



OLYMPIC VALLEY PUBLIC SERVICE DISTRICT BOARD REPORT



SUBJECT:	Village at Palisades Tahoe Specific Plan Project Update	EXHIBIT:	F-11, 183 Pages
AUTHOR:	Dave Hunt, District Engineer	MEETING DATE:	June 30, 2026

RECOMMENDED ACTION:

This report is informational only; no action is requested from the Board.

DISCUSSION:

The Placer County Board of Supervisors approved the Revised Village at Palisades Tahoe Specific Plan project and associated entitlements on May 12, 2026. The Revised Project reflects a substantial reduction in project size from the prior Specific Plan analyzed in earlier District technical studies.

The District previously prepared several studies to evaluate potential project impacts, as well as projected cumulative development impacts on the District's water and sewer systems. These included:

- *VPTSP Water System Capacity Analysis* (Farr West, 2015)
- *VPTSP Sewer Capacity Analysis* (Farr West, 2014)
- *Water Demand Projections Through 2040* (Farr West, 2015).

On September 30, 2025, the District contracted with DOWL to update the water and sewer system capacity analyses and buildout water demand projections. These updates were prepared to reflect the reduced size of the Revised Project and to provide the District with current planning information.

The updated water and sewer system capacity analyses assess the hydraulic capacity of the District's existing systems and define short- and long-term capital improvements necessary to satisfy applicable capacity requirements under the California Waterworks Standards and the District's water and sewer codes.

The updated Water Demand Projections technical memorandum evaluates past and existing water demands and projects future water demands in Olympic Valley through General Plan buildout. These demand projections are intended to support long-term water supply planning and future groundwater modeling efforts related to the Olympic Valley Groundwater Basin.

Staff anticipate returning to the Board in the coming months with Development Agreement(s) pertaining to Fire/EMS and Water/Wastewater services, and any related agreements requiring Board consideration or approval.

FISCAL/RESOURCE IMPACTS: This report is informational only and does not authorize any expenditures or agreements. The updated water and sewer system technical memoranda are intended to support long-term planning efforts related to future infrastructure, operational, and facility needs associated with the proposed development.

STRATEGIC PLAN ALIGNMENT:

Focus Area: Proactive Planning | **Goal:** Build district capacity to meet the needs of future development.

ATTACHMENTS:

- Water Demand Buildout Projections – DOWL, June 10, 2026
- VPTSP Water System Capacity Analysis – DOWL, June 10, 2026
- VPTSP Sewer Capacity Analysis – DOWL, June 8, 2026

DATE PREPARED: June 25, 2026



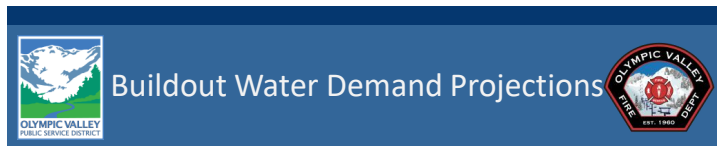
Water and Sewer System Capacity Analysis

Buildout Water Demand Projections

June 30, 2026



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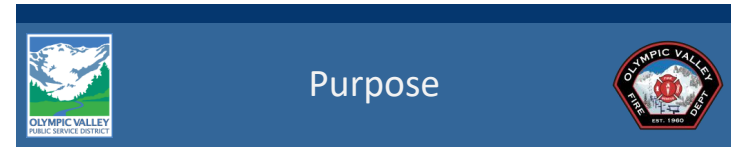


Buildout Water Demand Projections

- Analysis of existing water demands and projection of buildout water demands
- **Existing Water Demands**
 - OVPSD and OVMWC historical averages
 - Everline Resort and Palisades Tahoe snowmaking and irrigation
- **Projected Future Water Demands**
 - VPTSP Project Demands
 - Non-Project Cumulative Development based on approved development projects not yet built, known development proposals, and analysis of developable parcels either vacant or under-developed



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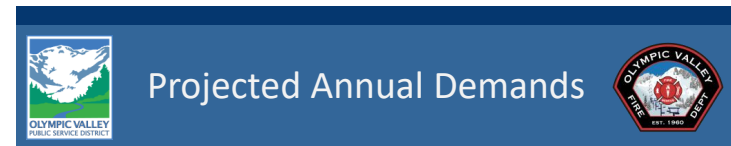


Purpose

- The District prepared three (3) studies to evaluate the Village at Palisades Tahoe Specific Plan (VPTSP) project impacts as well as projected cumulative development impacts on the District’s water and sewer systems. These included:
 - VPTSP Water System Capacity Analysis (Farr West, 2015)
 - VPTSP Sewer Capacity Analysis (Farr West, 2014)
 - Water Demand Projections Through 2040 (Farr West, 2015)
- Water and sewer system capacity analyses evaluated hydraulic capacity of District's systems and defined short- and long-term CIPs related to future development impacts
- Water demand projections prepared to inform the VPTSP Water Supply Assessment and support groundwater modeling efforts



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Projected Annual Demands

Projected Annual Water Demand at Buildout (AFA)

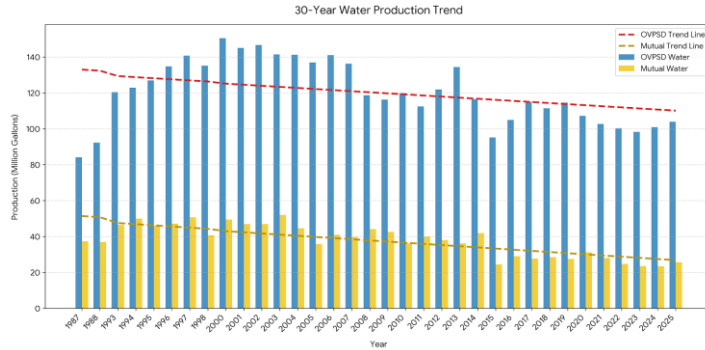
Supplier/Use	2015 Required Production	2026 Required Production
OVPSD	786	554
OVMWC	140	88
ERS Golf Course Irrigation	145	145
ERS Snowmaking	94	82
PT Snowmaking	89	93
Total Production Requirement	1,254	962
<i>Historic Horizontal Well Production</i>		
OVPSD	26	0
OVMWC	42	39
Main Well Field Total Production Requirement	1,186	923

- Reduction in historical average water use trends – OVPSD 20% drop, OVMWC 26% drop
- Reduction in water demand generation rates
- Reduction in VPTSP project size – 40% less bedrooms, 20% less commercial



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OVPD/OVMWC 30-Year Trend



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Water Demand Generation Rates

Water Demand Generation Rate Summary

Category	2015 Generation Rate	2026 Generation Rate	Unit
Single-Family Residential	550	309	gpd/unit
Multi-Family Condo	200	92	gpd/unit
General Commercial	0.24	0.048	gpd/sq ft
Resort Commercial	n/a	0.249	gpd/sq ft
Resort Lodging	n/a	125	gpd/bedroom

- Analysis of metered water use data
- Reduction in water use for each customer type
- Developed Resort Lodging and Resort Commercial classes
- Generation rates applied to forecast development to calculate projected future water demands

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Water System Capacity Analysis

- Using the information developed in the buildout water demand projections, this work identified potential impacts from projected buildout development in the Valley
- **Scenarios analyzed:**
 - Existing water distribution system
 - Existing water distribution system + VPTSP
 - Existing water distribution system + VPTSP + Non-Project

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Capacity Evaluation Criteria

- **Source Capacity**
 - California Waterworks Standards §64554 New and Existing Source Capacity
 - Meet system MDD at all times with largest source out of service
- **Storage**
 - Storage volumes for operating storage, emergency storage, and fire flow storage
- **System Pressure and Velocity**
 - California Waterworks Standards §64602 Minimum Pressure
 - 20 psi minimum pressure for all demand scenarios, including fire flow
- **Fire Flow and Duration**
 - As defined in Sections B105.1 and B 105.2 of the California Fire Code

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Identified Improvements

- **Scenario 1 - Existing System**
 - Granite Chief pressure sustaining station
 - Existing condition not created by development
- **Scenario 2 – Existing + VPTSP**
 - Additional storage (adjacent to West Tank)
 - Up to 4 new wells (location and timing TBD based on aquifer conditions and water demands at time of development)
 - On-site distribution system improvements
- **Scenario 3 – Existing + VPTSP + Non-Project Development**
 - Up to 2 new wells (location and timing TBD based on aquifer conditions and water demands at time of development)
 - On-site distribution system improvements

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Sewer System Capacity Analysis

- **Scenarios analyzed:**
 - Existing water distribution system
 - Existing water distribution system + VPTSP
 - Existing water distribution system + VPTSP + Non-Project
- **Capacity Evaluation Criteria**
 - Maximum flows – PHDFW during non-storm event
 - Pipes < 15" diameter designed to flow at ½ depth at maximum flows
 - Pipes ≥ 18" diameter designed to flow at ¾ depth at maximum flows
 - PWWF – no surcharging allowed

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Projected Wastewater Flows

	Q _{ADWF}	Q _{Peak Hour DWF}	Q _{PWWF}
2026			
Existing Model Conditions	0.629	0.846	2.126
VPTSP Loads	0.128	0.194	0.444
Buildout Loads	0.092	0.124	0.311
2015			
Existing Model Conditions	0.632	0.828	2.007
VPTSP Loads	0.427	0.559	1.241
Non-Project Loads	0.333	0.439	1.057

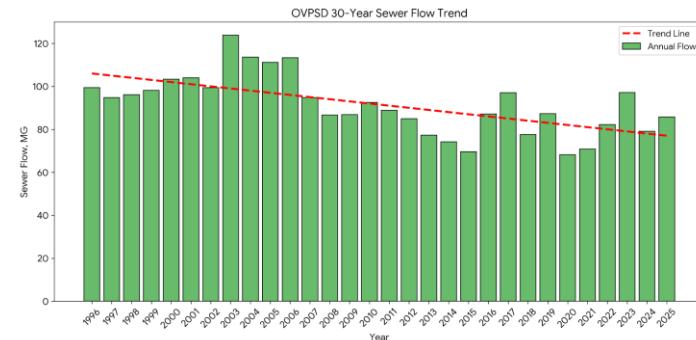
- Peak wet weather flow based on 2005 rain on snow event
- PHDFW:ADWF = 1.35
- PWWF:ADWF = 3.38
- Reduced projected flows due to lower wastewater generation rates
- Reduction in VPTSP project size – 40% less bedrooms, 20% less commercial, reduced wet amenities

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30-Year Sewer Flow Trend



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Wastewater Generation Rates




Wastewater Generation Rate Summary

Land Use	Water Demand Factor (gpd)	Wastewater Generation Rate (gpd)	Unit
Residential			
Single Family	309	225	per unit
Multi-Family Condo	92	67	per unit
Other			
Resort Bedroom	125	91	per bedroom
Resort Commercial	0.249	0.181	per sq. ft.
General Commercial	0.048	0.035	per sq. ft.

- Analysis of metered water use data and sewer flow data
- Reduction in wastewater generation directly related to lower water use
- Developed Resort Lodging and Resort Commercial classes
- Generation rates applied to forecast development to calculate projected sewer flows



Identified Improvements



Scenario	6" to 8"	12" to 15"	Total
1: Existing System	No pipe upsizing required		0
2: Existing System + VPTSP	0	670	670
3: Existing System + VPTSP + Buildout	0	670	670

- 2 pipe segments located along the interceptor
 - Only marginally exceeds criteria under PHDFW conditions
- No capacity issues for peak wet weather flows



Questions?

TO: David Hunt, P.E.
Olympic Valley Public Service District

FROM: Alex Stodtmeister, P.E.
Ben Dallas, E.I.

REVIEWED: Luke Tipton, P.E.

DATE: 6/10/2026

PROJECT: Olympic Valley Public Service District

SUBJECT: Water Demand Buildout Projections



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1.0 SUMMARY

This memorandum presents an analysis of existing water demands, as well as a projection of future buildout water demands based on proposed and projected developments in the Olympic Valley. This memorandum was originally prepared in 2015 to support preparation of the Water Supply Assessment for the Village at Palisades Tahoe Specific Plan (VPTSP) (Water Demand Projections Through 2040, Farr West Engineering, June 10, 2015). The 2015 memorandum has been included in this memorandum as Attachment 1.

The VPTSP was originally approved by the Placer County (County) Board of Supervisors in 2016 and re-approved in 2024 as a large scale, mixed-use specific plan with 1,493 medium- and high-density resort lodging bedrooms, employee housing, and a variety of commercial and recreation uses. Over the past ten years, the project has been altered based on legal challenges. The currently proposed development plan includes a reduction of 40 percent of resort lodging bedrooms and a 20 percent reduction in commercial floor area. The County prepared an Addendum to the previously certified Environmental Impact Report (EIR) and the VPTSP was approved by the Placer County Board of Supervisors on May 12, 2026.

Based on this, alongside changes to non-project buildout water demand projections and an analysis of recent historic water demands, the District is updating buildout water demand projections for the Valley.

Past, existing and projected water demands are presented for the four main groundwater pumpers in the Olympic Valley groundwater basin. These entities include:

- Olympic Valley Public Service District (OVPSD or District)
- Olympic Valley Mutual Water Company (OVMWC)
- Everline Resort & Spa (ERS) (snowmaking and irrigation)
- Palisades Tahoe (PT) (snowmaking and irrigation/dust control)

Table 1 presents a summary of the estimated annual water demand requirements for the Olympic Valley (Valley) through buildout. The Total Production Requirement includes total estimated water demands by pumping entity in the Valley. The Main Well Field Total Production Requirement provides an estimate of the total water production requirements in the Valley from the groundwater wells only, excluding the average historical horizontal well contribution. Table 1 also includes the required production as summarized in the 2015 analysis, showing the reduction in required production due to the changes in development projections identified above. These projected water demands will be described in more detail in subsequent sections of this memorandum.

Table 1: Projected Annual Water Demand at Buildout (AFA)

Supplier/Use	2015 Required Production	2026 Required Production
OVPSD ¹	786	554
OVMWC ²	140	88
ERS Golf Course Irrigation ³	145	145
ERS Snowmaking ⁴	94	82
PT Snowmaking ⁵	89	93
Total Production Requirement	1,254	962
<i>Historic Horizontal Well Production</i>		
OVPSD ⁶	26	0
OVMWC ⁷	42	39
Main Well Field Total Production Requirement	1,186	923

The buildout water demand projections for the District are based on the existing historical water demands, as well as the future projected water demands associated with the VPTSP, the ERS Phase 2, and demands associated with non-project water demand projections. The District performed an analysis to project non-project buildout water demands based on approved development projects that have not yet been built, known development proposals, and an analysis of developable parcels in the Valley that are either vacant or underdeveloped based on the 1983 Squaw Valley General Plan & Land Use Ordinance. The buildout water demand projections for OVMWC include the existing historical water demands plus the remaining vacant parcels zoned residential in their service territory. Snowmaking demands for PT and ERS were estimated using available historical water production data. Irrigation demands for the ERS are based on the agreed upon pumping schedule presented in the ERS Phase 2 Development Agreement between the District and ERS and 2008 Water and Sewer Service Agreement for the Resort at Squaw Creek: Phase II Final Supplemental EIR prepared by the District.

Table 2 presents a summary of the projected monthly water demands to be met by groundwater pumping in the Valley for each of the pumping entities. The demand from the Olympic Valley Groundwater Basin aquifer includes the summation of all water demands minus the average historical contribution by the District and OVMWC horizontal wells.

¹ Includes Average Existing Demands (Table 3), VPTSP (Table 7), Developable SFR (Table 10), Multi-family/Commercial Projection (Table 12) and ERS Phase II Potable (Table 13).

² Includes Existing Demands (Table 3), and Developable SFR (Table 10).

³ ERS golf course irrigation based on ERS Phase 2 Development Agreement and SEIR

⁴ ERS snowmaking based on average pumping 2017-2021.

⁵ PT snowmaking based on average pumping 2015-2024.

⁶ The District horizontal well has been offline since 2017 and is used as an emergency backup water source.

⁷ Average horizontal well production (2015-2024).

Table 2: Projected Total Water Demand at Buildout by Month (AF)

Month	Water Demands						Average Horizontal Well Production		Demand from Olympic Valley Groundwater Basin Aquifer ⁸
	OVPSD ⁹	OVMWC ¹⁰	ERS Irrigation ¹¹	ERS Snowmaking ¹²	PT Snowmaking ¹³	Total Demand	OVPSD ¹⁴	OVMWC ¹⁵	
January	43	5	0	14	16	78	0	3	75
February	42	5	0	1	19	67	0	3	63
March	45	6	0	0	7	57	0	4	54
April	35	5	0	0	0	40	0	3	36
May	36	6	6	0	0	49	0	4	46
June	55	10	28	0	0	94	0	3	91
July	72	13	46	0	0	130	0	3	127
August	70	12	36	0	0	118	0	3	115
September	53	10	23	0	0	86	0	3	83
October	38	7	6	1	5	57	0	3	54
November	24	4	0	32	22	92	0	3	89
December	40	5	0	35	23	104	0	3	101
Totals	554	88	145	82	93	962	0	39	923

⁸ Olympic Valley Groundwater Basin demand calculated by subtracting Average Horizontal Well Production from Total Demand column.

⁹ Includes Average Existing Demands (Table 3), VPTSP (Table 7), Developable SFR (Table 10), Multi-family/Commercial Projection (Table 12) and ERS Phase II Potable (Table 13).

¹⁰ Includes Existing Demands (Table 3), and Developable SFR (Table 10).

¹¹ ERS golf course irrigation based on ERS Phase 2 Development Agreement and SEIR.

¹² ERS snowmaking based on production data 2017-2021, monthly averages plus 10%.

¹³ PT snowmaking based on production data 2015-2024, monthly averages plus 10%.

¹⁴ District horizontal well has been offline since 2017 and is used as an emergency backup water source.

¹⁵ Average horizontal well production (2015-2024).

2.0 EXISTING DEMANDS

This section presents existing demands for the District, OVMWC, ERS and PT based on historical production data. To establish the baseline existing water demands for the District and the OVMWC, an average of production data for the years 2015-2024 was used. For the baseline snowmaking and irrigation demands for the ERS, an average of production data for 2017-2021 was used, as data for 2015, 2016, and 2022 to 2024 was not available. For the PT, groundwater pumping for 2015-2024 were averaged.

2.1 OVPSD AND OVMWC HISTORICAL WATER DEMANDS

The water production data for both the District and OVMWC for the years of 2015-2024 is presented in Table 3. The data includes the total production, including the vertical wells (main well field) and horizontal wells.

When compared to the previous analysis (2000-2014 period used), the existing average production for the District dropped from 403 acre feet annually (AFA) to 323 AFA as presented in Table 3, representing an approximately 20 percent drop. OVMWC also saw a large decrease in water usage going from 130 AFA to 96 AFA, an approximate drop of 26 percent.

Table 3: Existing Annual Water Demand for OVPSD and OVMWC

Year	OVPSD ¹⁶		OVMWC ¹⁶	
	Production (gal/yr)	Production (AFA)	Production (gal/yr)	Production (AFA)
2015	95,200,000	292	24,489,580	75
2016	109,260,000	335	29,066,120	89
2017	115,080,000	353	27,759,420	85
2018	111,420,704	342	28,484,880	87
2019	114,596,644	352	27,575,500	85
2020	107,393,600	330	31,121,900	96
2021	102,593,400	315	28,115,290	86
2022	100,293,400	308	24,831,705	76
2023	98,307,600	302	23,473,834	72
2024	101,383,100	311	23,784,212	73
Average	105,552,845	323	26,870,244	82
Maximum	115,080,000	353	31,121,900	96

Table 4 provides a summary of unbilled water in the District system for the 2015 to 2024 period. Unbilled water represents the difference between metered water use and metered production. Unbilled water not only represents unaccounted for leaks within the distribution system and inaccurate water meters, but also accounted for unbilled water such as hydrant flushing, construction water, etc. The average unbilled water percentage for the District over the 2015 to 2024 period is 14.3 percent. The previous analysis had similarly calculated the unbilled water percentage for the District over a period spanning from 2000 to 2014 and had identified an average unbilled water factor of 11.1 percent. Metered water use for OVMWC was not obtained for this analysis, and as such, unbilled water percentages were not calculated for that system. The calculated unbilled water percentage of 14.3 percent will be used in calculating projected water demands presented in Section 3.0 of this memorandum for projected future water demands.

¹⁶ Horizontal and Vertical well production records provided by the District and OVMWC.

Table 4: Existing Annual Unbilled Water Demand for OVPSD (gal)

Year	Production	Metered	Difference	%
2015	95,200,000	78,244,690	16,955,310	17.8%
2016	109,260,000	95,240,156	14,019,844	12.8%
2017	115,080,000	96,404,535	18,675,465	16.2%
2018	111,420,704	102,010,221	9,410,483	8.4%
2019	114,596,644	97,283,542	17,313,102	15.1%
2020	107,393,600	87,874,423	19,519,177	18.0%
2021	102,593,400	89,171,089	13,422,311	13.0%
2022	100,293,400	84,293,969	15,999,431	15.8%
2023	98,307,600	86,902,554	11,405,046	11.5%
2024	101,383,100	87,223,300	14,159,800	13.9%
			Average	14.3%

2.2 EVERLINE RESORT AND PALISADES TAHOE HISTORICAL SNOWMAKING AND IRRIGATION DEMANDS

Snowmaking and irrigation data has been collected from a number of sources to compile the yearly water production presented in Table 5. Data for both snowmaking and irrigation for the ERS golf course dates back to 1992 with available data through 2021, with a few missing years in that time period. The PT began pumping groundwater from the valley floor wells (west aquifer) in 2011. Irrigation and snowmaking data for both entities was compiled by the District and Psomas.

For the baseline snowmaking and irrigation demands for the ERS presented in Table 5, an average of production data for 2017-2021 was used, as data for 2015, 2016, and 2022 to 2024 was not available. For the PT, production data for 2015 to 2024 was used. When compared to the previous analysis, irrigation demands for ERS increased from 163 AFA, ERS snowmaking decreased from 94 AFA, and PT snowmaking increased from 81 AFA. Overall, the total production of ERS and PT irrigation and snowmaking wells decreased from 338 AFA as calculated in 2015, to 332 AFA.

Table 5: Existing Annual Water Demand for Irrigation and Snowmaking (AFA)

Month	Golf Course Irrigation ¹⁷	Snowmaking: ERS ¹⁷	Snowmaking: PT ¹⁸	Total Production
January	0	13	15	27
February	0	1	17	18
March	0	0	6	6
April	9	0	0	0
May	11	0	0	10
June	26	0	0	32
July	43	0	0	45
August	38	0	0	42
September	25	0	0	30
October	22	1	4	36
November	0	29	20	58
December	0	31	21	54
Totals	173	75	84	332

3.0 PROJECTED FUTURE WATER DEMANDS

This analysis uses a buildout projection based on the proposed development schedule for the VPTSP, known forthcoming developments, and growth projections in the Valley based on the 1983 Squaw Valley General Plan & Land Use Ordinance.

The future water demands are made up of the following components:

- VPTSP
- Vacant single-family residential (SFR) lots within the Valley
- Undeveloped and underdeveloped commercial parcels within the Valley (Buildout Projection)
- ERS Phase 2

Based on the best available information, estimated buildout snowmaking water demands for ERS and PT are based on the monthly averages presented in Section 2.0, plus an additional 10 percent. Irrigation demands for the ERS are based on the agreed upon pumping schedule presented in the ERS Phase 2 Development Agreement between the District and ERS and 2008 Water and Sewer Service Agreement for the Resort at Squaw Creek: Phase II Final Supplemental EIR prepared by the District.

The sections below describe the methods used to estimate these future water demands at buildout.

3.1 WATER DEMAND GENERATION RATES

Water demand generation rates specific to the District were prepared through an in-depth analysis of customer meter data and District water production data for the years 2020 to 2024. Five different generation rates based on customer types were prepared in order to accurately project future water usage. The five generation rate categories are:

- Single-Family Residential
- Multi-Family Condo

¹⁷ From historical available production data 2017-2021.

¹⁸ From historical production data 2015-2024.

- General Commercial
- Resort Commercial
- Resort Bedroom

Monthly customer meter reads and water production data were provided by the District from 2020 through 2024. The individual customer meters were matched with the assessor's parcel number (APN) the meters provide service for. Once each meter was matched with the appropriate APN, land use and zoning data was pulled from Placer County based on the meter APN. Existing customers were sorted into one of the five projection categories based on their current water usage, land use, and zoning.

Single-family residential and multi-family condo generation rates were calculated using the same methodology. Each existing customer designated as single-family residential or multi-family condo was analyzed to determine if they are full-time or part-time water users. Any customer determined to be a part-time water user was then removed from the analysis. Using short-term rental data from Placer County, all customers identified as short-term rentals were also removed from the analysis. The remaining full-time water user volumes and number of units served were compiled and a gallons per day (gpd) unit rate was calculated for each category. The unit rate was then adjusted by the average unbilled water rate of 14.3 percent shown in Table 4.

Of the customer meter data provided by the District, all meters defined as commercial were identified by District staff as either general commercial or resort commercial. Using Placer County building size data, a gpd per building square foot (sq ft) generation rate was calculated for each category. These generation rates were then adjusted by the average unbilled water rate of 14.3 percent. Additionally, an average occupancy rate of 61 percent was used to determine the generation rate at 100 percent occupancy. This average occupancy rate was determined by taking the monthly occupancy rates developed for the previous 2015 memo and adding an additional 5 percent to each month's rate.

District staff identified which of their existing customer water meters serve resort properties. Based on the Placer County data, the total number of units within these resort properties was identified, however, the total number of bedrooms within this number of units is unknown. As the District serves a unique recreational area, it is assumed that most multi-family customers in the area operate as second homes, vacation properties, or short-term rentals. This assumption of part-time occupancy mirrors the water usage behavior of a resort bedroom. An analysis of all multi-family customer data was performed to determine customer usage by the number of months occupied. As resort bedrooms are not fully occupied throughout the calendar year, multi-family customers with at least six months of occupancy were used to determine the generation rate for resort bedrooms. This amounted to approximately 85 percent of all multi-family customers. Placer County data on the number of bedrooms per multi-family property was available, and a generation rate of gpd per bedroom was calculated using this subset of multi-family customers. This generation rate was then adjusted by the average unbilled water rate of 14.3 percent, and the average occupancy rate of 61 percent.

Table 6 gives the final demand generation rates for each category, along with the generation rates developed for the 2015 analysis. The 2015 analysis only considered three categories: single-family residential, resort bedroom (referred to as "multi-family bedroom" in the analysis), and overall commercial. The unit generation rates for the District have decreased due to overall water usage dropping by 20 percent in the last ten years, while customer counts within the District have risen by 6 percent.

Table 6: Water Demand Generation Rate Summary

Category	2015 Generation Rate	2026 Generation Rate	Unit
Single-Family Residential	550	309	gpd/unit
Multi-Family Condo	n/a	92	gpd/unit
General Commercial	0.24	0.048	gpd/sq ft
Resort Commercial	n/a	0.249	gpd/sq ft
Resort Lodging	200	125	gpd/bedroom

3.2 VPTSP PROJECT DEMANDS

VPTSP consultants provided a detailed analysis of the water demands associated with the proposed Project. The original water demands analysis for the Project was submitted to the District in September 2025 and based on comments from the District and changes to the project size and layout, have been adjusted to incorporate these modifications. A detailed Project water demands memorandum prepared by Psomas (September 15, 2025) is provided as Attachment 2 of the memorandum.

The projected project buildout water demands for VTPSP are shown in Table 7. These demands were estimated using the projected number of resort bedrooms and resort commercial space square footage multiplied by demand generation rates developed by the District. Demands specific to the Project irrigation and Mountain Adventure Camp were taken directly from the Psomas memorandum. The total water demands of the Project are estimated to be 137 AFA at buildout. When compared to the total water demands projected in the 2015 analysis (also shown in Table 7), the updated total annual demand decreases by 43 percent. This is primarily due to the 40 percent reduction in resort bedrooms and 20 percent reduction in commercial floor area presented in the updated VPTSP plan, coupled with the reduction in water demand generation rates.

Table 7: Projected Monthly Water Demand for VPTSP Project at Buildout

Month	2015 Total Production (gal)	2015 Total Production (AFA)	2026 Total Production (gal) ¹⁹	2026 Total Production (AFA) ¹⁹
January	6,769,305	21	3,872,099	12
February	7,022,701	21	4,038,598	12
March	7,674,292	24	4,416,831	14
April	5,936,716	18	3,009,167	9
May	5,466,123	17	3,217,358	10
June	6,407,310	20	4,009,746	12
July	8,398,282	26	5,232,869	16
August	8,687,878	27	5,505,235	17
September	6,334,911	19	3,272,748	10
October	5,285,126	16	2,728,160	8
November	4,018,143	12	1,902,130	6
December	6,262,512	19	3,545,259	11
Total Annual Demand	78,263,299	240	44,750,200	137

3.3 BUILDOUT PROJECTION DEMANDS

As presented previously, the buildout water demand projections for the District are based on the existing historical water demands, future projected water demands associated with the VPTSP project, the ERS Phase 2, and non-project demands associated with the buildout projection of the reasonably foreseeable growth in the Valley based on the 1983 Squaw Valley General Plan & Land Use Ordinance. The District performed an analysis to project non-project buildout water demands based on approved development projects that have not yet been built, known development proposals, and an analysis of developable parcels in the Valley that are either vacant or under-developed based on the 1983 Squaw Valley General Plan & Land Use Ordinance. Table 8 provides a summary of the number of units, bedrooms, and commercial square footage associated with non-project buildout demand projections.

¹⁹ Values derived from the projected number of resort bedrooms and commercial square footage at buildout multiplied by District developed generation rates. Irrigation and Mountain Adventure Camp demands taken from the Psomas memorandum.

Table 8: Development Forecast to Buildout²⁰

APN	Address	Common Name	Zoning	Buildout Residential (Units)	Buildout (Bedrooms)	Buildout (Commercial Square Footage)	Customer Type
Resort Lodging/Commercial							
096-230-036	3039, 3041 River Road	7-11, Tahoe Dave's Skis & Boards	EC	--	147	15,490	Resort Lodging / Commercial
096-290-056	285, 100, 1, 101 Squaw Valley Road	Squaw Valley Park - Snow Museum	FR	--	0	20,000	Commercial
096-290-011	Squaw Valley Road	Henrikson Parcel	EC	--	0	12,000	Commercial
096-101-009	1604 Squaw Valley Road	Post Office, Unofficial Building	VC	--	85	1,264	Resort Lodging / Commercial
096-540-017	Chamonix	Carville Granite View	VC	--	66	0	Resort Lodging
SUBTOTAL RESORT LODGING/COMMERCIAL				--	298	48,754	--
Single-Family Residential							
Various	Public Service District	Public Service District	--	40	--	--	SFR
096-290-050 096-230-062	325 Squaw Valley Road	Sierra Family Meadows	HDR-20	10	--	--	SFR
096-540-018 096-540-019 096-540-020	Washoe Dr. Extension	Carville SFR - 3 SFR lots	LDR-4	3	--	--	SFR
096-060-049	1525 Squaw Valley Road	Stables	HDR-25	8	--	--	SFR
096-340-008	448 Squaw Peak Road	Tiny Homes Parcel	HDR-25	4	--	--	SFR
096-230-028	No Address (above Tiger Tail)	Mancuso SFR	CP	4	--	--	SFR
SUBTOTAL SINGLE-FAMILY RESIDENTIAL				69	--	--	--
Everline Resort & Spa Phase II							
096-060-072	350 Squaw Creek Road	Phase 2A Townhomes	HDR-20	--	460	--	Resort Lodging
096-290-075	310 Squaw Creek Road	Phase 2A Townhomes	HDR-20	--		--	Resort Lodging
096-290-074	300 Squaw Creek Road	Phase 2A Townhomes	HDR-20	--		--	Resort Lodging
096-290-070	320 Squaw Creek Road	Phase 2B/C Mid-Rise	HDR-20	--		--	Resort Lodging
096-290-071	330 Squaw Creek Road	Phase 2B/C Mid-Rise	HDR-20	--		--	Resort Lodging
096-290-065	340 Squaw Creek Road	Phase 2B/C Mid-Rise	HDR-20	--		--	Resort Lodging
SUBTOTAL EVERLINE RESORT & SPA PHASE II				--	460	--	--
TOTAL				69	758	48,754	--

²⁰ Source: District Comprehensive Development Analysis.

3.3.1 SINGLE-FAMILY RESIDENTIAL: BUILDOUT PROJECTION DEMANDS

The District’s buildout analysis has identified 69 developable SFR units within the District service area. This includes foreseeable projects (10 units for Sierra Family Meadows, 3 units for Carville SFR, 8 units for 1525 Olympic Valley Road Stables, 4 units for Tiny Homes Parcel, and 4 units for Mancuso) and vacant SFR parcels (40 units) located throughout the District service area. OVMWC currently has 15 vacant SFR developable lots. The projected annual water demands associated with these parcels are shown in Table 9. A discussion on the methodology used to determine the SFR water demand generation rate can be found in Section 3.1. It is assumed that water use and SFR development patterns are similar to the District; therefore, the same demand factors will be used for the vacant SFR lots in the OVMWC service area.

Table 9: Projected Annual Water Demand for Vacant SFR at Buildout

Supplier	# Developable Units ²¹	Demand Factor (gpd) ²²	Total Demand (gal/yr) ²²	Total Demand (AFA) ²²
OVPSD	69	309	7,781,629	24
OVMWC	15	309	1,691,658	5
Total Average Annual Water Demand			9,473,287	29

Table 10 provides the average monthly water demand for the projected SFR parcels. These demands are calculated by multiplying the average percentage of water production per month by the average annual water demand. The percentage of water production per month is based on a review of water production data for the District and OVMWC over the 2015 to 2024 period. It represents the percentage of water used in a given month based on the total annual water demand. The values show a bell curve pattern, with higher water use in the summer months and lower water use in the winter months, which is typical for a mixed land use community.

Table 10: Projected Monthly Water Demand for Vacant SFR at Buildout

Month	% Production / Month	OVPSD Demand (gal)	OVMWC Demand (gal)	Total (gal)	Total (AF)
January	7%	544,385	118,345	662,730	2
February	7%	514,494	111,846	626,340	2
March	7%	536,122	116,548	652,671	2
April	6%	466,855	101,490	568,346	2
May	7%	508,196	110,477	618,674	2
June	11%	847,566	184,253	1,031,820	3
July	14%	1,089,429	236,832	1,326,262	4
August	13%	1,011,974	219,994	1,231,968	4
September	11%	829,538	180,334	1,009,873	3
October	7%	569,887	123,889	693,776	2
November	4%	343,706	74,719	418,424	1
December	7%	519,476	112,929	632,405	2
Total Developable SFR Demand				9,473,287	29

²¹ Source: OVPSD Comprehensive Development Analysis.

²² Total includes 14.3% system unbilled water added to demand factor.

3.3.2 COMMERCIAL PARCELS: BUILDOUT PROJECTION DEMANDS

The District’s buildout analysis has also identified developable resort and commercial properties in their analysis. The projections include 460 bedrooms associated with the ERS Phase 2 and an additional 298 bedrooms in forecasted development. The analysis also identified 48,754 square feet of commercial development at buildout, with 32,000 square feet being general commercial and 16,754 square feet of resort commercial.

The methodologies for determining the water demand generation rates for the resort bedroom, general commercial, and resort commercial analyses are discussed more thoroughly in Section 3.1. Table 11 identifies the calculated water demand generation rates for each category, as well as provides the estimated water demands for projected resort and commercial properties within the District at buildout. The demand factors presented represent the estimated average day demand during 100 percent occupancy. A 14.3 percent factor was also added to the water demand factors to account for system unbilled water.

Table 11: Projected Daily Water Demand for Undeveloped/Underdeveloped Resort and Commercial at 100% Occupancy at Buildout

Resort Lodging Water Demand			
Category	Number of Bedrooms ²³	gpd/bedroom ²⁴	Demand (gpd) ²⁵
Resort Bedroom	758	125	94,951
Commercial Water Demand			
Category	Commercial sf ²³	gpd/sf ²⁶	Demand (gpd) ²⁵
General Commercial	32,000	0.048	1,546
Resort Commercial	16,754	0.249	4,179
Total			100,676

The water demands shown in Table 11 represent the average day demand at 100 percent occupancy. Actual water demands for resort and commercial properties development will be dependent on occupancy rates in the Valley. Occupancy rates in an alpine resort type community vary by season with higher occupancies occurring during the winter ski season and summer months of July and August and lower occupancy rates seen during the shoulder spring and fall months. As discussed previously in Section 3.1, occupancy rates used to determine monthly water use for the buildout projection analysis were originally presented by VPTSP in their 2015 analysis and were based on a review of Village at Squaw Valley occupancy data for fiscal years 2008-2014. The District determined that 5 percent be added to the monthly rate of the previous occupancy data for use in their buildout projection analysis. The average monthly occupancy for commercial and resort properties is shown in Table 12.

Similar to the vacant SFR water demand calculation, the multi-family/commercial projection demand was broken down to monthly use. Table 12 provides the estimated monthly water demands based on the estimated occupancy. The monthly water demands are calculated by multiplying the average day demand at 100 percent occupancy, by the estimated occupancy by month.

²³ Source: OVPSD Comprehensive Development Analysis.

²⁴ Per analysis of multi-family customers that show at least six months of water usage.

²⁵ Demands include 14.3% system water loss to demand factor.

²⁶ Based on review of existing commercial usage data.

Table 12: Projected Daily Water Demand for Undeveloped/Underdeveloped Multi-Family Residential and Commercial at Buildout

Month	ADD at 100% Occupancy (gpd) ²⁷	Occupancy Rate (%) ²⁸	ADD (gpd)	Day/Month	Total Monthly Demand (AF)
January	100,676	68%	68,459	31	7
February		79%	79,534	28	7
March		78%	78,527	31	7
April		54%	54,365	30	5
May		40%	40,270	31	4
June		57%	57,385	30	5
July		77%	77,520	31	7
August		82%	82,554	31	8
September		59%	59,399	30	5
October		47%	47,318	31	5
November		33%	33,223	30	3
December		62%	62,419	31	6
Total Annual Demand					69

Water demands for the 460 bedrooms for the ERS Phase 2 are included in the analysis described previously and shown in Table 11 and Table 12. A more specific breakdown of the ERS Phase 2 demands is presented in Table 13 below.

Table 13: Projected Monthly Potable Water Demand for ERS Phase 2 at Buildout

Month	Total Monthly Demand (AF)
January	4
February	4
March	4
April	3
May	2
June	3
July	4
August	4
September	3
October	3
November	2
December	3
Total Annual Demand	40

²⁷ Includes 14.3% system water loss.

²⁸ Values equivalent to the monthly occupancy rates presented in the 2015 analysis, plus 5% added to each month.

**Attachment 1: Water Demand Projections Through 2040
(Farr West Engineering, June 10, 2015)**

TECHNICAL MEMORANDUM

Project: SQUAW VALLEY PUBLIC SERVICE DISTRICT
WATER DEMAND PROJECTIONS THROUGH 2040

Prepared For: Mike Geary, P.E.
General Manager
Squaw Valley Public Service District

Prepared By: David Hunt, P.E., Farr West Engineering
Matt Van Dyne, P.E., Farr West Engineering

Date: June 10, 2015

1.0 SUMMARY

This memorandum presents an analysis of past and existing water demands, as well as a projection of future water demands in Squaw Valley through 2040. The water demands presented will be used to support the groundwater modeling effort being performed by HydroMetrics WRC to assess available water supply from the Olympic Valley Groundwater Basin aquifer. Demands presented for the groundwater model include the total annual groundwater pumping requirement as well as monthly production requirements for the four main pumping entities in the Valley.

Past, existing and projected water demands are presented for the four main groundwater pumpers in the Olympic Valley groundwater basin. These entities include:

- Squaw Valley Public Service District (SVPSD),
- Squaw Valley Mutual Water Company (SVMWC),
- Resort at Squaw Creek (RSC) (snowmaking and irrigation), and
- Squaw Valley Resort (SVR) (snowmaking and irrigation/dust control).

The unit acronyms used in this memorandum includes:

- Acre-Foot AF
- Acre-Foot Annually AFA
- Gallons gal
- Gallons per day gpd
- Year yr
- Million Gallons MG

Table 1 presents a summary of the estimated annual water demand requirements for the Olympic Valley through 2040. The Total Production Requirement includes total estimated water demands by pumping

entity in the Valley. The Main Well Field Total Production Requirement provides an estimate of the total water production requirements in the Valley from the groundwater wells only; excluding the average historical horizontal well contribution. These projected water demands will be described in more detail in subsequent sections of this memorandum.

Table 1 – Projected Annual Water Demand at 2040, AFA

Supplier / Use	Required Production
SVPSD (a)	786
SVMWC (b)	140
Resort at Squaw Creek	
Golf Course Irrigation (c)	145
Snowmaking (d)	94
Squaw Valley Resort Snow Making (e)	89
Total Production Requirement	1,254
Historic Horizontal Well Production	
SVPSD (f)	26
SVMWC (f)	42
Main Well Field Total Production Requirement	1,186

(a) Includes Average Existing Demands (Table 3), VSVSP (Table 6), Developable SFR (Table 9), Multi-family/Commercial Projection (Table 11) and RSC Phase II Potable (Table 12)

(b) Includes Existing Demands (Table 3), and Developable SFR (Table 9)

(c) RSC golf course irrigation based on RSC Phase 2 Development Agreement and SEIR

(d) RSC snowmaking based on long term average pumping 1992-2014

(e) SVR snowmaking based on average pumping 2011-2014

(f) Average Horizontal well production (2000-2014)

The 2040 water demand projections for the SVPSD are based on the existing historical water demands, as well as the future projected water demands associated with the VSVSP project, the RSC Phase 2, as well as demands associated with the cumulative projection of the growth in the Valley based on the 1983 Squaw Valley General Plan & Land Use Ordinance (prepared by Alex Fisch, Placer County). The 2040 water demand projections for the SVMWC include the existing historical water demands plus the remaining vacant residential zoned parcels in their service territory. Snowmaking demands for SVR were estimated using available historical water use data. Snowmaking demands for RSC are based on long term historical pumping data. Irrigation demands for the RSC are based on the agreed upon pumping schedule presented in the RSC Phase 2 Development Agreement and Supplemental EIR.

Table 2 presents a summary of the projected monthly water demands to be met by groundwater pumping in the Valley for each of the pumping entities. The demand from the Olympic Valley Groundwater Basin aquifer includes the summation of all water demands *minus* the average historical contribution by the SVPSD and SVMWC horizontal wells. Monthly water demand projections are provided to support the groundwater modeling effort.

Table 2 – Projected Total Water Demand at 2040 by Month, AF

Month	Water Demands					Total Demand	Average Horizontal Well Production (f)		Demand from Olympic Valley Groundwater Basin Aquifer (f)
	SVPSD (a)	SVMWC (b)	RSC Irrigation (c)	RSC Snow Making (d)	SVR Snow Making (e)		SVPSD	SVMWC	
January	59.6	7.1	0.0	20.6	22.8	110.0	1.4	3.6	105.0
February	62.9	6.8	0.0	19.4	15.9	105.0	1.3	3.4	100.3
March	64.2	7.8	0.0	0.0	0.0	72.0	1.6	4.0	66.4
April	47.6	6.4	0.0	0.0	0.0	54.0	2.0	3.9	48.1
May	53.7	10.9	6.4	0.0	0.0	71.1	3.3	3.9	63.9
June	76.2	16.6	28.2	0.0	0.0	121.0	4.0	3.3	113.7
July	102.4	21.7	45.7	0.0	0.0	169.8	3.3	3.4	163.1
August	102.0	21.7	36.2	0.0	0.0	159.9	3.1	3.2	153.7
September	77.5	18.7	23.3	0.0	0.0	119.5	2.2	3.4	113.9
October	52.3	10.5	5.5	0.6	1.2	70.0	1.6	3.2	65.2
November	34.0	5.3	0.0	26.5	19.1	84.9	1.1	3.2	80.6
December	53.4	6.9	0.0	27.1	29.7	117.1	1.2	3.5	112.4
Totals	785.7	140.4	145.5	94.1	88.7	1,254.4	26.1	42.1	1,186.2

(a) Includes Average Existing Demands (Table 3), VSVSP (Table 6), Developable SFR (Table 9), Multi-family/Commercial Projection (Table 11) and RSC Phase II Potable (Table 12)

(b) Includes Existing Demands (Table 3), and Developable SFR (Table 9)

(c) RSC golf course irrigation based on RSC Phase 2 Development Agreement and SEIR

(d) RSC snowmaking based on long term average pumping records 1992-2014 (compiled by Todd Groundwater)

(e) SVR snowmaking based on production data 2011-2014, monthly averages plus 10% (compiled by Todd Groundwater)

(f) 2000-2014 average production based on SVPSD and SVMWC production data,

(f) Olympic Valley Groundwater Basin demand calculated by subtracting Average Horizontal Well Production from Total Demand column

2.0 EXISTING DEMANDS

This section presents existing demands for the SVPSD, SVMWC, RSC and SVR based on historical production data. To establish the baseline existing water demands for the SVPSD and the SVMWC, an average of production data for the years 2000-2014 was used. For the baseline snowmaking and irrigation demands for the RSC, an average of all available data for 1992-2014, as provided by various sources, was used. For the SVR, groundwater pumping for the winter seasons 2010-2012 was averaged.

2.1 SVPSD and SVMWC Historical Water Demands

The water production data for both the SVPSD and SVMWC for the years of 2000-2014 is presented in Table 3. The data includes the total production, including the vertical wells (main well field) and horizontal wells.

The average production for the 2000-2014 time period was used for the baseline existing water demand. There was a noticeable decrease in water demand between 2007 and 2008 for the SVPSD. This reduction can be associated with a number of factors, including the District’s diligent water conservation efforts, the rate increase implemented in 2008, and the overall effect of the shrinking economy. Overall, both the SVPSD and SVMWC have seen a reduction in water demands over the time period.

Table 3 – Existing Annual Water Demand for SVPSD and SVMWC

Year	SVPSD (a)		SVMWC (a)	
	Production (gal/yr)	Production (AFA)	Production (gal/yr)	Production (AFA)
2000	144,413,900	443.2	49,493,960	151.9
2001	143,753,400	441.2	48,108,400	147.6
2002	146,676,600	450.2	47,008,599	144.3
2003	141,441,900	434.1	51,011,020	156.6
2004	141,291,100	433.6	44,563,818	136.8
2005	137,009,964	420.5	35,810,600	109.9
2006	141,058,596	432.9	40,959,699	125.7
2007	136,350,441	418.5	39,754,520	122.0
2008	118,620,000	364.1	44,166,000	135.6
2009	116,330,000	357.0	42,631,020	130.8
2010	119,900,000	368.0	36,152,530	111.0
2011	108,283,560	332.3	40,027,210	122.8
2012	121,890,000	374.1	38,065,730	116.8
2013	134,372,318	412.4	36,184,623	111.1
2014	116,383,857	357.2	41,935,410	128.7
Average	131,185,042	402.6	42,391,543	130.1
Maximum	146,676,600	450.2	51,011,020	156.6

(a) Horizontal and Vertical well production records provided by SVPSD and SVMWC

Table 4 provides a summary of unbilled water in the SVPSD system for the 2000-2014 time period. Unbilled water represents the difference between metered water use and metered production. Unbilled water not only represents unaccounted for leaks within the distribution system and inaccurate water meters, but also accounted for unbilled water such as hydrant flushing, construction water, etc. The

average unbilled water percentage for the District over this time period is 11.1%. As the SVMWC has no water consumption data, an unbilled water percentage is unable to be determined for that system. The 11.1% value will be used in calculating projected water demands presented in Section 3 of this memorandum for both the SVPSD and SVMWC projected water demands.

Table 4 – Existing Annual Unbilled Water Demand for SVPSD, MG

Year	Production	Metered	Difference	%
2000	144,413,900	141,070,901	3,342,999	2.3%
2001	143,753,400	124,836,433	18,916,967	13.2%
2002	146,676,600	124,104,349	22,572,251	15.4%
2003	141,441,900	129,408,642	12,033,258	8.5%
2004	141,291,100	128,858,811	12,432,289	8.8%
2005	137,009,964	125,883,531	11,126,434	8.1%
2006	141,058,596	127,352,122	13,706,474	9.7%
2007	136,350,441	126,179,725	10,170,716	7.5%
2008	118,620,000	112,401,682	6,218,318	5.2%
2009	116,330,000	106,820,190	9,509,810	8.2%
2010	119,900,000	106,893,633	13,006,367	10.8%
2011	112,483,560	95,236,194	17,247,366	15.3%
2012	121,890,000	104,047,729	17,842,271	14.6%
2013	134,360,000	103,998,351	30,361,649	22.6%
2014	116,400,000	93,087,206	23,312,794	20.0%
			Average	11.1%

2.2 Resort at Squaw Creek and Squaw Valley Resort Historical Snowmaking and Irrigation Demands

Snowmaking and irrigation data has been collected from a number of sources to compile the yearly water demands presented in Table 5. Data for both snowmaking and irrigation for the RSC golf course dates back to 1992 with a few missing years between 1992 and 2014. The SVR began pumping groundwater from the valley floor wells (west aquifer) in 2011. Irrigation and snowmaking data for both entities was compiled by Todd Groundwater.

