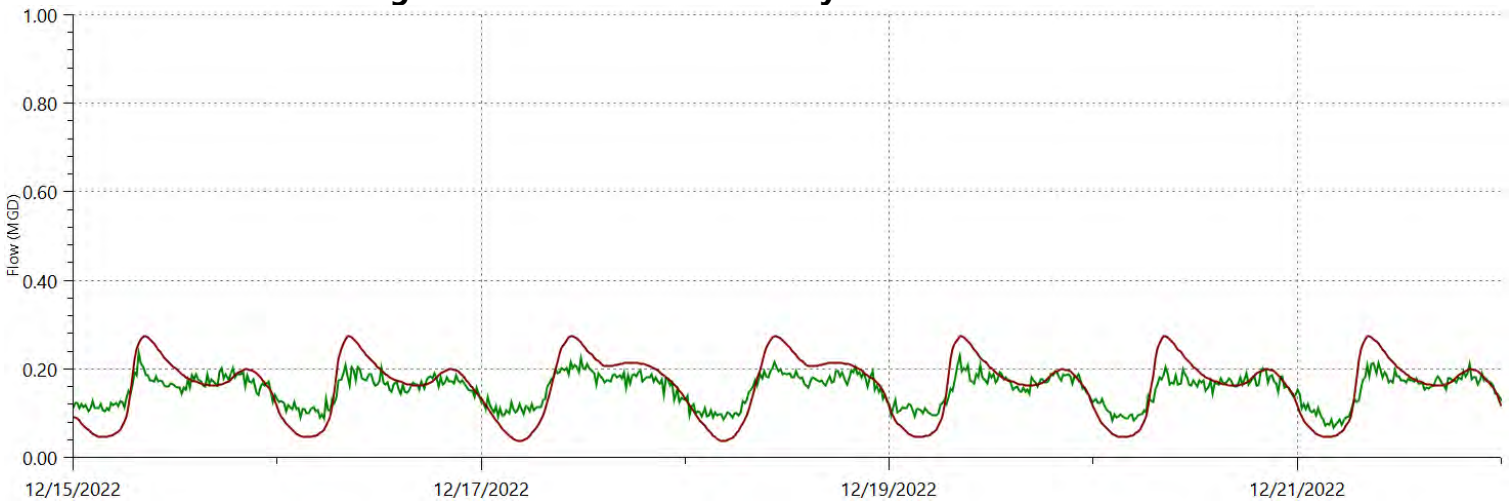


Figure D-14: Flow Meter 12 Dry Weather Calibration

APPENDIX E – WET WEATHER MODEL CALIBRATION GRAPHS

Figure E-1: Flow Meter 1 Wet Weather Calibration

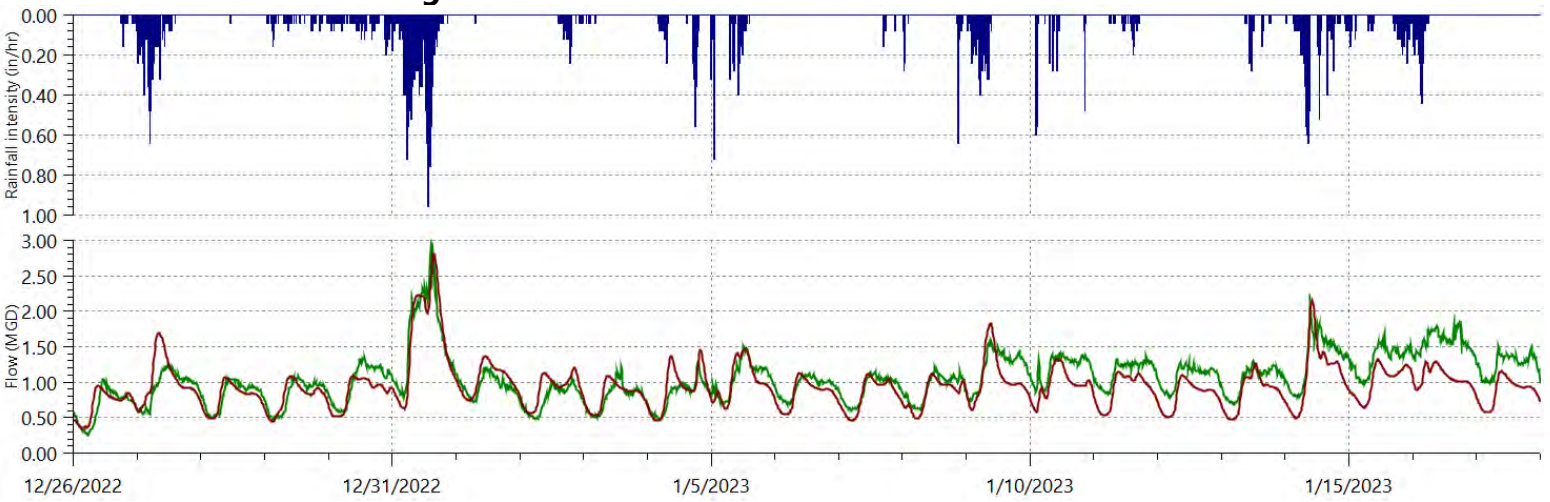


Figure E-2: Flow Meter 2 Wet Weather Calibration

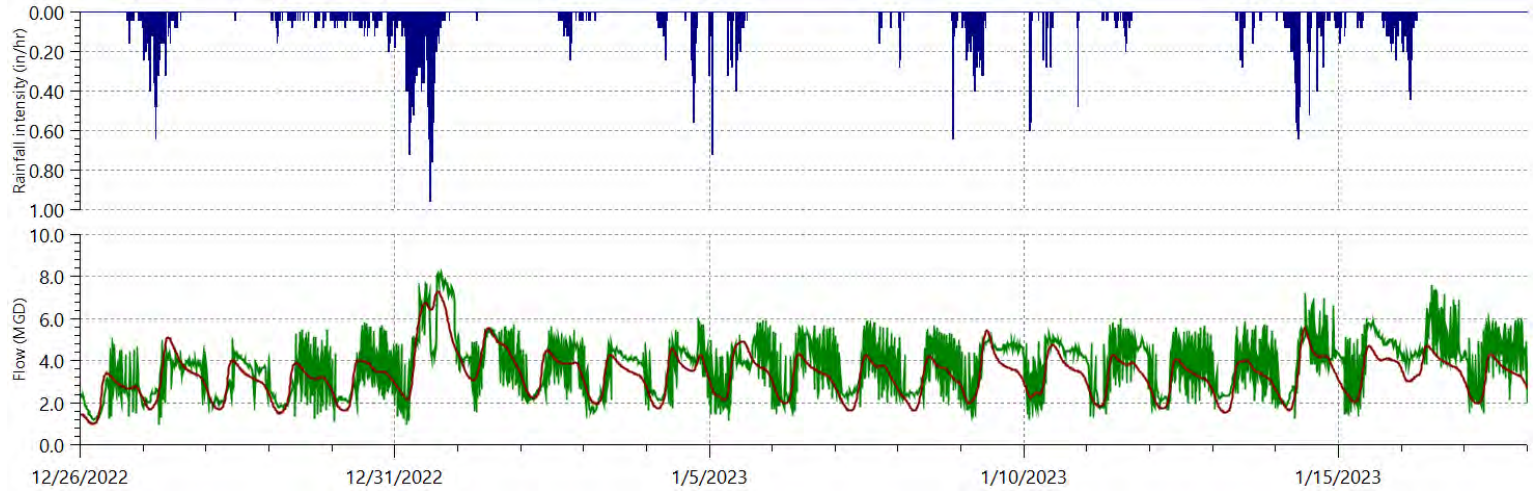


Figure E-3: Flow Meter 3 Wet Weather Calibration

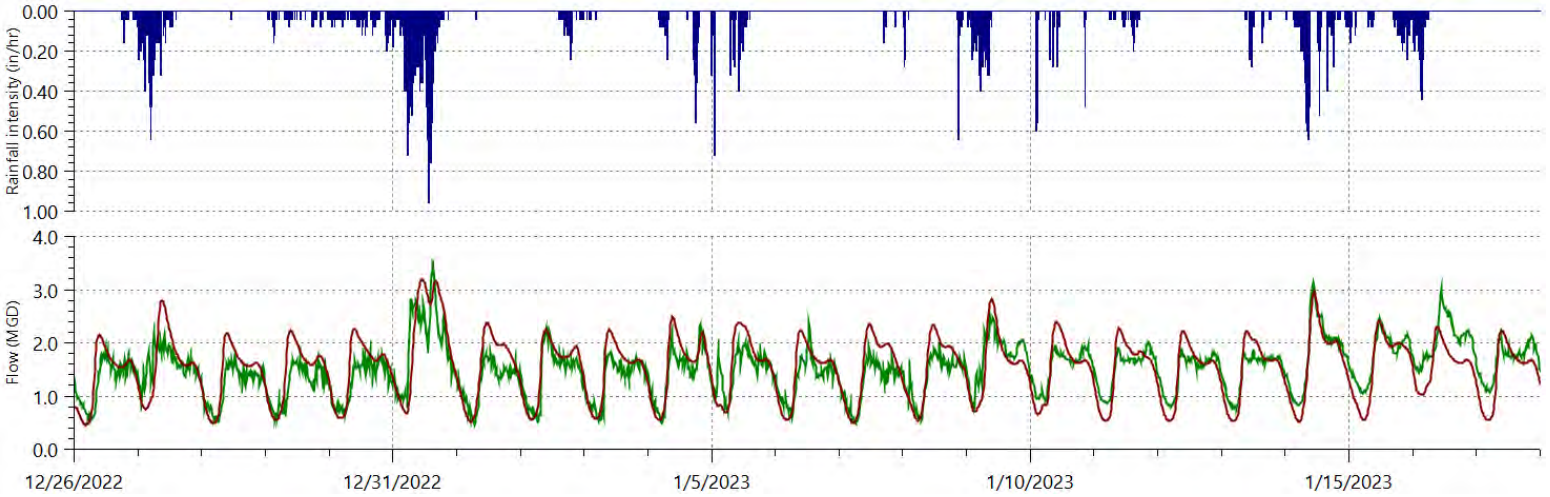


Figure E-4: Flow Meter 3A Wet Weather Calibration

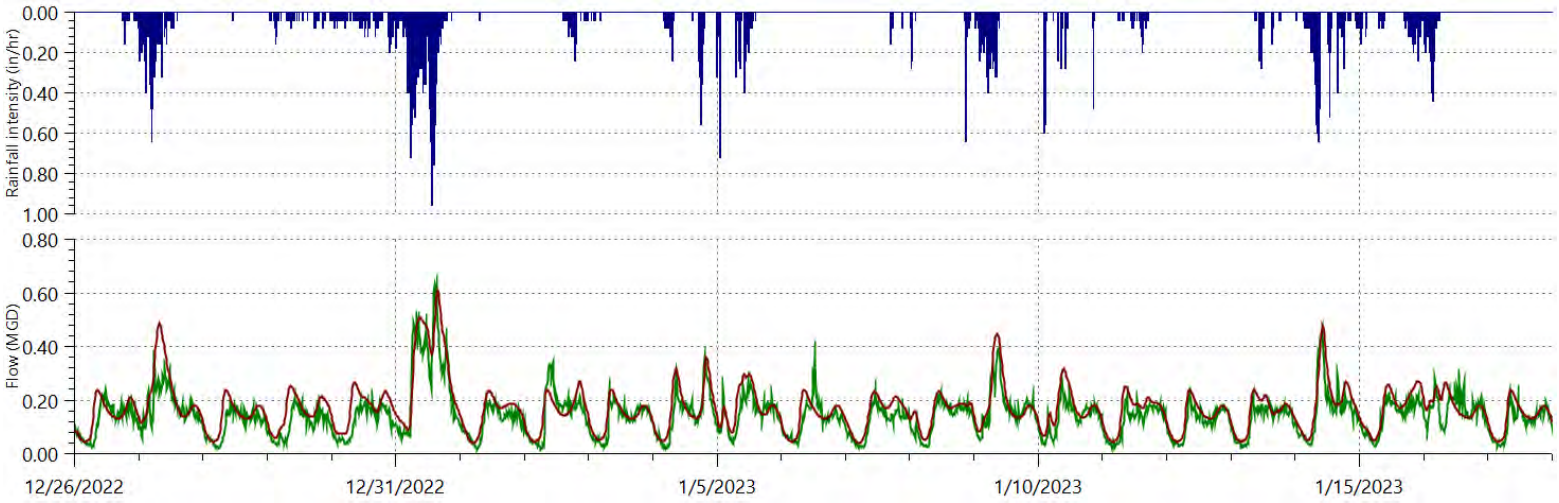


Figure E-5: Flow Meter 4 Wet Weather Calibration

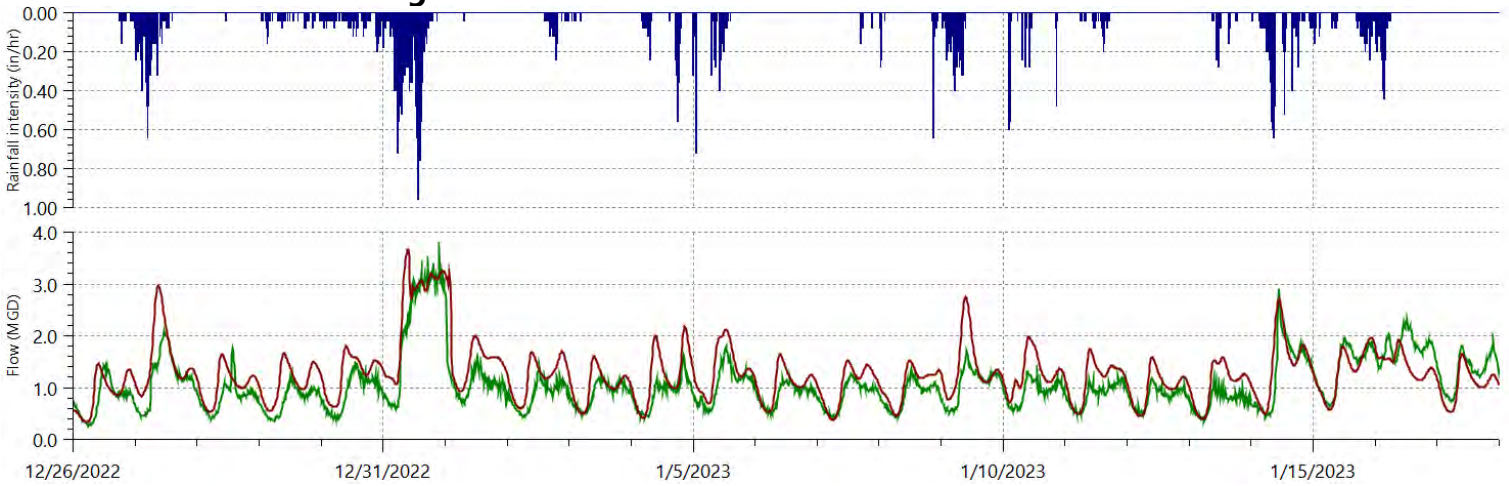