For the RSC, average baseline existing demands for irrigation presented in Table 5 is based on historical available production data for 1992-2004, and 2007 and 2012-2014. Average baseline existing demands for snowmaking is based on data provided between the years of 1992-2014. For the SVR, only production data for 2011-2014 was used.

Table 5 – Existing Annual Water Demand for Irrigation and Snowmaking, AFA

Month	Golf Course Irrigation (a)	Snow Making - RSC (b)	Snow Making - SVR (c)	Total Production
January	0	20.6	20.7	41.3
February	0	19.4	14.4	33.8
March	0	0	0.0	0.0
April	6.1	0	0.0	6.1
May	9.3	0	0.0	9.3
June	30.3	0	0.0	30.3
July	43.6	0	0.0	43.6
August	36.4	0	0.0	36.4
September	24.4	0	0.0	24.4
October	13.0	0.6	1.1	14.6
November	0	26.5	17.3	36.0
December	0	27.1	27.0	54.1
Totals	163.2	94.1	80.6	337.9

(a) From historical available production data 1992-2004 and 2007 and 2012-2014 (only data provided with monthly pumping)

(b) Values consist of 1992-2014 data compiled by Todd Groundwater

(c) Values consist of 2011-2014 data compiled by Todd Groundwater

3.0 PROJECTED FUTURE WATER DEMAND

This analysis uses a 25-year projection period based on the proposed development schedule for the VSVSP. These projected water demands will be compared to estimated available water supply to verify that the District can meet the projected water demand associated with the proposed project, in addition to existing and planned future uses.

The future water demands are made up of the following components:

- VSVSP,
- Vacant single family residential (SFR) lots within the Valley,
- Undeveloped and underdeveloped commercial parcels within the Valley (Cumulative Projection), and
- RSC Phase 2.

Based on the best available information, estimated future snow making water demands for the RSC over the 25-year projection period are not expected to increase beyond the existing average baseline demands presented in Section 2. For the SVR, snowmaking demands are estimated based on the monthly average of data over the 2011-2014 time period, plus an additional 10%. Irrigation demands for the RSC are expected to decrease upon development of the RSC Phase 2. The irrigation demands were defined in the Development Agreement between the SVPSD and the RSC. The decreased RSC irrigation demands are presented in Table 2.

The sections below describe the methods used to estimate these future water demands over the 25-year study period.

3.1 VSVSP PROJECT DEMANDS

VSVSP consultants provided a detailed analysis of the water demands associated with the proposed Project. The original water demands analysis for the Project was submitted to the District in December 2012, and based on comments from the District and changes to the project size and layout, have been adjusted to incorporate these modifications. A detailed Project water demands memorandum prepared by MacKay & Soms is provided in Appendix A of the memorandum. The Project annual water demands will be realized over a 25-year timeframe as indicated by the VSVSP.

The projected Project buildout water demands shown in Table 6 will be used in the groundwater modeling effort. These demands are estimated to be 240.2 AFA at buildout.

Table 6 – Projected Monthly Water Demand for VSVSP Project at 2040

Month	Total Production (gal)	Total Production (AF) (a)
January	6,769,305	20.8
February	7,022,701	21.6
March	7,674,292	23.6
April	5,936,716	18.2
May	5,466,123	16.8
June	6,407,310	19.7
July	8,398,282	25.8
August	8,687,878	26.7
September	6,334,911	19.4
October	5,285,126	16.2
November	4,018,143	12.3
December	6,262,512	19.2
Total Annual Demand	78,263,299	240.2

(a) Values obtained from February 25, 2015 Appendix A Updated Water Demand Calculations Village at Squaw Valley Specific Plan (supersedes Mackay & Soms Technical Memorandum No. 1 Updated Water Study Village at Squaw Valley, June 10, 2014)

3.2 CUMMULATIVE PROJECTION DEMANDS

As presented previously, the 2040 water demand projections for the SVPSD are based on the existing historical water demands, future projected water demands associated with the VSVSP project, the RSC Phase 2, and demands associated with the cumulative projection of the reasonably foreseeable growth in the Valley based on the 1983 Squaw Valley General Plan & Land Use Ordinance. Placer County (County) performed a comprehensive analysis of residential and commercial properties in the Valley (Absorption Schedule Technical Memorandum, Alex Fisch, April 8, 2014). The County’s analysis identified single family residential (SFR) and commercial development potential for approved projects, foreseeable projects, and forecasted development. The County’s technical memorandum is provided in Appendix B. Table 7 provides a summary of the number of units, bedrooms, and commercial square footage associated with the cumulative projection.

Table 7 – Development Forecast to 2040

<i>Approved Projects</i>			
	<i>Units</i>	<i>Bedrooms</i>	<i>Commercial sq. ft.</i>
RSC Phase 2	441 condo units	464 bedrooms	--
Olympic Estates	16 residential units	64 bedrooms	--
<i>Foreseeable Projects</i>			
	<i>Units</i>	<i>Bedrooms</i>	<i>Commercial sq. ft.</i>
Squaw Valley Ranch Estates	8 residential units	40 bedrooms	--
Mancuso	4 residential units	20 bedrooms	--
PlumpJack Redevelopment	--	104 net hotel rooms/condo bedrooms	10,000 sq. ft. net new commercial
Olympic Valley Museum	--	--	14,500
<i>Forecast Development</i>			
	<i>Units</i>	<i>Bedrooms</i>	<i>Commercial sq. ft.</i>
SFR (SVPSD)	66	264	--
SFR (SVMWC)	15	60	--
Resort/hotel/condo units	34	52	--
General Commercial	--	--	56,000
<i>Total Development Outside the Project Boundary</i>			
	569 units	1,008 bedrooms	80,500 sq. ft.

Source: Absorption Schedule Technical Memorandum, Alex Fisch, Placer County, April 8, 2014

3.2.1 SINGLE FAMILY RESIDENTIAL - CUMMULATIVE PROJECTION DEMANDS

The County’s cumulative analysis has identified 94 developable SFR units within the SVPSD service area. This includes approved projects (16 units for Olympic Estates), foreseeable projects (8 units for Squaw Valley Ranch Estates, and 4 units for Mancuso), and forecast developments (66 units). SVMWC currently has 15 vacant SFR developable lots. The projected annual water demands associated with these parcels is shown in Table 8. It is anticipated that these SFR lots will be built out within the 25-year projection period.

The projected water demands associated with SFR parcels in the SVPSD service territory is approximately 550 gpd/connection based on an analysis of the historical customer metered data. This analysis included average water use by residential customers that showed water use throughout the year, each month. This portrays a more realistic estimate of a full time resident, as compared to transient, part time residents.

Based on review of the SVMWC production data, the average water demand factor (based on an approximate number of units served of 280) is approximately 400 gpd/unit. As the SVMWC has no water consumption data, it is not possible to determine the amount of water used by full time versus part time residents. It is assumed that water use and SFR development patterns are similar to the SVPSD; therefore, the same demand factors will be used for the vacant SFR lots in the SVMWC service area.

Table 8 – Projected Annual Water Demand for Vacant SFR at 2040

Supplier	# Developable Units (a)	Demand Factor (gpd)	Total Demand (gal/yr) (b)	Total Demand (AFA) (b)
SVPSD	94	550	20,965,126	64.3
SVMWC	15	550	3,345,499	10.3
Total Average Annual Water Demand			24,026,162	74.6

(a) Source: Absorption Schedule Technical Memorandum, Alex Fisch, Placer County, April 8, 2014

(b) Total includes 11.1% system unbilled water added to demand factor

Table 9 provides the average monthly water demands for the projected SFR parcels. These demands are calculated by multiplying the average percentage of water production per month by the average annual water demand. The percentage of water production per month is based on a review of water production data for the SVPSD and SVMWC over the 2000-2014 time period. It represents the percentage of water used in a given month based on the total annual water demand. The values show a bell curve pattern, with higher water use in the summer months and lower water use in the winter months, which is typical for a mixed land use community.

Table 9 – Projected Monthly Water Demand for Vacant SFR at 2040

Month	% Production / Month	SVPSD Demand (gal)	SVMWC Demand (gal)	Total (gal)	Total (AF)
January	7%	1,534,174	244,815	1,778,989	5.5
February	9%	1,810,470	288,905	2,099,375	6.4
March	8%	1,744,049	278,306	2,022,354	6.2
April	5%	1,138,909	181,741	1,320,650	4.1
May	5%	1,067,916	170,412	1,238,328	3.8
June	8%	1,675,738	267,405	1,943,143	6.0
July	15%	3,160,391	504,318	3,664,709	11.2
August	14%	2,957,581	471,954	3,429,535	10.5
September	11%	2,297,172	366,570	2,663,742	8.2
October	7%	1,511,118	241,136	1,752,253	5.4
November	4%	886,876	141,523	1,028,399	3.2
December	6%	1,180,733	188,415	1,369,148	4.2
Total Developable SFR Demand				24,310,624	74.6

3.2.2 COMMERCIAL PARCELS - CUMULATIVE PROJECTION DEMANDS

The County’s cumulative analysis has also identified developable multifamily and commercial properties in their analysis. The projections include 464 bedrooms associated with the RSC Phase 2, 104 bedrooms associated with the PlumpJack Redevelopment project, and an additional 52 bedrooms in forecasted development. The analysis also identified 80,500 square feet of commercial development through the year 2040.

The number of bedrooms and average daily water demand per bedroom for multifamily is identified in Table 10. The water demands for the bedroom analysis are based on the assumption of a population of 2 persons per bedroom and a water demand of 100 gpd/person. These assumptions are consistent with the VSVSP Project water demands analysis that was prepared by MacKay & Soms and reviewed by the

District. These values represent a somewhat conservative estimation. The water demands represent the average day demand at 100% occupancy. A 11.1% factor was added to the water demand factor to account for system unbilled water. Table 10 identifies the water demands associated with 156 multifamily bedrooms. Water demands for the 464 bedrooms for the RSC Phase 2 are based on the Development Agreement between the SVPSD and the RSC. These demands are presented in Table 12 below.

Table 10 also provides estimated water demands for projected commercial development. The commercial floor area water demand factor of 0.24 gpd/square foot is based on a comprehensive review of the SVPSD commercial metered customer data for the time period 2005-2014. This demand factor represents the estimated average day demand during 100% occupancy. A 11.1% factor was also added to the water demand factor to account for system unbilled water.

Table 10 – Projected Daily Water Demand for Undeveloped/Underdeveloped Multi-Family Residential and Commercial at 100% Occupancy at 2040

Multi-Family Water Demand			
Category	Number of Bedrooms (a)	gpd/bedroom (b)	Bedroom Demand (gpd) (d)
Hotel/Motel Combo	156	200	34,663
Commercial Water Demand			
Category	Commercial sf (a)	gpd/sf (c)	Bedroom Demand (gpd) (d)
Commercial	80,500	0.24	21,465
Total			56,128

(a) Source: Absorption Schedule Technical Memorandum, Alex Fisch, Placer County, April 8, 2014

(b) $(2.0 \text{ capita/bedroom}) \times (100 \text{ gpd/capita}) = 200 \text{ gpd/bedroom}$

(c) Based on review of existing commercial usage data

(d) Demands include 11.1% system water loss to demand factor

The water demands shown in Table 10 represent the average day demand at 100% occupancy. Actual water demands for multi-family and commercial development will be dependent on occupancy rates in the Valley. Occupancy rates in an alpine resort type community vary by season with higher occupancies occurring during the winter ski season and summer months of July and August and lower occupancy rates seen during the shoulder spring and fall months. Occupancy rates used to determine monthly water use for the cumulative projection analysis were presented by VSVSP in their analysis and were based on a review of Village at Squaw Valley USA occupancy data for fiscal years 2008-2014. The SVPSD has determined that this occupancy data is also relevant for use in their cumulative projection analysis. The average monthly occupancy for commercial and multifamily land use is shown in Table 11.

Similar to the vacant SFR water demand calculation, the multi-family/commercial projection demand must be broken down to monthly use for the groundwater modeling effort. Table 11 provides the estimated monthly water demands based on the estimated occupancy. The monthly water demands are calculated by multiplying the average day demand at 100% occupancy, by the estimated occupancy by month.

Table 11 – Projected Daily Water Demand for Undeveloped/Underdeveloped Multi-Family Residential and Commercial at 2040

Month	ADD at 100% Occupancy (gpd)(a)	Occupancy Rate (%) (b)	ADD (gpd)	Day/Month	Total Monthly Demand (AF)
January	56,128	63%	35,360	31	3.4
February		74%	41,535	28	3.6
March		73%	40,973	31	3.9
April		49%	27,503	30	2.5
May		35%	19,645	31	1.9
June		52%	29,186	30	2.7
July		72%	40,412	31	3.8
August		77%	43,218	31	4.1
September		54%	30,309	30	2.8
October		42%	23,574	31	2.2
November		28%	15,716	30	1.4
December		57%	31,993	31	3.0
Total Annual Demand					35.4

(a) Includes 11.1% system water loss

(b) Values obtained from February 25, 2015 Appendix A Updated Water Demand Calculations Village at Squaw Valley Specific Plan (supersedes Mackay & Soms Technical Memorandum No. 1 Updated Water Study Village at Squaw Valley, June 10, 2014)

As previously stated, water demands for the 464 bedrooms for the RSC Phase 2 are based on the Development Agreement between the SVPSD and the RSC. These demands are presented in Table 12 below.

Table 12 – Projected Monthly Potable Water Demand for RSC Phase 2 at 2040

Month	Total Monthly Demand, AF
January	4.3
February	4.2
March	4.4
April	1.7
May	2.7
June	4.0
July	4.7
August	5.4
September	4.0
October	2.7
November	2.0
December	3.0
Total Annual Demand	43.2

4.0 WATER DEMAND SCHEDULE

This analysis uses a 25-year projection period based on the proposed development schedule for the VSVSP. This section provides existing and projected water demands by water use sector for the groundwater pumpers in the Valley. The SVPSD water use is shown by service type based on their consumption data; SFR, multifamily, commercial, and irrigation. The VSVSP is shown as a separate projected water demand that will be supplied by the SVPSD. The other suppliers include the SVMWC (SFR), RSC snowmaking and irrigation, and SVR snowmaking.

Table 13 shows the historical water use back to 2000. The water use for SVPSD is based on metered data for each connection type as well as production data. In 2000, multifamily water use was billed under the commercial classification. By 2005, the SVPSD moved the multifamily billing to its own classification. The SVPSD also has a few irrigation connections for SFR as well as commercial and multifamily (HOA) common areas. The SVMWC demands are based on production records as the system was not individually metered during this time period. For the RSC, irrigation data was available for 2000, 2007, and 2012. The RSC snowmaking data was available for 2000, 2005, and 2010. Finally, the SVR began pumping their Valley floor wells in late 2010, with minimal pumping seen only in December 2010.

Table 13 – Existing Annual Water Demand by Use in 5-year Intervals, AFA

Customer Type		2000	2005	2010
SVPSD	SFR	140	125	110
	Multi Family (a)		145	130
	Commercial	243	100	85
	Irrigation	60	50	43
	VSVSP			
SVMWC	SFR	152	110	111
RSC	Irrigation	135	184 (b)	153 (c)
	Snowmaking	60	69 (d)	77
SVR	Snowmaking (e)			
TOTAL		790	783	709

- (a) In 2000, Multi Family was included in Commercial usage data
- (b) Actual data available for 2007
- (c) Actual data available for 2012
- (d) Actual data available for 2006
- (e) Snowmaking water use for SVR began in late 2010

Table 14 provides the projected water demands, in 5-year increments, through 2040. The demands shown for 2015 are the baseline existing water demands presented previously in Section 2.0 of this memorandum. To establish the baseline existing water demands for the SVPSD and the SVMWC, an average of production data for the years 2000-2014 was used. For the baseline snowmaking and irrigation demands for the RSC, an average of all available data for 1992-2014, as provided by various sources, was used. For the SVR, groundwater pumping for the winter seasons 2011-2014 was averaged.

In projecting water demands forward through 2040, the following assumptions were made:

- VSVSP water demands based on values obtained from February 25, 2015 Appendix A Updated Water Demand Calculations Village at Squaw Valley Specific Plan (supersedes Mackay & Soms Technical Memorandum No. 1 Updated Water Study Village at Squaw Valley, June 10, 2014);
- Development projections for SFR, multi-family and commercial development are based on Placer County's Absorption Schedule Technical Memorandum, Alex Fisch, Placer County, April 8, 2014;
- RSC Phase 2 development demands realized in 2025, this includes both potable demands and the irrigation rollback pursuant to the Development Agreement, and
- Snowmaking demands for the RSC and SVR are assumed to remain consistent through 2040.

Based on the MacKay & Soms memorandum, the VSVSP water demands over the development period are estimated to be:

<u>Year</u>	<u>Water Demand (AFA)</u>
2015	0
2020	84.1
2025	132.1
2030	180.1
2035	216.2
2040	240.2

Based on the Placer County development projections, the cumulative demands for SFR, commercial and multifamily utilize increments of 25%, 25%, 20%, 20%, and 10% for each 5-year period through 2040.

Irrigation demands associated with the SVPSD irrigation meters are assumed to remain the same through 2040. Future irrigation demands for the SVPSD are incorporated into the water demand factors used to project future water demands by land use classification.

Table 14 – Projected Annual Water Demand by Use at 5-Year Intervals, AFA

Customer Type		2015 (a)	2020	2025 (b)	2030	2035	2040
SVPSD	SFR	120	136	152	165	178	184
	Multi Family	142	147	196	200	205	207
	Commercial	94	98	101	104	106	108
	Irrigation	47	47	47	47	47	47
	VSVSP	0	84	132	180	216	240
SVMWC	SFR	130	133	135	137	139	140
RSC	Irrigation	163	163	145	145	145	145
	Snowmaking	94	94	94	94	94	94
Ski Corp	Snowmaking	89	89	89	89	89	89
TOTAL, All Demands		879	990	1,091	1,161	1,219	1,254
TOTAL, Minus Horizontal Well Contribution (c)		811	922	1,023	1,093	1,151	1,186

- (a) 2015 demands represent the baseline as described in Section 2.0 of this memorandum
- (b) RSC Phase 2 potable demands realized in 2025, as well as irrigation rollback per DA
- (c) Horizontal well contribution from SVPSD and SVMWC is 68 AFA

The “TOTAL, All Demands” includes the required amount to satisfy all water demands by the users. The actual demand on the main well field groundwater aquifer is based on this total demand minus the contribution from the SVPSD and SVMWC horizontal wells.

Appendix A

TECHNICAL MEMORANDUM NO. 1

To: County of Placer
From: Ken Giberson
Date: June 9, 2015
Job No.: 18446.00
Subject: Updated Water Study
Village at Squaw Valley (V@SV)



INTRODUCTION

The illustrative land use plan for the project has continued to evolve since the time of the original application (December 2012). The December 2013 illustrative land use plan for the project is the basis of the analysis contained in this Technical Memorandum. Refer to **Exhibit 1** for the illustrative land use plan that was the basis for the Master Water Study submitted on December 31, 2012 (“Study”) and **Exhibit 2** for the currently proposed illustrative land use plan.

Therefore, the Study reflects outdated water demands and needs to be updated to reflect revised project water demands. In lieu of preparing a new Study, this Technical Memorandum was prepared to provide a brief update to the analysis and findings contained in the original Study. Accordingly, this Technical Memorandum (TM) includes an update of the water demand projections for the project. This TM also includes an evaluation of the ability of the originally proposed water distribution and storage system improvements to meet these updated water demands.

UPDATED WATER DEMAND ASSUMPTIONS

In response to changes in the proposed illustrative land use plan, and comments received from Squaw Valley PSD Staff on the proposed water demands contained in the Study, an updated estimate of water demands was prepared for the project. Additionally, water demands have been prepared for the critical late summer and early fall periods (July – October) for build-out conditions of the project during both normal and dry water years.

The following significant changes in methodology are worthy of note:

1. **Managed Lodging Occupancy Rates.** Lodging occupancy rates for managed units used in the analysis were based solely on V@SV units, for which Squaw Valley Resort, LLC manages. The PSD requested a more robust sample of historical occupancy rates and questioned the projected improvements to same related to new amenities and enhanced operations.

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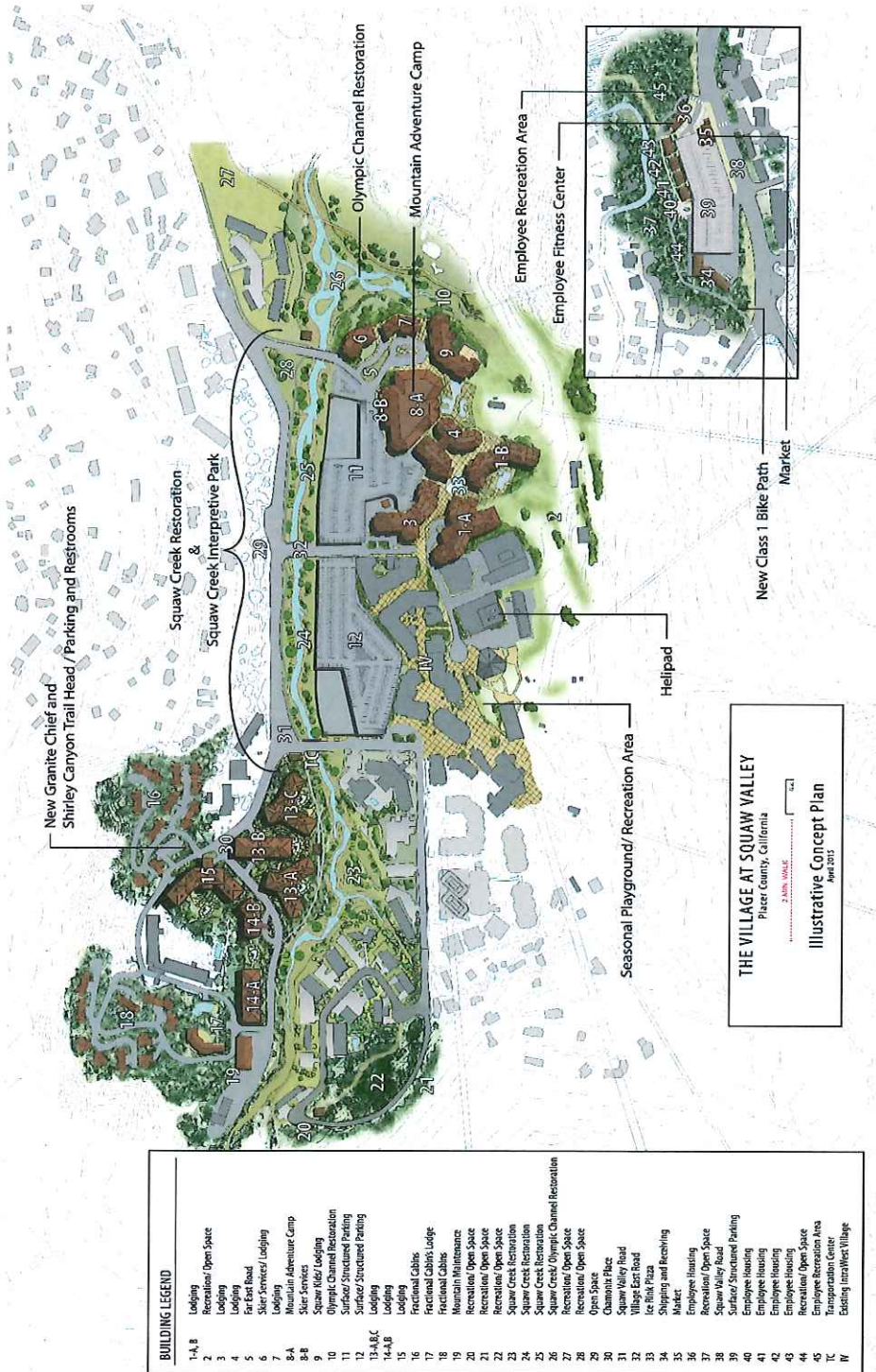
Exhibit 1

December 2012 Illustrative Land Use Plan



Exhibit 2

April 2015 Illustrative Land Use Plan



BUILDING LEGEND	
1A-B	Lodging
2	Recreation/Open Space
3	Lodging
4	Lodging
5	Far East Road
6	Skier Services/Lodging
7	Lodging
8-A	Mountain Adventure Camp
8-B	Skier Services
9	Squaw Hill Lodging
10	Olympic Channel Restoration
11	Mountain Adventure Camp
12	Surface/Structured Parking
13A,B,C	Lodging
14A,B	Lodging
15	Recreation/Open Space
16	Furniture
17	Furniture
18	Furniture
19	Mountain Maintenance
20	Recreation/Open Space
21	Recreation/Open Space
22	Recreation/Open Space
23	Recreation/Open Space
24	Squaw Creek Restoration
25	Squaw Creek Restoration
26	Squaw Creek/Olympic Channel Restoration
27	Recreation/Open Space
28	Recreation/Open Space
29	Open Space
30	Chalet/Place
31	Squaw Valley Road
32	Village East Road
33	Skier Plaza
34	Skier Plaza
35	Marketing and Merchising
36	Marketing
37	Employee Housing
38	Recreation/Open Space
39	Squaw Valley Road
40	Surface/Structured Parking
41	Employee Housing
42	Employee Housing
43	Employee Housing
44	Recreation/Open Space
45	Employee Recreation Area
IC	Interpretive Center
IV	Building Illustrative Village

Accordingly, a new database was developed to track historical monthly occupancy rates from 2009-2011 related to six specific Olympic Valley properties (managed lodging). Thereafter, these occupancy rates were inflated by 5% per month, with the exception of August, which was inflated by 10% due to new amenities and enhanced lodging operations.

2. **Unmanaged Lodging Occupancy Rates.** Occupancy rates for non-managed units were based on inflated anecdotal information from other KSL Resorts properties. The PSD requested additional support related to Olympic Valley occupancy rates for non-managed units. Since specific occupancy records related to non-managed units wasn't directly available, a database of owners of non-managed units was developed and a use survey of these owners was initiated. The results were tabulated and analyzed, and now show empirical data of use patterns related to non-managed units. **Table A** shown below, provides support of our earlier assumptions.

Table A
Average Unit Use

Calculation of Average Unit Use						
Excluding Rental Use						
Type of Resident	Number of Responses	Percent of All Responses	Average Annual Nights of Use		Average Person-Nights by Unit Type	
			November to April	May to October	November to April	May to October
Full Time	2	3.8%	181	184	271.5	276
Seasonal	14	26.4%	92.9	14	350.8	58.2
Second Home	37	69.8%	40.3	13.5	143.9	44
Weighted Average			59.5	20.1	203.4	56.6

3. **Mountain Adventure Camp Water Demands.** The original water demands for Mountain Adventure Camp (formerly known as Grand Camp) were adjusted according to lodging occupancy rates. While this may be appropriate for the dry amenities for Mountain Adventure Camp, the PSD suggested that water demand related to the wet amenities for Mountain Adventure Camp might not have a high correlation to lodging occupancy rates (i.e., once the pumps and heaters are running, the occupancy of the amenities may have little effect on water use). The Mountain Adventure Camp water demand analysis was revised to only apply lodging occupancy rates to the dry amenities of the facility and assumed 100% occupancy for the wet amenities. Additionally, while the overall magnitude of Mountain Adventure Camp has been reduced in scale, the water demands for Mountain Adventure Camp are assumed to remain unchanged in this update (a conservative assumption).
4. **Employee Housing.** Water demand related to employee housing was not specifically evident in the analysis. The incremental new employees that will be generated by the project were

specifically estimated based on the various land uses proposed within the project that will reside in Olympic Valley, and the incremental water demands specific to same were estimated.

5. **Residential Water Demands.** The scale of the residential portions of the project, in terms of unit and room counts, has been significantly reduced from those shown on the December 2012 illustrative land use plan. Accordingly, the associated water demands have been reduced pro-rata (from 1,093 units to 850 units).
6. **Non-Residential Water Demands.** The PSD requested a more specific reconciliation of new commercial space vs. demolished commercial space. Additionally, the amount of non-residential (commercial) space proposed for development has also been reduced in the new illustrative land use plan.

Accordingly, the incremental commercial spaces (new vs. demolished) proposed by the project were updated and reconciled, and then segregated by type of commercial use. Specific water demands for the PSD's non-residential customers were researched, and a revised estimate of per unit water demand rates was applied to the non-residential (commercial) land uses. This work effort results in a higher integrity analysis of water demand for non-residential land uses.

Further, the scale of the non-residential portions of the project has been reduced from those shown on the December 2012 illustrative land plan. In June 2014, and again in February 2015, a number of very small changes in the square footages of various non-residential land uses occurred. The water demands associated therewith are now adjusted from earlier projections.

7. **Conservation.** The original 15% conservation saving rate during drought years was believed to be too high since most conservation savings in drought years comes from irrigation programs and the vast majority of the potable water demands for this project are indoors. The conservation savings rate was reduced to 5%, a rate that is more consistent with the indoor savings observed throughout the hospitality industry during dry years. Dry year demands are reduced within the hospitality industry through a use of various public education and demand reduction strategies (e.g., placards in each bedroom, restaurants and public areas; provision of water in restaurants on request only; and changing of linens and towels only upon request). These education and demand reduction strategies are designed to create a heightened awareness among the guests to conserve water.
8. **Phasing.** Originally, the project was planned to be constructed in four (4) separate phases. The December 2013 illustrative land use plan, in addition to depicting a less intense development plan for the site, also eliminated the concept of geographic phasing in favor of a phasing approach that will be tied to construction of individual buildings. As a result, while they are nearly identical in methodology (except as noted otherwise herein), the water demand calculations contained herein are less voluminous than those contained in the earlier December 2012, July 2013 and February 2014 versions of this study.
9. **System Loss.** The Study was completed using a system loss of 9.8% as reported by the SVPSD on July 14, 2013. This system loss figure was derived from record data collected by the SVPSD from 2000 – 2011. Since that time the SVPSD has collected and analyzed record data for the

years 2012 – 2014. Based on this newer data the SVPSD estimates the system loss to be 11.1%. Accordingly, this increase system loss factor has been included in the most recent water demand calculations.

10. **Irrigation Demands.** The Study did not include irrigation demands for landscaping areas that would be included in the proposed development. At that time, the irrigation needs of the project were contemplated to be provided from the resort’s snow making water supply system, which is separate and distinct from the Squaw Valley PSD potable water system. Since that time, though, it has been decided that these irrigation demands will, in fact, be served through the potable water supply system and not from the resort’s snow making water supply system. Accordingly, the water demand calculations contained in **Table B** now reflect this increased demand :

Table B		
Irrigation Demands (Including 11.1% System Loss)		
Year	Normal Water Year (AFA)	Critical Dry Water Year (AFA)
Normal	15.0	8.7
Dry	14.1	8.1

UPDATED WATER DEMAND PROJECTIONS

The water demand calculations contained in the Study were then updated to reflect the above described changes. Also, a number of minor changes in these calculations and notes were made, as appropriate. **Appendix A**, attached hereto, reflects the updated water demands for the project.

The results of this update indicate that the projected annual water demands for the project at build out have changed slightly from those included in the December 2012 Study. **Table C** is a comparison of the current and prior annual water demands of the project during both a normal and a dry water year. **Table D** also demonstrates that the projected water demands for the project have been slightly increased during the critical dry period each summer (July – October), when the local aquifer isn’t being recharged from runoff from the surrounding mountains.

EVALUATION OF PROPOSED SYSTEM IMPROVEMENTS

The resulting design flow rates for the water distribution system (average daily, maximum daily and peak hour water demands of the project) are now estimated to be lower than earlier projected. Additionally, the water storage requirement for the project has been reduced. **Table D** compares the water system design requirements between the December 2012 Study and this update.

It is important to understand the implication this update may have on the proposed water distribution system improvements. Since these updated peak water demands are smaller than those shown in the

December 2012 Study, the previously designed system, in terms of distribution main sizes, appear to be oversized to some degree given the lower estimate of design flow rates discussed above.

Clearly, the size of the distribution piping system can be reduced from that contained in the December 2012 Study. Also, the number of wells required to serve the project will be reduced and the water storage tank will be reduced in size (from 1.0 million gallons to 0.69 million gallons). Finally, due to the reduction in building footprints and the preservation of the main parking field for the day skiers, not all of the water lines shown in the Study will actually be required.

These adjustments in system improvements will be made during final design of the project. Refer to **Exhibit 3** for the proposed system improvements contemplated in the December 2012 Study and **Exhibit 4** for the proposed system improvements contemplated in this update.

Further, the December 2012 Study evaluated the hydraulic capacity of the existing system to accommodate the projected flows that would be generated by the development of the project. In all cases, with the exception of some of the existing pipelines within the immediate vicinity of the project area, the existing pipelines in the system were found to have adequate capacity to service the project in addition to continuing to service the existing customer base of the SVPSD.

As it relates to the existing pipelines within the immediate vicinity of the project, the December 2012 Study identified a few existing pipelines that will need to be replaced in order that the system meet the post development demands of the project. These improvements to the existing system will prevent any degradation in service levels for existing customers in the post development scenario.

While it was beyond the scope of the December 2012 Study to evaluate the condition of the existing system, it has been noted that the waterline pipe crossing of Squaw Creek Channel downstream of the Far East Bridge is in need of repair. In all likelihood, this pipeline crossing will need to be upgraded with the restoration of the channel and upgrading of the existing bridge structure that is currently proposed.

CONCLUSION

The results of this update indicate that the projected water demands for the project have changed slightly from those included in the December 2012 Study. These changes will need to be evaluated in terms of the ability of the groundwater basin to reliably meet these demands.

The proposed water storage tank required to serve the project will now be somewhat smaller than the one envisioned in the Study. While the proposed water distribution system is somewhat oversized for the updated water demands generated by the project, this probably isn't significant for purposes of CEQA evaluation and land use entitlement approvals.

The project is conservatively envisioned to build out over a twenty-five year time frame. Accordingly, the resulting increase in annual water demands over a twenty-five year time frame (2015 – 2040) by five year increments as required by SB 610 is shown in **Table E**.

Table C

Comparison of Water Demands at Project Build Out

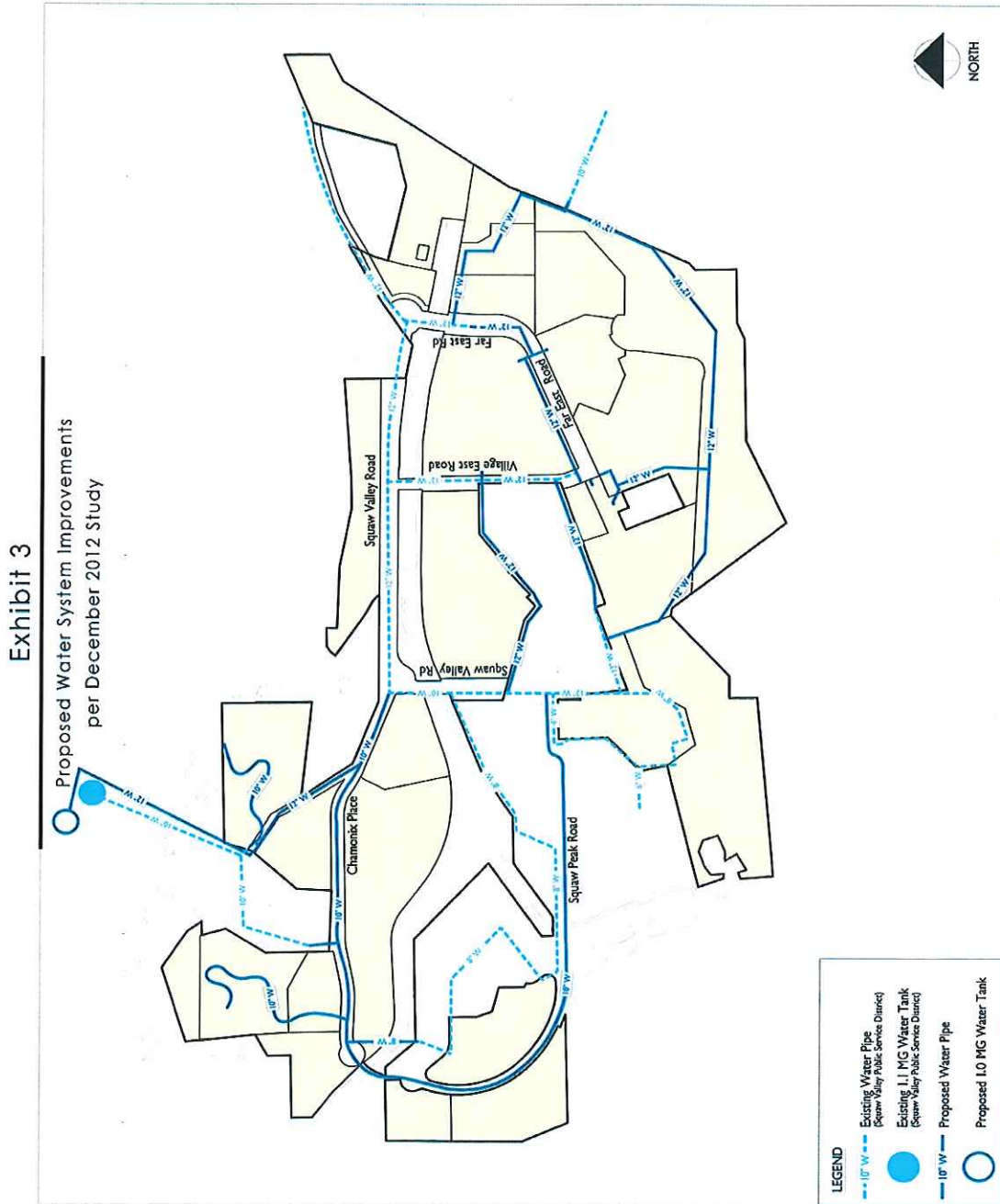
		<u>Annual Water Demand (AF)</u> (Jan. - Dec.)						<u>Critical Period Demand (AF)</u> (July - Oct.)					
<u>Normal Water Year</u>													
Dec. '12	July '13	Feb. '14	Mar. '14	Jun. '14	Jun. '15	Dec. '12	July '13	Feb. '14	Mar. '14	Jun. '14	Jun. '15		
252.3±	286.7±	221.0±	222.9±	233.9±	240.2±	84.6±	102.7±	78.6±	79.2±	86.4±	88.1±		
<u>Dry Water Year</u>													
Dec. '12	July '13	Feb. '14	Mar. '14	Jun. '14	Jun. '15	Dec. '12	July '13	Feb. '14	Mar. '14	Jun. '14	Jun. '15		
218.0±	274.8±	212.5±	214.2±	224.7±	230.8±	73.1±	98.4±	75.5±	76.1±	82.9±	84.6±		

Table D
Water System Design Requirements at Build Out

<u>Design Parameter</u>	<u>Dec. 2012</u>	<u>June 2015</u>	<u>Percent Change</u>
Average Daily Demand (gpm)	0.62	0.45	<27%±>
Maximum Daily Demand (gpm)	1.40	0.96	<31%±>
Peak Hourly Demand (gpm)	2.04	1.38	<32%±>
Water Storage (MG)	0.97	0.69	<29%±>

Exhibit 3

Proposed Water System Improvements Per December 2012 Study



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Exhibit 4

Proposed Water System Improvements Per Update

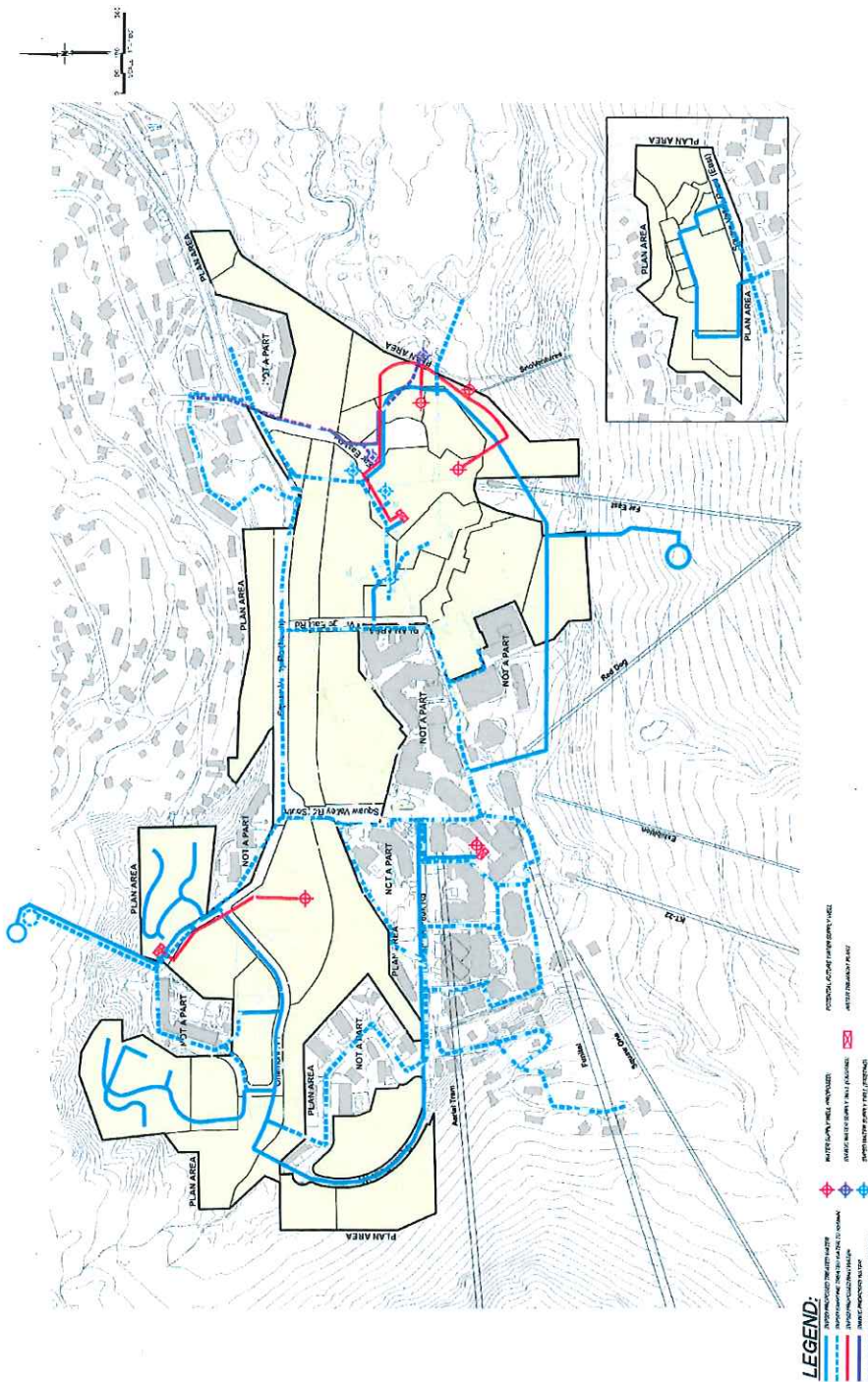


Table E

**Annual Water Demand in Five-Year Increments
(Normal Water Year Scenario)**

<u>Year</u>	<u>Water Demand (AFA)</u>
2015	0
2020	84.1±
2025	132.1±
2030	180.1±
2035	216.2±
2040	240.2±

Appendix A

Updated Water Demand Calculations

Village At Squaw Valley Specific Plan

June 9, 2015

**Updated Water Demand Calculations
Village At Squaw Valley Specific Plan**

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4	Build Out Water Demand Projection - Dry Water Year	13
5	Development Summary - New & Demolished Spaces	21

Table 1
Estimated Net Increase in Annual Water Demands
Normal Water Years
The Village at Squaw Valley
Buildout Conditions

Full Build Out - Normal Conditions	Average Daily Demand (gpd)			Average Daily Demand By Month (gpd)												Average Annual Occupancy	Annual Water Demand (Acre Feet)
	Units / Rooms / Population (19)	Unit Demand (17)	Total Average Daily Demand	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Lodging Units																	
Managed (75%)																	
Units	850																
Bedrooms/Unit (22)	1,756																
Bedrooms	1,493																
Managed Bedroom Ratio	75%																
Managed Bedrooms	1,120																
x People per Bedroom (9)	1.6																
Population	1,792																
Occupancy/Usage Rate (18)	x	90 gal/capita/day =	161,244	63.0%	74.0%	73.0%	49.0%	35.0%	52.0%	72.0%	77.0%	54.0%	42.0%	28.0%	57.0%	56.3%	
Average Daily Demand Per Month				101,584	119,321	117,708	79,010	56,435	83,847	116,098	124,158	87,072	67,722	45,148	91,909		
Monthly Demand (Acre-Feet)		2.8 People/Unit 253 GPD/Unit 0.80 EDU/Unit		9.7	10.3	11.2	7.3	5.4	7.7	11.0	11.8	8.0	6.4	4.2	8.7		101.7
Unmanaged (25%)																	
Units	850																
Bedrooms/Unit (22)	1,756																
Bedrooms	1,493																
Managed Bedroom Ratio	25%																
Managed Bedrooms	373																
x People per Bedroom (9)	2.0																
Population	746																
Occupancy/Usage Rate (18)	x	Occupancy Rate (% of Managed Condo/Hotel) = 50%	90 gal/capita/day =	67,185	31.5%	37.0%	36.5%	24.5%	17.5%	26.0%	38.5%	27.0%	21.0%	14.0%	28.5%	28.2%	
Average Daily Demand Per Month					21,163	24,858	24,523	16,460	11,757	17,468	24,187	25,866	18,140	14,109	9,406	19,148	
Monthly Demand (Acre-Feet)		3.5 People/Unit 317 GPD/Unit 1.00 EDU/Unit		2.0	2.1	2.3	1.5	1.1	1.6	2.3	2.5	1.7	1.3	0.9	1.8		21.2
Employee Housing																	
Lot 4 Employee Count (14)	300																
Existing Employee Count	(99)																
New Employee Count	201																
Occupancy/Usage Rate (18)	x	90 gal/capita/day =	18,090	63.0%	74.0%	73.0%	49.0%	35.0%	52.0%	72.0%	77.0%	54.0%	42.0%	28.0%	57.0%	56.3%	
Average Daily Demand Per Month					11,397	13,387	13,206	8,864	6,332	9,407	13,025	13,929	9,789	7,588	5,065	10,311	
Monthly Demand (Acre-Feet)					1.1	1.2	1.3	0.8	0.6	0.9	1.2	1.3	0.9	0.7	0.5	1.0	

Table 1
Estimated Net Increase in Annual Water Demands
Normal Water Years
The Village at Squaw Valley
Buildout Conditions

Full Build Out - Normal Conditions	Average Daily Demand (gpd)			Average Daily Demand By Month (gpd)												Average Annual Occupancy	Annual Water Demand (Acre-Feet)
	Units / Rooms / Population (19)	Unit Demand (17)	Total Average Daily Demand	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Commercial/Other																	
Net Retail (11)	27,692 sf																
Occupancy/Usage Rate (18)				63.0%	74.0%	73.0%	49.0%	35.0%	52.0%	72.0%	77.0%	54.0%	42.0%	28.0%	57.0%	56.3%	
Average Daily Demand Per Month	x	0.24 gal/sf/day	6,646.08	4,187	4,918	4,852	3,257	2,326	3,456	4,785	5,117	3,589	2,791	1,861	3,788		
Net Restaurant / Food & Bev (11)	29,525 sf																
Occupancy/Usage Rate (18)				63.0%	74.0%	73.0%	49.0%	35.0%	52.0%	72.0%	77.0%	54.0%	42.0%	28.0%	57.0%	56.3%	
Average Daily Demand Per Month	x	0.24 gal/sf/day	7,086.00	4,464	5,244	5,173	3,472	2,480	3,685	5,102	5,456	3,826	2,976	1,984	4,039		
Net Hotel Common Areas (11)	49,493 sf																
Occupancy/Usage Rate (18)				63.0%	74.0%	73.0%	49.0%	35.0%	52.0%	72.0%	77.0%	54.0%	42.0%	28.0%	57.0%	56.3%	
Average Daily Demand Per Month	x	0.24 gal/sf/day	11,878.32	7,483	8,790	8,671	5,820	4,157	6,177	8,552	9,146	6,414	4,989	3,326	6,771		
Net Membership (11)	- sf																
Occupancy/Usage Rate (18)				63.0%	74.0%	73.0%	49.0%	35.0%	52.0%	72.0%	77.0%	54.0%	42.0%	28.0%	57.0%	56.3%	
Average Daily Demand Per Month	x	0.24 gal/sf/day	-	-	-	-	-	-	-	-	-	-	-	-	-		
Net Meeting Space (11)	(3,120) sf																
Occupancy/Usage Rate (18)				63.0%	74.0%	73.0%	49.0%	35.0%	52.0%	72.0%	77.0%	54.0%	42.0%	28.0%	57.0%	56.3%	
Average Daily Demand Per Month	x	0.24 gal/sf/day	(748.80)	(472)	(554)	(547)	(367)	(262)	(389)	(539)	(577)	(404)	(314)	(210)	(427)		
Net Office Space (11)	(7,593) sf																
Occupancy/Usage Rate (18)				63.0%	74.0%	73.0%	49.0%	35.0%	52.0%	72.0%	77.0%	54.0%	42.0%	28.0%	57.0%	56.3%	
Average Daily Demand Per Month	x	0.24 gal/sf/day	(1,822.32)	(1,148)	(1,349)	(1,330)	(893)	(638)	(948)	(1,312)	(1,403)	(984)	(765)	(510)	(1,039)		
Ski Services (11)	27,586 sf																
Occupancy/Usage Rate (13)				73.0%	84.0%	83.0%	59.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	15.0%	67.0%	36.8%	
Average Daily Demand Per Month	x	0.24 gal/sf/day	6,620.64	4,833	5,561	5,495	3,906	662	662	662	662	662	662	993	4,436		
Transit Facilities (11)	4,000 sf																
Occupancy/Usage Rate (13)				73.0%	84.0%	83.0%	59.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	15.0%	67.0%	36.8%	
Average Daily Demand Per Month	x	0.24 gal/sf/day	960.00	701	806	797	566	96	96	96	96	96	96	144	643		
Amenities																	
Net Amenities (11)	32,500 sf																
Occupancy/Usage Rate (18) or (13)				63.0%	74.0%	73.0%	49.0%	35.0%	52.0%	72.0%	77.0%	54.0%	42.0%	28.0%	57.0%	56.3%	
Average Daily Demand Per Month	x	0.24 gal/sf/day	7,800.00	4,914	5,772	5,694	3,822	2,730	4,056	5,616	6,006	4,212	3,276	2,184	4,446		
Mountain Adventure Camp Wet Amenities (23)	32,926 gpd			32,926	32,926	32,926	32,926	32,926	32,926	32,926	32,926	32,926	32,926	32,926	32,926		
Total Average Daily Demand Per Month				57,888.6	62,114.8	61,730.6	52,509.8	44,477.8	49,720.5	55,888.3	57,430.3	50,337.3	46,636.6	42,698.1	55,583.4		
Monthly Demand (Acre-Feet)				5.5	5.3	5.9	4.8	4.2	4.6	5.3	5.5	4.6	4.4	3.9	5.3		59.4
Summary																	
			Subtotal Average Daily Water Demand (gal)	192,032	219,680	217,167	156,844	119,002	160,442	209,195	221,384	165,318	136,066	102,318	176,952		193.7
			Misc. Pool & Spa Daily Water Demand (24)	4,946	5,708	5,487	6,179	19,331	7,080	7,197	6,837	6,449	5,667	17,918	4,856		9.1
			Total Average Daily Water Demand (gal)	196,979	225,388	222,653	163,023	138,333	167,522	216,392	228,220	171,767	141,732	120,235	181,808		
			Sub-Total Monthly Demand (Acre-Feet)	18.7	19.4	21.2	15.0	13.2	15.4	20.6	21.7	15.8	13.5	11.1	17.3		202.9
			Irrigation Demands (25)	-	-	-	1.4	1.9	2.3	2.7	2.3	1.7	1.1	-	-		13.4
			Subtotal	18.7	19.4	21.2	16.4	15.1	17.7	23.2	24.0	17.5	14.6	11.1	17.3		216.2
			System Losses (15) @ 11.1%	2.1	2.1	2.4	1.8	1.7	2.0	2.6	2.7	1.9	1.6	1.2	1.9		24.0
			Total Monthly Demand (Acre-Feet)	20.8	21.5	23.5	18.3	16.8	19.7	25.8	26.7	19.4	16.2	12.3	19.2		240.2

Table 1 - Notes

**Estimated Net Increase in Annual Water Demands
Normal Water Years
The Village at Squaw Valley
Buildout Conditions**

1. Demands shown are net of existing demands that currently exist within the Specific Plan Area.
2. Unit demand factors are per SVPSD Design Standards less 10% to reflect indoor use only.