Figure E-6: Flow Meter 5 Wet Weather Calibration

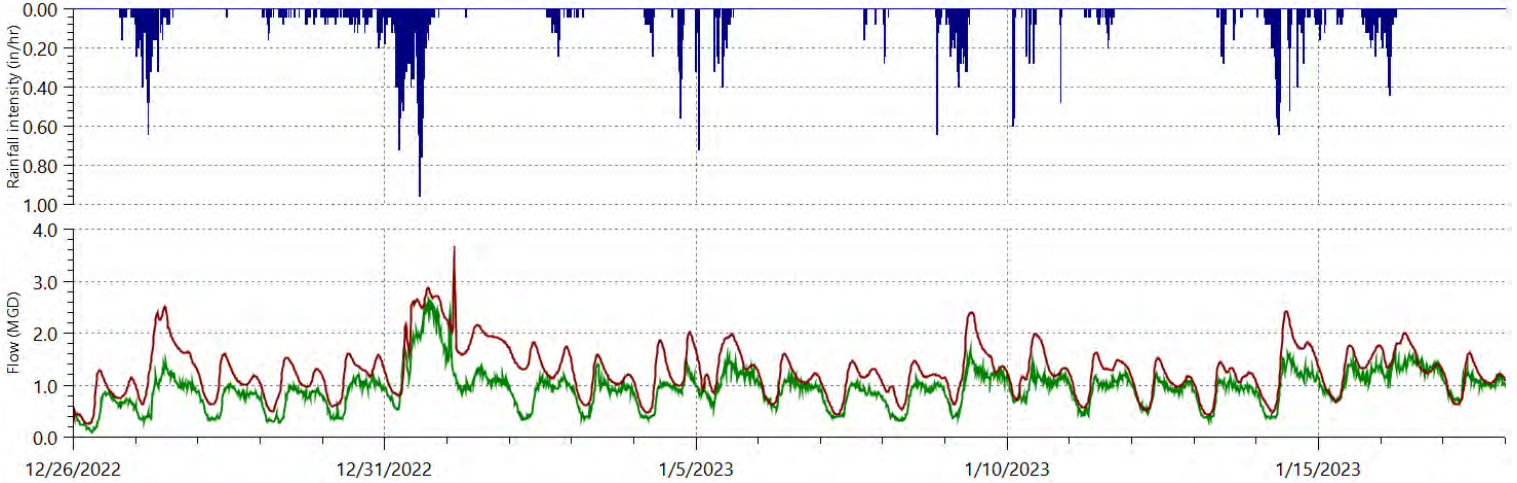


Figure E-7: Flow Meter 6 Wet Weather Calibration

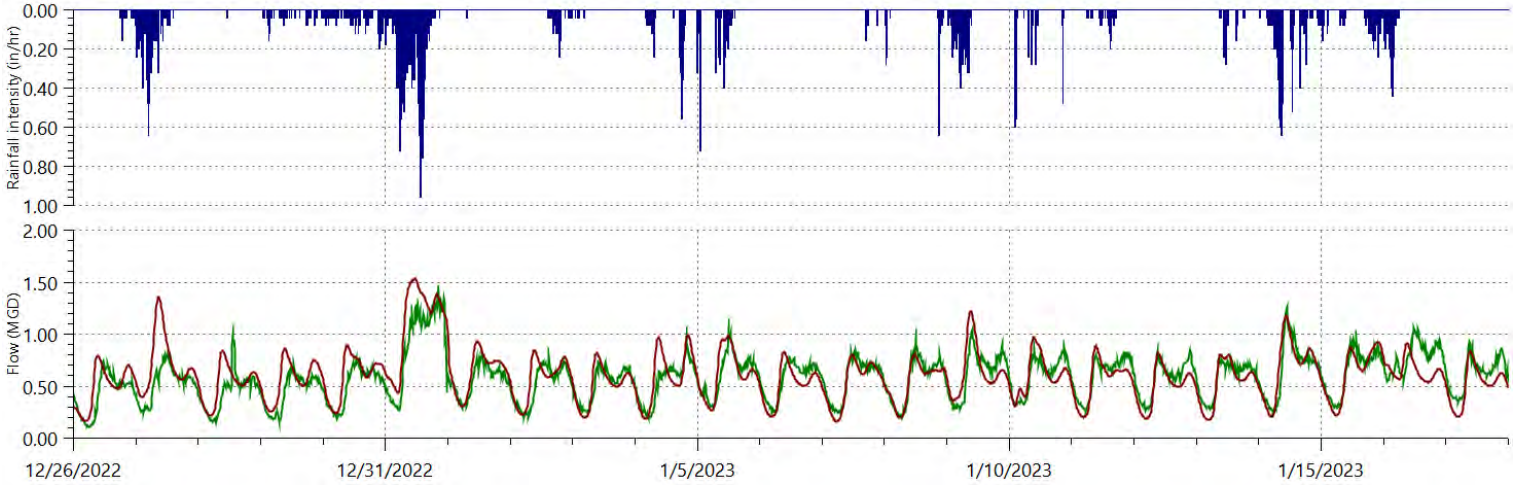


Figure E-8: Flow Meter 7 Wet Weather Calibration

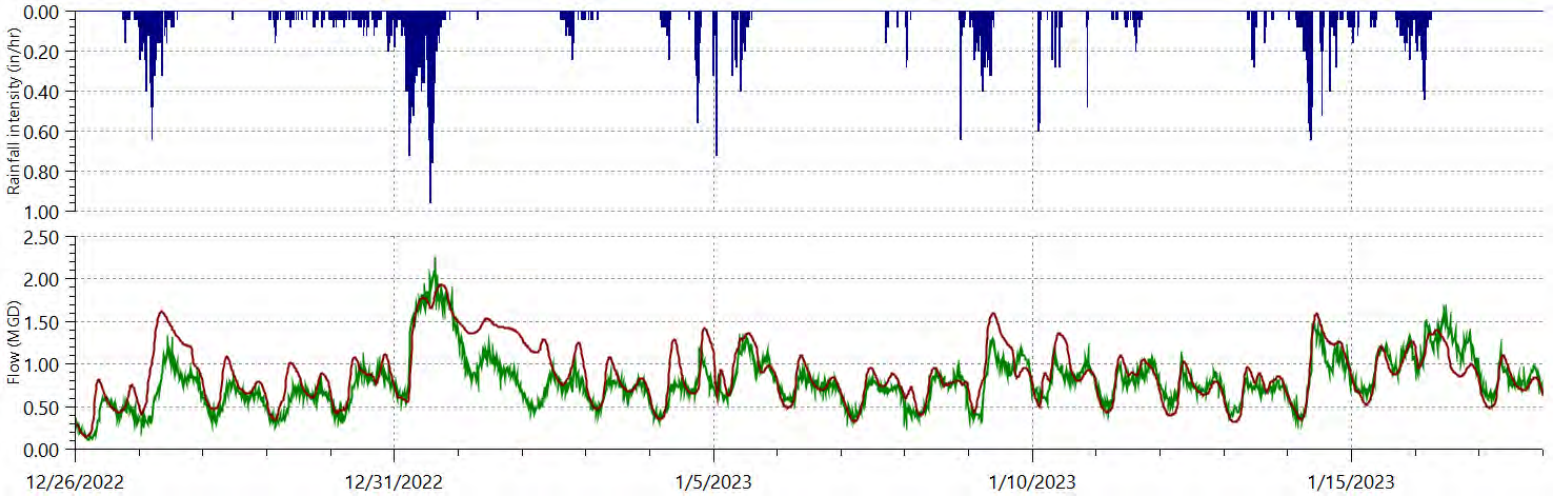


Figure E-9: Flow Meter 8 Wet Weather Calibration Including Depth

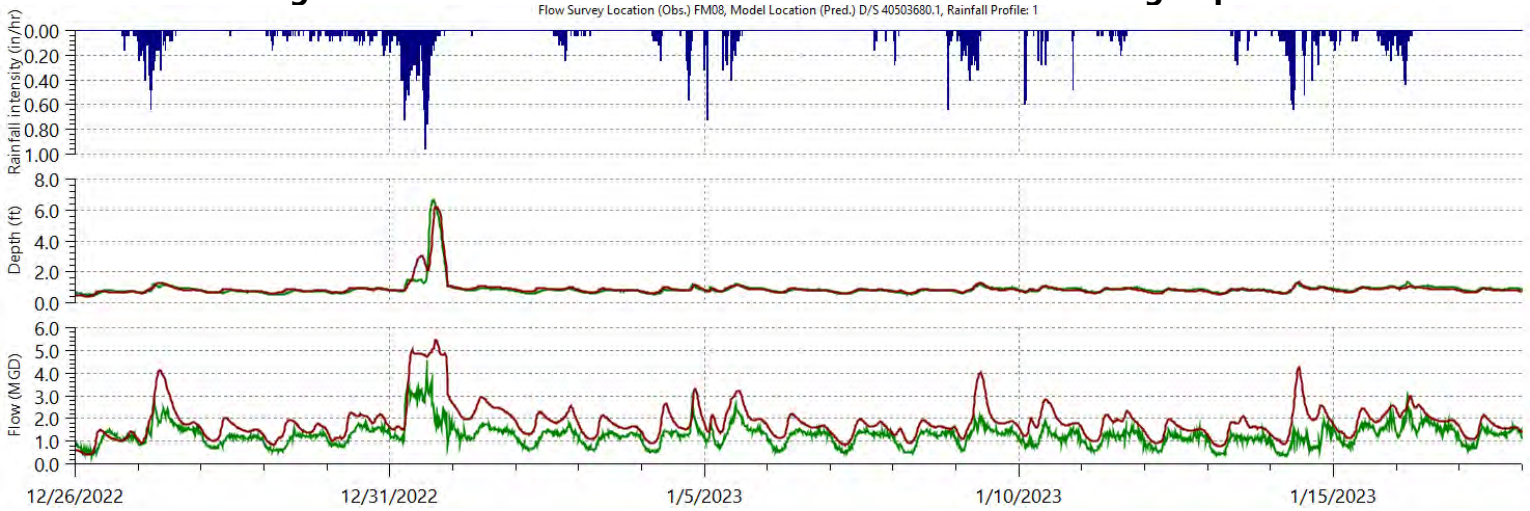


Figure E-10: Flow Meter 9 Wet Weather Calibration

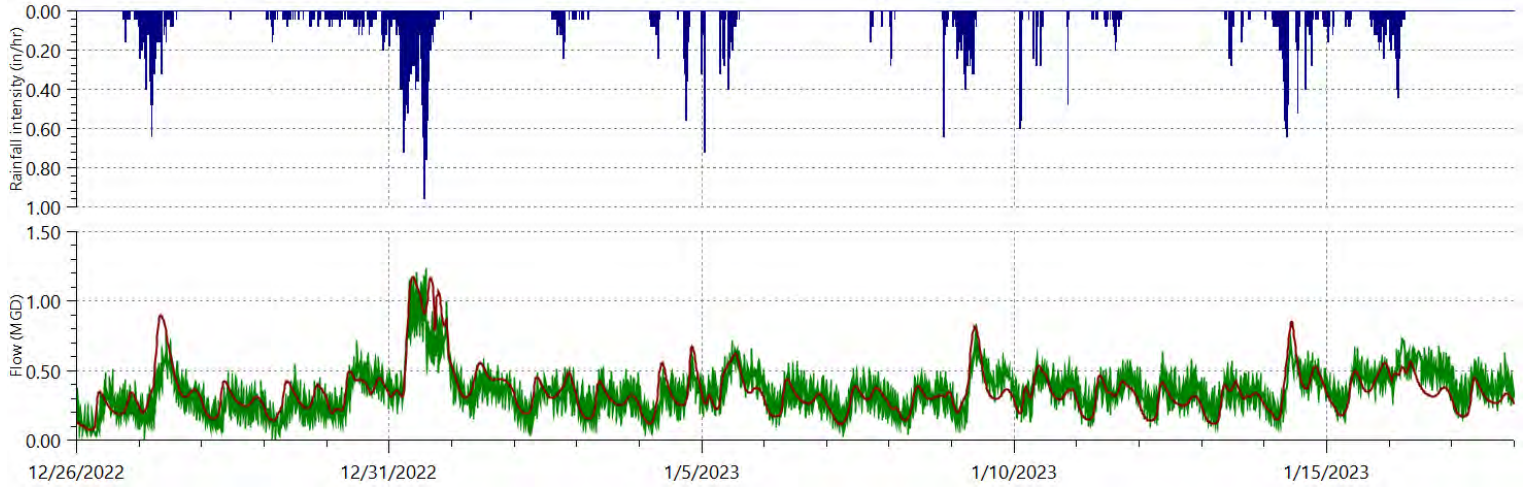


Figure E-11: Flow Meter 10 Wet Weather Calibration

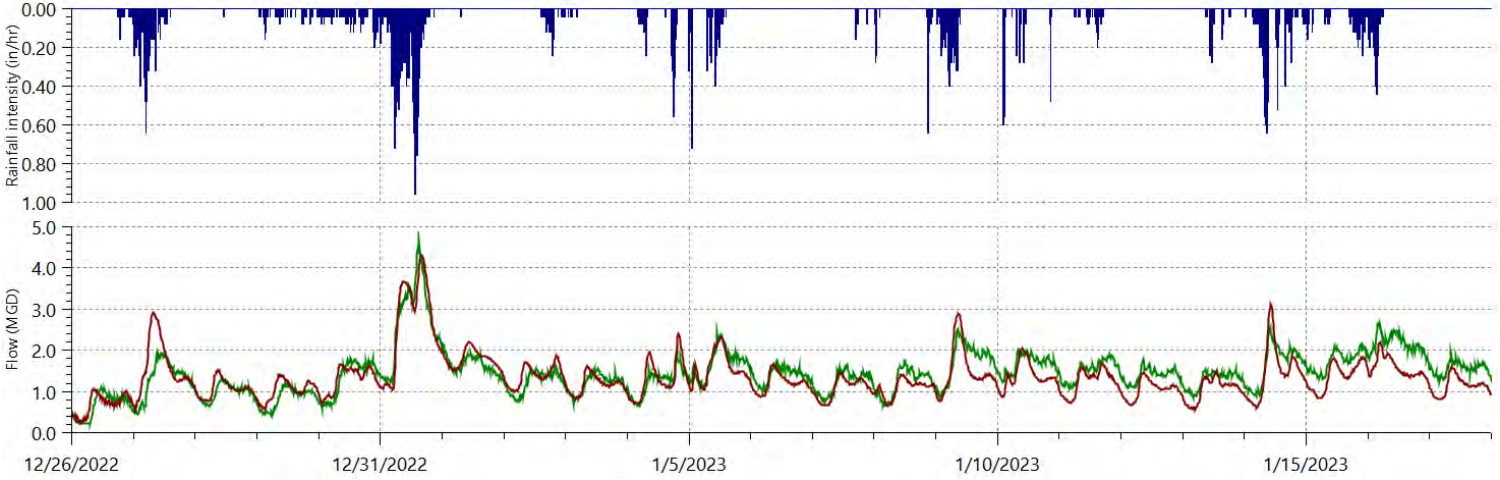


Figure E-12: Flow Meter 10A Wet Weather Calibration