<u>Land Use</u>	<u>SVPSD Unit Demand Factor</u>	<u>Less 10%</u>	<u>Study Unit Demand Factor</u>
Lodging Units	100 gal/capita/day	(10)	90 gal/capita/day
Commercial/Amenities/ Other	See Note 11 gal/sf/day	n/a	See Note 11 gal/sf/day

3. Occupancy/Usage Rates per Squaw Valley Ski Corporation estimates for post development activity levels (see Note 18).
4. Intentionally Blank.
5. Project Peak Demand Calculation (Based on Projected Occupancy):

Winter:	Max Month =	23.5 Acre-Feet (March)
	Max Month =	190 gallons per minute
	Max Day =	475 gallons per minute (PF = 2.5 per SVPSD 2007 Capacity and Reliability Study Update)
	Peak Hour =	713 gallons per minute (PF = 3.75 (assumed at 1.5 x Max. Daily Demand P. F.))
	No. Wells =	475 gpm / 200+/- gpm/well at Duty Factor of 70% = 3.40 new wells
	Assume	4 new wells to meet peak winter demands
Summer:	Max Month =	26.7 Acre-Feet (Aug)
	Max Month =	195 gallons per minute
	Max Day =	487 gallons per minute (PF = 2.5 per SVPSD 2007 Capacity and Reliability Study Update)
	Peak Hour =	730 gallons per minute (PF = 3.75 (assumed at 1.5 x Max. Daily Demand P. F.))
	No. Wells =	487 gpm / 200+/- gpm/well at Duty Factor of 70% = 3.48 new wells
	Assume	4 new wells to meet peak summer demands

- Notes:
1. SVPSD requires all system demands to be met with largest well out of service. Since the SVPSD system already meets this requirement, additional redundancy is not required.
 2. Maximum Day Demands actually controls the total number of new wells required (assuming 100% of well capacity), not the above calculations. MDD calculations at full buildout requires a minimum of 4 new wells.
 3. The results of groundwater modeling may recommend additional wells be constructed to optimize the well field system to reduce overall impacts to the aquifer.

6. Residential land uses based on Illustrative Land Use Plan plus 0%

<u>Land Use</u>	<u>Land Plan Unit Count</u>	<u>0%</u>	<u>Study Unit Count</u>
Lodging Units	850 Units	0	850 Units

7. Summer period after snow melt ends is considered the critical demand/supply period when recharge from watershed is less than pumping requirements and groundwater elevations start to fall (typically July - October).
8. Late Summer/Early Fall water supply indicated by yellow highlighting (max summer time draw on aquifer) is estimated at 88.1 acre-feet for normal water years and 84.6 acre-feet for dry water years.
9. Assumes 40% Groups (1 Pop/Bedroom) and 60% Leisure (2 Pop/Bedroom) for blended average of 1.6 Pop/Bedroom
10. Assumes 0% Groups (1 Pop/Bedroom) and 100% Leisure (2 Pop/Bedroom) for a blended average of 2.0 Pop/Bedroom
11. Proposed new building areas per the December 2013 Illustrative Plan are as follows:

<u>Proposed Use</u>	<u>Square Footage</u>	<u>Demand Rate</u>	<u>Occupancy Type</u>
Based on SVPSD non-residential average demand factors (Note 26).			
Amenities			
Mountain Adventure Camp Dry Amenities (FEC)	30,000 sf		
Fractional Cabins	2,500		
Net Amenities	32,500	0.24 Lodging (18)	
Mountain Adventure Camp Wet Amenities	60,000	32,926 Wet area (23)	
Subtotal Amenities	92,500 sf		

Table 1 - Notes

**Estimated Net Increase in Annual Water Demands
Normal Water Years
The Village at Squaw Valley
Buildout Conditions**

Commercial/Other			
Retail		33,620 sf	
Demo - Far East (Retail Warehouse)		(5,928)	
	Net Retail	<u>27,692</u>	0.24 Lodging (18)
Restaurant/F&B		31,120 sf	
Demo - Far East (Cantina)		(1,595)	
Demo - Olympic House (Food & Bev)		-	
	Net F&B	<u>29,525</u>	0.24 Lodging (18)
Hotel Common Area		49,493	0.24 Lodging (18)
Meeting Space		12,000 sf	
Demo - Olympic Valley Lodge (Meeting)		(15,120)	
	Net Meeting Sp	<u>(3,120)</u>	0.24 Lodging (18)
Office			
Demo - Clock Tower		(2,593) sf	
Demo - Olympic Valley Lodge (Office)		(5,000)	
	Net Office	<u>(7,593)</u>	0.24 Lodging (18)
Ski Services		75,000 sf	
Demo - Clinic		(1,519)	
Demo - Building Services/Plumbing/BOH		(4,771)	
Demo - Vehicle Maintenance		(14,000)	
Demo - Groomers		(1,000)	
Demo - Carpenter Shop & Storage		(4,304)	
Demo - Uniforms		(3,720)	
Demo - Mountain Operations		(2,800)	
Demo - Ski Patrol		(2,480)	
Demo - Ski Patrol Storage		(240)	
Demo - Race Services		(740)	
Demo - Ski School Locker Room		(4,430)	
Demo - Snoventures		(2,360)	
Demo - Race Team		(2,050)	
Demo - Far East - Central Reservations		(3,000)	
	Net Ski Svc	<u>27,586</u>	0.24 Mountain (13)
Transit Facilities		4,000	0.24 Mountain (13)
Subtotal Commercial / Other		<u>127,583</u> sf	
Total		<u>220,083</u> sf	
Employee Housing (New & Replace Demo)		38,916 sf	
Employee Housing Demolished		(13,872) sf	
Total Commercial / Other/Employee Housing		<u>245,127</u> sf	

12. Net increase in building area is 250,189 sf. Existing facilities (including existing maintenance facilities) totaling 91,522 sf will be replaced with new facilities totaling 341,711 sf as determined below:

New Uses (Proposed)	Area (SF)
Retail	33,620 sf
Restaurant/F&B	31,120
Hotel Common Area	49,493
Meeting Space	12,000
Ski Services	75,000
Transit Facilities	4,000
Cabins	2,500
Mountain Adventure Camp Wet Amenities	60,000
Mt. Adventure Camp Dry Amenities (FEC)	30,000
Subtotal Commercial / Amenities/ Other	<u>297,733</u> sf
Employee Housing (New & Replace Demo)	38,916 sf
Total Replaced	<u>336,649</u> sf

Table 1 - Notes

**Estimated Net Increase in Annual Water Demands
Normal Water Years
The Village at Squaw Valley
Buildout Conditions**

<u>Existing Uses (Demolished)</u>	<u>Area (SF)</u>
Clinic	(1,519) sf
Race Team	(2,050)
Snoventures	(2,360)
Maintenance / Operations	(38,485)
Far East (Retail Warehouse)	(5,928)
Far East (Cantina)	(1,595)
Far East (Central Reservations)	(3,000)
Clock Tower	(2,593)
Olympic Valley Lodge (Meeting)	(15,120)
Olympic Valley Lodge (Office)	(5,000)
Employee Housing	(13,872)
Subtotal Demolished Facilities	(91,522) sf
NET ADDITIONAL BUILDING AREA	245,127 sf

13. Mountain Related Occupancy Rates Determination:

Dec - April 15% higher than Hotel Occupancy

<u>Month</u>	<u>FY08FY14</u>	<u>Plus</u>	<u>Subtotal</u>	<u>Roundup (Use)</u>
January	57.75%	15%	72.75%	73%
February	68.95%	15%	83.95%	84%
March	67.81%	15%	82.81%	83%
April	43.71%	15%	58.71%	59%
May	10.00%	0%	10.00%	10%
June	10.00%	0%	10.00%	10%
July	10.00%	0%	10.00%	10%
August	10.00%	0%	10.00%	10%
September	10.00%	0%	10.00%	10%
October	10.00%	0%	10.00%	10%
November	15.00%	0%	15.00%	15%
December	51.50%	15%	66.50%	67%

14. Employee Housing:

Total Employee Count proposed for Lot 4 =	300 Employees (204 Single Beds & 48 Double Beds)
Existing Employee Count =	(99) Employees
New Employee Count =	201 Employees

15. System Loss Rate per SVPSD (June 2, 2015) based on metered demand and production for Years 2000-2014.

16. Typical well production ranges from 150-250 gpm / assume 200 gpm/well for study purposes.

Table 1 - Notes

**Estimated Net Increase in Annual Water Demands
Normal Water Years
The Village at Squaw Valley
Buildout Conditions**

17. Indoor use only.

18. Lodging Occupancy Rates Determination:

Utilize average monthly occupancy rates for The Village at Squaw Valley USA (Phases 1 and 2) from FY 08 - FY 14 plus 5% for future projections of utilization, except August which is assumed to be +10%.

Month	FY08FY14	Plus	Subtotal	Roundup (Use)
January	57.75%	5%	62.75%	63%
February	68.95%	5%	73.95%	74%
March	67.81%	5%	72.81%	73%
April	43.71%	5%	48.71%	49%
May	29.17%	5%	34.17%	35%
June	46.47%	5%	51.47%	52%
July	66.44%	5%	71.44%	72%
August	66.06%	10%	76.06%	77%
September	48.31%	5%	53.31%	54%
October	36.32%	5%	41.32%	42%
November	22.37%	5%	27.37%	28%
December	51.50%	5%	56.50%	57%

19. Unit count and non-residential land uses based on assumption of Illustrative Land Use Plan plus 0% does not exceed maximum development levels contained in the VSP.

20. Numbers may not add due to round off error.

21. Water Storage Requirement (Full Occupancy Scenario/Normal Water Years):

Note: See Table 3 for Maximum System Demands (ADD, MDD & PHD)

	Storage
Operational Storage = 25% MDD:	
25% times	0.96 MGD
0.24 MG (New)	
Fire Storage = 2,500 gpm for 2 hours (fire storage volume already exists - no new fire storage required):	
0 gpm times	2 Hrs.
0.00 MG (Existing)	
Emergency Storage = 100% ADD =	
100% times	0.45 MGD
0.45 MG (New)	
Total	0.69 MG

22. Rooms Per Unit: A total of 1,493 bedrooms will be spread over a total of 850 units for an average density of 1.756 rooms per unit.

23. Mountain Adventure Camp includes an 80,000 sf Aquatic Center and a 30,000 sf Family Entertainment Center (FEC). Water demands for the FEC are calculated as standard non-residential areas using the a non-residential unit demand factor of 0.24 gallons per square foot per day. The water maximum daily water demand for the Mountain Adventure Camp with a maximum occupancy of 2,000 people was estimated by Aquatic Development Group (Cohoes, NY) on May 31, 2012 (as modified by MacKay & Soms in the MAC Aquatic Center Pool Water and Sewer Demands calculations dated 12/02/2014) as follows:

Demand	Usage
Backwash System (Daily)	11,381 gpd
Splashout Loss	3,276 gpd
Evaporation Loss	3,519 gpd
Deck Washdown Water	750 gpd
Restroom Demands	14,000 gpd
Total	32,926 gpd

24. Miscellaneous pool and spa water demands for hot tubs and pools assumes similar count and size as per Illustrative Concept Plan dated September 7, 2012 are estimated as follows:

Phase	Pools	Spas
I	5	10
II	6	12
III	n/a	n/a
IV	n/a	n/a
Total	11	22

Facility	Dimensions	Number	Area Sq. Ft.	Total Sq. Ft.	Volume Cubic Feet	Total Volume (cf)
Pool	20' x 40' x 4' Avg. Depth	11	800	8,800	3,200	35,200
Spa	10' x 15' x 4' Avg. Depth	22	150	3,300	600	13,200
Totals			12,100	12,100	3,800	48,400

Table 1 - Notes

**Estimated Net Increase in Annual Water Demands
Normal Water Years
The Village at Squaw Valley
Buildout Conditions**

Annual Demand Estimate:

<u>Demand</u>	<u>Volume</u>	<u>Flushing</u>	<u>Evap. Loss Per Annum (Ft.)</u>	<u>Total Area (sf)</u>	<u>Annual Demand (cf)</u>	<u>AcFt Per Annum</u>
Pools	35,200	2			70,400	1.62
Spas	13,200	12			158,400	3.64
Subtotal					228,800	5.25
Plus 20% Splash Allow.					45,760	1.05
Subtotal					274,560	6.30
Evaporation			4.5	12,100	54,450	1.25
Subtotal					329,010	7.55
Plus 20% Contingency					65,802	1.51
					Total (cf) 394,812	9.06

Assumptions:

1. Pools are flushed twice annually (Spring and Fall) and Spas are flushed monthly.
2. Splash Losses at 20% of subtotal of fill/drain and evap losses.
3. Evaporation Losses per California DWR CIMIS ETo Rate for Zone 13:

<u>Month</u>	<u>ETo Rate (inches/month)</u>	<u>Percentage</u>	<u>Ac-Ft/Month</u>
January	1.24	2.28%	0.03
February	1.96	3.61%	0.05
March	3.10	5.71%	0.07
April	4.80	8.84%	0.11
May	6.51	11.99%	0.15
June	7.80	14.36%	0.18
July	8.99	16.56%	0.21
August	7.75	14.27%	0.18
September	5.70	10.50%	0.13
October	3.72	6.85%	0.09
November	1.80	3.31%	0.04
December	0.93	1.71%	0.02
Total	54.30 inches 4.5 Feet	100.00%	1.25

4. Pool/Spa Flushing & Splash Allowance (Incl. 20% Splash Loss):

<u>Month</u>	<u>Pool Flushing</u>	<u>Spa Flushing</u>	<u>Sub-Total</u>	<u>Splash Allow</u>	<u>Total</u>
January	0.00	0.30	0.30	0.06	0.36
February	0.00	0.30	0.30	0.06	0.36
March	0.00	0.30	0.30	0.06	0.36
April	0.00	0.30	0.30	0.06	0.36
May	0.81	0.30	1.11	0.22	1.33
June	0.00	0.30	0.30	0.06	0.36
July	0.00	0.30	0.30	0.06	0.36
August	0.00	0.30	0.30	0.06	0.36
September	0.00	0.30	0.30	0.06	0.36
October	0.00	0.30	0.30	0.06	0.36
November	0.81	0.30	1.11	0.22	1.33
December	0.00	0.30	0.30	0.06	0.36
Totals (Ac-Ft)	1.62	3.64	5.25	1.05	6.30

Table 1 - Notes

**Estimated Net Increase in Annual Water Demands
Normal Water Years
The Village at Squaw Valley
Buildout Conditions**

5. Daily Totals by Month (Incl. 20% Contingency):

Month	Acre-Feet					Gallons Per Day
	Pool & Spa Flushing & Splash	Evap. Losses	Subtotal	Contg.	Total	
January	0.36	0.03	0.39	0.08	0.47	4,946
February	0.36	0.05	0.41	0.08	0.49	5,708
March	0.36	0.07	0.43	0.09	0.52	5,487
April	0.36	0.11	0.47	0.09	0.57	6,179
May	1.33	0.15	1.48	0.30	1.78	19,331
June	0.36	0.18	0.54	0.11	0.65	7,080
July	0.36	0.21	0.57	0.11	0.68	7,197
August	0.36	0.18	0.54	0.11	0.65	6,837
September	0.36	0.13	0.49	0.10	0.59	6,449
October	0.36	0.09	0.45	0.09	0.54	5,667
November	1.33	0.04	1.37	0.27	1.65	17,918
December	0.36	0.02	0.39	0.08	0.46	4,856
Totals	6.30	1.25	7.55	1.51	9.06	

25. Irrigation Demands

Assumptions:

- a. Area of landscaping for planning purposes (per Illustrative Land Plan June 6, 2014) = 6.65 Acres
- b. Tahoe Resource Conservation District recommends irrigation only during months of April - October.
- c. Drip Irrigation with Irrigation Efficiency (IE) of 90% assumed.
- d. Use "Landscape Coefficient Method" used for estimating landscape irrigation demand (ET_L) - UC Coop Extension (August 2000)
 - ET_L = K_L x ET_O
 - ET_O = Evapotranspiration Rate per CIMIS Data Base for Zone 13 (CIMIS 1999)
 - K_L = Landscape Coefficient = K_s x K_D x K_M =
 - K_s = Species Landscape Coefficient (Above Average) = 0.4
 - K_D = Density Landscape Coefficient (Average) = 1.0
 - K_M = Microclimate Landscape Coefficient (Above Average) = 1.2
 - K_L = Landscape Coefficient = K_s x K_D x K_M = 0.48
- e. Theoretical Demand = ET_L + 12 inches/foot
- f. Assume plant palette per approved plant list in Specific Plan

Month	Monthly Irrigation Demand (Inches/Month)			Irrigation Rate (Feet/Month)			Irrigation Area (Acres)	Irrigation Demand / Month (AF/Mo)
	ET _O	K _L	ET _L	Theoretical Demand	Irrigation Efficiency	Irrigation Demand		
January	1.24	0.48	0.60	0.05	90%	n/a	6.65	0.00
February	1.90	0.48	0.91	0.08	90%	n/a	6.65	0.00
March	3.10	0.48	1.49	0.12	90%	n/a	6.65	0.00
April	4.80	0.48	2.30	0.19	90%	0.21	6.65	1.42
May	6.51	0.48	3.12	0.26	90%	0.29	6.65	1.92
June	7.80	0.48	3.74	0.31	90%	0.35	6.65	2.31
July	8.99	0.48	4.32	0.36	90%	0.40	6.65	2.66
August	7.75	0.48	3.72	0.31	90%	0.34	6.65	2.29
September	5.70	0.48	2.74	0.23	90%	0.25	6.65	1.68
October	3.72	0.48	1.79	0.15	90%	0.17	6.65	1.10
November	1.80	0.48	0.86	0.07	90%	n/a	6.65	0.00
December	0.93	0.48	0.45	0.04	90%	n/a	6.65	0.00
Totals	54.24		26.04	2.17		2.01		13.4

26. Commercial (non-residential) unit water demands were developed by SVPSD from meter records for all PSD non-residential customers from 2005 - 2012 and is based on actual consumption of the maximum month of each calendar year divided by the square footage each non-residential customer occupies. The average of the unit demand factors derived from this data set were used to estimate the water demands for commercial non-residential land uses for the project. The resulting composite average day demand for the maximum months was determined to be:

SVPSD Survey 0.24 gpd/square foot.

Table 2

**Estimated Distribution System Sizing Demands
Normal Water Year
The Village at Squaw Valley
Buildout Conditions**

Full Build Out	Average Daily Demand			Maximum Daily Demand		Peak Hourly Demand	
	Units	Study Unit Demand Factor (1)	Average Daily Demand (gpd)	Peaking Factor	Maximum Daily Demand (gpd)	Peaking Factor	Peak Hourly Demand (gpd)
Lodging Units							
Managed (75%) Units Managed Units Ratio Managed Units	850 75% 637	317 gpd/unit	201,929	2.5	504,823	3.75	757,234
Unmanaged (25%) Units Unmanaged Units Ratio Managed Units	850 25% 213	317 gpd/unit	67,521	2.5	168,803	3.75	253,204
Employee Housing							
Net Employee Housing (Beds)	201	90 gpd/capita	18,090	2.5	45,225	3.75	67,838
Commercial/Amenities/Other							
Net Retail (11)	27,692	0.24 gal/sf/day	6,646	2.5	16,615	3.75	24,923
Net Restaurant / Food & Bev (11)	29,525	0.24 gal/sf/day	7,086	2.5	17,715	3.75	26,573
Net Hotel Common Areas (11)	49,493	0.24 gal/sf/day	11,878	2.5	29,696	3.75	44,544
Net Membership (11)	-	0.24 gal/sf/day	-	2.5	-	3.75	-
Net Meeting Space (11)	(3,120)	0.24 gal/sf/day	(749)	2.5	(1,872)	3.75	(2,808)
Net Office Space (11)	(7,593)	0.24 gal/sf/day	(1,822)	2.5	(4,556)	3.75	(6,834)
Ski Services (11)	27,586	0.24 gal/sf/day	6,621	2.5	16,552	3.75	24,827
Transit Facilities (11)	4,000	0.24 gal/sf/day	960	2.5	2,400	3.75	3,600
Net Amenities (11)	32,500	0.24 gal/sf/day	7,800	2.5	19,500	3.75	29,250
Total Commercial/Amenities/ Other			38,420		96,050		144,075
Mountain Adventure Camp Restrooms (23)	14,000 gpd		14,000	2.5	35,000	3.75	52,500
Mountain Adventure Camp Activity Area (23)	18,926 gpd		18,926	1.0	18,926	1.0	18,926
Total Average Daily Demand Per Month			71,346		149,976		215,501
Subtotal							
Misc. Pool & Spa Maximum Daily Water Demand (24)	19,331 x	Subtotal	358,886		868,826		1,293,776
Irrigation Demands (July)			19,331	1.0	19,331	1.0	19,331
System Losses @ 9.8%			378,217		888,157		1,313,106
Total (gpd)			27,927	1.0	27,927	1.0	27,927
			406,144		916,084		1,341,034
			39,802		39,802		39,802
			445,946		955,886		1,380,836
Theoretical Maximum Demand (GPM) (Use for Distribution System Sizing)			309.7		663.8		958.9

New Wells @ 200 gpm/well at peak well output (wells producing at 100% of capacity) for the small number of maximum days that actually will occur during the year:
3.32
(Use 4 Wells)

Note (1): Assume Peak Day with all rooms occupied with 2.0 people/room (use unmanaged unit demand factors in all cases).
Note (2): Numbers do not total due to round off error.

Table 3
 System Sizing Demands by Developable Areas
 Squaw Valley Village Specific Plan
 Buildout Conditions

Parcel	Lodging Units			Total Lodging Demand	Commercial/ Amenities/Other			Irrigation					Subtotal	System Loss	Total Demands					
	Units	Unit Demand	Demand		Area (SF)	Unit Demand	Demand	Units	Acres/ Unit	Acres	Unit Demand	Demand			ADD (Subtotal + System Losses)		MDD ((2.50 x ADD) + System Losses)		PHD ((3.75 x ADD) + System Losses)	
															GPD	GPM	GPD	GPM	GPD	GPM
Area A																				
Area B																				
Area C																				
Area D																				
Area E																				
Area F																				
Area G																				
Area H																				
Area I																				
Area J																				
Area K																				
Area L																				
Area N																				
Area DD																				
Area O																				
Sub-Totals	0		0	0	0		0		0.0		0	0		0	0	0	0	0	0	0

To Be Determined
 During Final Design

Table 4
Estimated Net Increase in Annual Water Demands
Dry Water Years
The Village at Squaw Valley
Buildout Conditions

Full Build Out - Normal Conditions	Average Daily Demand (gpd)			Average Daily Demand By Month (gpd)												Average Annual Occupancy	Annual Water Demand (Acre-Feet)	
	Units / Rooms / Population (19)	Unit Demand (17)	Total Average Daily Demand	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
Lodging Units																		
Managed (75%)																		
Units	850																	
Bedrooms/Unit (22)	1,756																	
Bedrooms	1,493																	
Managed Bedroom Ratio	75%																	
Managed Bedrooms	1,120	90 gal/capita/day																
x People per Bedroom (9)	1.6	0.95 x Conservation Rate (5% Savings)																
Population	1,792																	
Occupancy/Usage Rate (18)	x	86 gal/capita/day =	153,182	63.0%	74.0%	73.0%	49.0%	35.0%	52.0%	72.0%	77.0%	54.0%	42.0%	28.0%	57.0%	56.3%		
Average Daily Demand Per Month				96,505	113,355	111,823	75,059	53,614	79,655	110,291	117,950	82,718	64,336	42,891	87,314			
Monthly Demand (Acre-Feet)				9.2	9.7	10.6	6.9	5.1	7.3	10.5	11.2	7.6	6.1	3.9	8.3			96.6
		2.8 People/Unit																
		241 GPD/Unit																
		0.80 EDU/Unit																
Unmanaged (25%)																		
Units	850	Occupancy Rate (% of Managed Condo/Hotel) =																
Bedrooms/Unit (22)	1,756	50%																
Bedrooms	1,493																	
Managed Bedroom Ratio	25%	90 gal/capita/day																
Managed Bedrooms	373	0.95 x Conservation Rate (5% Savings)																
x People per Bedroom (9)	2.0																	
Population	746																	
Occupancy/Usage Rate (18)	x	86 gal/capita/day =	63,826	31.5%	37.0%	36.5%	24.5%	17.5%	26.0%	36.0%	38.5%	27.0%	21.0%	14.0%	28.5%	28.2%		
Average Daily Demand Per Month				20,105	23,616	23,296	15,637	11,170	16,595	22,977	24,573	17,233	13,403	8,936	18,190			
Monthly Demand (Acre-Feet)				1.9	2.0	2.2	1.4	1.1	1.5	2.2	2.3	1.6	1.3	0.8	1.7			20.1
		3.5 People/Unit																
		301 GPD/Unit																
		1.00 EDU/Unit																
Employee Housing																		
Lot 4 Employee Count (14)	300	90 gal/capita/day =																
Existing Employee Count	(99)	0.95 x Conservation Rate (5% Savings)																
New Employee Count																		
Occupancy/Usage Rate (18)	x	86 gal/capita/day =	17,186	63.0%	74.0%	73.0%	49.0%	35.0%	52.0%	72.0%	77.0%	54.0%	42.0%	28.0%	57.0%	56.3%		
Average Daily Demand Per Month				10,827	12,717	12,545	8,421	6,015	8,936	12,374	13,233	9,280	7,218	4,812	9,796			
Monthly Demand (Acre-Feet)				1.0	1.1	1.2	0.8	0.6	0.8	1.2	1.3	0.9	0.7	0.4	0.9			10.8

Table 4
Estimated Net Increase in Annual Water Demands
Dry Water Years
The Village at Squaw Valley
Buildout Conditions

Full Build Out - Normal Conditions	Average Daily Demand (gpd)			Average Daily Demand By Month (gpd)												Average Annual Occupancy	Annual Water Demand (Acre-Feet)
	Units / Rooms / Population (19)	Unit Demand (17)	Total Average Daily Demand	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Commercial/Other																	
Net Retail (11)	27,692 sf	0.24 gal/sf/day															
Occupancy/Usage Rate (18)		0.95 x Conservation Rate (5% Savings)		63.0%	74.0%	73.0%	49.0%	35.0%	52.0%	72.0%	77.0%	54.0%	42.0%	28.0%	57.0%	56.3%	
Average Daily Demand Per Month	x	0.23 gal/sf/day	6,313.78	3,978	4,672	4,609	3,094	2,210	3,283	4,546	4,862	3,409	2,652	1,768	3,599		
Net Restaurant / Food & Bev (11)	29,525 sf	0.24 gal/sf/day															
Occupancy/Usage Rate (18)		0.95 x Conservation Rate (5% Savings)		63.0%	74.0%	73.0%	49.0%	35.0%	52.0%	72.0%	77.0%	54.0%	42.0%	28.0%	57.0%	56.3%	
Average Daily Demand Per Month	x	0.23 gal/sf/day	6,731.70	4,241	4,981	4,914	3,299	2,356	3,500	4,847	5,183	3,635	2,827	1,885	3,837		
Net Hotel Common Areas (11)	49,493 sf	0.24 gal/sf/day															
Occupancy/Usage Rate (18)		0.95 x Conservation Rate (5% Savings)		63.0%	74.0%	73.0%	49.0%	35.0%	52.0%	72.0%	77.0%	54.0%	42.0%	28.0%	57.0%	56.3%	
Average Daily Demand Per Month	x	0.23 gal/sf/day	11,284.40	7,109	8,350	8,238	5,529	3,950	5,868	8,125	8,689	6,094	4,739	3,160	6,432		
Net Membership (11)	- sf	0.24 gal/sf/day															
Occupancy/Usage Rate (18)		0.95 x Conservation Rate (5% Savings)		63.0%	74.0%	73.0%	49.0%	35.0%	52.0%	72.0%	77.0%	54.0%	42.0%	28.0%	57.0%	56.3%	
Average Daily Demand Per Month	x	0.23 gal/sf/day	-	-	-	-	-	-	-	-	-	-	-	-	-		
Net Meeting Space (11)	(3,120) sf	0.24 gal/sf/day															
Occupancy/Usage Rate (18)		0.95 x Conservation Rate (5% Savings)		63.0%	74.0%	73.0%	49.0%	35.0%	52.0%	72.0%	77.0%	54.0%	42.0%	28.0%	57.0%	56.3%	
Average Daily Demand Per Month	x	0.23 gal/sf/day	(711.36)	(448)	(526)	(519)	(349)	(249)	(370)	(512)	(548)	(384)	(299)	(199)	(405)		
Net Office Space (11)	(7,593) sf	0.24 gal/sf/day															
Occupancy/Usage Rate (18)		0.95 x Conservation Rate (5% Savings)		63.0%	74.0%	73.0%	49.0%	35.0%	52.0%	72.0%	77.0%	54.0%	42.0%	28.0%	57.0%	56.3%	
Average Daily Demand Per Month	x	0.23 gal/sf/day	(1,731.20)	(1,091)	(1,281)	(1,264)	(848)	(606)	(900)	(1,246)	(1,333)	(935)	(727)	(485)	(987)		
Ski Services (11)	27,586 sf	0.24 gal/sf/day															
Occupancy/Usage Rate (13)		0.95 x Conservation Rate (5% Savings)		73.0%	84.0%	83.0%	59.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	15.0%	67.0%	36.8%	
Average Daily Demand Per Month	x	0.23 gal/sf/day	6,289.61	4,591	5,283	5,220	3,711	629	629	629	629	629	629	943	4,214		
Transit Facilities (11)	4,000 sf	0.24 gal/sf/day															
Occupancy/Usage Rate (13)		0.95 x Conservation Rate (5% Savings)		73.0%	84.0%	83.0%	59.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	15.0%	67.0%	36.8%	
Average Daily Demand Per Month	x	0.23 gal/sf/day	912.00	666	766	757	538	91	91	91	91	91	91	137	611		
Amenities																	
Net Amenities (11)	32,500 sf	0.24 gal/sf/day															
Occupancy/Usage Rate (18) or (13)		0.95 x Conservation Rate (5% Savings)		63.0%	74.0%	73.0%	49.0%	35.0%	52.0%	72.0%	77.0%	54.0%	42.0%	28.0%	57.0%	56.3%	
Average Daily Demand Per Month	x	0.23 gal/sf/day	7,410.00	4,668	5,483	5,409	3,631	2,594	3,853	5,335	5,706	4,001	3,112	2,075	4,224		
Mountain Adventure Camp Wet Amenities (23)	32,926 gpd			32,926	32,926	32,926	32,926	32,926	32,926	32,926	32,926	32,926	32,926	32,926	32,926		
Total Average Daily Demand Per Month				56,640.5	60,655.4	60,290.4	51,530.6	43,900.2	48,880.8	54,740.2	56,205.1	49,466.7	45,951.0	42,209.5	54,450.5		
Monthly Demand (Acre-Feet)				5.4	5.2	5.7	4.7	4.2	4.5	5.2	5.3	4.6	4.4	3.9	5.2		58.3
Subtotal																	
Subtotal Average Daily Water Demand (gal)				184,077	210,343	207,955	150,648	114,698	154,066	200,382	211,961	158,698	130,909	98,848	169,750		185.9
Misc. Pool & Spa Daily Water Demand (24)				4,946	5,708	5,487	6,179	19,331	7,080	7,197	6,837	6,449	5,667	17,918	4,856		9.1
Total Average Daily Water Demand (gal)				189,023	216,051	213,441	156,827	134,029	161,146	207,579	218,797	165,147	136,575	116,766	174,607		
Sub-Total Monthly Demand (Acre-Feet)				18.0	18.6	20.3	14.4	12.8	14.8	19.7	20.8	15.2	13.0	10.8	16.6		195.0
Irrigation Demands (25) w/ 5% Conservation				-	-	-	1.3	1.8	2.2	2.5	2.2	1.6	1.0	-	-		12.7
Subtotal				18.0	18.6	20.3	15.8	14.6	17.0	22.3	23.0	16.8	14.0	10.8	16.6		207.7
System Losses (15) @ 11.1%				2.0	2.1	2.3	1.8	1.6	1.9	2.5	2.6	1.9	1.6	1.2	1.8		23.1
Total Monthly Demand (Acre-Feet)				20.0	20.6	22.6	17.5	16.2	18.9	24.7	25.5	18.7	15.6	11.9	18.5		230.8

Table 4 - Notes

**Estimated Net Increase in Annual Water Demands
Dry Water Years
The Village at Squaw Valley
Buildout Conditions**

- Demands shown are net of existing demands that currently exist within the Specific Plan Area.
- Unit demand factors are per SVPSD Design Standards less 10% to reflect indoor use only.

<u>Land Use</u>	<u>SVPSD Unit Demand Factor</u>	<u>Less 10%</u>	<u>Study Unit Demand Factor</u>
Lodging Units	100 gal/capita/day	(10)	90 gal/capita/day
Commercial/Amenities/ Other	See Note 11 gal/sf/day	n/a	See Note 11 gal/sf/day

- Occupancy/Usage Rates per Squaw Valley Ski Corporation estimates for post development activity levels (see Note 18).
- Intentionally Blank.

5. Project Peak Demand Calculation (Based on Projected Occupancy):

Winter:	Max Month =	23.5 Acre-Feet (March)
	Max Month =	190 gallons per minute
	Max Day =	475 gallons per minute (PF = 2.5 per SVPSD 2007 Capacity and Reliability Study Update)
	Peak Hour =	713 gallons per minute (PF = 3.75 (assumed at 1.5 x Max. Daily Demand P. F.))
No. Wells =	475 gpm / 200 +/- gpm/well at Duty Factor of 70% = 3.40	new wells
Assume	4	new wells to meet peak winter demands
Summer:	Max Month =	25.8 Acre-Feet (July)
	Max Month =	188 gallons per minute
	Max Day =	471 gallons per minute (PF = 2.5 per SVPSD 2007 Capacity and Reliability Study Update)
	Peak Hour =	707 gallons per minute (PF = 3.75 (assumed at 1.5 x Max. Daily Demand P. F.))
No. Wells =	471 gpm / 200 +/- gpm/well at Duty Factor of 70% = 3.48	new wells
Assume	4	new wells to meet peak summer demands

- Notes:
- SVPSD requires all system demands to be met with largest well out of service. Since the SVPSD system already meets this requirement, additional redundancy is not required.
 - Maximum Day Demands actually controls the total number of new wells required (assuming 100% of well capacity), not the above calculations. MDD calculations at full buildout requires a minimum of 4 new wells.
 - The results of groundwater modeling may recommend additional wells be constructed to optimize the well field system to reduce overall impacts to the aquifer.

6. Residential land uses based on Illustrative Land Use Plan plus 0%

<u>Land Use</u>	<u>Land Plan Unit Count</u>	<u>0%</u>	<u>Study Unit Count</u>
Lodging Units	850 Units	0	850 Units

- Summer period after snow melt ends is considered the critical demand/supply period when recharge from watershed is less than pumping requirements and groundwater elevations start to fall (typically July - October).
- Late Summer/Early Fall water supply indicated by yellow highlighting (max summer time draw on aquifer) is estimated at 88.1 acre-feet for normal water years and 84.6 acre-feet for dry water years.
- Assumes 40% Groups (1 Pop/Bedroom) and 60% Leisure (2 Pop/Bedroom) for blended average of 1.6 Pop/Bedroom
- Assumes 0% Groups (1 Pop/Bedroom) and 100% Leisure (2 Pop/Bedroom) for a blended average of 2.0 Pop/Bedroom
- Proposed new building areas per the December 2013 Illustrative Plan are as follows:

<u>Proposed Use</u>	<u>Square Footage</u>	<u>Demand Rate</u>	<u>Occupancy Type</u>
Based on SVPSD non-residential average demand factors (Note 26).			
Amenities			
Mountain Adventure Camp Dry Amenities (FEC)	30,000 sf		
Fractional Cabins	2,500		
Net Amenities	32,500	0.24 Lodging (18)	
Mountain Adventure Camp Wet Amenities	60,000	32,170 Wet area (23)	
Subtotal Amenities	92,500 sf		

Table 4 - Notes

**Estimated Net Increase in Annual Water Demands
Dry Water Years
The Village at Squaw Valley
Buildout Conditions**

Commercial/Other		
Retail		33,620 sf
Demo - Far East (Retail Warehouse)		(5,928)
Net Retail		<u>27,692</u>
		0.24 Lodging (18)
Restaurant/F&B		31,120 sf
Demo - Far East (Cantina)		(1,595)
Demo - Olympic House (Food & Bev)		-
Net F&B		<u>29,525</u>
		0.24 Lodging (18)
Hotel Common Area		49,493
		0.24 Lodging (18)
Meeting Space		12,000 sf
Demo - Olympic Valley Lodge (Meeting)		(15,120)
Net Meeting Sp		<u>(3,120)</u>
		0.24 Lodging (18)
Office		
Demo - Clock Tower		(2,593) sf
Demo - Olympic Valley Lodge (Office)		(5,000)
Net Office		<u>(7,593)</u>
		0.24 Lodging (18)
Ski Services		75,000 sf
Demo - Clinic		(1,519)
Demo - Building Services/Plumbing/BOH		(4,771)
Demo - Vehicle Maintenance		(14,000)
Demo - Groomers		(1,000)
Demo - Carpenter Shop & Storage		(4,304)
Demo - Uniforms		(3,720)
Demo - Mountain Operations		(2,800)
Demo - Ski Patrol		(2,480)
Demo - Ski Patrol Storage		(240)
Demo - Race Services		(740)
Demo - Ski School Locker Room		(4,430)
Demo - Snoventures		(2,360)
Demo - Race Team		(2,050)
Demo - Far East - Central Reservations		(3,000)
Net Ski Svc		<u>27,586</u>
		0.24 Mountain (13)
Transit Facilities		4,000
		0.24 Mountain (13)
Subtotal Commercial / Other		<u>127,583 sf</u>
Total		<u>220,083 sf</u>
Employee Housing (New & Replace Demo)		38,916 sf
Employee Housing Demolished		(13,872) sf
Total Commercial / Other/Employee Housing		<u>245,127 sf</u>

12. Net increase in building area is 250,189 sf. Existing facilities (including existing maintenance facilities) totaling 91,522 sf will be replaced with new facilities totaling 341,711 sf as determined below:

New Uses (Proposed)	Area (SF)
Retail	33,620 sf
Restaurant/F&B	31,120
Hotel Common Area	49,493
Meeting Space	12,000
Ski Services	75,000
Transit Facilities	4,000
Cabins	2,500
Mountain Adventure Camp Wet Amenities	60,000
Mt. Adventure Camp Dry Amenities (FEC)	30,000
Subtotal Commercial / Amenities/ Other	<u>297,733 sf</u>
Employee Housing (New & Replace Demo)	38,916 sf
Total Replaced	<u>336,649 sf</u>

Table 4 - Notes

**Estimated Net Increase in Annual Water Demands
Dry Water Years
The Village at Squaw Valley
Buildout Conditions**

<u>Existing Uses (Demolished)</u>	<u>Area (SF)</u>
Clinic	(1,519) sf
Race Team	(2,050)
Snoventures	(2,360)
Maintenance / Operations	(38,485)
Far East (Retail Warehouse)	(5,928)
Far East (Cantina)	(1,595)
Far East (Central Reservations)	(3,000)
Clock Tower	(2,593)
Olympic Valley Lodge (Meeting)	(15,120)
Olympic Valley Lodge (Office)	(5,000)
Employee Housing	(13,872)
Subtotal Demolished Facilities	(91,522) sf

NET ADDITIONAL BUILDING AREA 245,127 sf

13. Mountain Related Occupancy Rates Determination:

Dec - April 15% higher than Hotel Occupancy

<u>Month</u>	<u>FY08FY14</u>	<u>Plus</u>	<u>Subtotal</u>	<u>Roundup (Use)</u>
January	57.75%	15%	72.75%	73%
February	68.95%	15%	83.95%	84%
March	67.81%	15%	82.81%	83%
April	43.71%	15%	58.71%	59%
May	10.00%	0%	10.00%	10%
June	10.00%	0%	10.00%	10%
July	10.00%	0%	10.00%	10%
August	10.00%	0%	10.00%	10%
September	10.00%	0%	10.00%	10%
October	10.00%	0%	10.00%	10%
November	15.00%	0%	15.00%	15%
December	51.50%	15%	66.50%	67%

14. Employee Housing:

Total Employee Count proposed for Lot 4 =	300 Employees (204 Single Beds & 48 Double Beds)
Existing Employee Countd =	(99) Employees
New Employee Count =	201 Employees

15. System Loss Rate per SVPSD (June 2, 2015) based on metered demand and production for Years 2000-2014.

16. Typical well production ranges from 150-250 gpm / assume 200 gpm/well for study purposes.

Table 4 - Notes

**Estimated Net Increase in Annual Water Demands
Dry Water Years
The Village at Squaw Valley
Buildout Conditions**

17. Indoor use only.

18. Lodging Occupancy Rates Determination:

Utilize average monthly occupancy rates for The Village at Squaw Valley USA (Phases 1 and 2) from FY 08 - FY 14 plus 5% for future projections of utilization, except for August which is assumed to be +10%.

Month	FY08FY14	Plus	Subtotal	Roundup (Use)
January	57.75%	5%	62.75%	63%
February	68.95%	5%	73.95%	74%
March	67.81%	5%	72.81%	73%
April	43.71%	5%	48.71%	49%
May	29.17%	5%	34.17%	35%
June	46.47%	5%	51.47%	52%
July	66.44%	5%	71.44%	72%
August	66.06%	10%	76.06%	77%
September	48.31%	5%	53.31%	54%
October	36.32%	5%	41.32%	42%
November	22.37%	5%	27.37%	28%
December	51.50%	5%	56.50%	57%

19. Unit count and non-residential land uses based on assumption of Illustrative Land Use Plan plus 0% does not exceed maximum development levels contained in the VSP.

20. Numbers may not add due to round off error.

21. Water Storage Requirement (Full Occupancy Scenario/Normal Water Years):

Note: See Table 3 for Maximum System Demands (ADD, MDD & PHD)

	Storage
Operational Storage = 25% MDD:	
25% times	0.96 MGD
Fire Storage = 2,500 gpm for 2 hours (fire storage volume already exists - no new fire storage required):	
0 gpm times	2 Hrs.
Emergency Storage = 100% ADD =	
100% times	0.45 MGD
	0.24 MG (New)
	0.00 MG (Existing)
	0.45 MG (New)
Total	0.69 MG

22. Rooms Per Unit: A total of 1,493 bedrooms will be spread over a total of 850 units for an average density of 1.756 rooms per unit.