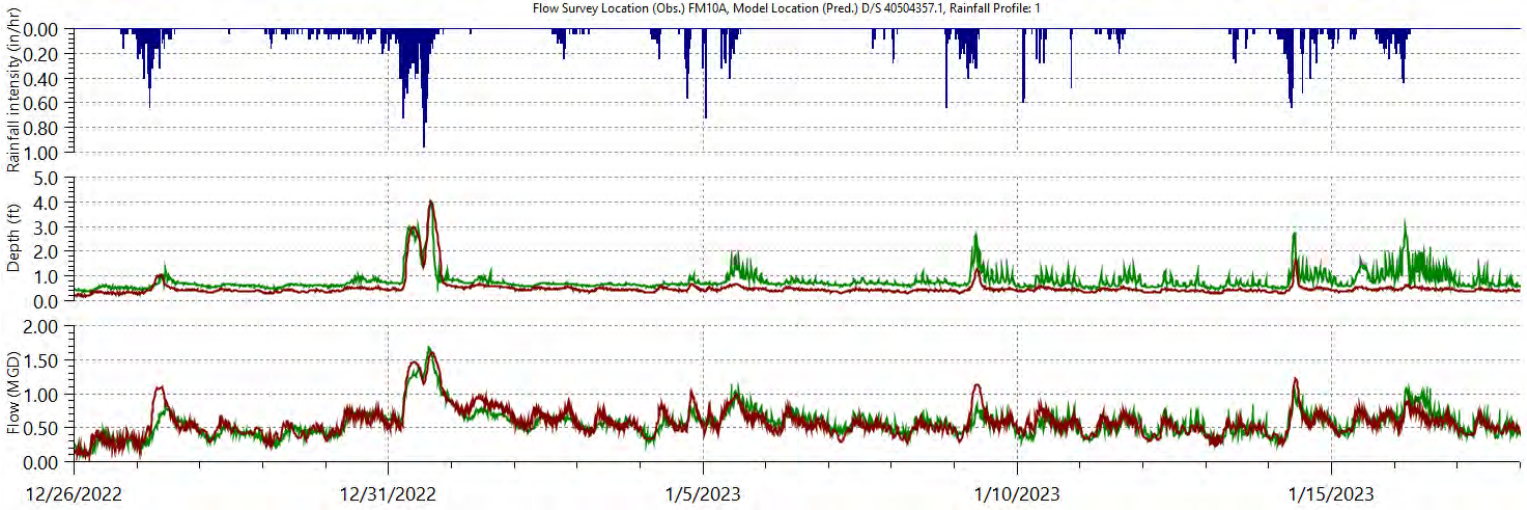


Figure E-13: Flow Meter 11 Wet Weather Calibration

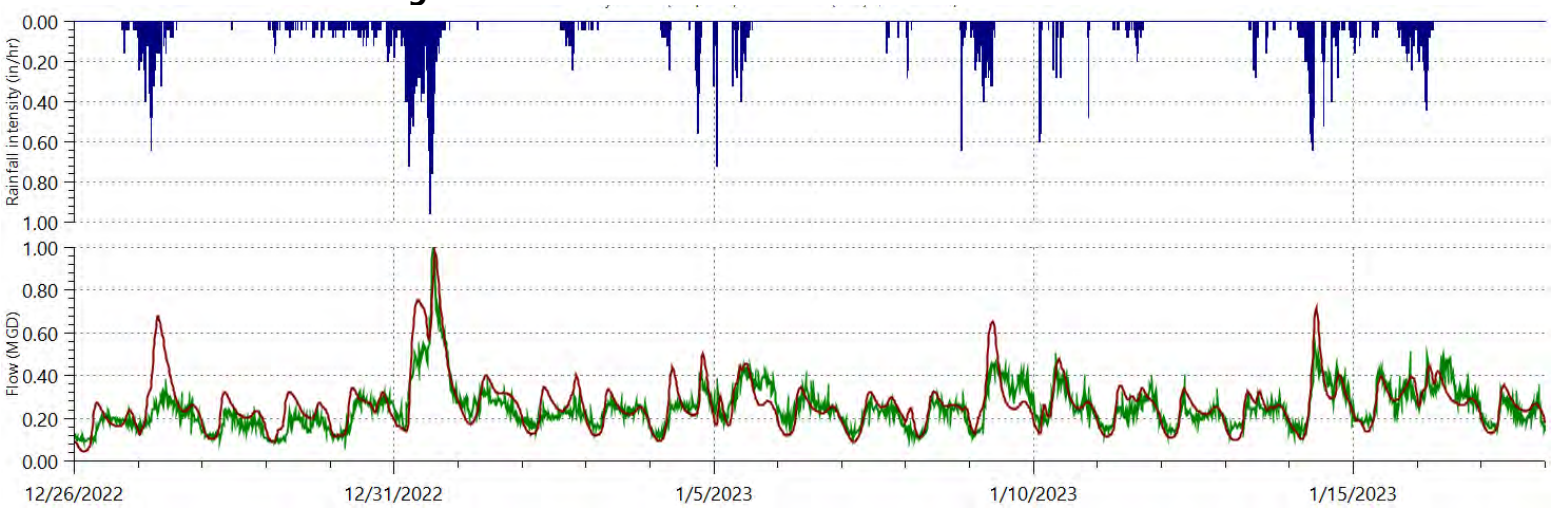


Figure E-14: Flow Meter 12 Wet Weather Calibration

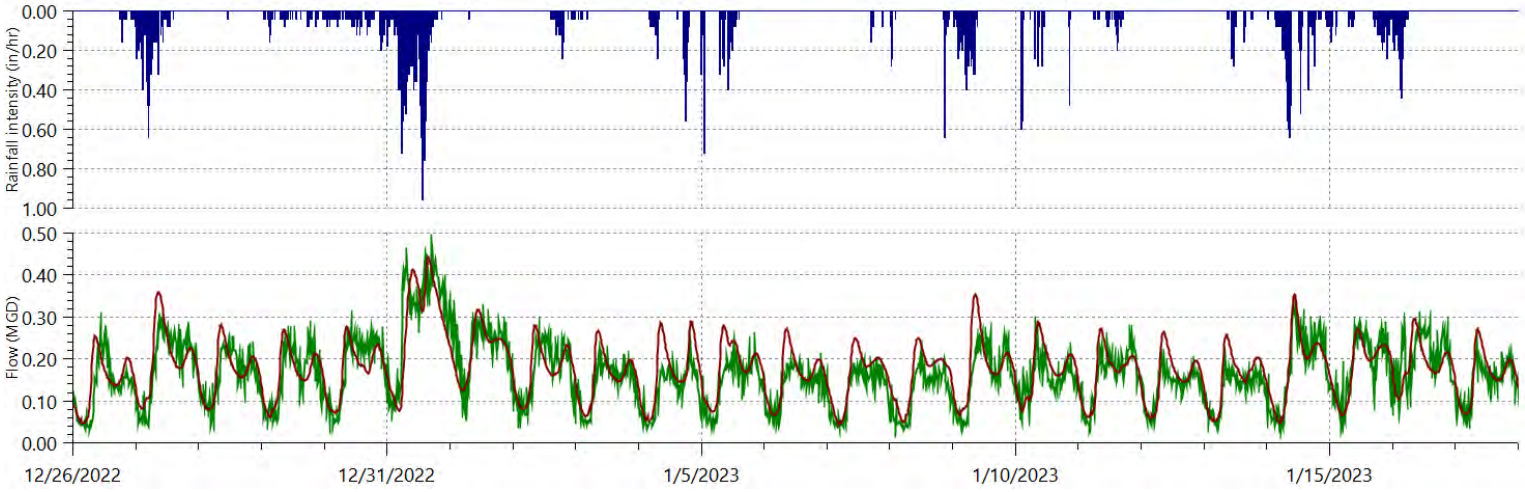
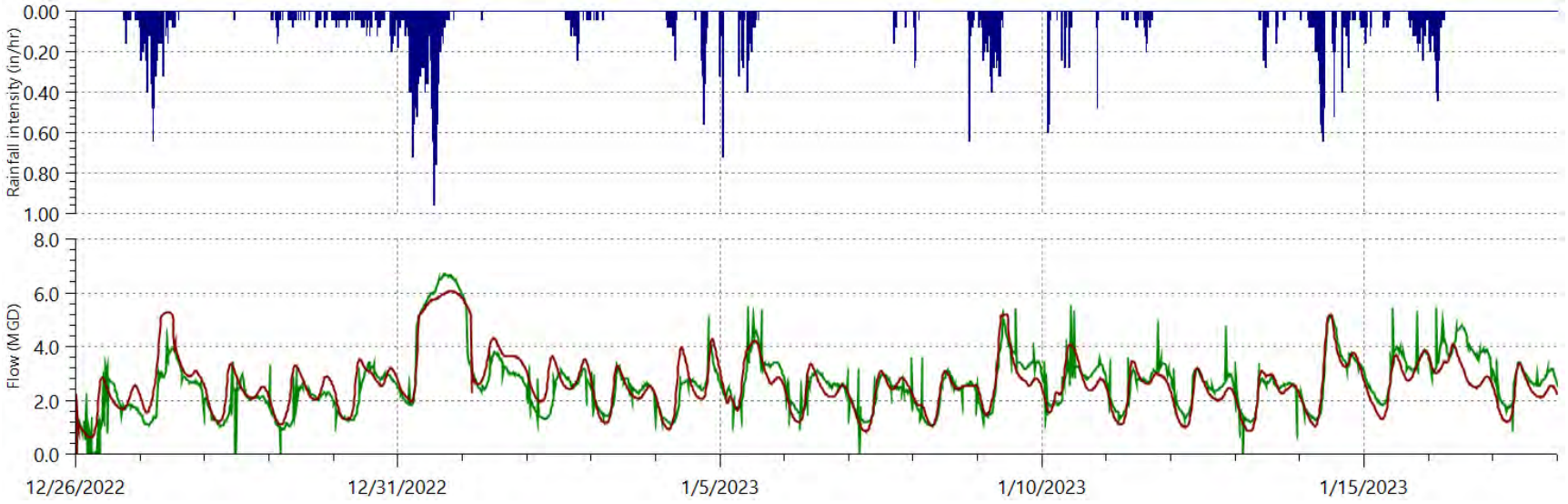
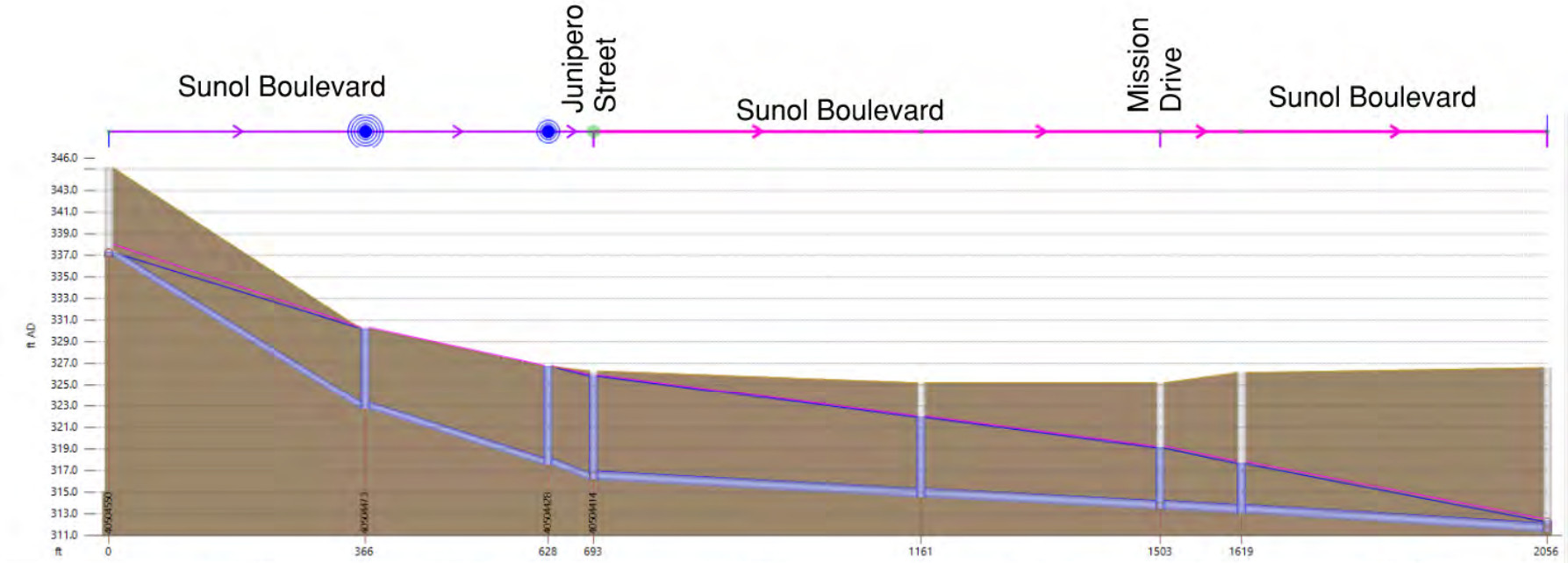


Figure E-15: Lift Station 6 Wet Weather Calibration



APPENDIX F – CAPACITY PROJECT PIPE PROFILES

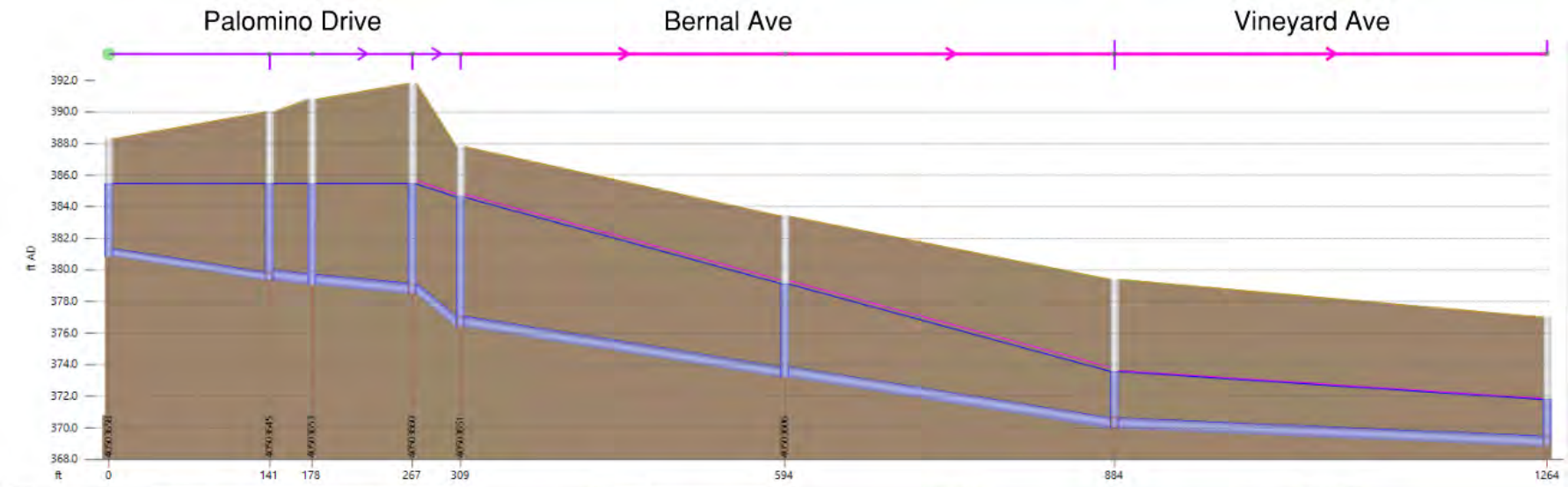
Figure 1: Sunol Boulevard Pipe Profile



Link	40504550.1	40504473.1	-	40504414.1	40504357.1	40504297.1	40504277.1
US node ID	40504550	40504473	-	40504414	40504357	40504297	40504277
ds node	40504473	40504428	-	40504357	40504297	40504277	40504178
length (ft)	366.4	261.5	64.8	468.2	342.0	116.3	437.0
width (in)	8.0	8.0	8.0	10.0	10.0	10.0	10.0
Bot rough M	0.013	0.013	0.013	0.013	0.013	0.013	0.013
us inv (ft AD)	336.900	322.700	317.500	316.130	314.530	313.410	313.040
ds inv (ft AD)	322.700	317.500	316.130	314.530	313.410	313.040	311.330
grad (%)	3.876	1.989	2.114	0.342	0.328	0.318	0.391
pfc (MGD)	1.54	1.10	1.14	0.83	0.81	0.80	0.89

Node	40504550	40504473	40504428	40504414	40504357	40504297	40504277	40504178
ground (ft AD)	345.100	330.200	326.700	326.300	325.200	325.200	326.150	326.600
flood dep (ft)	-7.806	-0.000	0.000	-0.469	-3.240	-6.088	-8.483	-14.297

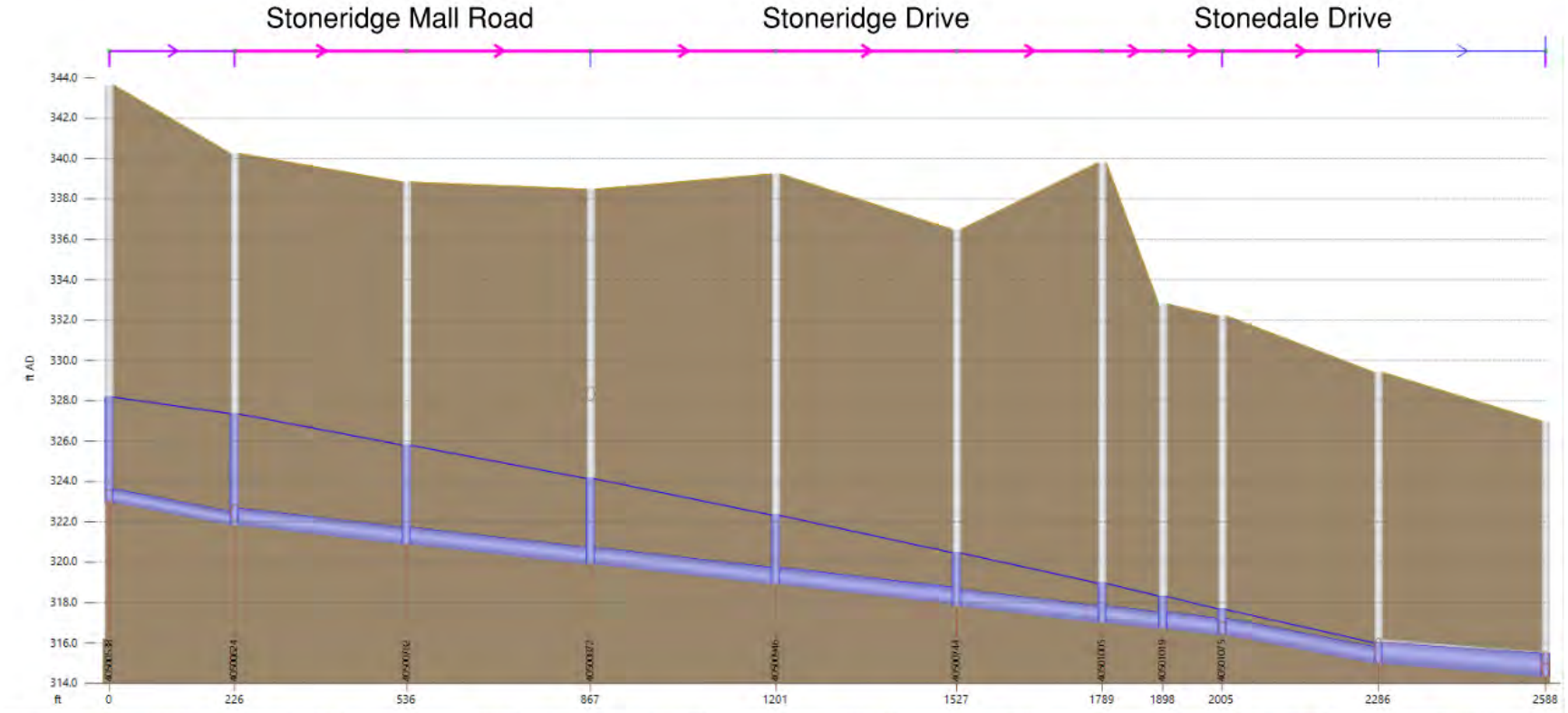
Figure 2: Bernal Avenue, Vineyard Avenue, and Palomino Drive