23. Mountain Adventure Camp includes an 60,000 sf Aquatic Center and a 30,000 sf Family Entertainment Center (FEC). Water demands for the FEC are calculated as standard non-residential areas using the a non-residential unit demand factor of 0.24 gallons per square foot per day. The water maximum daily water demand for the Mountain Adventure Camp with a maximum occupancy of 2,000 people was estimated by Aquatic Development Group (Cohoes, NY) on May 31, 2012 (as modified by MacKay & Soms in the MAC Aquatic Center Pool Water and Sewer Demands calculations dated 12/02/2014) as follows:

Demand	Usage
Backwash System (Daily)	11,375 gpd
Splashout Loss	3,276 gpd
Evaporation Loss	3,519 gpd
Restroom Demands	14,000 gpd
Total	32,170 gpd

24. Miscellaneous pool and spa water demands for hot tubs and pools assumes similar count and size as per Illustrative Concept Plan dated September 7, 2012 are estimated as follows:

Phase	Pools	Spas
I	5	10
II	6	12
III	n/a	n/a
IV	n/a	n/a
Total	11	22

Facility	Dimensions	Number	Area Sq. Ft.	Total Sq. Ft.	Volume Cubic Feet	Total Volume (cf)
Pool	20' x 40' x 4' Avg. Depth	11	800	8,800	3,200	35,200
Spa	10' x 15' x 4' Avg. Depth	22	150	3,300	600	13,200
Totals				12,100		48,400

Table 4 - Notes

**Estimated Net Increase in Annual Water Demands
Dry Water Years
The Village at Squaw Valley
Buildout Conditions**

Annual Demand Estimate:

Demand	Volume	Flushing	Evap. Loss Per Annum (Ft.)	Total Area (sf)	Annual Demand (cf)	AcFt Per Annum
Pools	35,200	2			70,400	1.62
Spas	13,200	12			158,400	3.64
Subtotal					228,800	5.25
Plus 20% Splash Allow.					45,760	1.05
Subtotal					274,560	6.30
Evaporation			4.5	12,100	54,450	1.25
Subtotal					329,010	7.55
Plus 20% Contingency					65,802	1.51
					Total (cf) 394,812	9.06

Assumptions:

1. Pools are flushed twice annually (Spring and Fall) and Spas are flushed monthly.
2. Splash Losses at 20% of subtotal of fill/drain and evap losses.
3. Evaporation Losses per California DWR CIMIS ETo Rate for Zone 13:

Month	ETo Rate (Inches/month)	Percentage	Ac-Ft/Month
January	1.24	2.28%	0.03
February	1.96	3.61%	0.05
March	3.10	5.71%	0.07
April	4.80	8.84%	0.11
May	6.51	11.99%	0.15
June	7.80	14.36%	0.18
July	8.99	16.56%	0.21
August	7.75	14.27%	0.18
September	5.70	10.50%	0.13
October	3.72	6.85%	0.09
November	1.80	3.31%	0.04
December	0.93	1.71%	0.02
Total	54.30 Inches 4.5 Feet	100.00%	1.25

4. Pool/Spa Flushing & Splash Allowance (Incl. 20% Splash Loss):

Month	Pool Flushing	Spa Flushing	Sub-Total	Splash Allow	Total
January	0.00	0.30	0.30	0.06	0.36
February	0.00	0.30	0.30	0.06	0.36
March	0.00	0.30	0.30	0.06	0.36
April	0.00	0.30	0.30	0.06	0.36
May	0.81	0.30	1.11	0.22	1.33
June	0.00	0.30	0.30	0.06	0.36
July	0.00	0.30	0.30	0.06	0.36
August	0.00	0.30	0.30	0.06	0.36
September	0.00	0.30	0.30	0.06	0.36
October	0.00	0.30	0.30	0.06	0.36
November	0.81	0.30	1.11	0.22	1.33
December	0.00	0.30	0.30	0.06	0.36
Totals (Ac-Ft)	1.62	3.64	5.25	1.05	6.30

Table 4 - Notes

**Estimated Net Increase in Annual Water Demands
Dry Water Years
The Village at Squaw Valley
Buildout Conditions**

5. Daily Totals by Month (Incl. 20% Contingency):

Month	Acre-Feet					Gallons Per Day
	Pool & Spa Flushing & Splash	Evap. Losses	Subtotal	Contg.	Total	
January	0.36	0.03	0.39	0.08	0.47	4,946
February	0.36	0.05	0.41	0.08	0.49	5,708
March	0.36	0.07	0.43	0.09	0.52	5,487
April	0.36	0.11	0.47	0.09	0.57	6,179
May	1.33	0.15	1.48	0.30	1.78	19,331
June	0.36	0.18	0.54	0.11	0.65	7,080
July	0.36	0.21	0.57	0.11	0.68	7,197
August	0.36	0.18	0.54	0.11	0.65	6,837
September	0.36	0.13	0.49	0.10	0.59	6,449
October	0.36	0.09	0.45	0.09	0.54	5,667
November	1.33	0.04	1.37	0.27	1.65	17,918
December	0.36	0.02	0.39	0.08	0.46	4,856
Totals	6.30	1.25	7.55	1.51	9.06	

25. Irrigation Demands

Assumptions:

- a. Area of landscaping for planning purposes (per Illustrative Land Plan June 6, 2014) = 6.65 Acres
- b. Tahoe Resource Conservation District recommends irrigation only during months of April - October.
- c. Drip Irrigation with Irrigation Efficiency (IE) of 90% assumed.
- d. Use "Landscape Coefficient Method" used for estimating landscape irrigation demand (ET_L) - UC Coop Extension (August 2000)
 - ET_L = K_L x ET_O
 - ET_O = Evapotranspiration Rate per CIMIS Data Base for Zone 13 (CIMIS 1999)
 - K_L = Landscape Coefficient = K_s x K_D x K_M
 - K_s = Species Landscape Coefficient (Above Average) = 0.4
 - K_D = Density Landscape Coefficient (Average) = 1.0
 - K_M = Microclimate Landscape Coefficient (Above Average) = 1.2
 - K_L = Landscape Coefficient = K_s x K_D x K_M = 0.48
- e. Theoretical Demand = ET_L + 12 inches/foot
- f. Assume plant palette per approved plant list in Specific Plan

Month	Monthly Irrigation Demand (Inches/Month)			Irrigation Rate (Feet/Month)			Irrigation Area (Acres)	Irrigation Demand / Month (AF/Mo) - including 5% Conservation
	ET _O	K _L	ET _L	Theoretical Demand	Irrigation Efficiency	Irrigation Demand		
January	1.24	0.48	0.60	0.05	90%	n/a	6.65	0.00
February	1.90	0.48	0.91	0.08	90%	n/a	6.65	0.00
March	3.10	0.48	1.49	0.12	90%	n/a	6.65	0.00
April	4.80	0.48	2.30	0.19	90%	0.21	6.65	1.35
May	6.51	0.48	3.12	0.26	90%	0.29	6.65	1.83
June	7.80	0.48	3.74	0.31	90%	0.35	6.65	2.19
July	8.99	0.48	4.32	0.36	90%	0.40	6.65	2.52
August	7.75	0.48	3.72	0.31	90%	0.34	6.65	2.18
September	5.70	0.48	2.74	0.23	90%	0.25	6.65	1.60
October	3.72	0.48	1.79	0.15	90%	0.17	6.65	1.04
November	1.80	0.48	0.86	0.07	90%	n/a	6.65	0.00
December	0.93	0.48	0.45	0.04	90%	n/a	6.65	0.00
Totals	54.24		26.04	2.17		2.01		12.7

26. Commercial (non-residential) unit water demands were developed by SVPSD from meter records for all PSD non-residential customers from 2005 - 2012 and is based on actual consumption of the maximum month of each calendar year divided by the square footage each non-residential customer occupies. The average of the unit demand factors derived from this data set were used to estimate the water demands for commercial non-residential land uses for the project. The resulting composite average day demand for the maximum months was determined to be:

SVPSD Survey 0.24 gpd/square foot.

Table No. 5
Village at Squaw Valley Conceptual Plan
Development Summary - New & Demolished Spaces

Parcel #	Land Use Description	Total		Net Total
		New	Demo	
Lodging (Keys)				
Condo Hotel				
1	Core - Condo Hotel (223 units)	346	-	346
1	West Wing - Condo Hotel (22 units)	34	-	34
3	Condo Hotel (98 units)	175	-	175
4	Condo Hotel (87 units)	156	-	156
6	Ski Services / Condo Hotel (17 units)	40	-	40
7	Condo Hotel (12 units)	28	-	28
9	Squaw Kids / Condo Hotel (58 units)	104	-	104
13	Condo Hotel (167 units)	298	-	298
15	Condo Hotel (88 units)	142	-	142
Timeshare				
14	Timeshare (47 units)	77	-	77
Fractional				
16	Fractional Cabins (17 units)	51	-	51
18	Fractional Cabins (14 units)	42	-	42
TOTAL KEYS ⁽¹⁾		1,493	-	1,493
Commercial/Other (Sq Ft)				
Amenities				
8	Mountain Adventure Camp / Ski Services	90,000	-	90,000
17	Fraction Cabins	2,500	-	2,500
Total Amenities		92,500	-	92,500
Retail				
1	Core - Condo Hotel	4,220	-	4,220
1	West Wing - Condo Hotel	-	-	-
3	Condo Hotel	3,250	-	3,250
4	Condo Hotel	6,150	-	6,150
6	Ski Services / Condo Hotel	1,500	-	1,500
7	Condo Hotel	1,500	-	1,500
9	Squaw Kids / Condo Hotel	3,000	-	3,000
13	Condo Hotel	3,000	-	3,000
14	Timeshare	2,000	-	2,000
15	Condo Hotel	3,000	-	3,000
17	Fraction Cabins	1,000	-	1,000
36	Shipping & Receiving	5,000	-	5,000
	Far East - Retail Warehouse	-	(5,928)	(5,928)
Total Retail		33,620	(5,928)	27,692
Restaurant / F&B				
1	Core - Condo Hotel	4,220	-	4,220
1	West Wing - Condo Hotel	-	-	-
3	Condo Hotel	3,250	-	3,250
4	Condo Hotel	6,150	-	6,150
6	Ski Services / Condo Hotel	2,000	-	2,000
7	Condo Hotel	2,000	-	2,000
9	Squaw Kids / Condo Hotel	3,000	-	3,000
13	Condo Hotel	3,000	-	3,000
14	Timeshare	2,000	-	2,000
15	Condo Hotel	3,000	-	3,000
17	Fraction Cabin Lodge	2,500	-	2,500
	Far East - Cantina	-	(1,595)	(1,595)
Total Restaurant / F&B		31,120	(1,595)	29,525

Table No. 5
Village at Squaw Valley Conceptual Plan
Development Summary - New & Demolished Spaces

Land Use		Total		
Parcel #	Description	New	Demo	Net Total
Hotel Common Areas				
1	Core - Condo Hotel	12,203	-	12,203
1	West Wing - Condo Hotel	1,478	-	1,478
3	Condo Hotel	4,755	-	4,755
4	Condo Hotel	4,936	-	4,936
6	Ski Services / Condo Hotel	1,814	-	1,814
7	Condo Hotel	1,814	-	1,814
9	Squaw Kids / Condo Hotel	4,129	-	4,129
13	Condo Hotel	8,603	-	8,603
14	Timeshare	2,124	-	2,124
15	Condo Hotel	4,008	-	4,008
17	Fraction Cabins	3,629	-	3,629
Total Hotel Common Area		49,493	-	49,493
Meeting Space				
1	Core - Condo Hotel	12,000	-	12,000
	Olympic Valley Lodge - Meeting	-	(15,120)	(15,120)
Total Meeting Space		12,000	(15,120)	(3,120)
Office				
	Demo - Clock Tower	-	(2,593)	(2,593)
	Demo - Olympic Valley Lodge (Office)	-	(5,000)	(5,000)
Total Office Space		-	(7,593)	(7,593)
Ski Services				
6	Ski Services / Condo Hotel	10,000	-	10,000
8	Mountain Adventure Camp / Ski Services	20,000	-	20,000
9	Squaw Kids / Condo Hotel	20,000	-	20,000
19	Mountain Maintenance	10,000	-	10,000
36	Shipping & Receiving	15,000	-	15,000
	Clinic	-	(1,519)	(1,519)
	Building Services / Plumbing / BOH	-	(4,771)	(4,771)
	Vehicle Maintenance	-	(14,000)	(14,000)
	Groomers	-	(1,000)	(1,000)
	Carpenter Shop & Storage	-	(4,304)	(4,304)
	Uniforms	-	(3,720)	(3,720)
	Mountain Operations	-	(2,800)	(2,800)
	Ski Patrol	-	(2,480)	(2,480)
	Ski Patrol Storage	-	(240)	(240)
	Race Services	-	(740)	(740)
	Ski School Locker Room	-	(4,430)	(4,430)
	Snoventures	-	(2,360)	(2,360)
	Race Team	-	(2,050)	(2,050)
	Far East - Central Reservations	-	(3,000)	(3,000)
Total Ski Services		75,000	(47,414)	27,586
Transit Facilities				
TC	Transit Facilities	4,000	-	4,000
Total Transit Facilities		4,000	-	4,000
Sub Total Commercial / Other Spaces		297,733	(77,650)	220,083
Employee Housing				
34 & 35	Employee Housing	38,916	-	38,916
	Employee Housing (Courtside)	-	(6,960)	(6,960)
	Employee Housing (Hostel)	-	(6,912)	(6,912)
Total Employee Housing		38,916	(13,872)	25,044
Total Commercial / Other Spaces		336,649	(91,522)	245,127

Notes:

(1) The number of keys is equal to the number of bedrooms. Water demand projections based on 1,493 bedrooms as compared with 1,493 keys shown above.

Appendix B

Absorption Schedule Technical Memorandum

To: Mike Geary, Squaw Valley Public Services District General Manager
From: Alex Fisch, Placer County Planning Services Division
Date: April 8, 2014
Subject: Village at Squaw Valley Specific Plan Water Supply Assessment

Placer County is the lead agency for the Village at Squaw Valley Specific Plan (VSVSP) project in compliance with the California Environmental Quality Act (PRC 2100 et. seq.). The County is preparing a Program EIR to analyze the environmental effects of project approval and implementation. To comply with the statutory requirements of CEQA, the County will analyze and disclose the impacts of the VSVSP project including analysis of the project's incremental contribution to cumulative effects considered together with other probable future projects. While there is no precise definition in CEQA for what is a probable future project, two approaches are prescribed. A list approach is commonly used whereby the lead agency will generate a list of "past, present and probable future projects producing related or cumulative impacts including, if necessary, those projects outside the control of the agency" (CEQA Guidelines § 15130). When utilizing the list approach Placer County would include approved projects currently under construction, projects that are approved that have not been constructed, and projects that are expected to be approved and constructed for which the County is currently processing an application(s) or has direct knowledge of the project and reasonably expects it to be carried out (including those outside the local agency control). The second approach prescribed by CEQA is to utilize projections contained in adopted local, regional, or statewide plan(s) or which are forecast from such plan(s). When plans do not include quantifiable projections, forecast growth projections can be developed in accordance with the adopted development regulations. Projections are often utilized for projects that are expected to build out over a relatively long period of time and the forecast timeframe will typically match the projected build out of the project.

For the VSVSP project, which is proposed to build out over a 25-year period, the County determined that it was appropriate to use both a list and forecast approach to determine cumulative development within the Olympic Valley study area¹. The cumulative development projections therefore include approved projects that have not yet been built, such as the Resort at Squaw Creek Phase 2 and the Olympic Estates Subdivision, project applications that the County has on file, and valley-wide development projections forecast out to 25 years². The forecast does not assign development to any specific properties nor grant or restrict any development rights. Rather, the forecast identifies a total development projection for use in the EIR cumulative impact analysis and SB 610 Water Supply Assessment.

The following text and tables details the cumulative list and projections prepared by Placer County.

¹ Regional development projections from neighboring communities such as Truckee, Alpine Meadows and Tahoe City are also included in the cumulative analysis. This memorandum deals specifically with the methodology used to prepare cumulative assumptions for the Olympic Valley study area in support of cumulative impact analysis within that community and the Water Supply Assessment.

² This memo does not describe linear utility projects within the Olympic Valley study area that may occur within the 25-year cumulative horizon such as the Squaw Valley Public Service District's Alternative/Supplemental Water Supply & Enhanced Utilities Feasibility Study preferred alternative.

Cumulative Projections

1. Development capacity is expressed in total bedrooms and commercial square footage in accordance with policies of the Squaw Valley General Plan, which is applicable to the entire Olympic Valley study area.
2. Cumulative projections include projects that are approved and are likely to be constructed and projects that the County is processing which have a reasonable expectation of being approved and constructed. This includes the approved Resort at Squaw Creek Phase 2 and the Olympic Estates Subdivision projects, and other projects that the County is currently processing including the Squaw Valley Ranch Estates, the Mancuso Rezone project, and redevelopment of the PlumpJack Hotel.
3. A parcel inventory of the study area was used to determine locations where additional development could be constructed during the 25-year cumulative timeframe and to verify that forecast development would not exceed the holding capacity of the Squaw Valley General Plan. The parcel inventory does not assign any development to any specific parcel. The forecast is a metric defining a number of bedrooms and commercial square-footage only and development could occur anywhere where it is authorized within the Olympic Valley study area. It is intended solely to provide a reasonable basis for predicting cumulative conditions within the 25-year time frame so that an appropriate cumulative impact analysis can be performed. The analysis is not intended to serve as a precise prediction regarding the amount of development that will occur on a particular parcel; rather, the analysis is a forecast of the cumulative, aggregate level of development that will exist in 25 years.

The results of the County’s analysis of approved projects, foreseeable projects, and forecast future development for the Olympic Valley study area are shown in the table below.

Cumulative List and Forecast to 2040

<i>Approved Projects</i>			
	<i>Units</i>	<i>Bedrooms</i>	<i>Commercial sq. ft.</i>
RSC Phase 2	441 condo units	464 bedrooms	--
Olympic Estates	16 residential units	64 bedrooms	--
<i>Foreseeable Projects</i>			
	<i>Units</i>	<i>Bedrooms</i>	<i>Commercial sq. ft.</i>
Squaw Valley Ranch Estates	8 residential units	40 bedrooms	--
Mancuso	4 residential units	20 bedrooms	--
PlumpJack Redevelopment	--	104 net hotel rooms/condo bedrooms	10,000 sq. ft. net new commercial
Olympic Valley Museum	--	--	14,500
<i>Forecast Development</i>			
	<i>Units</i>	<i>Bedrooms</i>	<i>Commercial sq. ft.</i>
Single-Family Residential	66	264	--
Resort/hotel/condo units	34	52	--
General Commercial	--	--	56,000
<i>Total Development Outside the Project Boundary</i>			
	569 units	1,008 bedrooms	80,500 sq. ft.
<i>Village at Squaw Valley Specific Plan Project Development</i>			
Resort Residential	600	1,243	--

Hotel	250	250	--
Employee Housing	21	264*	20,000
Net Other Commercial	--	--	200,083
Total Development			
	1,440 units	2,765 bedrooms*	300,583 sq. ft.

*264 employees in dormitory housing and studio units are included in the 2,765 total bedrooms of probable and forecast development. Total employees are utilized as the metric in recognition that demand for new infrastructure and services to serve dormitory employee housing are quantitatively distinct from new infrastructure and service demands created by construction of new hotel, condominium, and residential bedrooms.

Development Absorption

The following table details projected absorption rates for the project and for the cumulative development for the identified 25-year period in 5-year increments. To be conservative, the overall absorption rate is weighted to assume higher development rates in the near term for the VSVSP and for the cumulative projects/development. Absorption rates for the VSVSP assume a slightly higher rate of development in the near term due to the known tentative development schedule for the plan. Absorption rates for the VSVSP utilize increments of 35%, 20%, 20%, 15%, and 10% for each 5-year period and are expressed in units of bedrooms and commercial square footage. Commercial square footage for the VSVSP does not follow this formula precisely due to known amenities that are likely to be constructed in early phases of development, such as the Mountain Adventure Camp. Employee beds are calculated at corollary rates.

Absorption rates for the cumulative projects/development utilize increments of 25%, 25%, 20%, 20%, and 10% for each 5-year period and are also expressed in units of bedrooms and commercial square footage. Due to known commercial projects that are more likely to occur in the near term, commercial square footages do not follow this formula precisely.

Project Plus Cumulative Absorption Schedule

VSVSP Village Area		
<i>Year</i>	<i>Bedrooms</i>	<i>Commercial sq. ft.</i>
2020	522	104,940
2025	298	30,000
2030	298	30,000
2035	223	20,000
2040	152	15,143
Total	1,493	200,083*
VSVSP East Parcel		
<i>Year</i>	<i>Beds**</i>	<i>Commercial sq. ft.</i>
2020	92	15,000
2025	52	5,000
2030	52	--
2035	39	--
2040	29	--
Total	264	20,000
Cumulative projects/development		
<i>Year</i>	<i>Bedrooms</i>	<i>Commercial sq. ft.</i>
2020	252	24,500
2025	252	20,125
2030	201	14,000

2035	201	14,000
2040	102	7,875
Total	1,008	80,500

*The VSVSP is projected to construct a total of 277,733 square-feet of commercial uses, not including the 20,000 square-feet of commercial planned for the East Parcel. 77,650 square feet of the 277,733 square feet is replacement of existing commercial uses for a net total of 200,083 square feet of new commercial uses.

**Due to the dormitory and studio unit housing proposed for project-generated new employees, employee beds are utilized as the metric in recognition that demand for new infrastructure and services to serve employee housing are quantitatively distinct from new infrastructure and service demands created by construction of new hotel, condominium, and residential bedrooms.

Conclusions

The 25-year *cumulative list and forecast* includes all approved projects that are within the project vesting period, known active projects that are likely to be approved and carried out, and forecasted development for the 25-year planning horizon. The 25-year *project plus cumulative Absorption Schedule* identifies total development in excess of 20% beyond the prior 25 years of development within the Olympic Valley indicating that the quantity of development within the Olympic Valley study area for the identified 25-year period would exceed development that had occurred over the prior 25-year period and that the project development in this analysis would occur at a faster rate than historic levels. Based on observed development patterns, constraints and other factors, these figures will enable an appropriately conservative analysis of cumulative development and related environmental effects in the Olympic Valley and the VSVSP's potential incremental contribution to these cumulative effects. This will also enable an appropriately conservative analysis of the total water demand in order to complete the SB 610 Water Supply Assessment for this project, which will determine the availability of water for this same 25-year period.

**Attachment 2: The Village at Palisades Tahoe Specific
Plan Amendment – Water Infrastructure Master Plan
(Psomas September 15, 2025)**

TECHNICAL MEMORANDUM

To: Arden Hearing, Alterra Mountain Company
From: Megan Buche, PE - Psomas
Date: September 15, 2025
Subject: The Village at Palisades Tahoe Specific Plan Amendment
Water Infrastructure Master Plan



INTRODUCTION

The Village at Palisades Tahoe Specific Plan (VPTSP) was initially approved in 2016 and reaproved in 2024. Master Plans for wet and dry utilities were adopted at that time. Palisades Tahoe is now proposing revisions to the Specific Plan. Technical memoranda have been prepared to evaluate the changes in utilities infrastructure and parking needed to serve the VPTSP with the proposed changes. This technical memorandum addresses the changes in Water infrastructure that would be needed to serve VPTSP demand under the proposed amendments.

The proposed VPTSP reduces overall development intensity, including a decrease of 20% in commercial uses and 40% in residential uses. Other changes include rezoning Lot 12 from Village-Parking to Village Commercial-Core, which allows for lodging, parking and other uses. In addition, the zoning for Lots 16 and 18 was changed from Village Commercial-Neighborhood to Village-Forest Recreation. Also, the Mountain Adventure Camp would be reduced from 90,000 square feet to 72,000 square feet.

Due to the reduction in commercial and residential uses, the number of employees generated by the VPTSP will be lessened, resulting in a reduction in the amount of required workforce housing. The VPTSP proposes to provide housing for 296 employees (which includes replacement of demolished housing within the main Village. A minimum of 200 beds for employees will be provided on the East Parcel or in the Main Village.

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Given the reduced development scope, an update to the backbone infrastructure utility analysis is required to ensure that the proposed utility improvements align with the revised demand projections. Additionally, the removal of development from Lot 16 and Lot 18 has eliminated the need for utility and infrastructure improvements previously planned for those parcels.

SUMMARY OF UPDATES

As mentioned in the introduction, the total number of bedrooms has been reduced by 40% and the amount of commercial development is reduced by 20%. Below is a summary of proposed updates to the water infrastructure system for the Village full build-out condition.

Below is a list of additional updates with the proposed VPTSP amendment:

- Total reduction in water storage due to decreased residential and commercial demand.
- Reduction of total source water demand due to decreased development.
- Reduction in required infrastructure.
 - The water line located in Marmot Lane is no longer required.
 - The water line crossing at Washeshu Creek south of Lot 19 is no longer required.
 - The water service main lines servicing Lot 16 and Lot 18 are not required now that these lots are no longer being developed.
- There is a new water main located along the south side of south of Lot 12 to provide water service for future development and loop existing water infrastructure to maintain water pressure requirements.
- The total number of water wells and water treatment plants proposed for full buildout remains unchanged at four wells and two treatment plants. However, this is contingent on the actual yield capacity of the new wells. If the wells produce more than the assumed 200 gpm, the number of wells needed could be reduced accordingly.

EXISTING WATER SYSTEM

Based on the Olympic Valley Public Service District Water and Sewer System reports, the system has grown from approximately 788 connections to 900 connections since the original study in the provided in 2014 and subsequent updates through 2016. Even though the number of connections has increased since 2014 the water use has stayed constant since the original report.

Assuming that the existing wells are pumping for 6 hours a day, the existing water system can produce approximately 435,600 gallons per day. A breakdown of well production by year is shown in Table 2.

Table 1. Historic Well Production

	Well Production Averages (gpm)		
	2024*	2016*	2014*
Water Well #1R	380	389	400
Water Well #2R	330	323	350
Water Well #2R	110	120	130
Water Well #4R	Not in service	Not in service	Not in service
Water Well #5R	390	400	405
Horizontal well	Not in service	70	10
Total	1,210	1,302	1,295

*gpm averaged when wells were on and running

The existing system is equipped with three existing water storage tanks that have a total storage of 1,785,000 gallons which is summarized in Table 3.

Table 2. Existing Tanks

	Storage (gal)
West Tank	1,150,000
East Tank	500,000
Zone 3 Tank	135,000
Total	1,785,000

The existing water model provided by OVPSD to Psomas in 2021 shows that there is approximately 475 gpm of flow within the water model during peak hour.

DESIGN CRITERIA

To calculate the proposed full buildout condition for the Village Development, the following assumptions were carried over from the previous Water Infrastructure Technical Memos.

Occupancy Assumptions:

- Average day occupancy: 1.6 people per bedroom
- Peak day occupancy: 2.0 people per bedroom
- Maximum occupancy for:

- Average day (annual water loads): Based on previously calculated monthly rates (see Table 1)
- Peak monthly: Assumed at 85%
- Peak day: Assumed at 100%

Water Demand Assumptions:

- Average water demand: 90 gallons per day (gpd) per person
- Commercial water demand: 0.38 gpm per square foot
 - *Note: Mountain Adventure is classified as commercial*
- Peaking factor: 2.5 (between Average Daily Demand and Maximum Daily Demand)
- Maximum Daily Demand (MDD): Used to size wells, with a 70% duty factor.
- Peak Hour Demand (PHD): Used to size water lines.
 - PHD is 1.5 times the MDD.

Storage and Fire Protection Assumptions:

- Fire flow requirement: 2,500 gpm.
- Fire storage: Provided in existing tanks.
- Operational storage: 25% of MDD
- Emergency storage: Equal to ADD (Average Daily Demand)

Table 3 Occupancy Rates:

	January	February	March	April	May	June	July	August	September	October	November	December
Occupancy	58	79	78	54	40	57	77	82	59	47	33	62
Occupancy Unmanaged	29	39.5	39	27	20	28.5	38.5	41	29.5	23.5	16.5	31

FULL BUILDOUT DESIGN

In addition to the design parameters listed above, irrigation demands must also be considered. This analysis assumes the same irrigation demand as described in the September 2015 Squaw Creek Restoration Irrigation Demand Memo. This memo specified that the total annual irrigation demand for landscaping and restoration areas was estimated at 10.6 acre-feet. Of this, 8.8 acre-feet is expected to be used during the irrigation season (July through October), spanning 123 days. This irrigation demand is included with the water system analysis provided within this updated report.

These values were extrapolated to determine:

- Average Daily Demand (ADD)
- Maximum Daily Demand (MDD)
- Peak Hour Demand (PHD)

For PHD calculations, it was assumed that irrigation occurs over a 6-hour daily window. Refer to Table 4 for detailed projected demands for the development.

Additionally, the 2015 Memo specifies that creek restoration irrigation will be supplied via snowmaking wells. As a result, this component has been excluded from the source water and storage requirements discussed in this analysis.

Table 4. Buildout Water Demand

	Average Daily Demand (gpd)	Maximum Daily Demand (gpd)	Peak Hour Demand (gpm)	Annual Water Demand (ac-ft)
Indoor Water Use	170,133	639,000	665.63	142.1
Outdoor Water Use*	28,081	70,203	135.77	10.6
Total	198,241	639,000**	665.63**	152.7
<i>*Outdoor water average is only for 123 days</i>				
<i>** Total does not include outdoor water use due to peak usage occurring during winter months</i>				

The Total Average Daily Demand and Annual Water Demand account for both indoor and outdoor water use, as they are based on the annual average consumption. In contrast, the Maximum Daily Demand and Peak Hour Demand are derived from historical peak usage, which typically occurs during the winter months. Since outdoor irrigation is not in use during that time, it is excluded from these peak demand calculations.

Based on these calculations and the design criteria listed above, the full buildout requires 329,883 gallons of water storage. The total source water required is calculated with a 70% run time and results in approximately 634 gpm of source water.

This analysis assumes each well can produce 200 gallons per minute (gpm). Based on this yield, the full buildout would require four wells to meet the projected source demand of 634 gpm. However, if actual well capacity exceeds expectations, it may be possible to meet this demand with just three wells.

For comparison, the 2015 Technical Memo assumed the need for 680,000 gallons of water storage and 678 gpm of source capacity, also based on four wells.

The projected water storage requirement reflects a notable decrease, primarily due to its basis in average daily demand (ADD). As outlined earlier, the proposed development includes a reduction in residential and commercial intensity compared to the 2015 Technical Memo, resulting in a lower overall ADD.

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In the 2015 analysis, the annual water demand was estimated at 240.2 acre-feet per year, which served as the basis for the previous infrastructure sizing.

MARMOT LANE WATER LINE

A key revision to the previous plan involves reevaluating the proposed 10-inch water line along Marmot Drive. Initially intended to enhance fire flow, updated hydraulic modeling reveals that this line offers only marginal improvements to system pressures during fire flow conditions.

Importantly, existing infrastructure deficiencies are evident. Several lots currently fail to meet the required fire pressure when subjected to a 2,500-gpm fire flow. Fire flow deficiencies would also occur under future development scenarios, with or without the proposed Specific Plan, underscoring systemic limitations in the water system. However, the deficiencies would improve slightly with buildout of the Specific Plan due to proposed improvements to the water system

The following nodes in the OVPSD water model do not meet fire flow requirements under existing conditions:

- WFITTING-314
- PMP-2_NU
- WSERVICE-475
- WSERVICE-474
- WFITTING-718

The 2015 Master Plan proposed adding a water line along Marmot Drive in order to address these deficiencies. However, current modeling results confirm that the addition of the 10-inch line along Marmot Drive yields only minor pressure increases, and these critical nodes still fall short of fire flow standards. This further indicates that the low-pressure issue is inherent to the existing water system, not a consequence of new development.

Given the limited benefit of extending new infrastructure along Marmot Drive, and that buildout of the Specific Plan would neither cause nor exacerbate fire flow deficiencies (and would improve them slightly), it is recommended that this improvement be eliminated from the Water Master Plan

As noted, system-wide improvements associated with the full build-out condition are designed to enhance water pressure across the existing system, addressing longstanding deficiencies and delivering a more resilient and capable infrastructure. The water pressure for the lots within the VPTSP meet fire flow requirements in the full buildout condition.

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Certain water infrastructure previously proposed to support water pressure requirements may no longer be necessary. This includes the water main intended to serve Lots 16 and 18, as well as the water line along Marmot Lane. Additionally, the water line crossing at Washeshu Creek has been deemed unnecessary and removed from the list of proposed improvements.

PROJECT PHASING

Since the original phasing plan was developed, a new well has been constructed for a parcel that has not yet been built out. The Palisades development team is exploring the possibility of temporarily utilizing this well during the initial phases of the project, or until the parcel is developed. Ultimately, Palisades will construct the additional wells necessary to meet the capacity and storage requirements outlined in the Full Buildout scenario described above. The previous report assumed each well would produce 200 gallons per minute (gpm). However, the actual well capacity cannot be confirmed until test wells are drilled. Future wells may yield more or less than this estimate, which could affect both the timing and number of wells required.

Similarly, the storage capacity of the existing tank is currently unknown. As a result, the timing assumptions from the original phasing report have been retained. Given the significant reduction in overall storage demand, it is possible that the tank may not be needed until a later phase than previously anticipated.

CONCLUSION

In conclusion with the reduced bedroom count and reduced commercial area, the infrastructure needed has been reduced.

Reduced Infrastructure Requirements: The total number of bedrooms is reduced from 1493 listed in the 2015 Technical Memo to 896 plus East Parcel development in the 2025 proposal. Due to a reduction in bedroom count and commercial area, the overall infrastructure needs have decreased.

Based on the information provided in the 2015 Technical Memo, the water storage requirement for the proposed 2025 Specific Plan has been reduced from 680,000 gallons to 251,316 gallons. Additionally, the source water demand has reduced from 678 gpm to approximately 634 gpm (or 639,000 gallons/day).

Certain water infrastructure previously proposed to support water pressure requirements may no longer be necessary. This includes the water main intended to serve Lots 16 and 18, as well as the water line along Marmot Lane. Additionally, the water line crossing at Washeshu Creek has been deemed unnecessary and removed from the list of proposed improvements.

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Phasing Assumptions: The phasing strategy for Village development should consider if existing wells have available capacity and can temporarily be brought online to serve early phase needs. If the unused well can be utilized during Phase 1, certain infrastructure components may be deferred. Nonetheless, all infrastructure outlined for the full buildout is assumed to be necessary.

Well Capacity Assumption: This analysis assumes each well will yield 200 gallons per minute (gpm). The full buildout is projected to require four water wells and two water treatment plants, based on an assumed well capacity of 200 gpm. If actual well yields exceed this estimate, the total infrastructure required may be reduced, as fewer wells and potentially less treatment capacity could be sufficient to meet demand.

Please call with any questions at (916) 788-4845.

Thank you,

P S O M A S



Megan Buche, PE
Project Manager, Associate

APPENDICES:

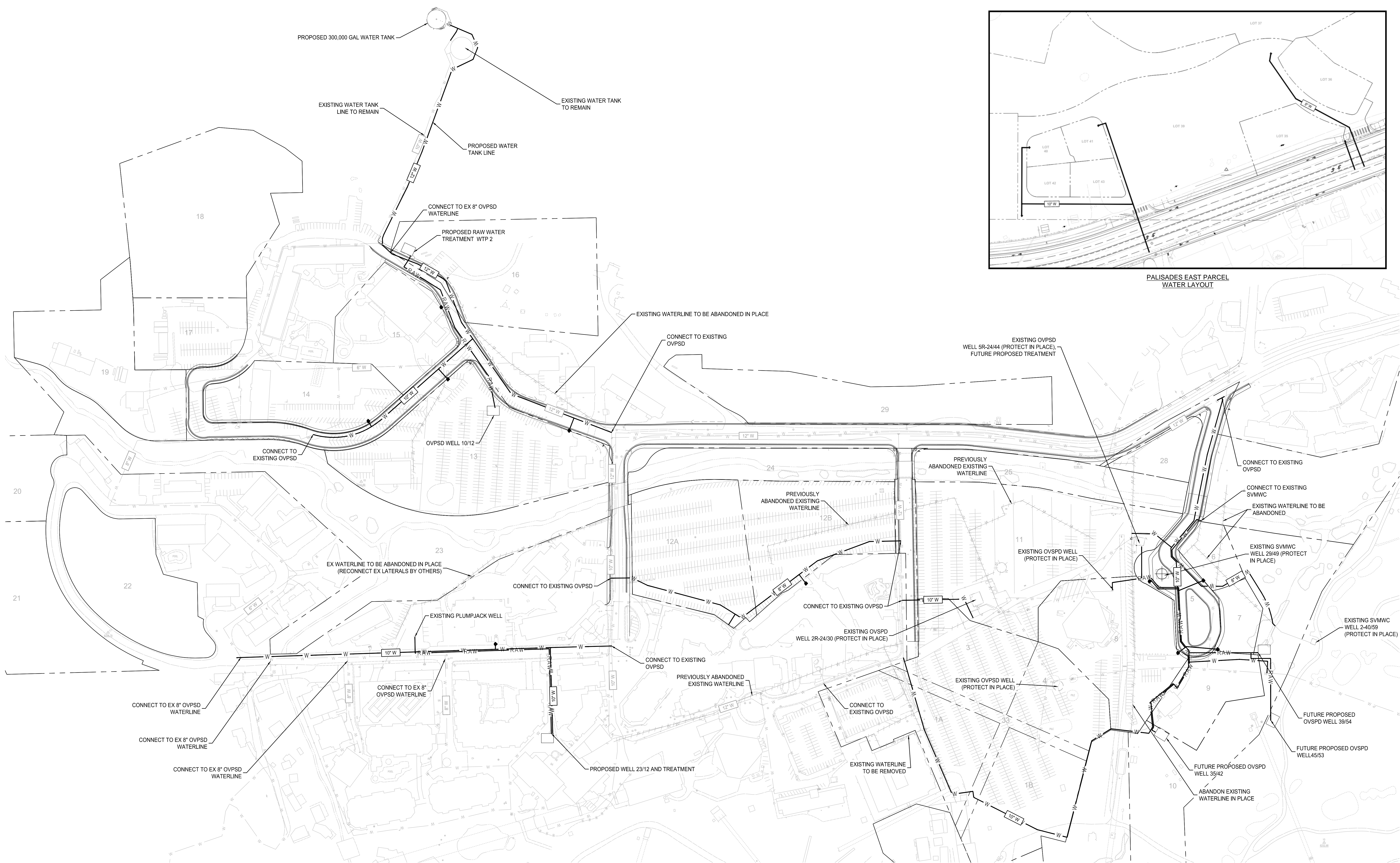
- A. Water System Infrastructure Exhibit

REFERENCES:

- A. Water Master Plan, McKay and Somps, 4/18/2016

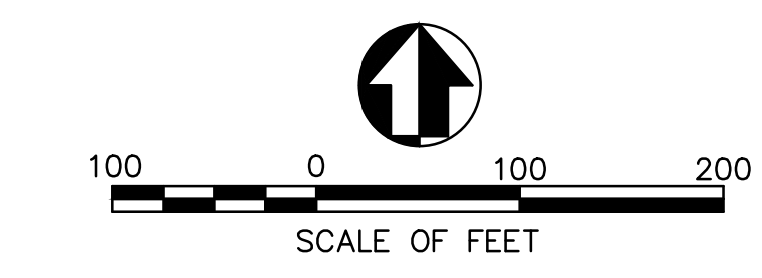
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Appendix A Water System Infrastructure Exhibit



PALISADES EAST PARCEL WATER LAYOUT

PALISADES VILLAGE WATER EXHIBIT



TO: David Hunt, P.E.
Olympic Valley Public Service District

FROM: Alex Stodtmeister, P.E.
Ben Dallas, E.I.

REVIEWED: Luke Tipton, P.E.

DATE: 6/10/2026

PROJECT: Olympic Valley Public Service District

SUBJECT: VPTSP Water System Capacity Analysis



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1.0 PURPOSE

This memorandum presents an evaluation of hydraulic capacity of the Olympic Valley Public Service District's (District) water distribution system and will serve as the basis for identifying potential impacts from projected buildout development in the Valley, including the Village at Palisades Tahoe Specific Plan (VPTSP).

This memo was originally prepared in 2015 during development of the VPTSP Draft Environmental Impact Report (EIR). The VPTSP was originally approved by the Placer County Board of Supervisors in 2016 and re-approved in 2024 as a large scale, mixed-use specific plan with 1,493 medium and high-density resort lodging bedrooms, employee housing, and a variety of commercial and recreation uses. Over the past ten years, the project has been altered based on legal challenges. The currently proposed development plan includes a reduction of 40 percent of resort lodging bedrooms and a 20 percent reduction in commercial floor area. The County prepared an Addendum to the previously certified Environmental Impact Report (EIR) and the VPTSP was approved by the Placer County Board of Supervisors on May 12, 2026.

Based on this, alongside changes to non-project buildout water demand projections and an analysis of recent historic water demands, the District is updating the water system capacity analysis.

The evaluation was performed using the District's hydraulic model and includes the following scenarios:

1. Existing water distribution system
2. Existing water distribution system + VPTSP at Buildout
3. Existing water distribution system + VPTSP at Buildout + Projected Buildout Development

Each scenario was modeled under maximum day demand (MDD), MDD plus fire flow, and peak hour demand (PHD) conditions.

The evaluation will define the short and long term water distribution system capital improvements necessary to satisfy the capacity requirements defined in the District Water Code and California Waterworks Standards.

2.0 BACKGROUND

2.1 PREVIOUS MODELING EFFORTS

ECO:LOGIC Engineering developed a hydraulic model of the District's water distribution system using Haestad Methods WaterCAD v4.5 in 2001 (SVPSD Water Model, April 9, 2001, ECO:LOGIC Engineering). The data for this model, including existing MDD, pipe sizes, node elevations, and system layout was taken

from a previous water model prepared by Auerbach Engineering Group and West Yost & Associates which used the software KYPIPE. The original model used a MDD of 656 gallons per minute (gpm). The modeling effort in 2001 included the addition of 170 gpm of additional MDD to account for water demands for projected development at that time, including the Intrawest Phase 1 project, bringing the total MDD to 826 gpm. The 2001 modeling project also included a field calibration effort, which included flowing two fire hydrants: one each on the east side and west side of the Olympic Valley (Valley) (SVPSD Water Model Calibration, December 20, 2001, ECO:LOGIC Engineering). The results of this modeling effort indicated that the system had no existing hydraulic deficiencies.

The model was subsequently utilized in 2007 to assess the effects of additional water demands from the proposed Everline Resort & Spa (ERS) Phase 2 development. An additional 107.4 gpm of MDD was added to the system to account for the estimated ERS Phase 2 water demands. For this work, the model was analyzed with a total MDD of 934 gpm as well as a fire flow of 2,500 gpm at the ERS. The model results indicated that, as the system was currently operated, all water for the ERS was supplied from the 500,000 gallon East Tank and that the existing 10-inch waterline between the main well field (West Tank zone) and the ERS operates normally closed. Under fire flow conditions, the East Tank would drain at a rate exceeding 2,500 gpm and the East Tank Booster Pump Station, with a capacity of 225 gpm, would not be able to replenish the tank in a timely manner. Based on this, it was recommended that a pressure reducing valve (PRV) be installed between the East Tank and the ERS and that the 10-inch waterline be activated so that the ERS would be supplied by the 1.15 million gallon West Tank zone, and supplemented in a fire flow event by flow from the East Tank through the recommended PRV.

2.2 2012 WATER MODEL UPDATE

The water model was updated and recreated using Bentley's WaterGEMS software in 2012. The model geometry was created using the District's GIS information, and water demands for the District were updated in terms of both quantity and accuracy of spatial location. DOWL utilized primary sources of information to update the water model which included the following:

- Previous water system model pipe configuration, including attribute information of pipe size and material
- Field GPS data for valves, meters, and hydrants
- Aerial photography
- Limited record drawing information
- Elevation data generated using available topographic survey data as well as USGS elevation data

In assigning water demand data, customer metered data for 2011 was geocoded to Placer County parcel data so that the spatial distribution of demands could be accomplished by individual meters. Based on this, model scenarios were created using the 2011 average day demand (ADD), as well as MDD using a peaking factor of 2.5. The 2011 ADD was 206 gpm (based on production data), and included an unbilled water percentage of 13 percent, which was spread evenly across each metered connection. Finally, the model was further calibrated using current well and booster pump station pump curves and operational settings for tank levels and PRV settings. The model was subsequently converted into the Innovyze InfoWater platform and has since been converted into the Autodesk InfoWater Pro platform.

2.3 2025 WATER MODEL UPDATE

The water model was further updated and calibrated over a three-year period from 2020 to 2022. The model updates were done in support of three different projects: the West Tank Relining Project, the Pressure Zone 1A Basis of Design Report, and the OVPSD-OVMWC Intertie Basis of Design Report.

Additionally, portions of the water model were updated in 2025 in support of this memorandum. The model updates include changes to the model geometry, demands, operations, and calibration.

Model geometry changes were based on infrastructure projects completed since the previous water model update. This includes a pressure reducing valve (PRV) being placed in the Well 5R wellhouse to allow Zone 2 water to feed into Zone 1 in the event of an emergency. Additionally, the OVPSD-OVMWC intertie project infrastructure was included. Outside of infrastructure project changes, elevation updates to key infrastructure based on survey were done for tanks, pump stations, wells, and PRVs. All other model junction elevations were updated with LiDAR data provided by the District in 2021.

Model demand updates were made to baseline model demands, as well as demand scenarios. Previously, all demand scenarios were run as steady state, but in 2020 extended period simulation (EPS) scenarios were created for ADD and MDD. The baseline demands of the model were updated with the ADD, MDD, and PHD demands calculated as a part of this effort. The baseline demands were edited by performing a global edit on the previous demand scenarios, so that the total system baseline demand matched those presented in this memorandum. As the global edit merely multiplies all demands within a model scenario by a set factor to achieve the desired system wide demand, the geometric allocation of said demands was not updated.

Model operational data for the District's system included updated system pump curves for all wells and booster pump stations within the District. Incorporation of the District's control strategy for the system was brought into the model in support of developing the EPS scenarios for ADD and MDD.

The model was calibrated in 2021 based on fire flow tests performed by District staff in 2020. Using the data collected from these fire flow tests, along with system information at the time of testing, the Hazen-Williams friction values (C-Values) were adjusted using the InfoWater Pro Calibrator tool. This tool uses a genetic algorithm that adjusts the friction of the system pipes based on pipe material in an effort to closely match the real world fire flow testing data procured. This provides a more refined calibration of the model, in conjunction with broader calibration efforts such as demand and model elevation updates.

3.0 WATER CAPACITY ANALYSIS

3.1 EXISTING CONDITIONS WATER DEMANDS

As part of this VPTSP water system capacity analysis, the model was further updated to allow for modeling the effects of proposed and future development within the Valley.

As previously mentioned, the water model was created based on the spatial distribution of metered water demand data for 2011.

This current model update included revising the model demands to reflect production data from 2015 to 2024 but did not update the spatial distribution of demands. The yearly production data for this time period was used to calculate the system wide ADD. Daily production data for the entire 10-year period was unavailable, however daily production data covering 2020 to 2024 yielded an average MDD:ADD peaking factor of 2.08. This MDD:ADD peaking factor was then multiplied by the newly updated ADD to determine the system wide MDD. A previous analysis of District water usage performed by the District in 2021 identified a PHD:MDD peaking factor of 2.21. This PHD:MDD peaking factor was then multiplied by the newly updated MDD to determine the system wide PHD. Based on this, the existing system condition scenario base model was updated with the following demands:

- ADD: 201 gpm
- MDD: 418 gpm
- PHD: 923 gpm

The peaking factors associated with these demands include:

- MDD:ADD = 2.08
- PHD:MDD = 2.21
- PHD:ADD = 4.60

3.2 VPTSP PROJECT WATER DEMANDS

VPTSP consultants provided a detailed analysis of the total development and potential water demands associated with the proposed project. This analysis serves as an update to their previous 2015 analysis. The water demand analysis for the project was submitted in September 2025. While the updated analysis provided a projected VPTSP buildout demand, the projected buildout demands used for this analysis were determined using a different methodology.

Demands for the VPTSP were developed using the total projected development data from The Village at Palisades Tahoe Specific Plan Amendment – Water Infrastructure Master Plan (Psomas September 15, 2025), comprising the total commercial building square footage, and expected resort bedrooms. The projected buildout demand for the VPTSP was calculated using the provided number of bedrooms and commercial square footage, which were then multiplied by resort specific generation rates developed as a part of this analysis by DOWL, through an analysis of the District customer meter and water production data. Demands for irrigation and the Mountain Adventure Camp (MAC) were taken directly from the Psomas memorandum. Demands for the MAC include filter backwash and pool refill rates, with a total combined flow of 24 gpm. The total annual demand estimate for the VPTSP project at buildout is 137 acre-feet, or 85 gpm on an ADD basis. However, MAC and irrigation demands on an annual basis lower the average daily flow rate for these entities due to their seasonality. Once adjusted for their seasonal use, the ADD for VPTSP is projected at 138 gpm. This includes a 14.3 percent factor to account for system unbilled water. However, the annual projected buildout demands were calculated with an average occupancy rate of 61 percent included. For the purposes of this capacity analysis, all projected demands used for the water model were adjusted to be at 100 percent occupancy, as this would better represent true daily and hourly demands, as occupancy rates are calculated on a monthly basis. This adjustment updates the VPTSP projected ADD to 166 gpm. MDD and PHD were calculated using the peaking factors presented in Section 3.1. A summary of these water demands is presented below:

- ADD: 166 gpm
- MDD: 219 gpm
- PHD: 454 gpm (includes 24 gpm for pool refill rates)

The projected VPTSP water demands were added to the appropriate nodes in the water model.