Link	40503658.1	-	40503653.1	-	40503651.1	40503606.1	40503548.2
US node ID	40503658	-	40503653	-	40503651	40503606	40503548
ds node	40503645	-	40503660	-	40503606	40503548	40503543
length (ft)	141.3	37.1	88.3	42.4	285.1	289.9	380.2
width (in)	6.0	8.0	8.0	8.0	8.0	8.0	8.0
Bot rough M	0.013	0.013	0.013	0.013	0.013	0.013	0.013
us inv (ft AD)	380.840	-	379.040	378.480	376.380	373.190	369.950
ds inv (ft AD)	379.340	-	378.480	376.360	373.190	369.950	368.800
grad (%)	1.061	0.808	0.634	5.000	1.119	1.118	0.302
pfc (MGD)	0.37	0.70	0.62	1.75	0.83	0.83	0.43

Node	40503658	40503645	40503653	40503660	40503651	40503606	40503548	40503543
ground (ft AD)	388.300	390.000	390.800	391.803	387.800	383.400	379.400	377.000
flood dep (ft)	-2.832	-4.534	-5.334	-6.338	-3.180	-4.270	-5.831	-5.209

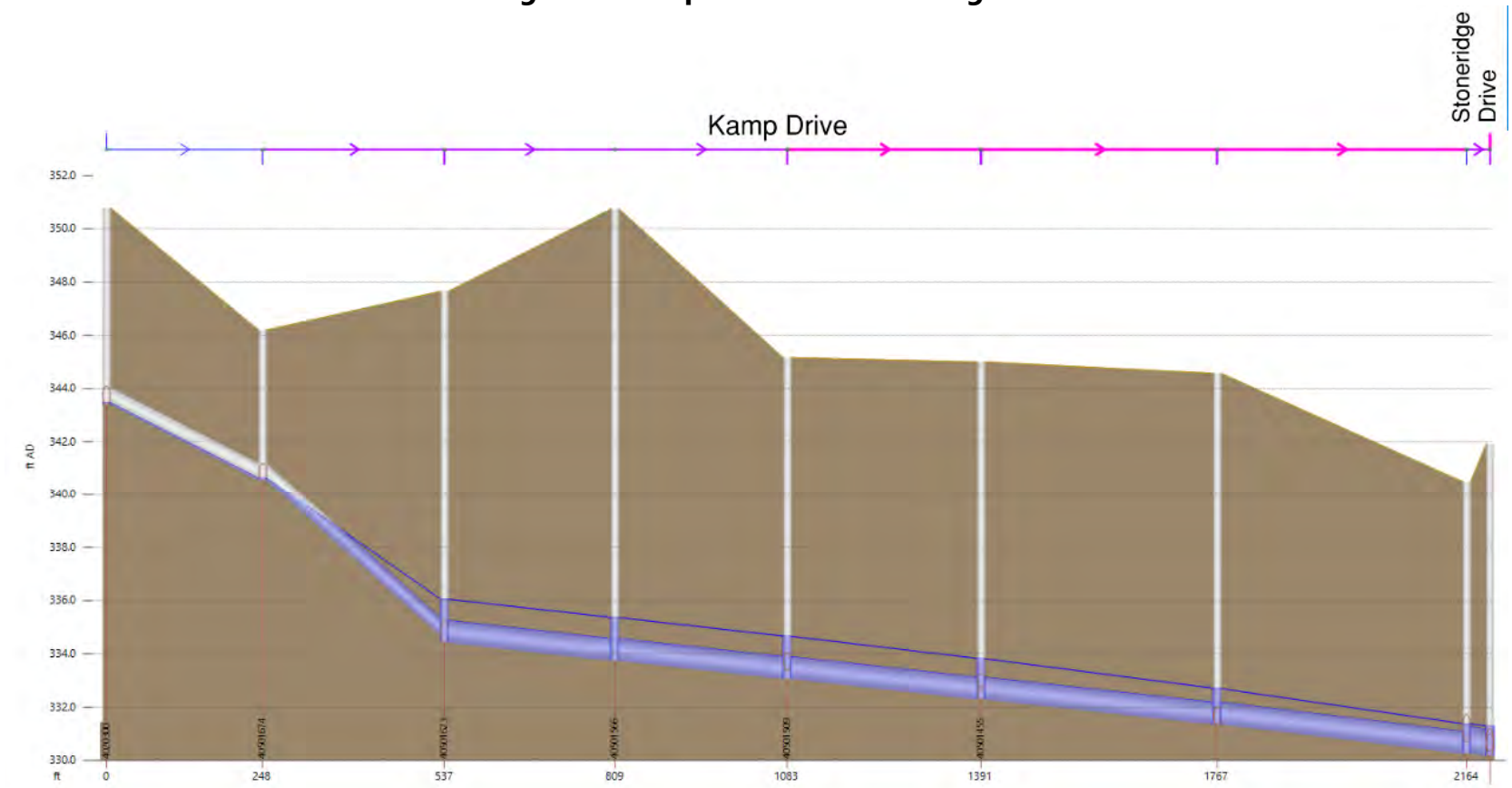
Figure 3: Stoneridge Mall



Link	40500538.1	40500624.1	40500782.1	40500872.1	40500946.1	40500744.1	-	-	40501075.1	40501119.1
US node ID	40500538	40500624	40500782	40500872	40500946	40500744	40501005	40501019	40501075	40501119
ds node	40500624	40500782	40500872	40500946	40500744	40501005	40501019	40501075	40501119	40501151
Asset ID	40805077	40802675	40804122	40804229	40805629	40805059	40806844	40806839	40804168	40804351
width (in)	8.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	15.0
r.pfc (MGD)	0.55	0.78	0.77	0.78	0.78	0.79	0.74	0.76	1.00	1.94
surc	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.92

Node	40500538	40500624	40500782	40500872	40500946	40500744	40501005	-	40501075	40501119	40501151
Asset ID	-	SA2D1M101	SA2D1M205	SA2D1M404	SA2D3M101	SA2D3M203	SA2D4M200	-	SA2D4M301	SA2D4M405	SA2D4M503
ground (ft AD)	343.648	340.260	338.840	338.480	339.240	336.490	339.800	332.800	332.210	329.410	327.000
flood dep (ft)	-15.461	-12.899	-13.034	-14.331	-16.906	-16.017	-20.836	-14.479	-14.525	-13.403	-11.522

Figure 4: Kamp Drive and Stoneridge Drive



Link	4020300.1	40501674.1	40501623.1	40501566.1	40501509.1	40501455.1	40501373.1	-
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ds node	40501674	40501623	40501566	40501509	40501455	40501373	40501239	-
Asset ID	40804541	40805249	40806293	40806605	40806149	40805507	40805303	-
width (in)	8.0	8.0	10.0	10.0	10.0	10.0	10.0	-
r.pfc (MGD)	0.84	1.11	0.71	0.71	0.71	0.71	0.74	-
surc	0.13	1.00	1.00	1.00	2.00	2.00	2.00	-

Node	4020300	40501674	40501623	40501566	40501509	40501455	40501373	40501239
Asset ID	SD3C2J106	SD3A4M503	SD3A4M405	SD3A4M206	SD3A4M103	SD3A2M400	SD3A2M301	SD3A2M102
ground (ft AD)	350.784	346.200	347.650	350.750	345.160	345.000	344.570	340.500
flood dep (ft)	-7.317	-5.571	-11.587	-15.375	-10.489	-11.166	-11.857	-9.118