3.3 NON-PROJECT BUILDOUT PROJECTION WATER DEMANDS

The non-project buildout water demand projections for the District are based on the existing historical water demands, future projected water demands associated with the VPTSP project, the ERS Phase 2, and non-project demands associated with the buildout projection of the reasonably foreseeable growth. The District performed an analysis to project non-project buildout water demands based on approved development projects that have not yet been built, known development proposals, and an analysis of developable parcels in the Valley that are either vacant or under-developed based on the 1983 Squaw Valley General Plan & Land Use Ordinance. Table 1 presents the land use and parcel data for these

properties, as well as a summary of the number of bedrooms and commercial square footage associated with the buildout projection. Figure 1 provides the location of the identified parcels.

The District's analysis identified single-family residential (SFR), multi-family residential, and commercial development potential for approved projects, foreseeable projects, and forecasted development. Ultimately, estimated water use is based on the number of lodging units (bedrooms) and commercial square footage as well as the following water demands factors:

- Single-Family Residential: 309 gpd/unit
- Multi-Family Condo: 92 gpd/unit
- General Commercial: 0.048 gpd/square foot
- Resort Commercial: 0.249 gpd/square foot
- Resort Lodging: 125 gpd/bedroom

A 14.3 percent factor was added to these water demand factors to account for system unbilled water.

Table 1: Olympic Valley General Plan Buildout Development Projections

APN	Address	Common Name	Zoning	Buildout Residential (Units)	Buildout (Bedrooms)	Buildout (Commercial Square Footage)	Customer Type
Resort Lodging/Commercial							
096-230-036	3039, 3041 River Road	7-11, Tahoe Dave's Skis & Boards	EC	--	147	15,490	Resort Lodging / Commercial
096-290-056	285, 100, 1, 101 Squaw Valley Road	Squaw Valley Park - Snow Museum	FR	--	0	20,000	Commercial
096-290-011	Squaw Valley Road	Henrikson Parcel	EC	--	0	12,000	Commercial
096-101-009	1604 Squaw Valley Road	Post Office, Unofficial Building	VC	--	85	1,264	Resort Lodging / Commercial
096-540-017	Chamonix	Carville Granite View	VC	--	66	0	Resort Lodging
SUBTOTAL RESORT LODGING/COMMERCIAL				--	298	48,754	--
Single-Family Residential							
Various	Public Service District	Public Service District	--	40	--	--	SFR
096-290-050 096-230-062	325 Squaw Valley Road	Sierra Family Meadows	HDR-20	10	--	--	SFR
096-540-018 096-540-019 096-540-020	Washoe Dr. Extension	Carville SFR - 3 SFR lots	LDR-4	3	--	--	SFR
096-060-049	1525 Squaw Valley Road	Stables	HDR-25	8	--	--	SFR
096-340-008	448 Squaw Peak Road	Tiny Homes Parcel	HDR-25	4	--	--	SFR
096-230-028	No Address (above Tiger Tail)	Mancuso SFR	CP	4	--	--	SFR
SUBTOTAL SINGLE-FAMILY RESIDENTIAL				69	--	--	--
Everline Resort & Spa Phase II							
096-060-072	350 Squaw Creek Road	Phase 2A Townhomes	HDR-20	--	460	--	Resort Lodging
096-290-075	310 Squaw Creek Road	Phase 2A Townhomes	HDR-20	--		--	Resort Lodging
096-290-074	300 Squaw Creek Road	Phase 2A Townhomes	HDR-20	--		--	Resort Lodging
096-290-070	320 Squaw Creek Road	Phase 2B/C Mid-Rise	HDR-20	--		--	Resort Lodging
096-290-071	330 Squaw Creek Road	Phase 2B/C Mid-Rise	HDR-20	--		--	Resort Lodging
096-290-065	340 Squaw Creek Road	Phase 2B/C Mid-Rise	HDR-20	--		--	Resort Lodging
SUBTOTAL EVERLINE RESORT & SPA PHASE II				--	460	--	--
TOTAL				69	758	48,754	--

The projected ADD associated with the SFR parcels is shown in Table 2.

Table 2: Projected Water Demands for Vacant SFR

# Lots	Demand Factor (gpd/lot)	Total Demand (gpd) ¹
69	309	21,320
	ADD, gpm	15

Table 3 presents the ADD water demands for multi-family residential and commercial development. The water demands shown represent the ADD at 100 percent occupancy. Actual water demands for multi-family residential and commercial development will be dependent on occupancy rates in the Valley. Occupancy rates in an alpine resort type community vary by season with higher occupancies occurring during the winter ski season and summer months of July and August and lower occupancy rates seen during the shoulder spring and fall months. Occupancy rates used to determine monthly water use for the buildout projection analysis were originally presented by VPTSP in their 2015 analysis and were based on a review of Village at Squaw Valley USA occupancy data for fiscal years 2008-2014. The District determined that 5 percent be added to the monthly rate of the previous occupancy data for use in their buildout projection analysis. This yields an average occupancy rate of 61 percent. For the purposes of this capacity analysis, all projected demands used for the water model were adjusted to be at 100 percent occupancy, as this would better represent true daily and hourly demands, as occupancy rates are calculated on a monthly basis.

Table 3: Projected Water Demands for Resort and Commercial at 100% Occupancy

Resort Lodging Water Demand			
Category	Number of Bedrooms	gpd/bedroom	Total Demand (gpd)
Resort Bedroom	758	125	94,951
Commercial Water Demand by Land Use			
Category	Commercial sf	gpd/sf	Sq. Ft. Demand (gpd)
General Commercial	32,000	0.048	1,546
Resort Commercial	16,754	0.249	4,179
Total			100,676

Table 4 provides a summary of ADD, MDD and PHD water demands for the non-project buildout projections.

Table 4: Projected ADD, MDD and PHD Water Demands Non-Project Buildout Projections

Land Use	ADD, gpm	MDD, gpm	PHD, gpm
Residential	15	31	68
Commercial/MFR/Resort	70	145	321
Total	85	176	390

Projected buildout water demands were added to the node nearest the identified developable parcel in the model.

3.4 SCENARIOS

Three model scenarios were developed to assess the water distribution system capacity impacts associated with projected buildout water demands, as listed below.

¹ Total includes 14.3% system water loss to demand factor.

1. Existing water distribution system
2. Existing water distribution system + VPTSP at Buildout
3. Existing water distribution system + VPTSP at Buildout + Non-Project Projected Buildout Development

Each scenario was modeled under MDD, MDD plus fire flow, and PHD conditions. Fire flow was modeled using 1,000 gpm for residential parcels and 1,500 for commercial parcels.

The water demands associated with each scenario are summarized in Table 5. The demands for the existing model conditions are defined in Section 3.1. The demands for the VPTSP and buildout are described in Sections 3.2 and 3.3.

Table 5: Water Distribution System Demands in gpm

	ADD	MDD	PHD
Existing Model Conditions ²	201	418	923
VPTSP Demand ³	166	219	454
Buildout Demand ⁴	85	176	390
Model Scenarios			
Existing System	201	418	923
Existing System + VPTSP	367	637	1,377
Existing System + VPTSP + Buildout	452	813	1,767

3.5 CAPACITY FOR EVALUATION CRITERIA

The criteria for evaluating water system capacity includes components source capacity, storage, and distribution system hydraulic capacity as defined in Chapter 16 of the California Waterworks Standards. The criteria also includes fire flow and duration requirements as defined by the California Fire Code (CFC) and National Fire Protection Association (NFPA).

3.5.1 SOURCE CAPACITY

Source capacity is defined in the California Waterworks Standards §64554 New and Existing Source Capacity. This section requires that all public water systems using groundwater only are required to meet the system’s MDD at all times, with the largest source out of service. This section also requires a system to be able to meet four hours of PHD with source capacity, storage capacity, and/or emergency source connections. Both the MDD and PHD requirements are to be met in the system as a whole and in each individual pressure zone.

The District currently meets this source capacity requirement with existing Wells 1R, 2R, and 5R. With the addition of the VPTSP and non-project buildout development projections, additional wells will be added to the system to satisfy this criterion.

² ADD based on average water production data for 2015-2024. MDD and PHD based on peaking factors of MDD:ADD = 2.08 and PHD:ADD = 4.60.

³ Based on generation rate analysis provided by DOWL. VPTSP irrigation and pool demands for the MAC from Psomas VPTSP Technical Memorandum, September 15th, 2025.

⁴ Based on generation rate analysis provided by DOWL, including SFR, MFR, Commercial.

3.5.2 STORAGE CAPACITY

The District defines total storage capacity as the total volume required for operating storage, emergency storage, and fire flow storage. A public water system should maintain an operating storage volume based on the system's capacity to produce water, to be sufficient for the system to meet the requirements of MDD. With the District's water supply wells able to satisfy the MDD requirement, operating storage is necessary to supply peak hour water demands that exceed production capacity on the maximum day of use. For this purpose, a value of 25 percent of MDD was used to calculate operating storage. For emergency storage, a capacity equal to one ADD was used. Finally, fire storage was calculated based on a 1,500 gpm, 4-hour duration fire event (360,000 gallons) for commercial properties, and 1,000 gpm for 1 hour duration (60,000 gallons) for residential fire flow.

3.5.3 SYSTEM PRESSURES AND VELOCITY

Minimum system pressures are defined in the California Waterworks Standards §64602 Minimum Pressure. This section requires minimum operating pressures to be maintained throughout the system of not less than 20 pounds per square inch (psi) at all times, including during conditions of MDD with a fire flow event.

Based on the criteria above, the minimum system pressure requirements for the existing system (Scenario 1) are listed below.

- 20 psi during MDD
- 20 psi during PHD
- 20 psi during MDD plus fire flow

Velocity criteria are not specifically addressed in the California Waterworks Standards. Velocity criteria are aimed at limiting high head losses in water distribution and transmission mains, as well as reducing the likelihood of hydraulic surges. Velocity criteria used in this analysis are listed below.

- Velocity shall be less than 8 feet per second under all conditions except fire flow
- Velocity shall be less than 20 feet per second under fire flow conditions

3.5.4 FIRE FLOW AND DURATION REQUIREMENTS

Section B105.1 of the CFC 2025 sets fire flow requirements for one- and two-family dwellings, including single and multi-family residential land uses. Fire flow and duration requirements are based on building occupancy and construction type, floor area, and whether automatic fire sprinklers are installed.

Tables B105.1(1) and (2) set the required fire flow and duration for residential occupancy types. Fire flow requirements for residential construction include the following:

- 0-3,600 square feet of floor area is 1,000 gpm for a 1-hour duration for unprotected (non-sprinklered) structures and 500 gpm for a ½ hour duration for protected (sprinklered) structures.
- >3,600 square feet of floor area is 1,750 gpm for a 2-hour duration for protected structures and 875 gpm for a 2-hour duration for protected structures.

All residential buildings in the Valley >3,600 square feet are assumed to have a fire sprinkler system. Not all residential buildings <3,600 square feet have fire sprinkler systems. Based on this, the maximum residential fire flow requirement would be 1,000 gpm for a 1-hour duration.

Section B105.2 sets fire flow requirements for resort and general commercial buildings and attached condominiums and apartment buildings. Fire flow and duration requirements are based on building occupancy and construction type, floor area, and whether automatic fire sprinklers are installed. All commercial buildings in the Valley have fire sprinkler systems, including both resort and general

commercial properties. Condominium and apartment buildings in the Valley are also equipped with fire sprinkler systems.

An analysis performed by the District’s fire prevention officer showed fire flow requirements ranging from 2,250-6,000 gpm with durations between 2-4 hours for existing buildings in the Valley. The larger fire flow requirements are resort commercial and condominium complex properties. Table B105.2 of CFC allows for a reduction in fire flow requirements for buildings equipped with approved fire sprinkler systems. In no case shall the required fire flow be less than 1,500 gpm for the durations stated in Table B105.1(2). Based on this analysis, the commercial and condominium/apartment fire flow requirements would be 1,500 gpm for a 4-hour duration.

4.0 CAPACITY ANALYSIS RESULTS

4.1 SCENARIO 1: EXISTING SYSTEM

The existing system is made up of three pressure zones; the West Tank Zone 1 (1.15 million gallons storage), the East Tank Zone 2 (550,000 gallons storage), and Zone 3 (135,000 gallons storage). The water supply wells provide supply to the West Tank Zone and storage tank. The East Tank Zone is supplied from a 220 gpm booster pump station near Olympic Valley Road and Resort Road. Zone 3 is supplied by a 100 gpm booster pump station located on Sierra Crest Trail. Figure 2 shows the existing pressure zone boundaries as well as water sources, water storage tanks, and booster pump stations.

At the existing level of development, the system capacity was evaluated with an ADD of 201 gpm, a MDD of 418 gpm, and a PHD of 923 gpm. The demands by pressure zone are shown in Table 6.

Table 6: Water Demands by Pressure Zone – Existing System (gpm)

	ADD	MDD	PHD
West Tank Zone 1	158	328	724
East Tank Zone 2	38	79	175
Zone 3	5	11	24
Entire System	201	418	923

It should be noted that currently Everline Resort is fed directly from the East Tank Zone 2. There is an existing 10-inch pipeline between the main well field and Everline Resort, but it currently operates normally closed.

4.1.1 SOURCE CAPACITY

The existing system sources and capacity are as follows:

- Well 1R: 420 gpm
- Well 2R: 340 gpm
- Well 5R: 425 gpm

The system also has two emergency standby sources:

- Well 3: 115 gpm
- Horizontal Well: 35 gpm

The total source capacity with Wells 1R, 2R, and 5R operational is 1,185 gpm under 24-hour well operation. With the largest source out of service (Well 5R), the total source capacity is 760 gpm. Based on

the existing system MDD of 428 gpm, the existing sources meet the capacity requirements defined in Section 3.5.1.

4.1.2 STORAGE CAPACITY

The existing system has a total system storage capacity of 1.835 million gallons as shown below.

- West Tank Zone 1: 1.15 million gallons
- East Tank Zone 2: 550,000 gallons
- Zone 3: 135,000 gallons

Based on the storage criteria presented in Section 3.5.2, the total existing system storage requirement is shown in Table 7.

Table 7: Storage Requirements: Existing System

	Criteria	Location	Volume (Gallons)
Operational Storage	25% MDD		150,403
Emergency Storage	100% ADD		289,186
Fire Storage	1,500 gpm @ 4 hours	West Zone	360,000
	1,000 gpm @ 1 hour	Zone 3	
Total Storage Required			799,589

The total system storage capacity meets the criteria as shown above. On a zonal basis, the storage requirement for Zone 1 is satisfied, even with a fire flow storage requirement of 360,000 gallons.

Zone 2 also has a fire flow storage requirement of 360,000 gallons based on the ERS fire demand of 1,500 gpm for a 4-hour duration. Zone 2 is currently fed off of the 550,000-gallon East Tank. This tank has the capacity to satisfy the operational and emergency storage requirements, as well as the fire storage requirements.

Zone 3 has a fire flow requirement of 1,000 gpm for a 1-hour duration, resulting in a fire flow storage requirement of 60,000 gallons. With a storage capacity of 140,000 gallons, the Zone 3 Tank satisfies the storage criteria.

4.1.3 SYSTEM PRESSURES AND VELOCITY

Model results for Scenario 1 indicate the following minimum pressures for each of the following demand sets.

- ADD: All nodes >20 psi
- MDD: All nodes >20 psi
- PHD: All nodes >20 psi

The system meets the minimum operating criteria for MDD and PHD, as outlined in Section 3.5.3 for an existing system.

The existing District system currently has four fire hydrants that are unable to meet their required fire flow. All Four of these hydrants are located on the west end of Zone 1. These hydrants are greatly affected by existing customer services in the Granite Chief neighborhood. The high elevation of this neighborhood means that the west end of the Valley floor is limited in how much water can be pulled from hydrants before the services in Granite Chief drop below a residual pressure of 20 psi. The fire flow available at the top of Granite Chief is approximately 900 gpm highlighting the high elevation and the system existing

conditions. The District has identified this and is currently vetting out a proposed infrastructure project to install a pressure sustaining pump station to serve the Granite Chief area and alleviate the issue.

Model results for Scenario 1 indicate the following hydrant available flow rates for each of the following pressure zones.

- Zone 1
 - Fire demand of 1,000 gpm
 - 84 hydrants pass this criterion
 - 3 hydrants fail this criterion
 - Fire demand of 1,500 gpm
 - 23 hydrants pass this criterion
 - 1 hydrant fail this criterion
- Zone 2
 - Fire demand of 1,000 gpm
 - 17 hydrants pass this criterion
 - 0 hydrants fail this criterion
- Zone 3
 - Fire demand of 1,000 gpm
 - 5 hydrants pass this criterion
 - 0 hydrant fails this criterion

Velocity criteria were met under ADD, MDD, and PHD flow conditions, with maximum velocities less than 5.5 fps. There are a few areas requiring a commercial fire flow of 1,500 gpm that are served by 6-inch waterlines. While a 1,500-gpm fire flow in a 6-inch pipe has a velocity of less than 20 fps, the pipe would see a velocity exceeding 17 fps. These areas are located within Zone 1 and should unknown future development in these areas require larger fire flows, improvements to the distribution system would need to be made.

4.2 SCENARIO 2: EXISTING SYSTEM + VPTSP AT BUILDOUT

The additional water demands associated with the VPTSP will be realized primarily in the western end of the Valley (West Tank Zone 1), with a small demand on the eastern end of the Valley associated with employee housing. No additional water demands will be realized in the East Tank Zone 2 or Zone 3. The water demands in the West Tank Zone 1 will increase by the demands associated with the project. This includes additional VPTSP demands as shown below.

- ADD: 166 gpm
- MDD: 219 gpm
- PHD: 454 gpm

The PHD includes an additional 24 gpm to account for the pool refill rate for the MAC.

The total water demands, including the existing system and the VPTSP are included below.

- ADD: 367 gpm
- MDD: 637 gpm
- PHD: 1,377 gpm

The demands by pressure zone are shown in Table 8.

Table 8: Water Demands by Pressure Zone – Existing System + VPTSP (gpm)

	ADD	MDD	PHD
West Tank Zone 1	324	547	1,178
East Tank Zone 2	38	79	175
Zone 3	5	11	24
Entire System	367	637	1,377

4.2.1 SOURCE CAPACITY

To satisfy the supply needs of the existing system with the addition of projected development, the Village at Squaw Valley Specific Plan Water Supply Assessment Update (WSA, Farr West et al., July 22, 2015) modeled an expanded well field with new wells required to meet future water demands and maintain adequate pumping water level criteria as identified in the WSA. The WSA modeled nine new potential well sites in order to verify water supply availability to meet projected VPTSP and non-project water demands. The District’s Wells 2R, 3, and 5R would remain intact, and Well 1R would be relocated to avoid future building footprint conflicts. In all, the District could operate up to 13 water supply wells, each pumping at 200 gpm for 17 hours per day, to satisfy the well field configuration and operational recommendations in the WSA. The actual number and timing of new wells to necessary to meet MDD requirements will be based on water demands and aquifer conditions at the time of development.

4.2.2 STORAGE CAPACITY

Additional water storage capacity will be required in Zone 1 to satisfy the additional demands associated with the VPTSP. The Village at Palisades Tahoe Specific Plan Amendment – Water Infrastructure Master Plan (Psomas September 15, 2025) defined an additional storage quantity of 251,316 gallons. The new water storage tank may be placed adjacent to the existing West Tank. Collectively, the existing 1.15 million gallon West Tank, with the addition of the new VPTSP tank will provide a total storage capacity of approximately 1.4 million gallons of storage capacity for Zone 1, providing adequate storage to satisfy the criteria for operational, emergency, and fire storage for Zone 1.

As no additional demands will be placed on Zones 2 and 3 with the addition of the VPTSP, the storage scenario for these zones is as described previously in Section 4.1.2.

4.2.3 SYSTEM PRESSURES AND VELOCITY

With the addition of water demands from the VPTSP, the model was run with an ADD of 367 gpm, a MDD of 637 gpm, and a PHD of 1,377 gpm.

The pressure criteria under this scenario include meeting MDD and PHD with a minimum residual pressure of 20 psi, and MDD with a fire event of 20 psi. Model results for Scenario 2 indicate the following minimum pressures for each of the following demand sets:

- ADD:
 - All existing system nodes > 20 psi
 - All proposed VPTSP nodes > 20 psi
- MDD:
 - All existing system nodes > 20 psi
 - All proposed VPTSP nodes > 20 psi
- PHD:
 - All existing system nodes > 20 psi
 - All proposed VPTSP nodes > 20 psi

Development of the VPTSP does not appear to adversely affect the existing system and the system meets the minimum operating criteria for MDD and PHD, as outlined in Section 3.5.3.

Model results for Scenario 2 indicate the following hydrant available flow rates for each of the following pressure zones:

- Zone 1
 - Fire demand of 1,000 gpm
 - 83 hydrants pass this criterion
 - 4 hydrants fail this criterion
 - Fire demand of 1,500 gpm
 - 36 hydrants pass this criterion
 - 4 hydrants fail this criterion
- Zone 2
 - Fire demand of 1,000 gpm
 - 17 hydrants pass this criterion
 - 0 hydrants fail this criterion
- Zone 3
 - Fire demand of 1,000 gpm
 - 5 hydrants pass this criterion
 - 0 hydrant fails this criterion

As previously discussed, fire flow in the west end of Zone 1 can be limited due to the high elevation of the Granite Chief area, and that an improvement project has been identified to address this. With the addition of the VPTSP buildout demands, the fire flow available at the top of Granite Chief is approximately 700 gpm, as compared to 900 gpm under existing conditions.

Additionally, the VPTSP buildout demands in concert with the high elevation of the Granite Chief area increases the number of hydrants in the west end of Zone 1 that are unable to meet required fire flow from four to eight. The previously identified pressure sustaining pump station project at Granite Chief would enable all Zone 1 hydrants to meet their required fire flow and comply with the California Waterworks Standards for minimum pressure.

The following infrastructure improvements required for VPTSP were added to the model (see Figure 3):

- New West Tank #2/VPTSP Tank (Psomas Master Plan Amendment)
- Up to 4 new wells (location and timing to be determined based on aquifer conditions and water demands at time of development)
- Pressure sustaining pump station for Granite Chief

The infrastructure improvements proposed in the Psomas Master Plan Amendment were reduced when compared to the previous 2015 analysis. The proposed infrastructure removed a looping waterline in Marmot Lane, a waterline crossing at Washeshu Creek south of Lot 19, and the removal of water service lines to Lot 16 and Lot 18 as they are no longer being developed. This analysis supports the removal of these specific infrastructure improvements as no significant impact or improvement was found to system pressures, fire flows, or velocities with their inclusion.

Velocity criteria were met under ADD, MDD, and PHD flow conditions, with maximum velocities less than 5.5 fps. There are a few areas requiring a commercial fire flow of 1,500 gpm that are served by 6-inch waterlines. While a 1,500 gpm fire flow in a 6-inch pipe has a velocity less than 20 fps, the pipe would see a velocity exceeding 17 fps. These areas are located within Zone 1 and should unknown future

development in these areas require larger fire flows, improvements to the distribution system would need to be made.

4.3 SCENARIO 3: EXISTING SYSTEM + VPTSP AT BUILDOUT + NON-PROJECT BUILDOUT DEVELOPMENT

The additional water demands associated with projected non-project development will be seen at various locations throughout the system. The parcels associated with the buildout water demands are shown in Figure 1. As presented previously in Section 3.3, the additional water demands associated with General Plan buildout are as follows:

- ADD: 85 gpm
- MDD: 176 gpm
- PHD: 390 gpm

The total water demands, including the existing system, VPTSP, and General Plan buildout would be:

- ADD: 452 gpm
- MDD: 813 gpm
- PHD: 1,767 gpm

The demands by pressure zone are shown in Table 9.

Table 9: Water Demands by Pressure Zone: Existing System + VPTSP + General Plan Buildout (gpm)

	ADD	MDD	PHD
West Tank Zone 1	389	682	1,479
East Tank Zone 2	58	121	265
Zone 3	5	11	24
Entire System	452	813	1,767

4.3.1 SOURCE CAPACITY

Similar to the additional water supplies necessary for the VPTSP, the WSA analysis included additional well sites to satisfy the water demands associated with future non-project development. The actual number and timing of new wells to necessary to meet MDD requirements will be based on water demands and aquifer conditions at the time of development.

4.3.2 STORAGE CAPACITY

With the additional storage provided by the VPTSP project, the total Zone 1 storage will be 1.4 million gallons. Based on the water demands presented above, the total storage requirement for Zone 1 with the addition of the buildout water demands will be approximately 1.1 million gallons.

The majority of additional demands will be realized in Zone 1. Zones 2 and 3 will see minimal increased water demands associated with less than 20 vacant SFR parcels remaining to be built upon. Therefore, the storage scenario for these zones is as described previously in Section 4.1.2.

4.3.3 SYSTEM PRESSURES AND VELOCITY

With the addition of water demands from the VPTSP and projected General Plan buildout development, the model was run with an ADD of 452 gpm, an MDD of 813 gpm, and a PHD of 1,767 gpm.

The pressure criteria under this scenario include meeting MDD and PHD with a minimum residual pressure of 20 psi and MDD with a fire event of 20 psi. Model results for Scenario 3 indicate the following minimum pressures for each of the following demand sets:

- ADD:
 - All existing system nodes > 20 psi
 - All proposed VPTSP nodes > 20 psi
 - 20 out of 20 buildout nodes > 20 psi
- MDD:
 - All existing system nodes > 20 psi
 - All proposed VPTSP nodes > 20 psi
 - 19 out of 20 buildout nodes > 20 psi
- PHD:
 - All existing system nodes > 20 psi
 - All proposed VPTSP nodes > 20 psi
 - 19 out of 20 buildout nodes > 20 psi

Model results for Scenario 3 indicate the following hydrant available flow rates for each of the following pressure zones:

- Zone 1:
 - Fire demand of 1,000 gpm
 - 87 hydrants pass this criterion
 - 6 hydrants fail this criterion
 - Fire demand of 1,500 gpm
 - 30 hydrants pass this criterion
 - 14 hydrants fail this criterion
- Zone 2:
 - Fire demand of 1,000 gpm
 - 17 hydrants pass this criterion
 - 0 hydrants fail this criterion
 - Fire demand of 1,500 gpm
 - 5 hydrants pass this criterion
 - 0 hydrants fail this criterion
- Zone 3:
 - Fire demand of 1,000 gpm
 - 5 hydrants pass this criterion
 - 0 hydrant fails this criterion

As previously discussed, fire flow in the west end of Zone 1 can be limited due to the high elevation of the Granite Chief area, and that an improvement project has been identified to address this. With the addition of the VPTSP buildout and non-project demands, the fire flow available at the top of Granite Chief is approximately 700 gpm, as compared to 900 gpm under existing conditions.

The addition of the VPTSP buildout and non-project buildout demands increases the number of Zone 1 hydrants that are unable to meet required fire flow in the west end of Zone 1 from four hydrants in the existing scenario to 20 hydrants in this scenario. The previously identified pressure sustaining pump station project at Granite Chief would enable all Zone 1 hydrants to meet their required fire flow and comply with the California Waterworks Standards for minimum pressure.

Velocity criteria were met under ADD, MDD, and PHD flow conditions, with maximum velocities less than 5.5 fps. There are a few areas requiring a commercial fire flow of 1,500 gpm that are served by 6-inch

waterlines. While a 1,500-gpm fire flow in a 6-inch pipe has a velocity of less than 20 fps, the pipe would see a velocity exceeding 17 fps. These areas are located within Zone 1 and should unknown future development in these areas require larger fire flows, improvements to the distribution system would need to be made.

5.0 SUMMARY

This water system capacity analysis was performed to assess the effects of potential future development in Olympic Valley. The analysis included evaluating source capacity, storage capacity, minimum system pressures and flow velocity under flow scenarios of ADD, MDD, MDD plus fire, and PHD. The criteria to meet these requirements are defined by the California Waterworks Standards and the District's Water Code.

In general, the existing system portrayed an available fire flow deficiency in the west end of Zone 1, due to the marginal pressures in the upper area of Granite Chief, limiting flow. Modeling showed that the existing pressure and fire flow situations were exacerbated with the additional flows from the VPTSP and non-project buildout water demands. As such, it has been recommended that a pressure sustaining pump station be installed which would utilize a pressurized feed tank to provide constant pressure to the Granite Chief area, with larger standby fire pumps in the event of an emergency. This infrastructure project is recommended regardless of development in OVPSD.

Finally, the ERS fire demand can be met from the East Tank Zone 2, but supply to the East Tank from the 220 gpm East Booster pump station does not provide a sufficient refill rate in the event of a fire at the ERS. For this reason, infrastructure and operational changes have been previously recommended to address this. These improvements allow for fire flow to be provided from both the West Tank Zone 1 and the East Tank Zone 2 during a fire event at the ERS. These improvements were recommended previously by ECO:LOGIC (SVPSD Water Model – Resort at Squaw Creek Phase II Will Serve Request, January 24, 2007).

The following recommended infrastructure improvements would put the ERS into the West Tank Zone 1 for ADD, MDD, and PHD flows (see Figure 4):

- Install PRV on the 12-inch pipeline between the East Tank and the ERS
- Open existing 10-inch pipeline through golf course
- Provide a direct connection between the 8-inch Well 5R discharge line and the 10-inch golf course pipeline
- Increase the capacity of the East Booster pump station

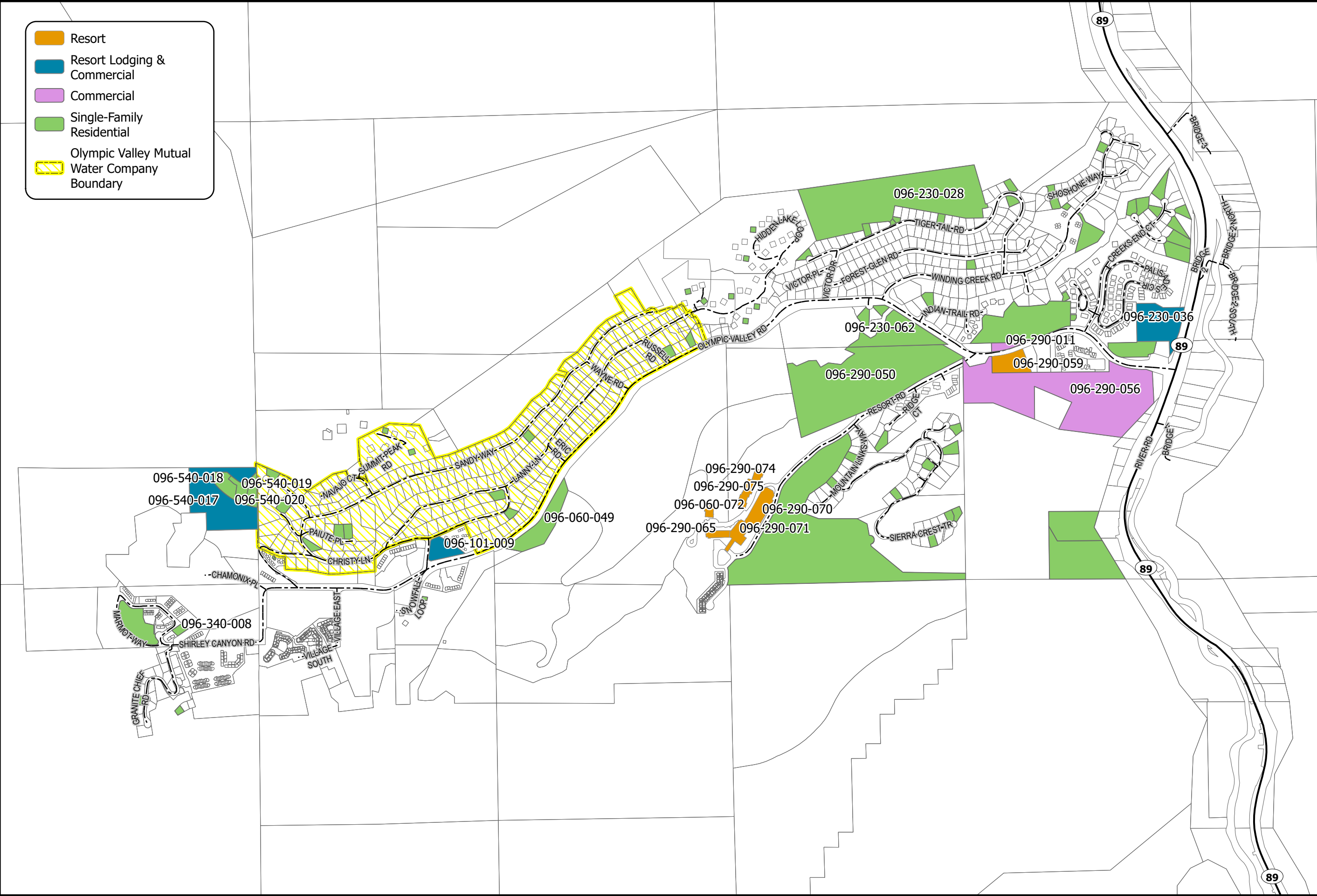
Other operational adjustments may also be necessary based on the reduced demand on the 500,000-gallon East Tank. With the ERS receiving water under normal flow conditions from the West Tank, the East Tank would be providing water supply to very few residential customers. In order to provide adequate turnover in the East Tank, the Zone 2 PRV would need to be adjusted to a downstream pressure of 120-125 psi. This would allow the East Tank to provide a portion of the water demand to the eastern end of Zone 1.

The following infrastructure improvements are required for development of the VPTSP, Scenario 2 (see Figure 3):

- New West Tank #2/VPTSP Tank (Psomas Master Plan Amendment)
- Up to 4 new wells (location and timing to be determined based on aquifer conditions and water demands at time of development)
- Additional on-site distribution system improvements will be identified in future improvement plans

Attachment 1: Figures

Resort
 Resort Lodging & Commercial
 Commercial
 Single-Family Residential
 Olympic Valley Mutual Water Company Boundary



Water Capacity Analysis














General Plan Buildout Estimates

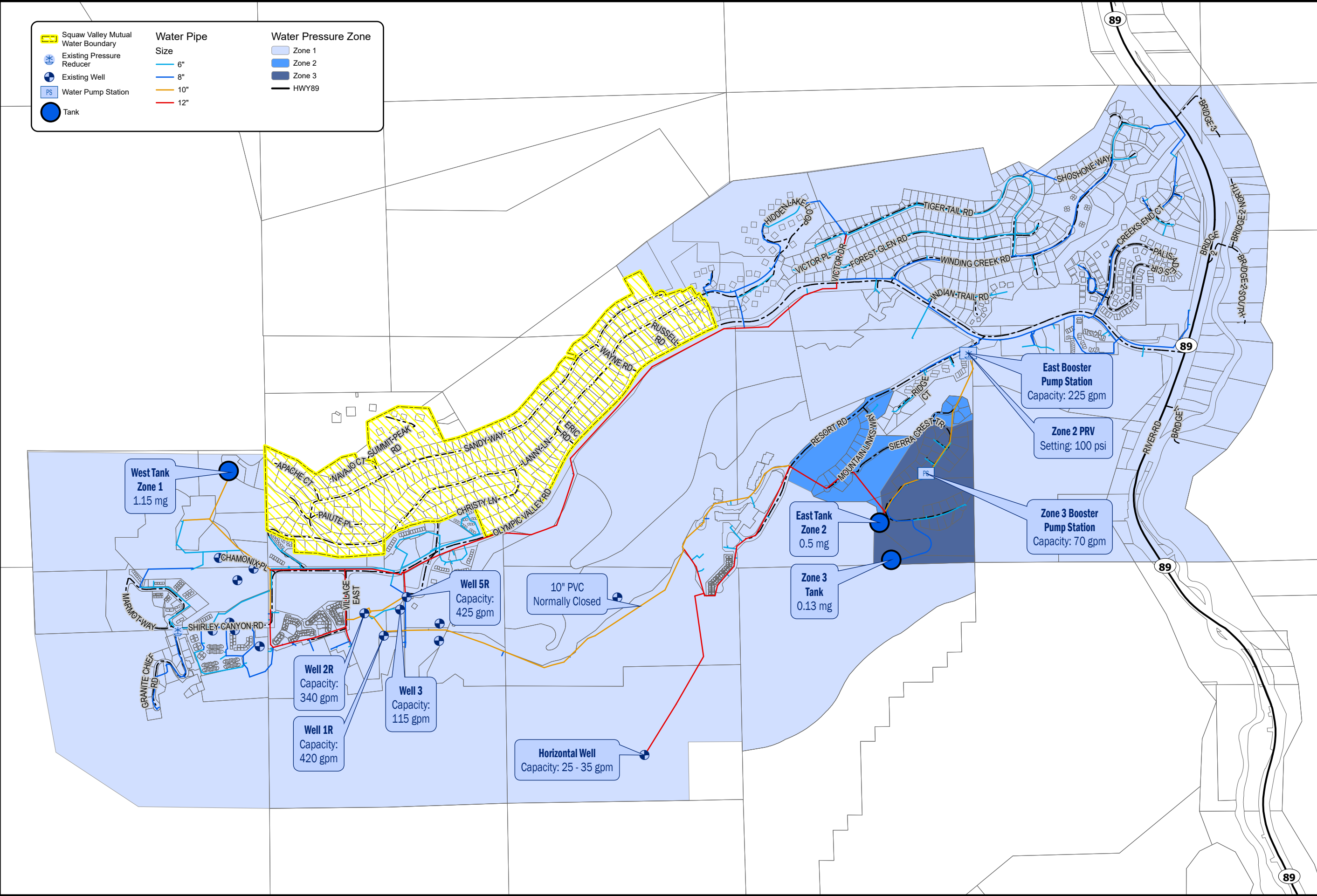
Figure 1



1" = 1,000'

The data contained herein does not represent survey delineation and should not be construed as a replacement for the authoritative source. No liability is assumed by DOWL as to the sufficiency or accuracy of the data.

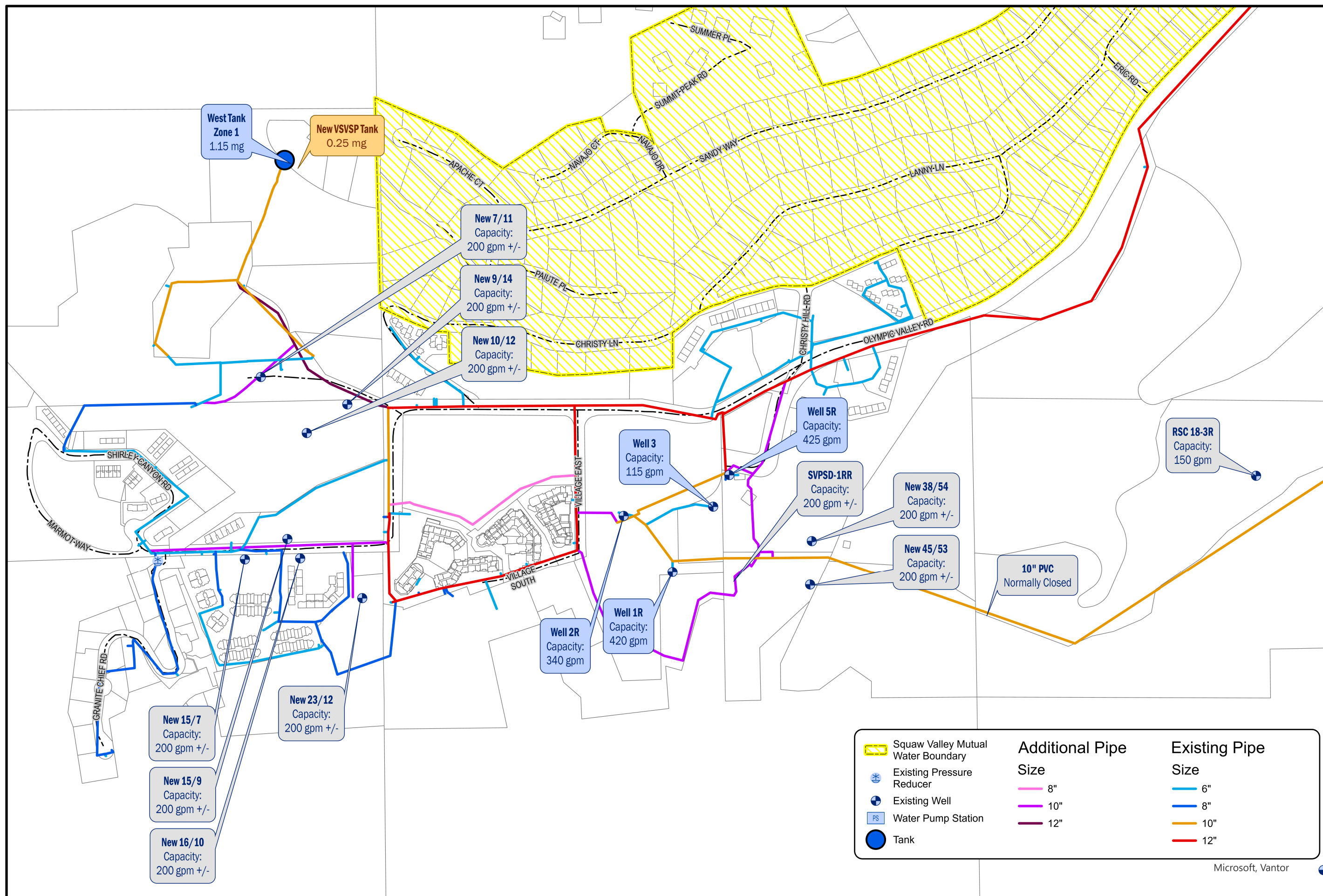
 Squaw Valley Mutual Water Boundary	Water Pipe	Water Pressure Zone
 Existing Pressure Reducer	Size	 Zone 1
 Existing Well	 6"	 Zone 2
 Water Pump Station	 8"	 Zone 3
 Tank	 10"	 HWY89
	 12"	



Water Capacity Analysis
 Existing Water System
 Figure 2


 1" = 1,000'

The data contained herein does not represent survey delineation and should not be construed as a replacement for the authoritative source. No liability is assumed by DOWL as to the sufficiency or accuracy of the data.



Water Capacity Analysis
 Existing Water System + VPTSP





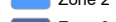







Figure 3

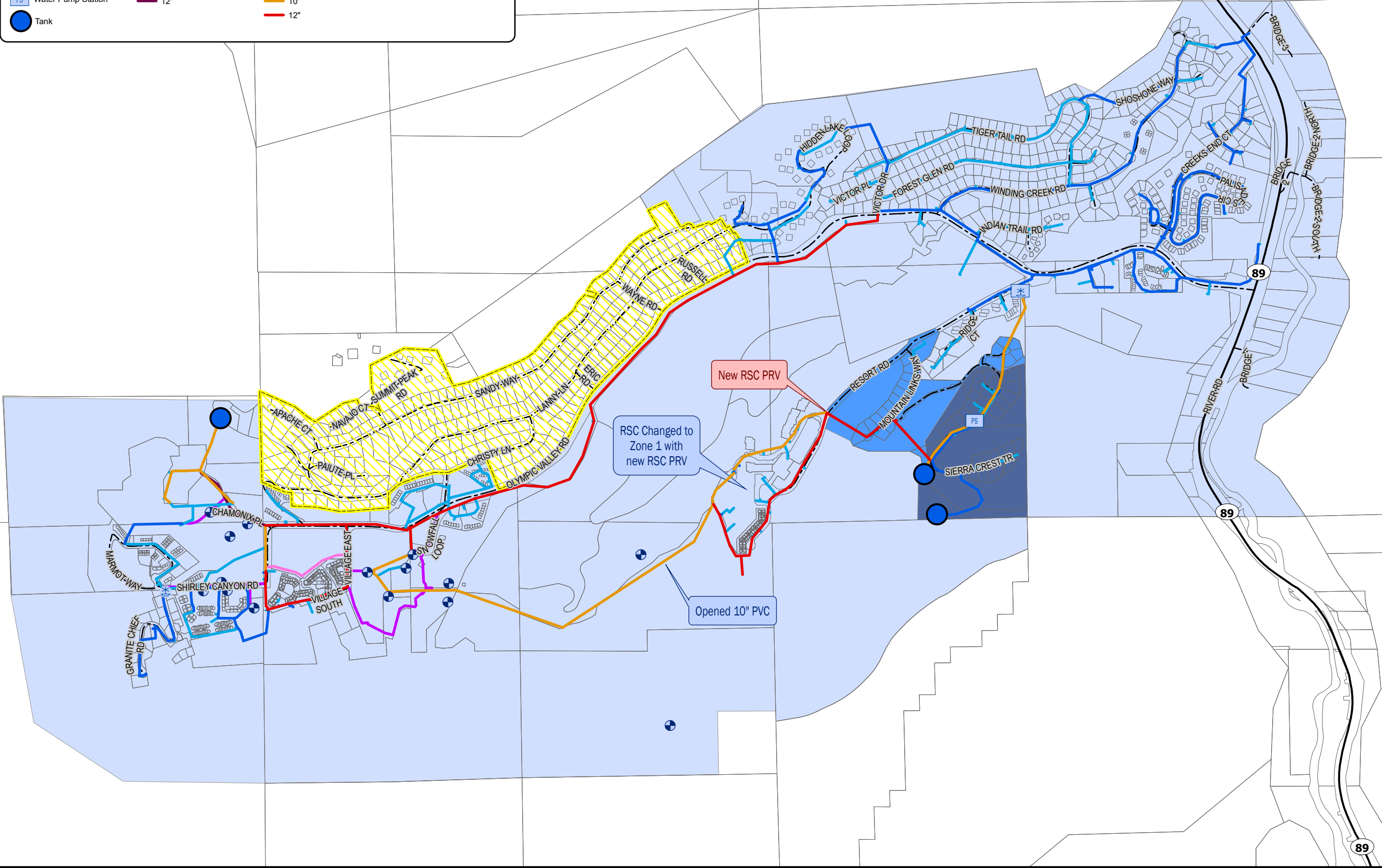
Additional Pipe		Existing Pipe	
Size		Size	
	8"		6"
	10"		8"
	12"		10"
			12"

1" = 400'

The data contained herein does not represent survey delineation and should not be construed as a replacement for the authoritative source. No liability is assumed by DOWL as to the sufficiency or accuracy of the data.

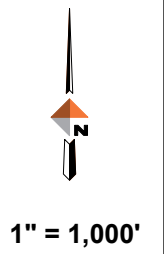
Microsoft, Vantor

	Squaw Valley Mutual Water Boundary	Additional Pipe	Existing Pipe	Water Pressure Zone
	Existing Pressure Reducer	Size	Size	 Zone 1
	Existing Well	 8"	 6"	 Zone 2
	Water Pump Station	 10"	 8"	 Zone 3
	Tank	 12"	 10"	
			 12"	



Water Capacity Analysis
 Existing Water System + VPTSP + GP Buildout

Figure 4



The data contained herein does not represent survey delineation and should not be construed as a replacement for the authoritative source. No liability is assumed by DOWL as to the sufficiency or accuracy of the data.

TO: David Hunt, P.E.
Olympic Valley Public Service District

FROM: Ben Dallas, E.I.
Alex Stodtmeister, P.E.

REVIEWED: Luke Tipton, P.E.

DATE: 6/8/2026

PROJECT: Olympic Valley Public Service District

SUBJECT: VPTSP Sewer Capacity Analysis



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1.0 PURPOSE

This memorandum presents an evaluation of hydraulic capacity of the Olympic Valley Public Service District's (OVPSD or District) wastewater collection system and will serve as the basis for identifying potential impacts from projected buildout development in the Valley, including the Village at Palisades Tahoe Specific Plan (VPTSP).

This memorandum was originally prepared in 2014 during development of the VPTSP Draft Environmental Impact Report (EIR). The VPTSP was originally approved by the Placer County Board of Supervisors in 2016 and re-approved in 2024 as a large scale, mixed-use specific plan with 1,493 medium and high-density resort lodging bedrooms, employee housing, and a variety of commercial and recreation uses. Over the past ten years, the project has been altered based on legal challenges. The currently proposed development plan includes a reduction of 40 percent of resort lodging bedrooms and a 20 percent reduction in commercial floor area. The County prepared an Addendum to the previously certified EIR and the VPTSP was approved by the Placer County Board of Supervisors on May 12, 2026.

Based on this, alongside changes to non-project buildout sewer generation rate projections and an analysis of recent historic sewer flows, the District is updating the sewer collection system capacity analysis.

The evaluation was performed using the District's hydraulic model and includes the following scenarios:

1. Existing sewer collection system
2. Existing sewer collection system + VPTSP at Buildout
3. Existing sewer collection system + VPTSP at Buildout + Projected Buildout Development

The evaluation will define the short- and long-term sewer collection system capital improvements necessary to satisfy the capacity requirements defined in the District sewer code.

2.0 BACKGROUND

2.1 1994 SEWER MODEL

The original hydraulic model of the District's sewer collection system was completed as part of the 1994 Sewer Master Plan (West Yost & Associates). The model was constructed using the software HYDRA and based on base map data developed by 7-H Technical Services Group. Wastewater generation rates were calculated to be 282 gallons per day (gpd)/equivalent dwelling unit (EDU) with a per capita average flow

of 76 gpd/capita. With only one flow monitoring station for the entire collection system area, infiltration and inflow (I/I) was spread equally across the collection system. The model used a future projected average dry weather flow (ADWF) of 0.69 million gallons per day (MGD), along with a peak I/I rate of 1.15 MGD. The model also used a peaking factor of 1.7 for Peak Hour DWF.

The results indicated the siphons that cross Washeshu Creek and the Truckee River as being the areas of deficiency, as well as the need to install multiple sewer flow meters throughout the system.

2.2 2007 SEWER MODEL

The sewer model was rebuilt in 2007 using InfoWorks and the then current geographic information system (GIS) infrastructure and flow meter data (SVPSD Sewer Capacity Study – DRAFT, ECO:LOGIC, December 2007). This effort also included a field survey of select manholes where elevation data was either missing or inconsistent. Unit wastewater generation rates were developed based on a comprehensive analysis of water meter and land use data. The unit wastewater generation rates were developed for a peak occupancy period, which included weekend and holiday occupancy for the month of February (assumed to be peak occupancy skier month as well as the President’s Day holiday). These wastewater generation rates are referenced in the District’s Sanitary Sewer Service Code and are shown in Table 1.

Table 1: 2007 Unit Wastewater Generation Rates

Land Use	Unit Flow Factor (gpd/unit)
Residential	
Single Family	291
Single Family - Multiple Units	475
Multi-Family - Individually Metered	151
Multi-Family - Master Metered	244
Other	
Hotel/Motel	304
Commercial	0.38 gpd/ft ²

The model was calibrated to a peak wet weather flow (PWWF) of 1.25 MGD, which coincided with a small storm event in March 2004. The ADWF was indicated to be 0.48 MGD based on the dry weather days preceding the March 2004 storm event. The resultant peaking factor was 2.6 (PWWF:ADWF) based on this data. The modeling scenarios for the 2007 capacity analysis included the existing flows shown above, as well as the addition of estimated wastewater flows from the Everline Resort Phase 2 project, which included an ADWF estimate of 0.054 MGD and a PWWF of 0.14 MGD. The estimated ADWF was calculated based on the projected development density and land use as well as the unit wastewater generation rates.

The 2007 capacity study showed no hydraulic limitations in the existing system. It should be noted that the model was run based on ADWF with an estimated infiltration/inflow based on the March 2004 storm peak flow rate. Generally, peak hour flows with storm events are used to conservatively assess the capacity of a sewer collection system.

2.3 2012 SEWER MODEL UPDATE

The sewer model was updated in 2012 in support of the VPTSP project. The purpose of this update was to create a sewer model using the District’s current GIS information. In 2007, the District established a GIS for their wastewater system. It utilized known District wastewater infrastructure information including survey data for manholes and cleanout locations, unique manhole IDs, pipe material, rim elevations, invert elevations and installation dates. This information continues to be updated and improved upon as more

infrastructure information becomes available through potholing, construction and additional survey data. Additional survey information was provided by Andregg Geomatics on the Olympic Valley Road sewer interceptor (T series manholes) and incorporated into the GIS.

The updated wastewater hydraulic model was built from the existing GIS database using the Bentley SewerGEMS Model Builder. Initially the GIS data was reviewed thoroughly for accuracy and then it was migrated into the DOWL GIS data scheme. Elevation data from both the original GIS database along with data from a previously created sewer model table were joined to the GIS via a unique identifier found in both the GIS and the elevation data table. The GIS database was used to generate the pipes configuration, sizes and material within SewerGEMS.

The sewer loads were distributed using the same sub-basins and load distribution used in the 2007 hydraulic model (SVPSD Sewer Capacity Study – DRAFT, ECO LOGIC December 2007). Flow data from 2008-2012 was evaluated for the TTSA flow meter at Highway 89 and data from the new flow monitoring site at T45A was analyzed mid-October 2011 through December 2012 to ensure loading rates from the 2007 Capacity Study were still accurate.

2.4 2014 SEWER MODEL UPDATE

As part of the 2014 VPTSP sewer capacity analysis, the model was further updated to allow for modeling the effects of proposed and future development within the Valley.

As previously mentioned, the 2007 and 2012 sewer models analyzed collection system capacity based on average dry and peak wet weather conditions associated with flows from and around a March 2004 storm event. This data represented sewer flow in a low occupancy time period. Being a resort area with a transient population, peak occupancy in the Valley is generally seen in peak ski season months, as well as the summertime vacation season. Peak sewer flows typically occur in the winter months when the occupancy is high and rain on snowstorm events are frequent. Rain on snowstorm events contribute to peak sewer flows as the rain melts the snow and the sewer system experiences increased I/I. For the purpose of assessing sewer collection system capacity, peak hour flow events with a component of I/I (in the form of a rain on snowstorm event) are assessed.

The 2014 model update included revising the model flows to include a major rain on snow event that occurred in the region December 31, 2005 – January 1, 2006. This storm represented nearly a 25-year 24-hour storm event and produced historical peak flows in the District's system. Rainfall data for this event is shown in Table 2.

Table 2: Temperature and Precipitation Data December 2005/January 2006¹

Date	Day	Low Temp (°F)	High Temp (°F)	Precip (in)	Rain/Snow
12/22/2005	Thursday	37	46	0.07	Rain
12/23/2005	Friday	28	57	0.00	-
12/24/2005	Saturday	24	57	0.01	-
12/25/2005	Sunday	32	48	0.12	Rain
12/26/2005	Monday	30	35	0.18	Snow
12/27/2005	Tuesday	28	42	0.28	Snow & Rain
12/28/2005	Wednesday	24	51	0.02	Rain
12/29/2005	Thursday	15	35	0.00	-
12/30/2005	Friday	28	42	1.15	Rain
12/31/2005	Saturday	26	41	1.04	Rain
1/1/2006	Sunday	28	41	0.51	Snow
1/2/2006	Monday	24	32	0.05	Snow
1/3/2006	Tuesday	19	35	0.00	-
1/4/2006	Wednesday	23	39	0.00	-

The 2014 analysis and model update identified that peak sewer collection system flow at the Highway 89 flowmeter occurred on December 31, 2005, with a recorded flow of 2.007 MGD at 11:00 AM. To develop peak dry weather flows associated with this storm event, data for dry days preceding the storm event were used. The ADWF was based on flow data for December 23, 24, and 29.

The 2014 base model was then updated with the following flow scenarios:

- ADWF: 0.632 MGD
- Peak Hour DWF: 0.828 MGD
- PWWF: 2.007 MGD

From this data, peaking factors were also developed:

- Peak Hour DWF:ADWF = 1.31
- PWWF:ADWF = 3.18

3.0 SEWER CAPACITY ANALYSIS

3.1 2025 SEWER MODEL UPDATE

In support of the most recent capacity analysis, the District sewer model elements were reviewed, and determinations were made as to which elements of the models required updating from the 2014 modeling effort. The model elements reviewed included model geometry, sewer flow scenarios, and sewer flow allocation. Based on the review of these elements, it was determined that the following updates to the model were required.

Since the 2014 model update, only one major capital improvement project, the Highway 89 siphon replacement, has been completed on the District sewer system. As such, the model geometry was

¹ Data from Weather Underground - Truckee-Tahoe, CA.

updated to include these improvements. As the ADWF and PWWF scenarios for the model were developed in 2014 based on sewer flow data from 2005 and 2006, the District undertook a review effort of all sewer flow and rainfall data from 2014 to present. Based on the District's findings, the December 31, 2005 storm presented in Table 2 still represents the peak storm and sewer flows for the area. However, in reviewing the supervisory control and data acquisition (SCADA) data of the sewer flows for this time period, it was determined that the 2014 analysis made incorrect assumptions on the flow totalizer values. District staff updated the analysis to determine that with the corrections to the SCADA data, the peak sewer flow of the event was 2.126 MGD between 10:00 AM and 11:00 AM, up from the previously calculated 2.007 MGD. Carrying these corrections in the SCADA data through the remainder of the flow analysis produced updated baseline ADWF and PWWF flows and diurnals. The 2025 sewer model was updated with the following baseline flows:

- ADWF: 0.629 MGD
- Peak Hour DWF: 0.846 MGD
- PWWF: 2.126 MGD

Based on this updated analysis, the peaking factors for the model and future demand projections were updated, see below.

- Peak Hour DWF:ADWF = 1.35
- PWWF:ADWF = 3.38

The ADWF and PWWF scenario diurnals were also updated to reflect the updated analysis. Table 3 shows the updated hourly flows for the ADWF and PWWF events used. As these sewer flow scenarios were developed based on storm and flow events from 2005 and 2006, it was determined that the geographic allocation of sewer flows within the District system did not need to be updated. Additionally, the model was converted into the Autodesk InfoWorks ICM software platform as a part of this update.

Table 3: Diurnal Sewer Flow Data (at Highway 89 Flow Meter)

Time	12/23/2005	12/24/2005	12/29/2005	Overall Average (MGD)	12/31/2005 Peak (MGD)
1:00	0.5544	0.3816	0.5496	0.4952	1.1496
2:00	0.5376	0.3912	0.5088	0.4792	1.1688
3:00	0.5016	0.3264	0.4848	0.4376	1.0752
4:00	0.4296	0.3024	0.4704	0.4008	1.0248
5:00	0.4080	0.2568	0.4560	0.3736	0.9936
6:00	0.4128	0.3120	0.4512	0.3920	0.984
7:00	0.4632	0.3360	0.5592	0.4528	1.0752
8:00	0.6408	0.5160	0.7920	0.6496	1.1496
9:00	0.7656	0.7032	1.0704	0.8464	1.6464
10:00	0.7872	0.7296	0.9048	0.8072	1.92
11:00	0.7776	0.7080	0.8400	0.7752	2.1264
12:00	0.7008	0.6816	0.7968	0.7264	1.6968
13:00	0.6504	0.6480	0.7368	0.6784	1.1808
14:00	0.6312	0.6312	0.7872	0.6832	0.9624
15:00	0.6312	0.6288	0.8112	0.6904	0.9336
16:00	0.6504	0.6552	0.8640	0.7232	1.1592
17:00	0.6744	0.6888	1.0056	0.7896	1.1232
18:00	0.6960	0.7104	1.0752	0.8272	1.152
19:00	0.6792	0.6360	0.8928	0.7360	1.164
20:00	0.6360	0.5928	0.8208	0.6832	1.1064
21:00	0.5952	0.5928	0.7728	0.6536	1.008
22:00	0.5976	0.5808	0.7680	0.6488	0.924
23:00	0.5760	0.5544	0.6816	0.6040	0.9264
0:00	0.5160	0.4992	0.6024	0.5392	0.8832
			Average	0.6289	1.1889
			Minimum	0.3736	0.8832
			Maximum	0.8464	2.1264

3.2 WASTEWATER GENERATION RATES

Wastewater generation rates specific to the District were developed through an in-depth analysis of District water usage and sewer flow data for the years 2020 to 2024. Five different generation rates based on customer types were prepared to accurately project sewer flows based on the profile of projected future development within the District. The five generation rate categories are:

- Single Family Residential
- Multi Family Condo
- General Commercial
- Resort Commercial
- Resort Bedroom

These five generation rate categories were developed based on the existing customer profile, as well as the profile of projected development within the District. Based on water use data, resort customers have a specific water use profile that differs from typical residential or commercial properties. As such, separating purpose built residential properties (single family and multi-family) and commercial properties (resort and general) was important to distinguish between resort style projected development, such as the VPTSP, and general development of residential and commercial properties.

Wastewater generation rates were developed in conjunction with water demand factors for projected future development. The wastewater generation rates were calculated by taking the overall water production for the District and Olympic Valley Mutual Water Company (OVMWC) for a given month and comparing it to the sewer flow total for that month to determine what percentage of water production per month becomes sewer flow. The water production data was also reduced by an unbilled water factor of 14.3 percent² to ensure that water lost through system leaks and other unbilled causes was not included in the sewer flow evaluation. Over the five-year period analyzed (2020 to 2024), the District and OVMWC systems saw 73 percent of its water production end up as sewer flow. The individual water demand factors for the different categories were then multiplied by 73 percent to develop the final sewer generation rates, which are summarized below in Table 4.

Since the District can experience frequent I/I, it was important to verify the accuracy of the concluded 73 percent ratio of sewer flow to water demand. This percentage was verified using an analysis of water customer meter data. Several single family residential and commercial water customers within the District utilize an irrigation only water meter in addition to the domestic water meter that measures indoor water use. Using these paired meters, an analysis completed on total water demands 2020 to 2024 showed that 43 percent and 69 percent of total water demands were attributable to indoor water use for single family residential and commercial customers, respectively. Per the Environmental Protection Agency (EPA), approximately 90 to 95 percent of indoor water use ends up as sewer flows. Assuming 95 percent of indoor water use becomes sewer flow, the percentage of single family residential and commercial customer total water use that ends up as sewer flow is 41 and 66 percent, respectively. Also considering that the District's multi-family residential and resort-based water usage is primarily indoor use only, a weighted average based on water usage per meter type yielded a sewer flow to water demand ratio of 74 percent.

While the water meter analysis gives a slightly more conservative approach to sewer generation for the District, it does not consider the water meter data for OVMWC that also contributes to the District sewer flows. As such, the original ratio of 73 percent was used for the final calculation of wastewater generation rates.

² Calculated from District customer meter and water production data, 2015-2024.

Table 4: 2025 Unit Wastewater Generation Rates

Land Use	Water Demand Factor (gpd)	Wastewater Generation Rate (gpd)	Unit
Residential			
Single Family	309	225	per unit
Multi-Family Condo	92	67	per unit
Other			
Resort Bedroom	125	91	per bedroom
Resort Commercial	0.249	0.181	per sq. ft.
General Commercial	0.048	0.035	per sq. ft.

3.3 SCENARIOS

Three model scenarios were developed to assess the sewer collection system capacity impacts associated with the proposed VPTSP project as well as the overall projected buildout:

1. Existing sewer collection system
2. Existing sewer collection system + VPTSP at Buildout
3. Existing sewer collection system + VPTSP at Buildout + Non-Project Projected Buildout Development

The sewer flows associated with each scenario are summarized in Table 5. The diurnal flow patterns and graphs for each scenario are provided in Attachment 2.

Table 5: Collection System Sewer Flows, Q

	Q_{ADWF}	$Q_{Peak\ Hour\ DWF}$	Q_{PWWF}
Existing Model Conditions ³	0.629	0.846	2.126
VPTSP Loads ⁴	0.128	0.194	0.444
Buildout Loads ⁵	0.092	0.124	0.311
Model Scenarios			
Existing System	0.629	0.846	2.126
Existing System + VPTSP	0.757	1.040	2.570
Existing System + VPTSP + Buildout	0.849	1.164	2.881

3.3.1 VPTSP PROJECT SEWER FLOWS

Based on water demand and sewer flow data from 2020-2024, DOWL developed updated generation rates as discussed in Section 3.2. The wastewater generation rate used for resort bedrooms is 91 gpd/bedroom.

³ ADWF and Peak Hour DWF from 12/23, 24 and 29, 2005 flow data. Peak hour wet flow occurred on Dec. 31, 2005 at 11 AM.

⁴ VPTSP loads calculated using District wastewater generation rates multiplied by total projected development presented in the Psomas VPTSP Amendment – Sanitary Sewer Infrastructure Master Plan (September 15, 2025).

⁵ Based on parcel-based analysis provided by the District, including SFR, MF, and Commercial.

For resort commercial, a wastewater generation rate of 0.181 gpd/square foot is used. These generation rates were used to develop the VPTSP buildout ADWF.

Peaking factors developed by DOWL as presented in Section 3.1 were used to develop VPTSP Peak Hour DWF and PWWF flows.

VPTSP sewer flows also include a backwash rate for the pool filters at the Mountain Adventure Camp (MAC). Sewer generation for the MAC includes a total daily backwash volume of approximately 5,000 gpd (VPTSP Amendment – Sanitary Sewer Infrastructure Master Plan, Psomas, September 15, 2025). Previously the developer depicted that the system design would include a backwash water equalization tank equal to the total daily flow. Flow would be bled into the sewer system at a rate of no greater than 20 gpm, which would empty the tank over a 10-hour period.

Projected VPTSP sewer flows were added to manhole SSMH T-8 in the sewer model.

3.3.2 NON-PROJECT BUILDOUT PROJECTION SEWER FLOWS

The District performed an analysis to project non-project buildout sewer flows based on approved development projects that have not yet been built, known development proposals, and an analysis of developable parcels in the Valley that are either vacant or underdeveloped. For those parcels with existing commercial buildings that are assumed to be demolished and redeveloped, the future projection subtracts the existing building area and replaces it with the proposed/anticipated new commercial floor area. The result is a net increase or decrease in floor area and thus considers the existing sewer flow contribution. Table 6 presents the land use and parcel data for these properties, as well as a summary of the number of bedrooms and commercial square footage associated with the buildout projection. Also included in the buildout projection are vacant SFR lots within the District and OVMWC water service boundaries. There are currently 69 vacant or underdeveloped SFR lots within the District's water service boundary and 15 vacant SFR lots within the OVMWC water service boundary, for a buildout total of 84 SFR lots. Finally, Table 6 also presents the estimated ADWF wastewater flows for the projected development. Figure 1 provides the location of the identified parcels.

The District's analysis identified SFR, multi-family, and commercial development potential for approved projects, foreseeable projects, and forecasted development. Ultimately, estimated wastewater generation is based on number of lodging units and commercial square footage and the wastewater generation rate factors presented previously in Table 4.

The wastewater generation factors represent an ADWF at 100% occupancy. Peak Hour DWF and PWWF were calculated using the peaking factors presented in Section 3.1.

Projected buildout sewer flows were added to the manhole nearest the identified developable parcel in the model.

Table 6: Buildout Development Projection and Wastewater Flows

APN	Customer Type	Address	Common Name	Zoning	Buildout Residential (Units)	Buildout (Bedrooms)	Buildout (Commercial Square Footage)	Wastewater Generation (gpd)			
								Resort Bedroom	Resort Commercial	General Commercial	SFR
Resort Lodging/Commercial											
096-230-036	Resort Lodging / Commercial	3039, 3041 River Road	7-11, Tahoe Dave's Skis & Boards	EC	--	147	15,490	13,387	2,809	--	--
096-290-056	Commercial	285, 100, 1, 101 Olympic Valley Road	Squaw Valley Park - Snow Museum	FR	--	0	20,000	--	--	702	--
096-290-011	Commercial	Olympic Valley Road	Henrikson Parcel	EC	--	0	12,000	--	--	421	--
096-101-009	Resort Lodging / Commercial	1604 Olympic Valley Road	Post Office, Unofficial Building	VC	--	85	1,264	7,741	229	--	--
096-540-017	Resort Lodging	Chamonix	Carville Granite View	VC	--	66	0	6,011	--	--	--
SUBTOTAL RESORT LODGING/COMMERCIAL					--	298	48,754	27,138	3,038	1,124	--
Everline Resort & Spa Phase II											
096-060-072	Resort Lodging	350 Resort Road	Phase 2A Townhomes	HDR-20	--	460	--	41,892	--	--	--
096-290-075	Resort Lodging	310 Resort Road	Phase 2A Townhomes	HDR-20			--		--		
096-290-074	Resort Lodging	300 Resort Road	Phase 2A Townhomes	HDR-20			--		--		
096-290-070	Resort Lodging	320 Resort Road	Phase 2B/C Mid-Rise	HDR-20			--		--		
096-290-071	Resort Lodging	330 Resort Road	Phase 2B/C Mid-Rise	HDR-20			--		--		
096-290-065	Resort Lodging	340 Resort Road	Phase 2B/C Mid-Rise	HDR-20			--		--		
SUBTOTAL EVERLINE RESORT & SPA PHASE II					--	460	--	41,892	--	--	--
Single-Family Residential											
096-290-059	SFR	OVPSD	Public Service District	--	40	--	--	--	--	--	8,985
Various	SFR	OVMWC	Mutual Water Company	--	15	--	--	--	--	--	3,369
096-290-050 096-230-062	SFR	325 Olympic Valley Road	Sierra Family Meadows	HDR-20	10	--	--	--	--	--	2,246
096-540-018 096-540-019 096-540-020	SFR	Washoe Dr. Extension	Carville SFR - 3 SFR lots	LDR-4	3	--	--	--	--	--	674
096-060-049	SFR	1525 Olympic Valley Road	Stables	HDR-25	8	--	--	--	--	--	1,797
096-340-008	SFR	448 Shirely Canyon Road	Tiny Homes Parcel	HDR-25	4	--	--	--	--	--	899
096-230-028	SFR	No Address (above Tiger Tail)	Mancuso SFR	CP	4	--	--	--	--	--	899
SUBTOTAL SINGLE-FAMILY RESIDENTIAL					84	--	--	--	--	--	18,869
TOTAL					84	758	48,754	69,030	3,038	1,124	18,869

3.4 CAPACITY EVALUATION CRITERIA

Section 1.06 of the District's Sewer Technical Specifications provides the design criteria for sizing a mainline sewer. The code requirements are:

- Pipes 15 inches in diameter and under designed to flow at $\frac{1}{2}$ depth at maximum flows
- Pipes 18 inches in diameter and over designed to flow at $\frac{3}{4}$ depth at maximum flows

Maximum flows are defined as the peak hour flow during non-storm events (Peak Hour DWF). In assessing this capacity, a d/D ratio is used. The d/D ratio is the peak measured depth of flow divided by the pipe diameter. So, for pipes 15 inches and under, the d/D cannot exceed 0.5, or 50%, at peak hourly flows.

At PWWF, no surcharging is allowed in assessing sewer system capacity. In this case, the PWWF in any pipe segment cannot exceed the calculated full pipe capacity.

3.5 MODEL RESULTS

Model simulations of the collection system were run for both Peak Hour DWF and PWWF for the scenarios identified in Section 3.1. All of the pipe segments affected by the additional sewer flows are along the main interceptor (T-series manholes). Tabular model results for each scenario are provided in Attachment 3.

3.5.1 SCENARIO 1: EXISTING SYSTEM

At the existing level of development, at maximum occupancy, the model was run with a Peak Hour DWF of 0.846 MGD, and a PWWF of 2.126 MGD. The existing system met the capacity criteria for both Peak Hour DWF and PWWF with one exception. The existing manhole T18 has sagged, creating a very flat pipe between manholes T18 and T19. To remedy this deficiency does not require an increase in pipe size. Restoring the original invert elevations at manhole T18 will provide the necessary capacity under existing flow conditions.

3.5.2 SCENARIO 2: EXISTING SYSTEM + VPTSP AT BUILDOUT

With the addition of sewer flows from the VPTSP, including the 20-gpm contributed by the MAC, there are capacity deficiencies observed under the ADWF condition. Table 7 shows the pipe segments with a d/D ratio greater than 0.5 under Peak Hour DWF conditions of 1.040 MGD. There is a total of 2 pipe segments that are affected by the additional flows. The total affected pipe length is approximately 670 linear feet. Figure 2 shows the location of these pipe segments. Under PWWF conditions of 2.570 MGD, there are no pipe segments where modeled sewer flows exceed the pipe full capacity.

The required pipe sizes to remedy the deficiencies are noted in the tables.

3.5.3 SCENARIO 3: EXISTING SYSTEM + VPTSP AT BUILDOUT + BUILDOUT DEVELOPMENT

With the addition of sewer flows from the VPTSP and projected buildout development, there are capacity deficiencies observed under the ADWF condition. Table 8 shows the pipe segments with a d/D ratio greater than 0.5 under Peak Hour DWF conditions of 1.164 MGD. There are 2 pipe segments that are affected by the additional flows. The total affected pipe length is approximately 670 linear feet. Figure 3 shows the location of the pipe segments. Under PWWF conditions of 2.881 MGD, there are no pipe segments where modeled sewer flows exceed the pipe full capacity.

The required pipe sizes to remedy the deficiencies are noted in the tables.

Table 7: Existing + VPTSP Peak Hour DWF Capacity Deficiencies

Start Manhole	End Manhole	Pipe Size (in.)	Full Pipe Capacity (MGD)	Peak Hour DWF (MGD)	d/D, %	Required Pipe Size
T18	T19	15	0.646	0.605	(N/A) ⁶	15
T37	T37A	12	4.199	0.890	0.560	15

Table 8: Existing + VPTSP + Buildout Projections Peak Hour DWF Capacity Deficiencies

Start Manhole	End Manhole	Pipe Size (in.)	Full Pipe Capacity (MGD)	Peak Hour DWF (MGD)	d/D, %	Required Pipe Size
T18	T19	15	0.646	0.631	(N/A) ⁶	15
T37	T37A	12	4.199	0.983	0.579	15

4.0 SUMMARY AND RECCOMENDATIONS

This sewer system capacity analysis was performed to assess sewer system capacity at both peak dry weather flow conditions (peak hour flow at maximum occupancy) and peak wet weather flow caused by a storm event. Peak flow conditions caused by the storm event coincided with peak hour wastewater flows. The data used to establish these existing wastewater flows was based on an extreme rain on snow event on December 31, 2005 and the dry weather days preceding the storm. These parameters simulate an extreme storm occurring during a holiday period with an expected peak occupancy during the ski season. Thus, the modeling effort produced a conservative, yet realistic, estimate of wastewater flow.

Modeling simulations were performed for three scenarios: existing system, existing system + VPTSP, and existing system + VPTSP + non-project buildout development. Under existing conditions, manhole T18 was identified as the only one deficiency due to the manhole sagging. If the invert elevations in this manhole were restored to previous conditions, then this pipe segment would meet flow capacity criteria.

With the addition of VPTSP and non-project buildout development, hydraulic deficiencies were seen in Peak Hour DWF conditions. The specific pipe sections were all located along the District’s main interceptor (T-series manholes). Table 9 summarizes the linear feet of under-capacity sewer pipe for each scenario as well as the recommended increased pipe size.

Table 9: Linear Feet of Under Capacity Pipe Peak Hour DWF Conditions

Scenario	6" to 8"	12" to 15"	Total
1: Existing System	No pipe upsizing required		0
2: Existing System + VPTSP	0	670	670
3: Existing System + VPTSP + Buildout	0	670	670

Sewer flows for the VPTSP project were provided by Psomas, most recently in their Village at Palisades Tahoe Specific Plan Amendment – Sanitary Sewer Infrastructure Master Plan (September 15, 2025). The estimated flows are based on specific land use sewer generation rates developed by DOWL and the District. But sewer generation for swimming pools at both the MAC and the various developments are based on other criteria, including splash losses and specific filter backwash estimates. Of specific

⁶ This pipe capacity affected by sagging manhole T18, as such d/D is not applicable due to adverse pipe grade.

importance to sewer system capacity are the draining of pools/spas and the filter backwash system at the MAC. Filter backwash requirements at the MAC were estimated by Psomas to be 5,000 gpd. The system will be designed with a 12,000-gallon equalization tank and metered into the collection system at 20 gpm (pursuant to a previous meeting). Flow rates in excess of 20 gpm can have a substantial impact on the capacity of the collection system.

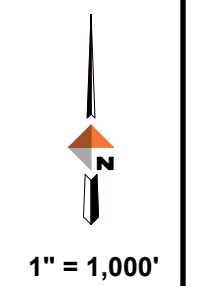
It is recommended that the District include specific language in the development agreement that limits the amount of discharge to the system from the MAC at 20 gpm. As the rapid draining of pools can also have a large impact on the collection system, it is also recommended that the development agreement includes language requiring the District be notified and receive advanced approval before draining pools to the system. This will greatly reduce the risk of sanitary sewer overflows during peak flow events.

Attachment 1: Figures

Sewer Capacity Analysis

General Plan Buildout Estimates

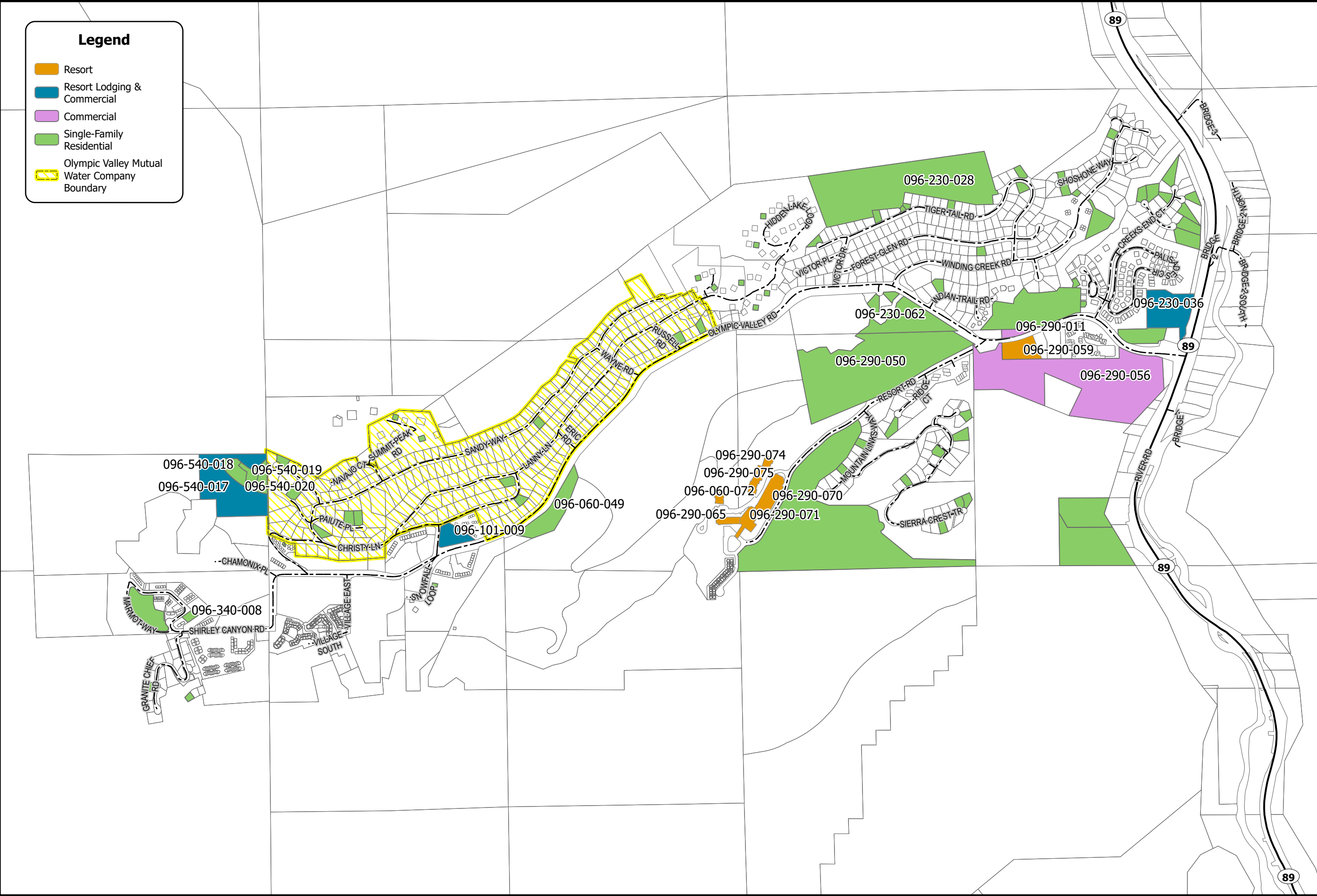
Figure 1

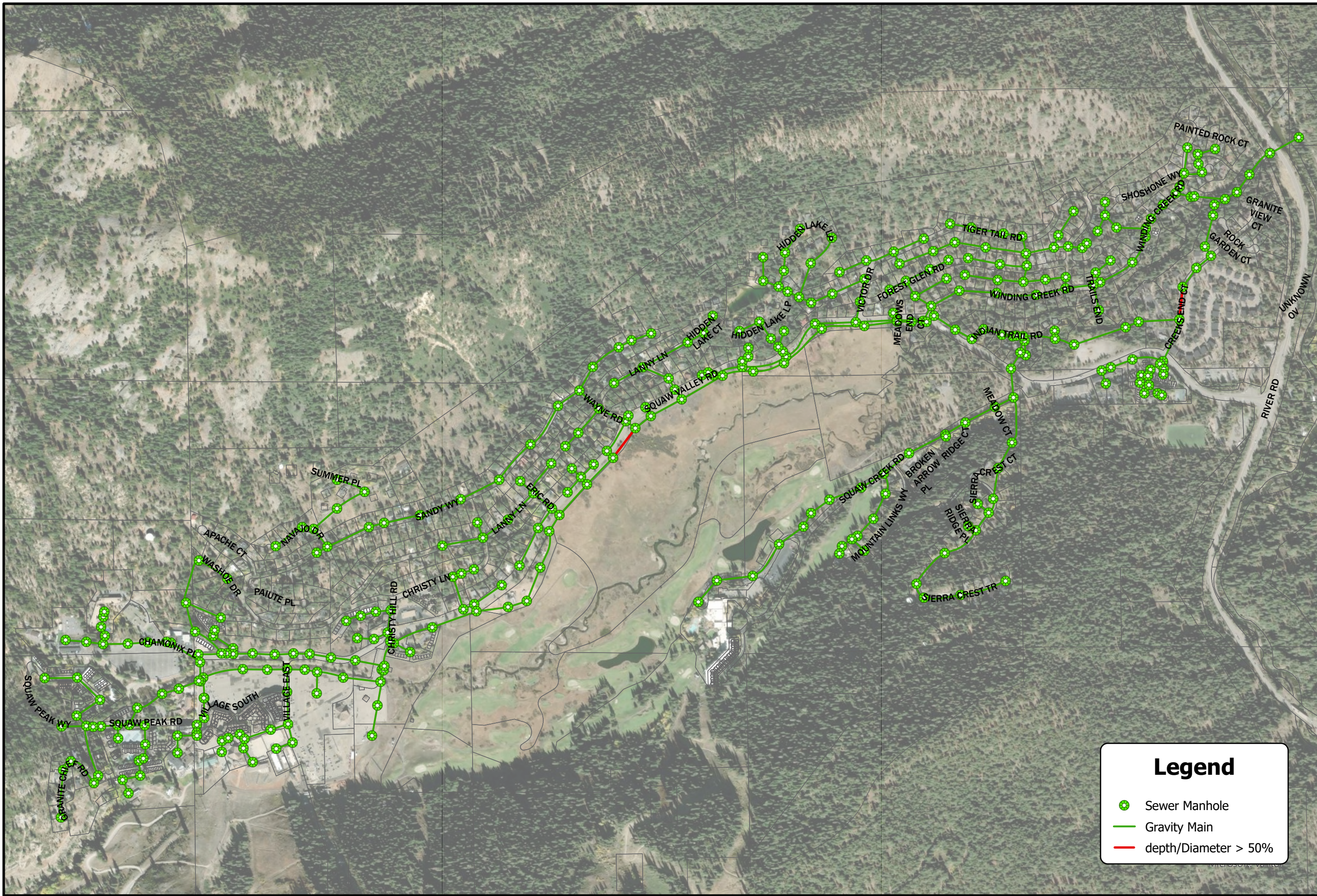


The data contained herein does not represent survey delineation and should not be construed as a replacement for the authoritative source. No liability is assumed by DOWL as to the sufficiency or accuracy of the data.

Legend

- Resort
- Resort Lodging & Commercial
- Commercial
- Single-Family Residential
- Olympic Valley Mutual Water Company Boundary





Legend

- Sewer Manhole
- Gravity Main
- depth/Diameter > 50%

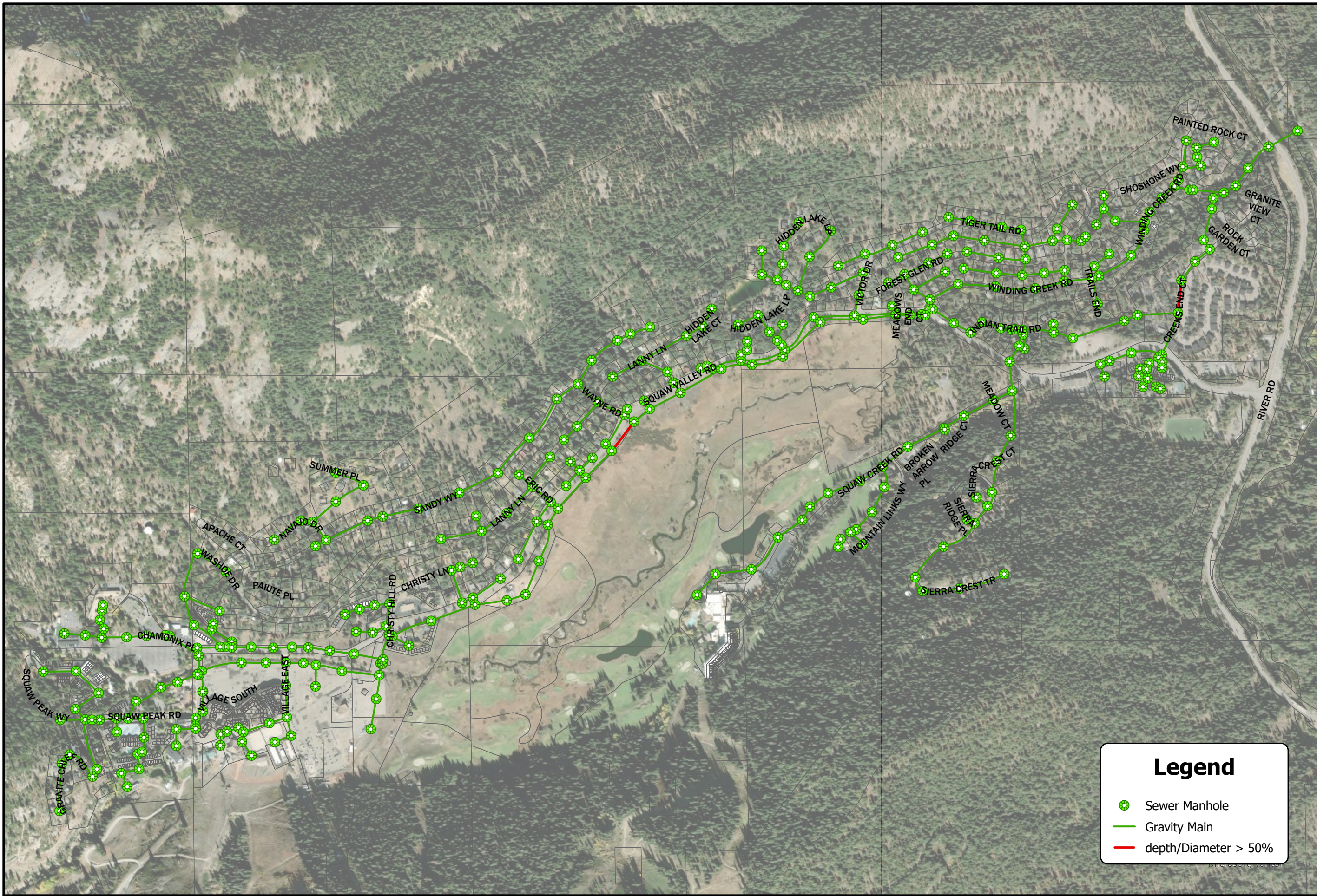
Sewer Capacity Analysis
 Existing + VPTSP - ADWF (Peak Hour)

Figure 2



1" = 850'

The data contained herein does not represent survey delineation and should not be construed as a replacement for the authoritative source. No liability is assumed by DOWL as to the sufficiency or accuracy of the data.



Legend

- Sewer Manhole
- Gravity Main
- depth/Diameter > 50%

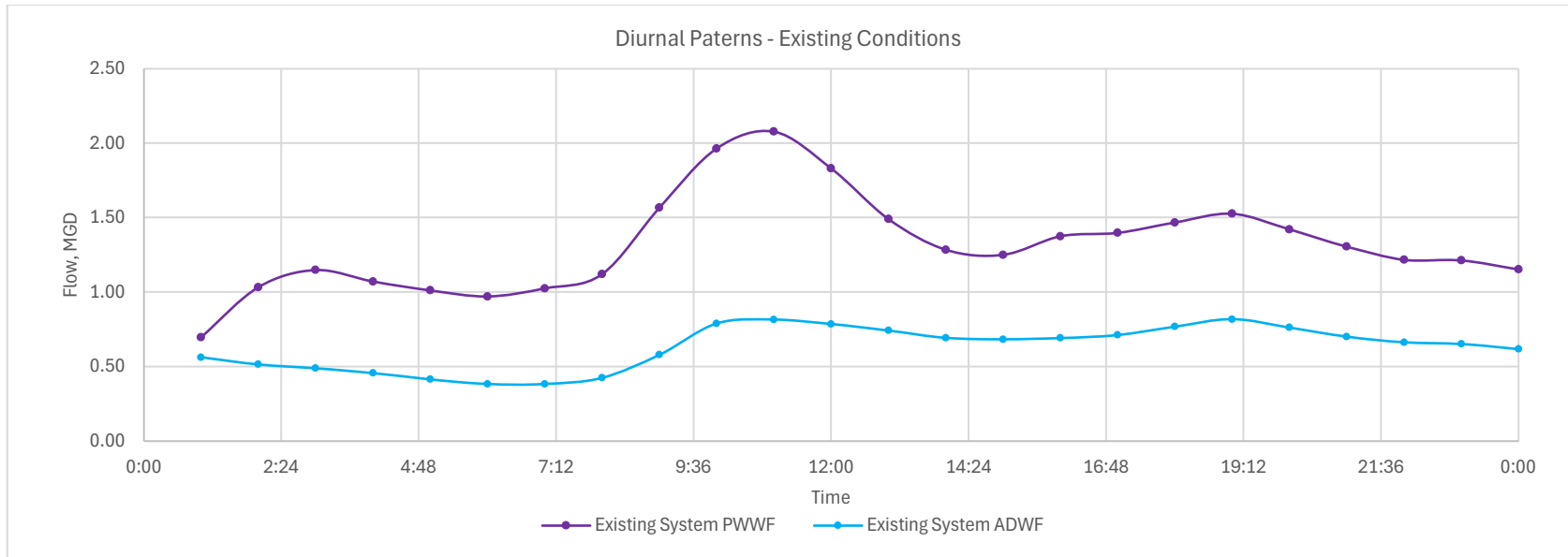
Sewer Capacity Analysis
 Existing + VPTSP + Non-Project Buildout - ADWF (Peak Hour)

Figure 3

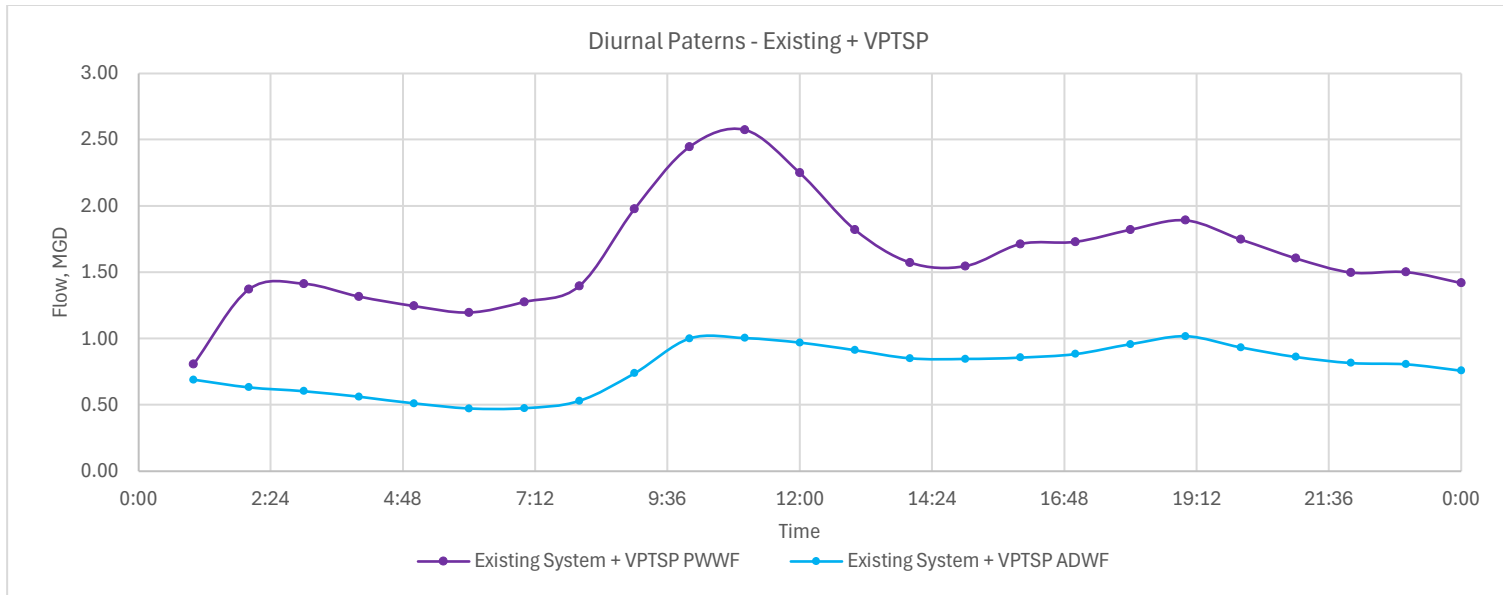
1" = 850'

The data contained herein does not represent survey delineation and should not be construed as a replacement for the authoritative source. No liability is assumed by DOWL as to the sufficiency or accuracy of the data.