APPENDIX G – IMPROVEMENTS IDENTIFIED IN 2007 WASTEWATER MASTER PLAN

Appendix G: 2007 Capacity Results Compared to 2024 Model Results

2007 CIP Project Number	Project Description	2007 Model Priority	2007 Model Results	2024 Capacity Project	2024 Model Results and Comments
Project 1A	Project 1A consists of replacing 522 feet of pipeline upstream of the dual 8-inch siphons crossing the Arroyo Mocho Canal. The existing 10 and 12-inch pipelines should be replaced with a 15-inch pipeline. Project 1A is estimated to cost $185,000.	Near-Term	The model predicts overflows upstream of this project, and significant surcharge downstream of the East Pleasanton area.	Capacity Project 4	The model shows a slight surcharge (10+ feet of freeboard) upstream of the existing double barrel 8-in siphon under future loading conditions. A project in this area is required because this surcharge is caused by future development, and no backup surcharge occurs under existing conditions. See Capacity Project 4 for details.
Project 1B	Project 1B consists of replacing 2,120 feet of pipeline along First Street from Bernal Avenue to Arendt Way. The existing 6 and 10-inch pipelines should be replaced with a 12-inch pipeline. in two reaches. Reach 1 involves replacing 204 feet of existing 10-inch pipeline along Sunol Boulevard between Monaco Drive and Bernal Avenue with a new 12-inch pipeline. Reach 2 involves replacing 2,123 feet of existing 6-inch and 10-inch pipeline along First Street between Bernal Avenue and Arendt Way with a new 12-inch pipeline. Project 1B is estimated to cost $715,000.	Near-Term	The model predicts surcharge and overflows along the existing pipeline. It also predicts backup surcharge upstream of this pipeline.	None	This section of pipe was modeled as 6-inch, 8-inch, and 10-inch in the 2007 Master Plan. According to the latest City GIS, this section of pipe was installed as a 12-inch originally. The modeled 12-inch section of pipe does not predict any surcharge on First Street between Abbie Street and Arendt Way. The model shows some surcharge at the intersection of Bernal Ave and 1st street. However, upstream of this point, the model predicts no surcharge. No project is needed based on pipe freeboard (6.5 ft).
Project 1C	LS-6 is an old pump station with capacity problems under dry weather flow conditions. A recent site inspection revealed the existing structure to be in poor condition. Pump Station S-6 is currently at capacity and should be upgraded from 4.0 mgd to a 6.9 mgd pump station. The existing facility cannot accommodate this upgrade. The existing building, wet well, and dry well are all too small to accommodate the new equipment. In order to increase the capacity at this station it is recommended that a new facility be constructed adjacent to the existing pump station. Construction for this project is estimated to take a year and during that time the existing pump station would remain in service. Project 1C is estimated to cost $4,125,000.	Near-Term	The model predicts extensive backup from LS-6 station.	Project has already been implemented	LS-6 has been substantially reconstructed since the 2007 Master Plan. The model shows significant backup surcharge at LS-6. However, under the future model load scenario, no project is needed based on the remaining freeboard in the downstream pipes.
Project 1D	Project 1D involves the construction of a new EARS pump station. In conjunction with Project 1E, the improvements will results in the activation of the EARS line. The new EARS PS will replace the existing EALS which is under capacity. It is recommended that the new pump station have a firm capacity of 7.6 mgd. Project 1D is estimated to cost $4,950,000.	Near-Term	The model predicts that EALS is undersized and should be replaced.	No	Due to limited available data, capacity of EALS lift station has not been evaluated EALS did show surcharge to within 8ft of the manhole rim during the 2022 rainfall event (approximately equivalent to the 25-year design storm). Based on this result, EALS may need to be upsized to have enough capacity for future developments in the East Pleasanton Area. Based on the modeled future conditions, it does not appear that

2007 CIP Project Number	Project Description	2007 Model Priority	2007 Model Results	2024 Capacity Project	2024 Model Results and Comments
Project 1E	Project 1E will connect the new EARS PS (Project 1D) with the existing system. An 800-foot, 30-inch diameter gravity pipeline will convey flows from the existing EALS to the new EARS PS. In addition, an 800-foot, 18-inch forcemain from the EARS PS will then carry the flow back to the existing manhole where flows will continue by gravity to the WWTP. Project 1E is estimated to cost $969,000.	Near-Term			using the EARS line and building a new pump station is a cost-effective means to convey flow to the DSRSD treatment plant, based on the existing sewer routing, and modeled results. If the EALS PS has significant site constraints and cannot be upgraded to accommodate future flows, a new EARS PS could be considered as an alternative. See **Section 6.4.3** for further discussion.
Project 2A	Project 2A consists of a new 850-foot, 8-inch pipeline that will bypass the existing Stoneridge Mall sewer. The new pipeline will be constructed along the eastern portion of Stoneridge Mall Road from Canyon Way to near Deodar Way. Project 2A is estimated to cost $236,000.	Medium-Term	The model predicts freeboard >3ft	Partially Implemented. One section of pipe in this area was installed in 2014.	One section of pipe in this area was replaced installed in 2014. If sufficient backup occurred, flow would back up and spill over the summit manhole SA2A4M300 and into the relief sewer on the West side of the Mall. No new pipeline to the East of Stoneridge Mall is needed based on current future load projections. Surcharge occurs in the sewer further upstream and further downstream of this location, but there is no benefit to upsizing this section of sewer based on current model future loads. A pipeline is required downstream of Stoneridge Mall based on the proposed future developments (see Capacity Project 3).
Project 2B	Project 2B consists of re-routing an existing 8-inch pipeline to accommodate a Nordstrom expansion at Stoneridge Mall. The existing pipeline alignment is just outside the current mall building. The proposed new 8-inch pipeline alignment will extend further east, almost to Stoneridge Mall Road. Project 2B is estimated to cost $237,000.	Medium-Term	The model predicts freeboard >3ft	Not needed at this location (see Capacity Project 3 downstream)	Due to changes in the projected developments at Stoneridge Mall, these sewers are not identified as a deficiency. However, Capacity Project 3 has been identified to address downstream capacity deficiencies.
Project 2C	Project 2C consists of replacing 855 feet of existing 8-inch pipeline along Kamp Drive between Maple Leaf Drive and Begonia Court with a new 10-inch pipeline. This reach of pipeline is not capacity limited. However, upstream and downstream reaches are 10-inch pipelines. Replacing the 8-inch pipeline will result in better maintenance of the line. Project 2C is estimated to cost $265,000.	Medium-Term	Modeled overflow predicted	Capacity Project 4	

2007 CIP Project Number	Project Description	2007 Model Priority	2007 Model Results	2024 Capacity Project	2024 Model Results and Comments
Project 2D	Project 2D is a resulting project from the Vineyard Sewer Master Plan. A new 3,972-foot, 18-inch pipeline will be constructed to provide relief in the Vineyard area. The pipeline is proposed from Bernal and Vineyard Avenues to Nevada Street and along Nevada Street to First Street near Downtown. Project 2D is estimated to cost $1,500,000.	Medium-Term	The model predicts freeboard of 1ft to 3ft	Capacity Project 2	This area shows significant modeled surcharge under existing design storm conditions, reaching within 3ft of the manhole rim. See Capacity Project 2 for more details.
Project 3A	Project 3A consists of replacing 5,333 feet of pipeline along Sunol Boulevard in three reaches. Reach 1 involves replacing 3,031 feet of existing 8-inch and 10-inch pipeline along Sunol Boulevard from Arlington Drive to Junipero Street with a new 12-inch pipeline. Reach 2 involves replacing 1,522 feet of existing 10-inch and 12-inch pipeline along Sunol Boulevard from Junipero Street to Monaco Drive with a new 15-inch pipeline. Reach three involves replacing 780 feet of existing 8-inch pipeline along Junipero Street between Sunol Boulevard and Sonoma Drive with a new 12-inch pipeline. The pipeline improvements are needed for future development upstream. Project 3A is estimated to cost $1,797,000.	Long-Term	Modeled Overflow predicted	Capacity Project 1	The existing and future loads PWWF scenario predicts a modeled overflow on Sunol Boulevard and extensive surcharge. See Capacity Project 1 for more details.
Project 3B	Upgrade Pump Station S-8 from a firm capacity of 4.0 mgd to 5.4 mgd. The upgrades are needed to accommodate future development in upstream basins. Project 3B is estimated to cost $1,650,000.	Long-Term	Model predicts surcharge caused by the lift station	No	The model shows significant backup surcharge at LS-8. However, the backup does not cause freeboard to be less than 3 feet and therefore a capacity project is not required (7+ feet of freeboard is still in the pipe). Note that LS-8 has a diversion structure that automatically diverts flow by gravity LS-6 under surcharged conditions.
Project 3C	Upgrade Pump Station S-7 from a firm capacity of 4.0 mgd to 4.6 mgd. The upgrades are needed to accommodate future development in upstream basins. Project 3C is estimated to cost $1,238,000.	Long-Term	Model predicts surcharge caused by the lift station	No	The model predicts some backup at LS-7. However, the backup does not cause freeboard to be less than 3 feet and therefore a capacity project is not required (10+ feet of freeboard is still in the pipe).

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