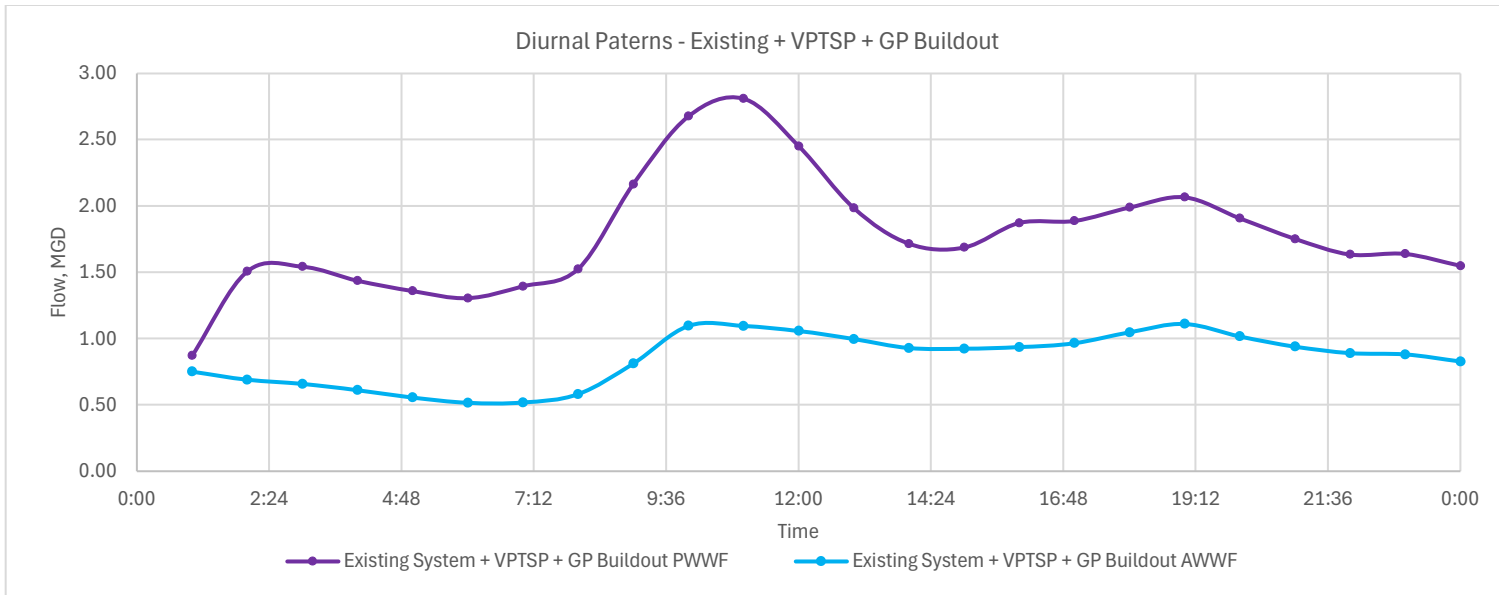
Attachment 2: Scenario Diurnal Flows



Existing System		
Time	ADWF, MGD	PWWF, MGD
1:00:00 AM	0.5619	0.6965
2:00:00 AM	0.5147	1.0328
3:00:00 AM	0.4890	1.1480
4:00:00 AM	0.4562	1.0708
5:00:00 AM	0.4148	1.0116
6:00:00 AM	0.3833	0.9701
7:00:00 AM	0.3829	1.0242
8:00:00 AM	0.4248	1.1203
9:00:00 AM	0.5789	1.5666
10:00:00 AM	0.7897	1.9638
11:00:00 AM	0.8152	2.0771
12:00:00 PM	0.7858	1.8299
1:00:00 PM	0.7424	1.4905
2:00:00 PM	0.6925	1.2838
3:00:00 PM	0.6832	1.2497
4:00:00 PM	0.6915	1.3747
5:00:00 PM	0.7119	1.3980
6:00:00 PM	0.7679	1.4671
7:00:00 PM	0.8181	1.5263
8:00:00 PM	0.7621	1.4207
9:00:00 PM	0.7009	1.3055
10:00:00 PM	0.6623	1.2171
11:00:00 PM	0.6519	1.2128
12:00:00 AM	0.6173	1.1528



Existing System + VPTSP		
Time	ADWF, MGD	PWWF, MGD
1:00:00 AM	0.6894	0.8068
2:00:00 AM	0.6328	1.3708
3:00:00 AM	0.6032	1.4136
4:00:00 AM	0.5611	1.3166
5:00:00 AM	0.5102	1.2453
6:00:00 AM	0.4725	1.1956
7:00:00 AM	0.4741	1.2759
8:00:00 AM	0.5293	1.3956
9:00:00 AM	0.7381	1.9780
10:00:00 AM	1.0005	2.4461
11:00:00 AM	1.0038	2.5733
12:00:00 PM	0.9690	2.2491
1:00:00 PM	0.9127	1.8199
2:00:00 PM	0.8509	1.5724
3:00:00 PM	0.8458	1.5453
4:00:00 PM	0.8563	1.7129
5:00:00 PM	0.8833	1.7291
6:00:00 PM	0.9574	1.8207
7:00:00 PM	1.0167	1.8917
8:00:00 PM	0.9326	1.7474
9:00:00 PM	0.8612	1.6054
10:00:00 PM	0.8156	1.4979
11:00:00 PM	0.8062	1.5012
12:00:00 AM	0.7584	1.4188



Existing System + VPTSP + GP Buildout		
Time	ADWF, MGD	PWWF, MGD
1:00:00 AM	0.7511	0.8712
2:00:00 AM	0.6896	1.5064
3:00:00 AM	0.6580	1.5425
4:00:00 AM	0.6112	1.4364
5:00:00 AM	0.5556	1.3587
6:00:00 AM	0.5149	1.3047
7:00:00 AM	0.5180	1.3938
8:00:00 AM	0.5798	1.5247
9:00:00 AM	0.8114	2.1636
10:00:00 AM	1.0962	2.6763
11:00:00 AM	1.0949	2.8096
12:00:00 PM	1.0574	2.4515
1:00:00 PM	0.9954	1.9838
2:00:00 PM	0.9278	1.7146
3:00:00 PM	0.9235	1.6869
4:00:00 PM	0.9349	1.8713
5:00:00 PM	0.9648	1.8876
6:00:00 PM	1.0466	1.9883
7:00:00 PM	1.1106	2.0656
8:00:00 PM	1.0160	1.9066
9:00:00 PM	0.9391	1.7515
10:00:00 PM	0.8896	1.6342
11:00:00 PM	0.8801	1.6389
12:00:00 AM	0.8268	1.5480

Attachment 3: Hydraulic Model Results

Scenario 1 - Existing Sewer System ADWF (Peak Hour)

Start Node	Invert (Start) (ft)	Stope Node	Invert (Stop) (ft)	Diameter (in)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Manning's n	Velocity	Flow (Maximum) (MGD)	Depth/Diame ter	Depth (Maximum) (ft)
T37	6134.09	T37A	6126.71	12	311.6	0.024	0.011	2.61	0.687	0.514	0.514
T45	6114.80	T40	6104.10	6	294.9	0.036	0.011	2.46	0.138	0.475	0.238
T41	6084.93	T43	6074.15	12	286.0	0.038	0.014	3.46	0.828	0.477	0.477
I49	6151.10	T34A	6147.86	6	78.1	0.041	0.011	0.00	0.000	0.425	0.212
T43	6074.46	TTSA	6068.27	10	315.7	0.020	0.011	6.07	0.828	0.410	0.342
T18	6172.23	T19	6172.22	15	352.3	0.000	0.011	1.46	0.404	0.381	0.476
A71	6189.96	T19	6172.17	6	111.5	0.160	0.011	0.00	0.000	0.381	0.190
I46	6161.17	T32	6152.50	6	35.3	0.245	0.011	0.00	0.000	0.367	0.184
T39	6122.47	T39A	6118.28	15	107.2	0.039	0.011	2.27	0.686	0.406	0.508
A59	6187.89	T11	6178.42	6	70.8	0.134	0.011	0.00	0.000	0.349	0.175
T17	6173.70	T18	6172.31	15	354.6	0.004	0.011	1.73	0.404	0.336	0.419
T35	6135.54	T36	6135.04	15	136.3	0.004	0.011	2.75	0.674	0.348	0.435
M1	6193.30	T09	6180.69	6	177.7	0.071	0.011	0.00	0.000	0.315	0.157
T37A	6127.12	T38	6124.19	12	222.5	0.013	0.011	4.63	0.687	0.333	0.333
T34	6147.24	T35	6135.68	12	516.5	0.022	0.011	4.56	0.674	0.333	0.333
T34A	6147.67	T34	6147.26	15	190.9	0.002	0.011	2.95	0.674	0.331	0.413
T46	6137.22	T37	6134.09	6	429.3	0.007	0.011	0.40	0.013	0.337	0.168
GV148	6168.77	T23	6167.91	15	308.7	0.003	0.011	2.30	0.477	0.307	0.384
T19	6172.21	T20	6171.57	15	189.0	0.003	0.011	2.27	0.466	0.305	0.382
T20	6171.56	T21	6171.00	15	333.1	0.002	0.011	2.26	0.465	0.306	0.382
A67	6187.47	T17	6173.88	6	90.3	0.150	0.011	0.00	0.000	0.296	0.148
T22	6169.61	GV148	6168.77	15	298.6	0.003	0.011	2.37	0.477	0.301	0.376
T31	6153.03	T32	6152.44	15	319.8	0.002	0.011	2.46	0.478	0.294	0.367
T25	6164.79	T26	6164.11	15	313.9	0.002	0.011	2.45	0.477	0.294	0.367
T21	6170.97	T22	6169.62	15	450.1	0.003	0.011	2.46	0.477	0.293	0.366
T14	6176.34	T15	6175.29	15	362.3	0.003	0.011	2.06	0.383	0.285	0.356
T15	6175.28	T16	6175.00	15	184.4	0.002	0.011	2.10	0.383	0.281	0.351
T30	6153.45	T31	6153.11	15	146.3	0.002	0.011	2.50	0.478	0.290	0.362
T26	6164.09	T26A	6163.72	15	138.9	0.003	0.011	2.51	0.477	0.289	0.361
T36	6135.02	T37	6133.91	15	388.1	0.003	0.011	3.35	0.674	0.301	0.376
T12	6177.65	T13	6177.20	15	187.8	0.002	0.011	2.18	0.383	0.273	0.342
T23	6167.87	T24	6166.89	15	484.5	0.002	0.011	2.60	0.477	0.282	0.352
T10	6179.38	T11	6178.39	15	446.5	0.002	0.011	2.15	0.374	0.271	0.339
T26A	6163.71	T27	6163.36	15	143.1	0.002	0.011	2.61	0.477	0.281	0.351
T28	6160.34	T29	6154.48	12	242.7	0.024	0.011	4.10	0.477	0.280	0.280
T24	6166.99	T25	6164.96	15	410.9	0.005	0.011	2.67	0.477	0.277	0.346
T29	6154.48	T30	6153.78	15	181.2	0.004	0.011	2.67	0.477	0.276	0.345
T13	6177.18	T14	6176.43	15	345.9	0.002	0.011	2.29	0.383	0.264	0.330

Scenario 1 - Existing Sewer System ADFW (Peak Hour)

W02	6191.76	T09	6180.69	8	36.0	0.307	0.009	1.14	0.049	0.267	0.178
T33	6152.30	T34A	6147.86	15	308.3	0.014	0.011	3.63	0.672	0.284	0.355
I47	6161.28	T33	6152.30	6	48.7	0.184	0.011	0.00	0.000	0.284	0.142
T11	6178.37	T12	6177.70	15	304.2	0.002	0.011	2.34	0.383	0.260	0.325
T39A	6118.72	T39B	6115.51	15	305.7	0.011	0.014	3.75	0.686	0.281	0.352
T09	6180.69	T10	6179.53	15	398.7	0.003	0.011	2.29	0.370	0.258	0.322
T08	6181.09	T09	6180.39	15	290.2	0.002	0.011	2.09	0.320	0.248	0.310
T16	6174.97	T17	6173.71	15	393.5	0.003	0.011	2.51	0.399	0.255	0.318
W7A	6192.35	T08	6181.40	8	42.9	0.255	0.014	0.22	0.010	0.248	0.165
R09	6179.04	R07	6177.61	10	388.1	0.004	0.009	1.92	0.179	0.312	0.260
T32	6152.41	T33	6152.30	15	64.4	0.002	0.011	2.92	0.478	0.260	0.325
W04	6183.80	T08	6181.40	8	18.3	0.131	0.014	0.06	0.002	0.240	0.160
W46	6201.41	W13	6201.10	10	333.6	0.001	0.024	0.44	0.040	0.305	0.254
W77	6196.45	T04A	6191.75	10	215.0	0.022	0.011	1.22	0.102	0.301	0.251
R07	6177.61	R06	6177.33	10	223.0	0.001	0.009	2.07	0.182	0.298	0.248
R11	6180.44	R10	6179.81	10	252.7	0.002	0.009	2.11	0.174	0.285	0.237
T40A	6100.47	T41	6084.93	12	205.9	0.075	0.009	8.20	0.828	0.253	0.253
R13	6182.30	R12A	6181.92	10	147.7	0.003	0.009	2.15	0.174	0.281	0.234
T07	6185.71	T08	6181.40	12	115.5	0.037	0.011	3.39	0.308	0.235	0.235
R12A	6181.92	R12	6181.39	10	216.9	0.002	0.009	2.20	0.174	0.276	0.230
R12	6181.39	R11	6180.44	10	323.9	0.003	0.009	2.23	0.174	0.274	0.228
R10	6179.81	R09	6179.04	10	310.2	0.002	0.009	2.30	0.179	0.273	0.228
R14	6183.41	R13	6182.30	10	285.9	0.004	0.009	2.35	0.174	0.264	0.220
R01	6166.50	T33	6152.30	10	159.2	0.089	0.011	3.26	0.198	0.238	0.198
T27	6163.34	T28	6160.34	12	91.8	0.033	0.011	5.82	0.477	0.219	0.219
R16	6186.30	R15	6185.30	10	344.7	0.003	0.009	2.45	0.175	0.257	0.214
W36	6202.56	W36A	6201.95	10	165.8	0.004	0.014	1.40	0.100	0.257	0.214
W37	6203.23	W36	6202.56	10	276.8	0.002	0.014	1.31	0.091	0.251	0.209
T38	6124.81	T39	6122.47	15	180.9	0.013	0.011	5.35	0.686	0.219	0.273
E30A	6121.96	T44	6120.73	8	175.9	0.007	0.009	2.78	0.122	0.250	0.167
W38	6203.80	W37	6203.23	10	180.8	0.003	0.014	1.30	0.089	0.248	0.207
T04A	6191.75	T05	6191.63	15	167.6	0.001	0.011	1.69	0.259	0.248	0.310
R15	6185.30	R14	6183.41	10	403.2	0.005	0.009	2.64	0.174	0.244	0.203
T40	6104.10	T40A	6100.47	15	131.1	0.028	0.014	6.45	0.819	0.217	0.271
E34	6142.00	E33	6141.04	8	70.1	0.014	0.014	2.64	0.112	0.243	0.162
R04	6175.40	R03	6174.10	10	198.7	0.007	0.009	2.79	0.184	0.243	0.202
T39C	6109.21	T40	6104.10	15	116.1	0.044	0.009	5.49	0.686	0.215	0.268
R18	6203.31	R10	6179.81	6	204.3	0.115	0.009	0.00	0.000	0.242	0.121
E29	6148.00	E30	6124.00	4	279.8	0.086	0.009	0.28	0.003	0.234	0.078
T05	6191.63	T5A	6191.07	15	120.5	0.005	0.011	1.87	0.259	0.231	0.289
T04	6192.53	T04A	6191.75	15	189.5	0.004	0.011	1.13	0.156	0.230	0.287

Scenario 1 - Existing Sewer System ADFW (Peak Hour)

R06	6177.33	R04	6175.40	10	317.7	0.006	0.009	3.03	0.182	0.227	0.189
E30	6124.00	E30A	6121.96	8	106.7	0.019	0.011	3.20	0.122	0.226	0.151
T44	6120.73	T44A	6119.54	8	165.1	0.007	0.009	3.22	0.122	0.225	0.150
E33	6141.04	E33A	6134.26	8	364.4	0.019	0.014	3.14	0.118	0.223	0.148
W13	6201.10	W14	6200.80	10	182.7	0.002	0.024	0.71	0.041	0.219	0.183
R25	6228.20	R03	6174.10	6	442.4	0.122	0.009	0.00	0.000	0.217	0.109
E36	6152.75	E34	6142.00	8	266.8	0.040	0.014	3.01	0.108	0.216	0.144
W38A	6204.49	W38	6203.80	10	111.2	0.006	0.014	1.57	0.087	0.215	0.179
E33B	6126.00	E30	6124.00	8	79.8	0.025	0.014	3.34	0.118	0.214	0.143
E33A	6134.26	E33B	6126.00	8	274.3	0.030	0.014	3.35	0.118	0.213	0.142
R17	6187.40	R16	6186.30	12	268.6	0.004	0.009	2.33	0.174	0.212	0.212
R03	6174.10	R02	6172.40	10	277.7	0.006	0.009	3.64	0.198	0.211	0.176
T5A	6191.07	T06	6190.69	15	254.9	0.001	0.011	2.16	0.263	0.211	0.264
W48	6205.54	W47	6202.90	10	191.4	0.014	0.024	0.60	0.032	0.210	0.175
W36A	6201.95	W15	6201.30	10	204.4	0.003	0.014	1.87	0.100	0.209	0.174
W47	6202.90	W47A	6202.49	10	177.6	0.002	0.024	0.75	0.040	0.208	0.173
W39	6204.60	W38A	6204.49	10	157.8	0.001	0.014	0.64	0.033	0.203	0.169
W47A	6202.49	W46	6201.41	10	42.8	0.025	0.024	0.80	0.040	0.202	0.168
W49A	6209.67	W49	6207.30	6	160.1	0.015	0.024	0.29	0.005	0.195	0.097
T44B	6115.91	T45	6114.80	8	33.0	0.034	0.009	4.56	0.138	0.192	0.128
W24R	6194.82	T5A	6191.07	12	203.9	0.018	0.024	0.06	0.004	0.189	0.189
W49	6207.30	W48	6205.54	8	236.5	0.007	0.024	1.00	0.030	0.188	0.126
T44A	6119.54	T44B	6115.91	8	147.5	0.025	0.009	4.84	0.138	0.184	0.123
R7A	6178.02	R07	6177.61	10	18.4	0.022	0.009	0.00	0.000	0.183	0.153
T39B	6115.13	T39C	6109.21	15	102.0	0.058	0.009	8.93	0.686	0.153	0.191
E39	6160.90	E38	6158.84	8	357.5	0.006	0.014	1.17	0.030	0.171	0.114
W76	6200.78	W75	6199.86	6	166.5	0.006	0.009	1.78	0.025	0.170	0.085
W62	6204.25	W38	6203.80	8	147.8	0.003	0.009	0.07	0.002	0.166	0.111
E32	6154.49	E33	6141.04	6	101.9	0.132	0.014	0.02	0.000	0.165	0.083
W38B	6206.00	W38A	6204.49	6	126.9	0.012	0.009	0.00	0.000	0.163	0.082
W14	6200.80	T02	6195.75	10	41.8	0.121	0.011	3.80	0.141	0.162	0.135
E40	6162.53	E39	6160.90	8	305.6	0.005	0.014	1.28	0.030	0.161	0.107
W40A	6204.80	W39	6204.60	10	74.6	0.003	0.014	0.49	0.018	0.161	0.134
E37	6157.08	E36	6152.75	8	286.5	0.015	0.014	1.48	0.034	0.158	0.106
E38	6158.84	E37	6157.08	8	379.4	0.005	0.014	1.38	0.032	0.158	0.106
W75	6199.86	W74	6198.13	8	182.2	0.009	0.009	1.81	0.037	0.149	0.100
E56	6164.60	E60	6163.70	8	158.1	0.006	0.014	1.58	0.033	0.149	0.100
R02	6172.40	R01	6166.50	10	175.4	0.034	0.009	6.02	0.198	0.149	0.124
E41	6163.44	E40	6162.53	8	158.7	0.006	0.014	0.96	0.020	0.146	0.097
T03	6193.82	T04	6192.53	15	233.0	0.006	0.011	2.18	0.156	0.146	0.182
E60	6163.70	E59	6159.16	8	210.7	0.022	0.014	1.65	0.033	0.145	0.097

Scenario 1 - Existing Sewer System ADFW (Peak Hour)

T02	6195.75	T03	6193.82	15	389.9	0.005	0.011	2.24	0.156	0.143	0.178
E58	6157.66	E36	6152.75	8	106.6	0.046	0.014	1.71	0.033	0.142	0.095
T06	6190.69	T07	6185.71	15	357.3	0.014	0.011	3.91	0.263	0.140	0.175
W74	6198.13	W77	6196.45	10	305.1	0.006	0.009	2.12	0.063	0.139	0.116
E10	6170.98	E56	6164.60	8	119.6	0.053	0.014	1.79	0.033	0.138	0.092
W73	6200.60	W74	6198.13	8	175.4	0.014	0.009	1.46	0.026	0.135	0.090
E59	6159.16	E58	6157.66	8	196.4	0.008	0.014	1.83	0.033	0.135	0.090
E43	6166.59	E42	6164.73	8	392.4	0.005	0.014	1.07	0.020	0.135	0.090
E35	6142.90	E34	6142.00	8	248.4	0.004	0.014	0.02	0.000	0.134	0.089
E42	6164.73	E41	6163.44	8	250.9	0.005	0.014	1.11	0.020	0.131	0.088
W49B	6212.68	W49A	6209.67	4	197.8	0.015	0.024	0.45	0.002	0.127	0.042
W15	6201.30	W14	6200.80	10	16.7	0.030	0.011	3.91	0.100	0.126	0.105
E08	6191.52	E09	6190.98	8	298.3	0.002	0.009	1.11	0.017	0.119	0.079
E55	6174.75	E56	6164.60	6	258.7	0.039	0.014	0.00	0.000	0.118	0.059
P13	6130.04	T44A	6119.54	8	68.8	0.153	0.009	0.93	0.013	0.117	0.078
E49	6176.69	E43	6166.59	6	199.5	0.051	0.014	0.45	0.003	0.114	0.057
E63	6170.92	E40	6162.53	6	181.0	0.046	0.014	0.00	0.000	0.109	0.054
W50R	6207.99	W49	6207.30	8	83.0	0.008	0.024	0.00	0.000	0.109	0.072
E44	6168.57	E43	6166.59	8	388.4	0.005	0.014	0.45	0.006	0.104	0.070
W01	6196.40	W02	6191.76	8	89.7	0.052	0.014	4.27	0.049	0.098	0.065
E09	6190.98	E10	6170.98	8	388.7	0.051	0.014	2.91	0.033	0.098	0.065
W01B	6200.24	W01	6196.40	8	143.9	0.027	0.014	0.75	0.008	0.097	0.065
T01	6197.20	T02	6195.75	15	192.2	0.008	0.011	0.43	0.014	0.094	0.117
W40	6205.97	W40A	6204.80	10	65.4	0.018	0.014	1.11	0.018	0.091	0.076
W42	6206.69	W40	6205.97	8	136.0	0.005	0.014	0.89	0.009	0.090	0.060
P04	6131.43	P03	6130.66	8	174.1	0.004	0.009	1.03	0.010	0.090	0.060
C4	6209.50	W01	6196.40	6	214.2	0.061	0.014	0.00	0.000	0.090	0.045
W43	6208.07	W42	6206.69	8	269.0	0.005	0.014	0.80	0.008	0.089	0.060
E42A	6172.38	E42	6164.73	6	76.7	0.100	0.014	0.00	0.000	0.089	0.045
W08B	6195.85	W08A	6195.50	10	153.2	0.002	0.014	0.63	0.010	0.087	0.072
W09	6196.50	W08B	6195.85	10	179.3	0.004	0.014	0.71	0.010	0.081	0.068
E61	6167.48	E60	6163.70	6	246.5	0.015	0.014	0.00	0.000	0.081	0.040
P06	6131.89	P04	6131.43	8	88.9	0.005	0.009	1.22	0.010	0.080	0.053
W08A	6195.50	W08	6194.90	10	207.5	0.003	0.014	0.72	0.010	0.080	0.066
P07	6132.36	P06	6131.89	8	91.2	0.005	0.009	1.24	0.010	0.079	0.052
W11	6197.90	W10	6197.30	10	184.7	0.003	0.014	0.74	0.010	0.078	0.065
P08	6133.31	P07	6132.36	8	172.5	0.006	0.009	1.28	0.010	0.078	0.052
W44	6209.56	W43	6208.07	8	300.4	0.005	0.014	0.61	0.005	0.078	0.052
P12	6154.64	P03	6130.66	6	248.0	0.097	0.009	0.36	0.001	0.077	0.039
E07	6192.80	E08	6191.52	8	221.4	0.006	0.014	0.03	0.000	0.077	0.051
W10	6197.30	W09	6196.50	10	210.8	0.004	0.014	0.77	0.010	0.076	0.064

Scenario 1 - Existing Sewer System ADFW (Peak Hour)

W08	6194.90	W07	6193.75	10	233.1	0.005	0.014	0.77	0.010	0.076	0.064
A83	6170.48	E44	6168.57	8	426.6	0.004	0.014	0.73	0.006	0.075	0.050
W11A	6198.10	W11	6197.90	10	63.6	0.003	0.014	0.54	0.006	0.073	0.061
P03	6130.66	P13	6130.04	8	136.7	0.005	0.009	1.70	0.012	0.069	0.046
A86	6207.06	W11	6197.90	6	51.4	0.178	0.009	0.00	0.000	0.068	0.034
W71	6208.46	W73	6200.60	8	262.8	0.030	0.009	0.67	0.004	0.065	0.043
T47	6144.47	T46	6137.22	6	299.6	0.024	0.011	0.00	0.000	0.065	0.032
T50A	6138.02	T46	6137.22	6	37.4	0.021	0.011	0.00	0.000	0.065	0.032
A82	6172.54	A83	6170.48	8	438.0	0.005	0.014	0.41	0.002	0.064	0.043
W19	6198.40	W11A	6198.10	10	47.7	0.006	0.014	0.72	0.006	0.061	0.051
W41	6242.85	W40	6205.97	6	236.1	0.156	0.014	0.00	0.000	0.059	0.030
W52	6267.50	W40	6205.97	6	494.1	0.125	0.009	0.00	0.000	0.059	0.030
W28R	6209.61	W70	6208.91	8	114.2	0.006	0.014	0.79	0.004	0.057	0.038
W07	6193.75	W7A	6192.35	10	281.7	0.005	0.014	1.23	0.010	0.056	0.046
A84	6171.79	A83	6170.48	6	56.5	0.023	0.014	0.00	0.000	0.052	0.026
E17	6190.77	E10	6170.98	8	163.1	0.121	0.014	0.00	0.000	0.049	0.033
E11	6181.95	E10	6170.98	8	270.8	0.041	0.009	0.00	0.000	0.049	0.033
W45	6215.00	W44	6209.56	8	310.8	0.018	0.014	0.33	0.001	0.049	0.032
W12	6199.05	W19	6198.40	10	219.9	0.003	0.014	0.34	0.002	0.048	0.040
A18	6226.07	W19	6198.40	6	330.3	0.084	0.009	0.00	0.000	0.046	0.023
W06	6188.50	W05	6186.30	8	290.3	0.008	0.014	0.62	0.002	0.046	0.031
W27R	6211.38	W28R	6209.61	6	65.2	0.027	0.014	0.00	0.000	0.043	0.021
W70	6208.91	W71	6208.46	8	61.8	0.007	0.009	1.25	0.004	0.042	0.028
W17	6197.60	T01	6197.20	8	5.5	0.073	0.011	0.00	0.000	0.040	0.026
W05	6186.30	W04	6183.80	8	341.0	0.007	0.014	0.88	0.002	0.036	0.024
H88	6179.40	A82	6172.54	6	51.5	0.133	0.014	0.00	0.000	0.034	0.017
W61A	6206.51	W62	6204.25	8	181.9	0.012	0.009	0.71	0.002	0.033	0.022
W61	6208.51	W61A	6206.51	8	137.3	0.015	0.009	1.00	0.002	0.026	0.017
A80	6173.90	A82	6172.54	8	288.0	0.005	0.014	0.00	0.000	0.025	0.017
E47	6187.90	E49	6176.69	6	218.2	0.051	0.014	0.00	0.000	0.024	0.012
E27	6162.40	E29	6148.00	8	160.6	0.090	0.009	1.97	0.003	0.023	0.015
W72	6212.72	W71	6208.46	6	90.7	0.047	0.009	0.00	0.000	0.023	0.011
W60	6208.83	W61	6208.51	6	47.5	0.007	0.009	0.00	0.000	0.017	0.009
E28	6168.10	E27	6162.40	6	127.8	0.045	0.014	0.00	0.000	0.014	0.007
E26	6192.80	E27	6162.40	6	165.7	0.184	0.014	0.00	0.000	0.014	0.007
E06	6193.66	E07	6192.80	8	343.1	0.003	0.014	0.00	0.000	0.007	0.005
E31	6177.11	E32	6154.49	6	185.1	0.122	0.014	0.00	0.000	0.006	0.003
A68	6205.95	A67	6187.47	4	120.2	0.154	0.011	0.00	0.000	0.000	0.000
A46	6283.80	A45	6240.52	4	153.0	0.283	0.011	0.00	0.000	0.000	0.000
R20	6235.68	R19	6221.55	6	224.3	0.063	0.009	0.00	0.000	0.000	0.000
R21	6237.00	R20	6235.68	6	60.9	0.022	0.009	0.00	0.000	0.000	0.000

Scenario 1 - Existing Sewer System ADWF (Peak Hour)

E13	6223.40	E12	6205.00	6	272.2	0.068	0.014	0.00	0.000	0.000	0.000
E51	6174.00	E63	6170.92	6	171.2	0.018	0.014	0.00	0.000	0.000	0.000
R19	6221.55	R18	6203.31	6	262.7	0.069	0.009	0.00	0.000	0.000	0.000
H104	6343.76	H103	6338.71	6	265.4	0.019	0.009	0.00	0.000	0.000	0.000
C1	6220.00	C2	6215.76	6	147.8	0.029	0.009	0.00	0.000	0.000	0.000
A26	6431.20	A27	6390.02	6	216.2	0.191	0.011	0.00	0.000	0.000	0.000
A17	6266.57	A18	6226.07	6	292.4	0.139	0.009	0.00	0.000	0.000	0.000
R32	6438.52	R30	6397.40	6	383.0	0.107	0.009	0.00	0.000	0.000	0.000
H89	6195.00	H88	6179.40	6	73.3	0.213	0.014	0.00	0.000	0.000	0.000
R35	6527.25	R34	6492.02	6	354.5	0.099	0.009	0.00	0.000	0.000	0.000
R28	6377.00	R27	6373.42	6	150.2	0.024	0.009	0.00	0.000	0.000	0.000
W01C	6198.62	W01B	6200.24	8	158.8	-0.010	0.014	0.00	0.000	0.530	0.353
C2	6215.76	C3	6211.20	6	148.8	0.031	0.009	0.00	0.000	0.000	0.000
A37A	6289.49	A37	6276.25	6	137.0	0.097	0.011	0.00	0.000	0.000	0.000
A37B	6300.03	A37A	6289.49	6	199.7	0.053	0.011	0.00	0.000	0.000	0.000
A88	6255.14	A87	6238.06	6	54.0	0.316	0.009	0.00	0.000	0.000	0.000
A87	6238.06	A86	6207.06	6	225.8	0.137	0.009	0.00	0.000	0.000	0.000
A70	6192.16	A71	6189.96	6	336.1	0.007	0.011	0.00	0.000	0.000	0.000
A25	6442.50	A26	6431.20	6	110.2	0.103	0.011	0.00	0.000	0.000	0.000
A28	6399.90	A27	6390.02	6	114.8	0.086	0.011	0.00	0.000	0.000	0.000
A33	6291.81	A34	6270.50	6	459.4	0.046	0.011	0.00	0.000	0.000	0.000
S53	6501.60	S52	6477.50	6	290.8	0.083	0.011	0.00	0.000	0.000	0.000
A58	6189.07	A59	6187.89	6	114.8	0.010	0.011	0.00	0.000	0.000	0.000
A55	6225.90	A58	6189.07	6	325.9	0.113	0.011	0.00	0.000	0.000	0.000
S52	6477.50	S51	6456.40	6	307.3	0.069	0.011	0.00	0.000	0.000	0.000
A56	6227.51	A55	6225.90	6	87.7	0.018	0.011	0.00	0.000	0.000	0.000
A32	6312.94	A33	6291.81	6	453.9	0.047	0.011	0.00	0.000	0.000	0.000
A57	6230.50	A56	6227.51	6	125.6	0.024	0.011	0.00	0.000	0.000	0.000
A60	6197.30	A59	6187.89	6	318.4	0.030	0.011	0.00	0.000	0.000	0.000
A62	6200.59	A63	6189.85	6	401.4	0.027	0.011	0.00	0.000	0.000	0.000
WY-A30	6367.64	A30	6354.41	6	350.8	0.038	0.011	0.00	0.000	0.000	0.000
A30	6354.41	A31	6331.83	6	414.9	0.054	0.011	0.00	0.000	0.000	0.000
A47	6270.09	A45	6240.52	6	393.7	0.075	0.011	0.00	0.000	0.000	0.000
A45	6240.52	A44	6226.50	6	295.5	0.047	0.011	0.00	0.000	0.000	0.000
A44	6226.50	A42	6209.99	6	349.7	0.047	0.011	0.00	0.000	0.000	0.000
A34	6270.50	A35	6260.00	6	249.2	0.042	0.011	0.00	0.000	0.000	0.000
A40	6231.01	A39	6228.59	6	179.1	0.014	0.011	0.00	0.000	0.000	0.000
A66	6188.90	A67	6187.47	6	194.2	0.007	0.011	0.00	0.000	0.000	0.000
A69	6191.40	A67	6187.47	6	172.6	0.023	0.011	0.00	0.000	0.000	0.000
H94	6266.20	A78	6252.82	6	175.4	0.076	0.011	0.00	0.000	0.000	0.000
H95	6287.00	H94	6266.20	6	188.4	0.110	0.011	0.00	0.000	0.000	0.000

Scenario 1 - Existing Sewer System ADFW (Peak Hour)

A78	6252.82	A76	6224.80	6	490.9	0.057	0.011	0.00	0.000	0.000	0.000
A79	6179.00	A80A	6176.00	6	64.2	0.047	0.014	0.00	0.000	0.000	0.000
H92	6277.37	H91	6261.21	6	209.7	0.077	0.009	0.00	0.000	0.000	0.000
A80A	6176.00	A80	6173.90	6	57.9	0.036	0.014	0.00	0.000	0.000	0.000
A74	6184.20	T21	6170.83	6	114.7	0.117	0.014	0.00	0.000	0.497	0.248
A76	6224.80	A75	6196.26	6	271.3	0.105	0.011	0.00	0.000	0.000	0.000
A77	6235.70	A76	6224.80	6	312.6	0.035	0.011	0.00	0.000	0.000	0.000
A72	6194.12	A71	6189.96	6	59.7	0.070	0.011	0.00	0.000	0.000	0.000
A38	6221.80	A71	6189.96	6	284.8	0.112	0.011	0.00	0.000	0.000	0.000
H97	6253.93	E45	6200.14	6	127.5	0.422	0.014	0.00	0.000	0.000	0.000
A73	6189.48	T20	6171.56	6	97.4	0.184	0.014	0.00	0.000	0.433	0.217
A65	6188.50	T16	6174.88	6	95.2	0.143	0.011	0.00	0.000	0.431	0.215
A42	6209.99	A65	6188.50	6	227.6	0.094	0.011	0.00	0.000	0.000	0.000
A27	6390.02	A29	6373.50	6	439.4	0.038	0.011	0.00	0.000	0.000	0.000
E63A	6176.10	E63	6170.92	6	344.2	0.015	0.014	0.00	0.000	0.000	0.000
W34	6209.72	W33A	6207.90	6	161.7	0.011	0.011	0.00	0.000	0.000	0.000
A35	6260.00	A38	6221.80	6	253.7	0.151	0.011	0.00	0.000	0.000	0.000
A39	6228.59	A38	6221.80	6	304.6	0.022	0.011	0.00	0.000	0.000	0.000
A63	6189.85	A65	6188.50	6	228.3	0.006	0.011	0.00	0.000	0.000	0.000
A43	6238.36	A42	6209.99	6	170.1	0.167	0.011	0.00	0.000	0.000	0.000
A31	6331.83	A32	6312.94	6	411.8	0.046	0.011	0.00	0.000	0.000	0.000
A16	6296.00	A17	6266.57	6	362.2	0.081	0.009	0.00	0.000	0.000	0.000
W33A	6207.90	W32	6204.90	6	185.7	0.016	0.011	0.00	0.000	0.000	0.000
E12	6205.00	E11	6181.95	6	124.6	0.185	0.014	0.00	0.000	0.000	0.000
R33	6479.22	R32	6438.52	6	402.5	0.101	0.009	0.00	0.000	0.000	0.000
R34	6492.02	R33	6479.22	6	158.3	0.081	0.009	0.00	0.000	0.000	0.000
W31	6203.49	W30	6202.96	6	95.5	0.006	0.011	0.00	0.000	0.000	0.000
S51	6456.40	A26	6431.20	6	296.1	0.085	0.011	0.00	0.000	0.000	0.000
A75	6196.26	A74	6184.20	6	118.5	0.102	0.014	0.00	0.000	0.000	0.000
A36	6274.65	A35	6260.00	6	259.8	0.056	0.011	0.00	0.000	0.000	0.000
A41	6228.10	A42	6209.99	6	342.3	0.053	0.011	0.00	0.000	0.000	0.000
C3	6211.20	C4	6209.50	6	142.1	0.012	0.009	0.00	0.000	0.000	0.000
E62	6173.52	E61	6167.48	6	315.2	0.019	0.014	0.00	0.000	0.000	0.000
E46	6190.00	E47	6187.90	6	334.9	0.006	0.014	0.00	0.000	0.000	0.000
E54	6181.34	E55	6174.75	6	307.9	0.021	0.014	0.00	0.000	0.000	0.000
T50	6138.76	T50A	6138.02	6	106.2	0.007	0.011	0.00	0.000	0.000	0.000
T54	6139.31	T50	6138.76	6	63.3	0.009	0.011	0.00	0.000	0.000	0.000
T51	6147.03	T50	6138.76	6	103.3	0.080	0.011	0.00	0.000	0.000	0.000
T52	6147.58	T51	6147.03	6	72.1	0.008	0.011	0.00	0.000	0.000	0.000
T53	6148.29	T52	6147.58	6	108.2	0.007	0.011	0.00	0.000	0.000	0.000
T57	6141.70	T56	6140.81	6	41.2	0.022	0.011	0.00	0.000	0.000	0.000

Scenario 1 - Existing Sewer System ADFW (Peak Hour)

T56	6140.81	T55	6139.91	6	114.3	0.008	0.011	0.00	0.000	0.000	0.000
H99	6325.00	H98	6300.65	6	323.1	0.075	0.009	0.00	0.000	0.000	0.000
T55	6139.91	T54	6139.31	6	89.6	0.007	0.011	0.00	0.000	0.000	0.000
H102	6312.81	H101	6301.43	6	160.3	0.071	0.014	0.00	0.000	0.000	0.000
H106	6320.37	H105	6308.40	6	225.6	0.053	0.009	0.00	0.000	0.000	0.000
H105	6308.40	H101	6301.43	6	156.7	0.044	0.009	0.00	0.000	0.000	0.000
H101	6301.43	H100	6274.02	6	97.9	0.280	0.009	0.00	0.000	0.000	0.000
H98	6300.65	H97	6253.93	6	342.5	0.136	0.014	0.00	0.000	0.000	0.000
H100	6274.02	H97	6253.93	6	122.0	0.165	0.014	0.00	0.000	0.000	0.000
E45	6200.14	E46	6190.00	6	219.6	0.046	0.014	0.00	0.000	0.000	0.000
H87	6258.40	H85	6221.25	6	108.1	0.344	0.009	0.00	0.000	0.000	0.000
E53	6183.02	E52	6179.55	6	199.8	0.017	0.014	0.00	0.000	0.000	0.000
E52	6179.55	E51	6174.00	6	254.3	0.022	0.014	0.00	0.000	0.000	0.000
E50	6176.54	E51	6174.00	6	173.6	0.015	0.014	0.00	0.000	0.000	0.000
A29	6373.50	WY-A30	6367.64	6	148.4	0.039	0.011	0.00	0.000	0.000	0.000
E16	6196.92	E17	6190.77	6	183.3	0.034	0.014	0.00	0.000	0.000	0.000
T47A	6148.60	T47	6144.47	6	220.0	0.019	0.011	0.00	0.000	0.000	0.000
I45	6162.25	I46	6161.17	6	101.6	0.011	0.011	0.00	0.000	0.000	0.000
E25	6185.67	E24	6183.36	6	60.8	0.038	0.014	0.00	0.000	0.000	0.000
T48A	6150.78	T48	6149.75	6	127.8	0.008	0.011	0.00	0.000	0.000	0.000
A37	6276.25	A36	6274.65	6	312.5	0.005	0.011	0.00	0.000	0.000	0.000
T59	6139.47	T58	6138.95	6	51.5	0.010	0.011	0.00	0.000	0.000	0.000
T48	6149.75	T47A	6148.60	6	92.5	0.012	0.011	0.00	0.000	0.000	0.000
W31A	6203.82	W31	6203.49	6	74.8	0.004	0.011	0.00	0.000	0.000	0.000
W32	6204.90	W31A	6203.82	6	27.5	0.039	0.011	0.00	0.000	0.000	0.000
W25R	6219.26	W72	6212.72	6	159.7	0.041	0.009	0.00	0.000	0.000	0.000
T58	6138.95	T50A	6138.02	6	59.4	0.016	0.011	0.00	0.000	0.000	0.000
W26	6216.50	W27R	6211.38	6	107.4	0.048	0.014	0.00	0.000	0.000	0.000
I48	6165.85	I47	6161.28	6	137.2	0.033	0.011	0.00	0.000	0.000	0.000
A15	6339.98	A17	6266.57	6	442.9	0.166	0.009	0.00	0.000	0.000	0.000
W57	6222.40	W58	6221.20	6	141.4	0.008	0.009	0.00	0.000	0.000	0.000
H85	6221.25	A84	6171.79	6	61.5	0.804	0.014	0.00	0.000	0.000	0.000
R23	6239.48	R21	6237.00	6	115.7	0.021	0.009	0.00	0.000	0.000	0.000
R22	6257.85	R21	6237.00	6	165.1	0.126	0.009	0.00	0.000	0.000	0.000
R27	6373.42	R26	6315.62	6	297.5	0.194	0.009	0.00	0.000	0.000	0.000
R31	6402.16	R30	6397.40	6	81.1	0.059	0.009	0.00	0.000	0.000	0.000
R30	6397.40	R28	6377.00	6	207.4	0.098	0.009	0.00	0.000	0.000	0.000
R26	6315.62	R25	6228.20	6	276.0	0.317	0.009	0.00	0.000	0.000	0.000
R29	6382.72	R28	6377.00	6	135.9	0.042	0.009	0.00	0.000	0.000	0.000
H86	6233.90	H85	6221.25	6	161.3	0.078	0.009	0.00	0.000	0.000	0.000
H90	6241.00	H89	6195.00	6	82.0	0.561	0.014	0.00	0.000	0.000	0.000

Scenario 1 - Existing Sewer System ADFW (Peak Hour)

H91	6261.21	H87	6258.40	6	194.0	0.014	0.009	0.00	0.000	0.000	0.000
E24	6183.36	E23	6182.44	6	134.9	0.007	0.014	0.00	0.000	0.000	0.000
R36	6532.02	R35	6527.25	6	450.7	0.011	0.009	0.00	0.000	0.000	0.000
R24	6240.89	R23	6239.48	6	79.9	0.018	0.009	0.00	0.000	0.000	0.000
A14	6342.00	A15	6339.98	6	321.5	0.006	0.009	0.00	0.000	0.000	0.000
A24	6452.90	A25	6442.50	6	316.1	0.033	0.011	0.00	0.000	0.000	0.000
W55	6346.00	W54	6325.00	6	122.6	0.171	0.009	0.00	0.000	0.000	0.000
W54	6325.00	W53	6284.20	6	317.6	0.128	0.009	0.00	0.000	0.000	0.000
W56	6367.24	W55	6346.00	6	454.3	0.047	0.009	0.00	0.000	0.000	0.000
W53	6284.20	W52	6267.50	6	87.7	0.190	0.009	0.00	0.000	0.000	0.000
H103	6338.71	H102	6312.81	6	174.2	0.149	0.009	0.00	0.000	0.000	0.000
W59	6216.33	W60	6208.83	8	143.9	0.052	0.009	0.00	0.000	0.000	0.000
W50A	6209.59	W50	6208.76	8	99.5	0.008	0.024	0.00	0.000	0.000	0.000
W50B	6211.27	W50A	6209.59	8	47.6	0.035	0.024	0.00	0.000	0.000	0.000
W50	6208.76	W50R	6207.99	8	91.6	0.008	0.024	0.00	0.000	0.000	0.000
E14	6222.16	E15	6221.13	8	205.9	0.005	0.014	0.00	0.000	0.000	0.000
E01	6203.03	E02	6202.06	8	277.8	0.003	0.014	0.00	0.000	0.000	0.000
E04	6212.90	E03	6201.08	8	313.9	0.038	0.014	0.00	0.000	0.000	0.000
E03	6201.08	E06	6193.66	8	125.1	0.059	0.014	0.00	0.000	0.000	0.000
E15	6221.13	E16	6196.92	8	312.1	0.078	0.014	0.00	0.000	0.000	0.000
W30	6202.96	W17	6197.60	8	190.2	0.028	0.011	0.00	0.000	0.000	0.000
W58	6221.20	W59	6216.33	8	173.0	0.028	0.009	0.00	0.000	0.000	0.000
E23	6182.44	E11	6181.95	8	137.0	0.004	0.014	0.00	0.000	0.000	0.000
E02	6202.06	E03	6201.08	8	278.8	0.004	0.014	0.00	0.000	0.000	0.000

Scenario 2 - Existing Sewer System + VPTSP ADWF (Peak Hour)

Start Node	Invert (Start) (ft)	Stope Node	Invert (Stop) (ft)	Diameter (in)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Manning's n	Velocity	Flow (Maximum) (MGD)	Depth/Diame ter	Depth (Maximum) (ft)
T37	6134.09	T37A	6126.71	12	311.6	0.024	0.011	3.05	0.890	0.560	0.560
T45	6114.80	T40	6104.10	6	294.9	0.036	0.011	2.21	0.138	0.519	0.260
T41	6084.93	T43	6074.15	12	286.0	0.038	0.014	3.88	1.032	0.518	0.518
I49	6151.10	T34A	6147.86	6	78.1	0.041	0.011	0.00	0.000	0.490	0.245
T43	6074.46	TTSA	6068.27	10	315.7	0.020	0.011	6.44	1.032	0.465	0.387
T18	6172.23	T19	6172.22	15	352.3	0.000	0.011	1.71	0.605	0.458	0.573
A71	6189.96	T19	6172.17	6	111.5	0.160	0.011	0.00	0.000	0.450	0.225
I46	6161.17	T32	6152.50	6	35.3	0.245	0.011	0.00	0.000	0.445	0.223
T39	6122.47	T39A	6118.28	15	107.2	0.039	0.011	2.66	0.890	0.439	0.549
A59	6187.89	T11	6178.42	6	70.8	0.134	0.011	0.00	0.000	0.433	0.216
T17	6173.70	T18	6172.31	15	354.6	0.004	0.011	1.97	0.605	0.412	0.515
T35	6135.54	T36	6135.04	15	136.3	0.004	0.011	2.96	0.878	0.400	0.501
M1	6193.30	T09	6180.69	6	177.7	0.071	0.011	0.00	0.000	0.393	0.197
T37A	6127.12	T38	6124.19	12	222.5	0.013	0.011	4.97	0.890	0.383	0.383
T34	6147.24	T35	6135.68	12	516.5	0.022	0.011	4.93	0.878	0.382	0.382
T34A	6147.67	T34	6147.26	15	190.9	0.002	0.011	3.18	0.878	0.380	0.475
T46	6137.22	T37	6134.09	6	429.3	0.007	0.011	0.35	0.013	0.376	0.188
GV148	6168.77	T23	6167.91	15	308.7	0.003	0.011	2.55	0.679	0.370	0.462
T19	6172.21	T20	6171.57	15	189.0	0.003	0.011	2.51	0.668	0.369	0.461
T20	6171.56	T21	6171.00	15	333.1	0.002	0.011	2.51	0.667	0.369	0.461
A67	6187.47	T17	6173.88	6	90.3	0.150	0.011	0.00	0.000	0.364	0.182
T22	6169.61	GV148	6168.77	15	298.6	0.003	0.011	2.62	0.679	0.362	0.453
T31	6153.03	T32	6152.44	15	319.8	0.002	0.011	2.70	0.680	0.354	0.443
T25	6164.79	T26	6164.11	15	313.9	0.002	0.011	2.71	0.679	0.353	0.441
T21	6170.97	T22	6169.62	15	450.1	0.003	0.011	2.72	0.679	0.352	0.440
T14	6176.34	T15	6175.29	15	362.3	0.003	0.011	2.34	0.584	0.352	0.440
T15	6175.28	T16	6175.00	15	184.4	0.002	0.011	2.37	0.584	0.349	0.436
T30	6153.45	T31	6153.11	15	146.3	0.002	0.011	2.76	0.680	0.348	0.435
T26	6164.09	T26A	6163.72	15	138.9	0.003	0.011	2.77	0.679	0.347	0.434
T36	6135.02	T37	6133.91	15	388.1	0.003	0.011	3.60	0.878	0.346	0.433
T12	6177.65	T13	6177.20	15	187.8	0.002	0.011	2.45	0.584	0.341	0.426
T23	6167.87	T24	6166.89	15	484.5	0.002	0.011	2.87	0.679	0.338	0.423
T10	6179.38	T11	6178.39	15	446.5	0.002	0.011	2.44	0.574	0.337	0.422
T26A	6163.71	T27	6163.36	15	143.1	0.002	0.011	2.89	0.679	0.337	0.421
T28	6160.34	T29	6154.48	12	242.7	0.024	0.011	4.55	0.679	0.335	0.335
T24	6166.99	T25	6164.96	15	410.9	0.005	0.011	2.95	0.679	0.332	0.415
T29	6154.48	T30	6153.78	15	181.2	0.004	0.011	2.95	0.678	0.332	0.415
T13	6177.18	T14	6176.43	15	345.9	0.002	0.011	2.59	0.584	0.327	0.409

Scenario 2 - Existing Sewer System + VPTSP ADWF (Peak Hour)

W02	6191.76	T09	6180.69	8	36.0	0.307	0.009	0.84	0.049	0.326	0.217
T33	6152.30	T34A	6147.86	15	308.3	0.014	0.011	3.90	0.876	0.326	0.407
I47	6161.28	T33	6152.30	6	48.7	0.184	0.011	0.00	0.000	0.325	0.162
T11	6178.37	T12	6177.70	15	304.2	0.002	0.011	2.63	0.584	0.324	0.404
T39A	6118.72	T39B	6115.51	15	305.7	0.011	0.014	4.04	0.890	0.322	0.402
T09	6180.69	T10	6179.53	15	398.7	0.003	0.011	2.59	0.571	0.322	0.402
T08	6181.09	T09	6180.39	15	290.2	0.002	0.011	2.44	0.521	0.314	0.392
T16	6174.97	T17	6173.71	15	393.5	0.003	0.011	2.82	0.600	0.314	0.392
W7A	6192.35	T08	6181.40	8	42.9	0.255	0.014	0.16	0.010	0.313	0.208
R09	6179.04	R07	6177.61	10	388.1	0.004	0.009	1.92	0.179	0.312	0.260
T32	6152.41	T33	6152.30	15	64.4	0.002	0.011	3.28	0.680	0.308	0.385
W04	6183.80	T08	6181.40	8	18.3	0.131	0.014	0.04	0.002	0.305	0.203
W46	6201.41	W13	6201.10	10	333.6	0.001	0.024	0.44	0.040	0.305	0.254
W77	6196.45	T04A	6191.75	10	215.0	0.022	0.011	1.22	0.102	0.301	0.251
R07	6177.61	R06	6177.33	10	223.0	0.001	0.009	2.07	0.182	0.298	0.248
R11	6180.44	R10	6179.81	10	252.7	0.002	0.009	2.11	0.174	0.285	0.237
T40A	6100.47	T41	6084.93	12	205.9	0.075	0.009	8.73	1.032	0.283	0.283
R13	6182.30	R12A	6181.92	10	147.7	0.003	0.009	2.15	0.174	0.281	0.234
T07	6185.71	T08	6181.40	12	115.5	0.037	0.011	2.69	0.308	0.278	0.278
R12A	6181.92	R12	6181.39	10	216.9	0.002	0.009	2.20	0.174	0.276	0.230
R12	6181.39	R11	6180.44	10	323.9	0.003	0.009	2.23	0.174	0.274	0.228
R10	6179.81	R09	6179.04	10	310.2	0.002	0.009	2.30	0.179	0.273	0.228
R14	6183.41	R13	6182.30	10	285.9	0.004	0.009	2.35	0.174	0.264	0.220
R01	6166.50	T33	6152.30	10	159.2	0.089	0.011	2.87	0.198	0.262	0.219
T27	6163.34	T28	6160.34	12	91.8	0.033	0.011	6.44	0.679	0.261	0.261
R16	6186.30	R15	6185.30	10	344.7	0.003	0.009	2.45	0.175	0.257	0.214
W36	6202.56	W36A	6201.95	10	165.8	0.004	0.014	1.40	0.100	0.257	0.214
W37	6203.23	W36	6202.56	10	276.8	0.002	0.014	1.31	0.091	0.251	0.209
T38	6124.81	T39	6122.47	15	180.9	0.013	0.011	5.73	0.890	0.250	0.313
E30A	6121.96	T44	6120.73	8	175.9	0.007	0.009	2.78	0.122	0.250	0.167
W38	6203.80	W37	6203.23	10	180.8	0.003	0.014	1.30	0.089	0.248	0.207
T04A	6191.75	T05	6191.63	15	167.6	0.001	0.011	1.69	0.259	0.248	0.310
R15	6185.30	R14	6183.41	10	403.2	0.005	0.009	2.64	0.174	0.244	0.203
T40	6104.10	T40A	6100.47	15	131.1	0.028	0.014	6.83	1.023	0.244	0.305
E34	6142.00	E33	6141.04	8	70.1	0.014	0.014	2.64	0.112	0.243	0.162
R04	6175.40	R03	6174.10	10	198.7	0.007	0.009	2.79	0.184	0.243	0.202
T39C	6109.21	T40	6104.10	15	116.1	0.044	0.009	5.98	0.890	0.243	0.304
R18	6203.31	R10	6179.81	6	204.3	0.115	0.009	0.00	0.000	0.242	0.121
E29	6148.00	E30	6124.00	4	279.8	0.086	0.009	0.28	0.003	0.234	0.078
T05	6191.63	T5A	6191.07	15	120.5	0.005	0.011	1.87	0.259	0.231	0.289
T04	6192.53	T04A	6191.75	15	189.5	0.004	0.011	1.13	0.156	0.230	0.287

Scenario 2 - Existing Sewer System + VPTSP ADWF (Peak Hour)

R06	6177.33	R04	6175.40	10	317.7	0.006	0.009	3.03	0.182	0.227	0.189
E30	6124.00	E30A	6121.96	8	106.7	0.019	0.011	3.20	0.122	0.226	0.151
T44	6120.73	T44A	6119.54	8	165.1	0.007	0.009	3.22	0.122	0.225	0.150
E33	6141.04	E33A	6134.26	8	364.4	0.019	0.014	3.14	0.118	0.223	0.148
W13	6201.10	W14	6200.80	10	182.7	0.002	0.024	0.71	0.041	0.219	0.183
R25	6228.20	R03	6174.10	6	442.4	0.122	0.009	0.00	0.000	0.217	0.109
E36	6152.75	E34	6142.00	8	266.8	0.040	0.014	3.01	0.108	0.216	0.144
W38A	6204.49	W38	6203.80	10	111.2	0.006	0.014	1.57	0.087	0.215	0.179
E33B	6126.00	E30	6124.00	8	79.8	0.025	0.014	3.34	0.118	0.214	0.143
E33A	6134.26	E33B	6126.00	8	274.3	0.030	0.014	3.35	0.118	0.213	0.142
R17	6187.40	R16	6186.30	12	268.6	0.004	0.009	2.33	0.174	0.212	0.212
R03	6174.10	R02	6172.40	10	277.7	0.006	0.009	3.64	0.198	0.211	0.176
T5A	6191.07	T06	6190.69	15	254.9	0.001	0.011	2.16	0.263	0.211	0.264
W48	6205.54	W47	6202.90	10	191.4	0.014	0.024	0.60	0.032	0.210	0.175
W36A	6201.95	W15	6201.30	10	204.4	0.003	0.014	1.87	0.100	0.209	0.174
W47	6202.90	W47A	6202.49	10	177.6	0.002	0.024	0.75	0.040	0.208	0.173
W39	6204.60	W38A	6204.49	10	157.8	0.001	0.014	0.64	0.033	0.203	0.169
W47A	6202.49	W46	6201.41	10	42.8	0.025	0.024	0.80	0.040	0.202	0.168
W49A	6209.67	W49	6207.30	6	160.1	0.015	0.024	0.29	0.005	0.195	0.097
T44B	6115.91	T45	6114.80	8	33.0	0.034	0.009	4.56	0.138	0.192	0.128
W24R	6194.82	T5A	6191.07	12	203.9	0.018	0.024	0.06	0.004	0.189	0.189
W49	6207.30	W48	6205.54	8	236.5	0.007	0.024	1.00	0.030	0.188	0.126
T44A	6119.54	T44B	6115.91	8	147.5	0.025	0.009	4.84	0.138	0.184	0.123
R7A	6178.02	R07	6177.61	10	18.4	0.022	0.009	0.00	0.000	0.183	0.153
T39B	6115.13	T39C	6109.21	15	102.0	0.058	0.009	9.65	0.890	0.174	0.217
E39	6160.90	E38	6158.84	8	357.5	0.006	0.014	1.17	0.030	0.171	0.114
W76	6200.78	W75	6199.86	6	166.5	0.006	0.009	1.78	0.025	0.170	0.085
W62	6204.25	W38	6203.80	8	147.8	0.003	0.009	0.07	0.002	0.166	0.111
E32	6154.49	E33	6141.04	6	101.9	0.132	0.014	0.02	0.000	0.165	0.083
W38B	6206.00	W38A	6204.49	6	126.9	0.012	0.009	0.00	0.000	0.163	0.082
W14	6200.80	T02	6195.75	10	41.8	0.121	0.011	3.80	0.141	0.162	0.135
E40	6162.53	E39	6160.90	8	305.6	0.005	0.014	1.28	0.030	0.161	0.107
W40A	6204.80	W39	6204.60	10	74.6	0.003	0.014	0.49	0.018	0.161	0.134
E37	6157.08	E36	6152.75	8	286.5	0.015	0.014	1.48	0.034	0.158	0.106
E38	6158.84	E37	6157.08	8	379.4	0.005	0.014	1.38	0.032	0.158	0.106
W75	6199.86	W74	6198.13	8	182.2	0.009	0.009	1.81	0.037	0.149	0.100
E56	6164.60	E60	6163.70	8	158.1	0.006	0.014	1.58	0.033	0.149	0.100
R02	6172.40	R01	6166.50	10	175.4	0.034	0.009	6.02	0.198	0.149	0.124
E41	6163.44	E40	6162.53	8	158.7	0.006	0.014	0.96	0.020	0.146	0.097
T03	6193.82	T04	6192.53	15	233.0	0.006	0.011	2.18	0.156	0.146	0.182
E60	6163.70	E59	6159.16	8	210.7	0.022	0.014	1.65	0.033	0.145	0.097

Scenario 2 - Existing Sewer System + VPTSP ADWF (Peak Hour)

T02	6195.75	T03	6193.82	15	389.9	0.005	0.011	2.24	0.156	0.143	0.178
E58	6157.66	E36	6152.75	8	106.6	0.046	0.014	1.71	0.033	0.142	0.095
T06	6190.69	T07	6185.71	15	357.3	0.014	0.011	3.91	0.263	0.140	0.175
W74	6198.13	W77	6196.45	10	305.1	0.006	0.009	2.12	0.063	0.139	0.116
E10	6170.98	E56	6164.60	8	119.6	0.053	0.014	1.79	0.033	0.138	0.092
W73	6200.60	W74	6198.13	8	175.4	0.014	0.009	1.46	0.026	0.135	0.090
E59	6159.16	E58	6157.66	8	196.4	0.008	0.014	1.83	0.033	0.135	0.090
E43	6166.59	E42	6164.73	8	392.4	0.005	0.014	1.07	0.020	0.135	0.090
E35	6142.90	E34	6142.00	8	248.4	0.004	0.014	0.02	0.000	0.134	0.089
E42	6164.73	E41	6163.44	8	250.9	0.005	0.014	1.11	0.020	0.131	0.088
W49B	6212.68	W49A	6209.67	4	197.8	0.015	0.024	0.45	0.002	0.127	0.042
W15	6201.30	W14	6200.80	10	16.7	0.030	0.011	3.91	0.100	0.126	0.105
E08	6191.52	E09	6190.98	8	298.3	0.002	0.009	1.11	0.017	0.119	0.079
E55	6174.75	E56	6164.60	6	258.7	0.039	0.014	0.00	0.000	0.118	0.059
P13	6130.04	T44A	6119.54	8	68.8	0.153	0.009	0.93	0.013	0.117	0.078
E49	6176.69	E43	6166.59	6	199.5	0.051	0.014	0.45	0.003	0.114	0.057
E63	6170.92	E40	6162.53	6	181.0	0.046	0.014	0.00	0.000	0.109	0.054
W50R	6207.99	W49	6207.30	8	83.0	0.008	0.024	0.00	0.000	0.109	0.072
E44	6168.57	E43	6166.59	8	388.4	0.005	0.014	0.45	0.006	0.104	0.070
W01	6196.40	W02	6191.76	8	89.7	0.052	0.014	4.27	0.049	0.098	0.065
E09	6190.98	E10	6170.98	8	388.7	0.051	0.014	2.91	0.033	0.098	0.065
W01B	6200.24	W01	6196.40	8	143.9	0.027	0.014	0.75	0.008	0.097	0.065
T01	6197.20	T02	6195.75	15	192.2	0.008	0.011	0.43	0.014	0.094	0.117
W40	6205.97	W40A	6204.80	10	65.4	0.018	0.014	1.11	0.018	0.091	0.076
W42	6206.69	W40	6205.97	8	136.0	0.005	0.014	0.89	0.009	0.090	0.060
P04	6131.43	P03	6130.66	8	174.1	0.004	0.009	1.03	0.010	0.090	0.060
C4	6209.50	W01	6196.40	6	214.2	0.061	0.014	0.00	0.000	0.090	0.045
W43	6208.07	W42	6206.69	8	269.0	0.005	0.014	0.80	0.008	0.089	0.060
E42A	6172.38	E42	6164.73	6	76.7	0.100	0.014	0.00	0.000	0.089	0.045
W08B	6195.85	W08A	6195.50	10	153.2	0.002	0.014	0.63	0.010	0.087	0.072
W09	6196.50	W08B	6195.85	10	179.3	0.004	0.014	0.71	0.010	0.081	0.068
E61	6167.48	E60	6163.70	6	246.5	0.015	0.014	0.00	0.000	0.081	0.040
P06	6131.89	P04	6131.43	8	88.9	0.005	0.009	1.22	0.010	0.080	0.053
W08A	6195.50	W08	6194.90	10	207.5	0.003	0.014	0.72	0.010	0.080	0.066
P07	6132.36	P06	6131.89	8	91.2	0.005	0.009	1.24	0.010	0.079	0.052
W11	6197.90	W10	6197.30	10	184.7	0.003	0.014	0.74	0.010	0.078	0.065
P08	6133.31	P07	6132.36	8	172.5	0.006	0.009	1.28	0.010	0.078	0.052
W44	6209.56	W43	6208.07	8	300.4	0.005	0.014	0.61	0.005	0.078	0.052
P12	6154.64	P03	6130.66	6	248.0	0.097	0.009	0.36	0.001	0.077	0.039
E07	6192.80	E08	6191.52	8	221.4	0.006	0.014	0.03	0.000	0.077	0.051
W10	6197.30	W09	6196.50	10	210.8	0.004	0.014	0.77	0.010	0.076	0.064

Scenario 2 - Existing Sewer System + VPTSP ADWF (Peak Hour)

W08	6194.90	W07	6193.75	10	233.1	0.005	0.014	0.77	0.010	0.076	0.064
A83	6170.48	E44	6168.57	8	426.6	0.004	0.014	0.73	0.006	0.075	0.050
W11A	6198.10	W11	6197.90	10	63.6	0.003	0.014	0.54	0.006	0.073	0.061
P03	6130.66	P13	6130.04	8	136.7	0.005	0.009	1.70	0.012	0.069	0.046
A86	6207.06	W11	6197.90	6	51.4	0.178	0.009	0.00	0.000	0.068	0.034
W71	6208.46	W73	6200.60	8	262.8	0.030	0.009	0.67	0.004	0.065	0.043
T47	6144.47	T46	6137.22	6	299.6	0.024	0.011	0.00	0.000	0.065	0.032
T50A	6138.02	T46	6137.22	6	37.4	0.021	0.011	0.00	0.000	0.065	0.032
A82	6172.54	A83	6170.48	8	438.0	0.005	0.014	0.41	0.002	0.064	0.043
W19	6198.40	W11A	6198.10	10	47.7	0.006	0.014	0.72	0.006	0.061	0.051
W41	6242.85	W40	6205.97	6	236.1	0.156	0.014	0.00	0.000	0.059	0.030
W52	6267.50	W40	6205.97	6	494.1	0.125	0.009	0.00	0.000	0.059	0.030
W28R	6209.61	W70	6208.91	8	114.2	0.006	0.014	0.79	0.004	0.057	0.038
W07	6193.75	W7A	6192.35	10	281.7	0.005	0.014	1.23	0.010	0.056	0.046
A84	6171.79	A83	6170.48	6	56.5	0.023	0.014	0.00	0.000	0.052	0.026
E17	6190.77	E10	6170.98	8	163.1	0.121	0.014	0.00	0.000	0.049	0.033
E11	6181.95	E10	6170.98	8	270.8	0.041	0.009	0.00	0.000	0.049	0.033
W45	6215.00	W44	6209.56	8	310.8	0.018	0.014	0.33	0.001	0.049	0.032
W12	6199.05	W19	6198.40	10	219.9	0.003	0.014	0.34	0.002	0.048	0.040
A18	6226.07	W19	6198.40	6	330.3	0.084	0.009	0.00	0.000	0.046	0.023
W06	6188.50	W05	6186.30	8	290.3	0.008	0.014	0.62	0.002	0.046	0.031
W27R	6211.38	W28R	6209.61	6	65.2	0.027	0.014	0.00	0.000	0.043	0.021
W70	6208.91	W71	6208.46	8	61.8	0.007	0.009	1.25	0.004	0.042	0.028
W17	6197.60	T01	6197.20	8	5.5	0.073	0.011	0.00	0.000	0.040	0.026
W05	6186.30	W04	6183.80	8	341.0	0.007	0.014	0.88	0.002	0.036	0.024
H88	6179.40	A82	6172.54	6	51.5	0.133	0.014	0.00	0.000	0.034	0.017
W61A	6206.51	W62	6204.25	8	181.9	0.012	0.009	0.71	0.002	0.033	0.022
W61	6208.51	W61A	6206.51	8	137.3	0.015	0.009	1.00	0.002	0.026	0.017
A80	6173.90	A82	6172.54	8	288.0	0.005	0.014	0.00	0.000	0.025	0.017
E47	6187.90	E49	6176.69	6	218.2	0.051	0.014	0.00	0.000	0.024	0.012
E27	6162.40	E29	6148.00	8	160.6	0.090	0.009	1.97	0.003	0.023	0.015
W72	6212.72	W71	6208.46	6	90.7	0.047	0.009	0.00	0.000	0.023	0.011
W60	6208.83	W61	6208.51	6	47.5	0.007	0.009	0.00	0.000	0.017	0.009
E28	6168.10	E27	6162.40	6	127.8	0.045	0.014	0.00	0.000	0.014	0.007
E26	6192.80	E27	6162.40	6	165.7	0.184	0.014	0.00	0.000	0.014	0.007
E06	6193.66	E07	6192.80	8	343.1	0.003	0.014	0.00	0.000	0.007	0.005
E31	6177.11	E32	6154.49	6	185.1	0.122	0.014	0.00	0.000	0.006	0.003
A68	6205.95	A67	6187.47	4	120.2	0.154	0.011	0.00	0.000	0.000	0.000
A46	6283.80	A45	6240.52	4	153.0	0.283	0.011	0.00	0.000	0.000	0.000
R20	6235.68	R19	6221.55	6	224.3	0.063	0.009	0.00	0.000	0.000	0.000
R21	6237.00	R20	6235.68	6	60.9	0.022	0.009	0.00	0.000	0.000	0.000

Scenario 2 - Existing Sewer System + VPTSP ADWF (Peak Hour)

E13	6223.40	E12	6205.00	6	272.2	0.068	0.014	0.00	0.000	0.000	0.000
E51	6174.00	E63	6170.92	6	171.2	0.018	0.014	0.00	0.000	0.000	0.000
R19	6221.55	R18	6203.31	6	262.7	0.069	0.009	0.00	0.000	0.000	0.000
H104	6343.76	H103	6338.71	6	265.4	0.019	0.009	0.00	0.000	0.000	0.000
C1	6220.00	C2	6215.76	6	147.8	0.029	0.009	0.00	0.000	0.000	0.000
A26	6431.20	A27	6390.02	6	216.2	0.191	0.011	0.00	0.000	0.000	0.000
A17	6266.57	A18	6226.07	6	292.4	0.139	0.009	0.00	0.000	0.000	0.000
R32	6438.52	R30	6397.40	6	383.0	0.107	0.009	0.00	0.000	0.000	0.000
H89	6195.00	H88	6179.40	6	73.3	0.213	0.014	0.00	0.000	0.000	0.000
R35	6527.25	R34	6492.02	6	354.5	0.099	0.009	0.00	0.000	0.000	0.000
R28	6377.00	R27	6373.42	6	150.2	0.024	0.009	0.00	0.000	0.000	0.000
W01C	6198.62	W01B	6200.24	8	158.8	-0.010	0.014	0.00	0.000	0.000	0.000
C2	6215.76	C3	6211.20	6	148.8	0.031	0.009	0.00	0.000	0.000	0.000
A37A	6289.49	A37	6276.25	6	137.0	0.097	0.011	0.00	0.000	0.000	0.000
A37B	6300.03	A37A	6289.49	6	199.7	0.053	0.011	0.00	0.000	0.000	0.000
A88	6255.14	A87	6238.06	6	54.0	0.316	0.009	0.00	0.000	0.000	0.000
A87	6238.06	A86	6207.06	6	225.8	0.137	0.009	0.00	0.000	0.000	0.000
A70	6192.16	A71	6189.96	6	336.1	0.007	0.011	0.00	0.000	0.000	0.000
A25	6442.50	A26	6431.20	6	110.2	0.103	0.011	0.00	0.000	0.000	0.000
A28	6399.90	A27	6390.02	6	114.8	0.086	0.011	0.00	0.000	0.000	0.000
A33	6291.81	A34	6270.50	6	459.4	0.046	0.011	0.00	0.000	0.000	0.000
S53	6501.60	S52	6477.50	6	290.8	0.083	0.011	0.00	0.000	0.000	0.000
A58	6189.07	A59	6187.89	6	114.8	0.010	0.011	0.00	0.000	0.000	0.000
A55	6225.90	A58	6189.07	6	325.9	0.113	0.011	0.00	0.000	0.000	0.000
S52	6477.50	S51	6456.40	6	307.3	0.069	0.011	0.00	0.000	0.000	0.000
A56	6227.51	A55	6225.90	6	87.7	0.018	0.011	0.00	0.000	0.000	0.000
A32	6312.94	A33	6291.81	6	453.9	0.047	0.011	0.00	0.000	0.000	0.000
A57	6230.50	A56	6227.51	6	125.6	0.024	0.011	0.00	0.000	0.000	0.000
A60	6197.30	A59	6187.89	6	318.4	0.030	0.011	0.00	0.000	0.000	0.000
A62	6200.59	A63	6189.85	6	401.4	0.027	0.011	0.00	0.000	0.000	0.000
WY-A30	6367.64	A30	6354.41	6	350.8	0.038	0.011	0.00	0.000	0.000	0.000
A30	6354.41	A31	6331.83	6	414.9	0.054	0.011	0.00	0.000	0.000	0.000
A47	6270.09	A45	6240.52	6	393.7	0.075	0.011	0.00	0.000	0.000	0.000
A45	6240.52	A44	6226.50	6	295.5	0.047	0.011	0.00	0.000	0.000	0.000
A44	6226.50	A42	6209.99	6	349.7	0.047	0.011	0.00	0.000	0.000	0.000
A34	6270.50	A35	6260.00	6	249.2	0.042	0.011	0.00	0.000	0.000	0.000
A40	6231.01	A39	6228.59	6	179.1	0.014	0.011	0.00	0.000	0.000	0.000
A66	6188.90	A67	6187.47	6	194.2	0.007	0.011	0.00	0.000	0.000	0.000
A69	6191.40	A67	6187.47	6	172.6	0.023	0.011	0.00	0.000	0.000	0.000
H94	6266.20	A78	6252.82	6	175.4	0.076	0.011	0.00	0.000	0.000	0.000
H95	6287.00	H94	6266.20	6	188.4	0.110	0.011	0.00	0.000	0.000	0.000

Scenario 2 - Existing Sewer System + VPTSP ADWF (Peak Hour)

A78	6252.82	A76	6224.80	6	490.9	0.057	0.011	0.00	0.000	0.000	0.000
A79	6179.00	A80A	6176.00	6	64.2	0.047	0.014	0.00	0.000	0.000	0.000
H92	6277.37	H91	6261.21	6	209.7	0.077	0.009	0.00	0.000	0.000	0.000
A80A	6176.00	A80	6173.90	6	57.9	0.036	0.014	0.00	0.000	0.000	0.000
A74	6184.20	T21	6170.83	6	114.7	0.117	0.014	0.00	0.000	0.000	0.000
A76	6224.80	A75	6196.26	6	271.3	0.105	0.011	0.00	0.000	0.000	0.000
A77	6235.70	A76	6224.80	6	312.6	0.035	0.011	0.00	0.000	0.000	0.000
A72	6194.12	A71	6189.96	6	59.7	0.070	0.011	0.00	0.000	0.000	0.000
A38	6221.80	A71	6189.96	6	284.8	0.112	0.011	0.00	0.000	0.000	0.000
H97	6253.93	E45	6200.14	6	127.5	0.422	0.014	0.00	0.000	0.000	0.000
A73	6189.48	T20	6171.56	6	97.4	0.184	0.014	0.00	0.000	0.000	0.000
A65	6188.50	T16	6174.88	6	95.2	0.143	0.011	0.00	0.000	0.000	0.000
A42	6209.99	A65	6188.50	6	227.6	0.094	0.011	0.00	0.000	0.000	0.000
A27	6390.02	A29	6373.50	6	439.4	0.038	0.011	0.00	0.000	0.000	0.000
E63A	6176.10	E63	6170.92	6	344.2	0.015	0.014	0.00	0.000	0.000	0.000
W34	6209.72	W33A	6207.90	6	161.7	0.011	0.011	0.00	0.000	0.000	0.000
A35	6260.00	A38	6221.80	6	253.7	0.151	0.011	0.00	0.000	0.000	0.000
A39	6228.59	A38	6221.80	6	304.6	0.022	0.011	0.00	0.000	0.000	0.000
A63	6189.85	A65	6188.50	6	228.3	0.006	0.011	0.00	0.000	0.000	0.000
A43	6238.36	A42	6209.99	6	170.1	0.167	0.011	0.00	0.000	0.000	0.000
A31	6331.83	A32	6312.94	6	411.8	0.046	0.011	0.00	0.000	0.000	0.000
A16	6296.00	A17	6266.57	6	362.2	0.081	0.009	0.00	0.000	0.000	0.000
W33A	6207.90	W32	6204.90	6	185.7	0.016	0.011	0.00	0.000	0.000	0.000
E12	6205.00	E11	6181.95	6	124.6	0.185	0.014	0.00	0.000	0.000	0.000
R33	6479.22	R32	6438.52	6	402.5	0.101	0.009	0.00	0.000	0.000	0.000
R34	6492.02	R33	6479.22	6	158.3	0.081	0.009	0.00	0.000	0.000	0.000
W31	6203.49	W30	6202.96	6	95.5	0.006	0.011	0.00	0.000	0.000	0.000
S51	6456.40	A26	6431.20	6	296.1	0.085	0.011	0.00	0.000	0.000	0.000
A75	6196.26	A74	6184.20	6	118.5	0.102	0.014	0.00	0.000	0.000	0.000
A36	6274.65	A35	6260.00	6	259.8	0.056	0.011	0.00	0.000	0.000	0.000
A41	6228.10	A42	6209.99	6	342.3	0.053	0.011	0.00	0.000	0.000	0.000
C3	6211.20	C4	6209.50	6	142.1	0.012	0.009	0.00	0.000	0.000	0.000
E62	6173.52	E61	6167.48	6	315.2	0.019	0.014	0.00	0.000	0.000	0.000
E46	6190.00	E47	6187.90	6	334.9	0.006	0.014	0.00	0.000	0.000	0.000
E54	6181.34	E55	6174.75	6	307.9	0.021	0.014	0.00	0.000	0.000	0.000
T50	6138.76	T50A	6138.02	6	106.2	0.007	0.011	0.00	0.000	0.000	0.000
T54	6139.31	T50	6138.76	6	63.3	0.009	0.011	0.00	0.000	0.000	0.000
T51	6147.03	T50	6138.76	6	103.3	0.080	0.011	0.00	0.000	0.000	0.000
T52	6147.58	T51	6147.03	6	72.1	0.008	0.011	0.00	0.000	0.000	0.000
T53	6148.29	T52	6147.58	6	108.2	0.007	0.011	0.00	0.000	0.000	0.000
T57	6141.70	T56	6140.81	6	41.2	0.022	0.011	0.00	0.000	0.000	0.000

Scenario 2 - Existing Sewer System + VPTSP ADWF (Peak Hour)

T56	6140.81	T55	6139.91	6	114.3	0.008	0.011	0.00	0.000	0.000	0.000
H99	6325.00	H98	6300.65	6	323.1	0.075	0.009	0.00	0.000	0.000	0.000
T55	6139.91	T54	6139.31	6	89.6	0.007	0.011	0.00	0.000	0.000	0.000
H102	6312.81	H101	6301.43	6	160.3	0.071	0.014	0.00	0.000	0.000	0.000
H106	6320.37	H105	6308.40	6	225.6	0.053	0.009	0.00	0.000	0.000	0.000
H105	6308.40	H101	6301.43	6	156.7	0.044	0.009	0.00	0.000	0.000	0.000
H101	6301.43	H100	6274.02	6	97.9	0.280	0.009	0.00	0.000	0.000	0.000
H98	6300.65	H97	6253.93	6	342.5	0.136	0.014	0.00	0.000	0.000	0.000
H100	6274.02	H97	6253.93	6	122.0	0.165	0.014	0.00	0.000	0.000	0.000
E45	6200.14	E46	6190.00	6	219.6	0.046	0.014	0.00	0.000	0.000	0.000
H87	6258.40	H85	6221.25	6	108.1	0.344	0.009	0.00	0.000	0.000	0.000
E53	6183.02	E52	6179.55	6	199.8	0.017	0.014	0.00	0.000	0.000	0.000
E52	6179.55	E51	6174.00	6	254.3	0.022	0.014	0.00	0.000	0.000	0.000
E50	6176.54	E51	6174.00	6	173.6	0.015	0.014	0.00	0.000	0.000	0.000
A29	6373.50	WY-A30	6367.64	6	148.4	0.039	0.011	0.00	0.000	0.000	0.000
E16	6196.92	E17	6190.77	6	183.3	0.034	0.014	0.00	0.000	0.000	0.000
T47A	6148.60	T47	6144.47	6	220.0	0.019	0.011	0.00	0.000	0.000	0.000
I45	6162.25	I46	6161.17	6	101.6	0.011	0.011	0.00	0.000	0.000	0.000
E25	6185.67	E24	6183.36	6	60.8	0.038	0.014	0.00	0.000	0.000	0.000
T48A	6150.78	T48	6149.75	6	127.8	0.008	0.011	0.00	0.000	0.000	0.000
A37	6276.25	A36	6274.65	6	312.5	0.005	0.011	0.00	0.000	0.000	0.000
T59	6139.47	T58	6138.95	6	51.5	0.010	0.011	0.00	0.000	0.000	0.000
T48	6149.75	T47A	6148.60	6	92.5	0.012	0.011	0.00	0.000	0.000	0.000
W31A	6203.82	W31	6203.49	6	74.8	0.004	0.011	0.00	0.000	0.000	0.000
W32	6204.90	W31A	6203.82	6	27.5	0.039	0.011	0.00	0.000	0.000	0.000
W25R	6219.26	W72	6212.72	6	159.7	0.041	0.009	0.00	0.000	0.000	0.000
T58	6138.95	T50A	6138.02	6	59.4	0.016	0.011	0.00	0.000	0.000	0.000
W26	6216.50	W27R	6211.38	6	107.4	0.048	0.014	0.00	0.000	0.000	0.000
I48	6165.85	I47	6161.28	6	137.2	0.033	0.011	0.00	0.000	0.000	0.000
A15	6339.98	A17	6266.57	6	442.9	0.166	0.009	0.00	0.000	0.000	0.000
W57	6222.40	W58	6221.20	6	141.4	0.008	0.009	0.00	0.000	0.000	0.000
H85	6221.25	A84	6171.79	6	61.5	0.804	0.014	0.00	0.000	0.000	0.000
R23	6239.48	R21	6237.00	6	115.7	0.021	0.009	0.00	0.000	0.000	0.000
R22	6257.85	R21	6237.00	6	165.1	0.126	0.009	0.00	0.000	0.000	0.000
R27	6373.42	R26	6315.62	6	297.5	0.194	0.009	0.00	0.000	0.000	0.000
R31	6402.16	R30	6397.40	6	81.1	0.059	0.009	0.00	0.000	0.000	0.000
R30	6397.40	R28	6377.00	6	207.4	0.098	0.009	0.00	0.000	0.000	0.000
R26	6315.62	R25	6228.20	6	276.0	0.317	0.009	0.00	0.000	0.000	0.000
R29	6382.72	R28	6377.00	6	135.9	0.042	0.009	0.00	0.000	0.000	0.000
H86	6233.90	H85	6221.25	6	161.3	0.078	0.009	0.00	0.000	0.000	0.000
H90	6241.00	H89	6195.00	6	82.0	0.561	0.014	0.00	0.000	0.000	0.000

Scenario 2 - Existing Sewer System + VPTSP ADWF (Peak Hour)

H91	6261.21	H87	6258.40	6	194.0	0.014	0.009	0.00	0.000	0.000	0.000
E24	6183.36	E23	6182.44	6	134.9	0.007	0.014	0.00	0.000	0.000	0.000
R36	6532.02	R35	6527.25	6	450.7	0.011	0.009	0.00	0.000	0.000	0.000
R24	6240.89	R23	6239.48	6	79.9	0.018	0.009	0.00	0.000	0.000	0.000
A14	6342.00	A15	6339.98	6	321.5	0.006	0.009	0.00	0.000	0.000	0.000
A24	6452.90	A25	6442.50	6	316.1	0.033	0.011	0.00	0.000	0.000	0.000
W55	6346.00	W54	6325.00	6	122.6	0.171	0.009	0.00	0.000	0.000	0.000
W54	6325.00	W53	6284.20	6	317.6	0.128	0.009	0.00	0.000	0.000	0.000
W56	6367.24	W55	6346.00	6	454.3	0.047	0.009	0.00	0.000	0.000	0.000
W53	6284.20	W52	6267.50	6	87.7	0.190	0.009	0.00	0.000	0.000	0.000
H103	6338.71	H102	6312.81	6	174.2	0.149	0.009	0.00	0.000	0.000	0.000
W59	6216.33	W60	6208.83	8	143.9	0.052	0.009	0.00	0.000	0.000	0.000
W50A	6209.59	W50	6208.76	8	99.5	0.008	0.024	0.00	0.000	0.000	0.000
W50B	6211.27	W50A	6209.59	8	47.6	0.035	0.024	0.00	0.000	0.000	0.000
W50	6208.76	W50R	6207.99	8	91.6	0.008	0.024	0.00	0.000	0.000	0.000
E14	6222.16	E15	6221.13	8	205.9	0.005	0.014	0.00	0.000	0.000	0.000
E01	6203.03	E02	6202.06	8	277.8	0.003	0.014	0.00	0.000	0.000	0.000
E04	6212.90	E03	6201.08	8	313.9	0.038	0.014	0.00	0.000	0.000	0.000
E03	6201.08	E06	6193.66	8	125.1	0.059	0.014	0.00	0.000	0.000	0.000
E15	6221.13	E16	6196.92	8	312.1	0.078	0.014	0.00	0.000	0.000	0.000
W30	6202.96	W17	6197.60	8	190.2	0.028	0.011	0.00	0.000	0.000	0.000
W58	6221.20	W59	6216.33	8	173.0	0.028	0.009	0.00	0.000	0.000	0.000
E23	6182.44	E11	6181.95	8	137.0	0.004	0.014	0.00	0.000	0.000	0.000
E02	6202.06	E03	6201.08	8	278.8	0.004	0.014	0.00	0.000	0.000	0.000

Scenario 3 - Existing Sewer System + VPTSP + GP Buildout ADWF (Peak Hour)

Start Node	Invert (Start) (ft)	Stope Node	Invert (Stop) (ft)	Diameter (in)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Manning's n	Velocity	Flow (Maximum) (MGD)	Depth/Diame ter	Depth (Maximum) (ft)
T37	6134.09	T37A	6126.71	12	311.6	0.024	0.011	3.23	0.983	0.579	0.579
T45	6114.80	T40	6104.10	6	294.9	0.036	0.011	2.12	0.139	0.539	0.269
T41	6084.93	T43	6074.15	12	286.0	0.038	0.014	4.06	1.126	0.536	0.536
I49	6151.10	T34A	6147.86	6	78.1	0.041	0.011	0.00	0.000	0.500	0.250
T43	6074.46	TTSA	6068.27	10	315.7	0.020	0.011	6.58	1.126	0.488	0.407
T18	6172.23	T19	6172.22	15	352.3	0.000	0.011	1.73	0.631	0.468	0.585
A71	6189.96	T19	6172.17	6	111.5	0.160	0.011	0.08	0.005	0.480	0.240
I46	6161.17	T32	6152.50	6	35.3	0.245	0.011	0.00	0.000	0.456	0.228
T39	6122.47	T39A	6118.28	15	107.2	0.039	0.011	2.82	0.983	0.453	0.566
A59	6187.89	T11	6178.42	6	70.8	0.134	0.011	0.00	0.000	0.442	0.221
T17	6173.70	T18	6172.31	15	354.6	0.004	0.011	1.99	0.632	0.421	0.526
T35	6135.54	T36	6135.04	15	136.3	0.004	0.011	3.01	0.933	0.413	0.516
M1	6193.30	T09	6180.69	6	177.7	0.071	0.011	0.00	0.000	0.401	0.201
T37A	6127.12	T38	6124.19	12	222.5	0.013	0.011	5.10	0.983	0.405	0.405
T34	6147.24	T35	6135.68	12	516.5	0.022	0.011	5.02	0.933	0.394	0.394
T34A	6147.67	T34	6147.26	15	190.9	0.002	0.011	3.23	0.933	0.392	0.490
T46	6137.22	T37	6134.09	6	429.3	0.007	0.011	0.62	0.028	0.421	0.210
GV148	6168.77	T23	6167.91	15	308.7	0.003	0.011	2.58	0.710	0.379	0.474
T19	6172.21	T20	6171.57	15	189.0	0.003	0.011	2.54	0.699	0.378	0.473
T20	6171.56	T21	6171.00	15	333.1	0.002	0.011	2.54	0.699	0.378	0.472
A67	6187.47	T17	6173.88	6	90.3	0.150	0.011	0.00	0.000	0.372	0.186
T22	6169.61	GV148	6168.77	15	298.6	0.003	0.011	2.65	0.710	0.371	0.464
T31	6153.03	T32	6152.44	15	319.8	0.002	0.011	2.74	0.712	0.363	0.454
T25	6164.79	T26	6164.11	15	313.9	0.002	0.011	2.74	0.710	0.362	0.452
T21	6170.97	T22	6169.62	15	450.1	0.003	0.011	2.75	0.711	0.361	0.451
T14	6176.34	T15	6175.29	15	362.3	0.003	0.011	2.37	0.610	0.360	0.450
T15	6175.28	T16	6175.00	15	184.4	0.002	0.011	2.40	0.610	0.357	0.447
T30	6153.45	T31	6153.11	15	146.3	0.002	0.011	2.80	0.712	0.357	0.446
T26	6164.09	T26A	6163.72	15	138.9	0.003	0.011	2.81	0.710	0.355	0.444
T36	6135.02	T37	6133.91	15	388.1	0.003	0.011	3.63	0.933	0.360	0.450
T12	6177.65	T13	6177.20	15	187.8	0.002	0.011	2.47	0.607	0.348	0.435
T23	6167.87	T24	6166.89	15	484.5	0.002	0.011	2.91	0.710	0.347	0.433
T10	6179.38	T11	6178.39	15	446.5	0.002	0.011	2.47	0.598	0.344	0.431
T26A	6163.71	T27	6163.36	15	143.1	0.002	0.011	2.92	0.710	0.345	0.431
T28	6160.34	T29	6154.48	12	242.7	0.024	0.011	4.61	0.710	0.343	0.343
T24	6166.99	T25	6164.96	15	410.9	0.005	0.011	2.98	0.710	0.340	0.425
T29	6154.48	T30	6153.78	15	181.2	0.004	0.011	2.99	0.710	0.340	0.425
T13	6177.18	T14	6176.43	15	345.9	0.002	0.011	2.62	0.608	0.334	0.417

Scenario 3 - Existing Sewer System + VPTSP + GP Buildout ADWF (Peak Hour)

W02	6191.76	T09	6180.69	8	36.0	0.307	0.009	1.01	0.061	0.335	0.224
T33	6152.30	T34A	6147.86	15	308.3	0.014	0.011	3.97	0.930	0.336	0.421
I47	6161.28	T33	6152.30	6	48.7	0.184	0.011	0.00	0.000	0.335	0.168
T11	6178.37	T12	6177.70	15	304.2	0.002	0.011	2.65	0.608	0.331	0.413
T39A	6118.72	T39B	6115.51	15	305.7	0.011	0.014	4.15	0.982	0.339	0.423
T09	6180.69	T10	6179.53	15	398.7	0.003	0.011	2.62	0.594	0.328	0.410
T08	6181.09	T09	6180.39	15	290.2	0.002	0.011	2.44	0.532	0.319	0.399
T16	6174.97	T17	6173.71	15	393.5	0.003	0.011	2.85	0.626	0.321	0.401
W7A	6192.35	T08	6181.40	8	42.9	0.255	0.014	0.32	0.020	0.323	0.216
R09	6179.04	R07	6177.61	10	388.1	0.004	0.009	1.98	0.200	0.330	0.275
T32	6152.41	T33	6152.30	15	64.4	0.002	0.011	3.31	0.712	0.316	0.395
W04	6183.80	T08	6181.40	8	18.3	0.131	0.014	0.04	0.002	0.309	0.206
W46	6201.41	W13	6201.10	10	333.6	0.001	0.024	0.44	0.040	0.305	0.254
W77	6196.45	T04A	6191.75	10	215.0	0.022	0.011	1.22	0.102	0.301	0.251
R07	6177.61	R06	6177.33	10	223.0	0.001	0.009	2.14	0.205	0.316	0.263
R11	6180.44	R10	6179.81	10	252.7	0.002	0.009	2.18	0.195	0.302	0.251
T40A	6100.47	T41	6084.93	12	205.9	0.075	0.009	8.94	1.126	0.296	0.296
R13	6182.30	R12A	6181.92	10	147.7	0.003	0.009	2.22	0.195	0.298	0.248
T07	6185.71	T08	6181.40	12	115.5	0.037	0.011	2.67	0.310	0.281	0.281
R12A	6181.92	R12	6181.39	10	216.9	0.002	0.009	2.27	0.195	0.293	0.244
R12	6181.39	R11	6180.44	10	323.9	0.003	0.009	2.30	0.195	0.290	0.242
R10	6179.81	R09	6179.04	10	310.2	0.002	0.009	2.37	0.200	0.289	0.241
R14	6183.41	R13	6182.30	10	285.9	0.004	0.009	2.40	0.192	0.278	0.232
R01	6166.50	T33	6152.30	10	159.2	0.089	0.011	3.04	0.220	0.272	0.227
T27	6163.34	T28	6160.34	12	91.8	0.033	0.011	6.52	0.710	0.267	0.267
R16	6186.30	R15	6185.30	10	344.7	0.003	0.009	2.41	0.175	0.260	0.217
W36	6202.56	W36A	6201.95	10	165.8	0.004	0.014	1.41	0.102	0.259	0.216
W37	6203.23	W36	6202.56	10	276.8	0.002	0.014	1.32	0.092	0.253	0.211
T38	6124.81	T39	6122.47	15	180.9	0.013	0.011	5.88	0.983	0.264	0.329
E30A	6121.96	T44	6120.73	8	175.9	0.007	0.009	2.78	0.124	0.251	0.168
W38	6203.80	W37	6203.23	10	180.8	0.003	0.014	1.31	0.090	0.250	0.208
T04A	6191.75	T05	6191.63	15	167.6	0.001	0.011	1.69	0.260	0.249	0.311
R15	6185.30	R14	6183.41	10	403.2	0.005	0.009	2.64	0.185	0.254	0.211
T40	6104.10	T40A	6100.47	15	131.1	0.028	0.014	6.99	1.117	0.255	0.319
E34	6142.00	E33	6141.04	8	70.1	0.014	0.014	2.65	0.113	0.244	0.163
R04	6175.40	R03	6174.10	10	198.7	0.007	0.009	2.89	0.207	0.257	0.214
T39C	6109.21	T40	6104.10	15	116.1	0.044	0.009	6.16	0.982	0.255	0.319
R18	6203.31	R10	6179.81	6	204.3	0.115	0.009	0.00	0.000	0.256	0.128
E29	6148.00	E30	6124.00	4	279.8	0.086	0.009	0.28	0.003	0.235	0.078
T05	6191.63	T5A	6191.07	15	120.5	0.005	0.011	1.87	0.261	0.232	0.289
T04	6192.53	T04A	6191.75	15	189.5	0.004	0.011	1.14	0.157	0.230	0.288

Scenario 3 - Existing Sewer System + VPTSP + GP Buildout ADWF (Peak Hour)

R06	6177.33	R04	6175.40	10	317.7	0.006	0.009	3.13	0.205	0.241	0.201
E30	6124.00	E30A	6121.96	8	106.7	0.019	0.011	3.21	0.124	0.227	0.152
T44	6120.73	T44A	6119.54	8	165.1	0.007	0.009	3.23	0.124	0.226	0.151
E33	6141.04	E33A	6134.26	8	364.4	0.019	0.014	3.15	0.119	0.224	0.149
W13	6201.10	W14	6200.80	10	182.7	0.002	0.024	0.71	0.041	0.219	0.183
R25	6228.20	R03	6174.10	6	442.4	0.122	0.009	0.00	0.000	0.230	0.115
E36	6152.75	E34	6142.00	8	266.8	0.040	0.014	3.02	0.109	0.217	0.145
W38A	6204.49	W38	6203.80	10	111.2	0.006	0.014	1.57	0.088	0.217	0.181
E33B	6126.00	E30	6124.00	8	79.8	0.025	0.014	3.35	0.120	0.215	0.144
E33A	6134.26	E33B	6126.00	8	274.3	0.030	0.014	3.36	0.119	0.214	0.143
R17	6187.40	R16	6186.30	12	268.6	0.004	0.009	2.34	0.174	0.211	0.211
R03	6174.10	R02	6172.40	10	277.7	0.006	0.009	3.75	0.220	0.223	0.186
T5A	6191.07	T06	6190.69	15	254.9	0.001	0.011	2.16	0.264	0.212	0.265
W48	6205.54	W47	6202.90	10	191.4	0.014	0.024	0.60	0.032	0.210	0.175
W36A	6201.95	W15	6201.30	10	204.4	0.003	0.014	1.88	0.102	0.211	0.176
W47	6202.90	W47A	6202.49	10	177.6	0.002	0.024	0.75	0.040	0.208	0.173
W39	6204.60	W38A	6204.49	10	157.8	0.001	0.014	0.65	0.034	0.206	0.172
W47A	6202.49	W46	6201.41	10	42.8	0.025	0.024	0.80	0.040	0.202	0.168
W49A	6209.67	W49	6207.30	6	160.1	0.015	0.024	0.29	0.005	0.195	0.097
T44B	6115.91	T45	6114.80	8	33.0	0.034	0.009	4.57	0.139	0.193	0.128
W24R	6194.82	T5A	6191.07	12	203.9	0.018	0.024	0.06	0.004	0.189	0.189
W49	6207.30	W48	6205.54	8	236.5	0.007	0.024	1.00	0.030	0.188	0.126
T44A	6119.54	T44B	6115.91	8	147.5	0.025	0.009	4.85	0.139	0.185	0.123
R7A	6178.02	R07	6177.61	10	18.4	0.022	0.009	0.00	0.000	0.194	0.162
T39B	6115.13	T39C	6109.21	15	102.0	0.058	0.009	9.94	0.982	0.182	0.228
E39	6160.90	E38	6158.84	8	357.5	0.006	0.014	1.17	0.030	0.171	0.114
W76	6200.78	W75	6199.86	6	166.5	0.006	0.009	1.78	0.025	0.170	0.085
W62	6204.25	W38	6203.80	8	147.8	0.003	0.009	0.07	0.002	0.167	0.111
E32	6154.49	E33	6141.04	6	101.9	0.132	0.014	0.02	0.000	0.166	0.083
W38B	6206.00	W38A	6204.49	6	126.9	0.012	0.009	0.00	0.000	0.165	0.082
W14	6200.80	T02	6195.75	10	41.8	0.121	0.011	3.81	0.142	0.163	0.136
E40	6162.53	E39	6160.90	8	305.6	0.005	0.014	1.28	0.030	0.161	0.107
W40A	6204.80	W39	6204.60	10	74.6	0.003	0.014	0.50	0.019	0.165	0.137
E37	6157.08	E36	6152.75	8	286.5	0.015	0.014	1.47	0.034	0.159	0.106
E38	6158.84	E37	6157.08	8	379.4	0.005	0.014	1.38	0.032	0.158	0.106
W75	6199.86	W74	6198.13	8	182.2	0.009	0.009	1.81	0.037	0.149	0.100
E56	6164.60	E60	6163.70	8	158.1	0.006	0.014	1.59	0.035	0.152	0.101
R02	6172.40	R01	6166.50	10	175.4	0.034	0.009	6.21	0.220	0.157	0.131
E41	6163.44	E40	6162.53	8	158.7	0.006	0.014	0.96	0.020	0.146	0.097
T03	6193.82	T04	6192.53	15	233.0	0.006	0.011	2.18	0.157	0.146	0.183
E60	6163.70	E59	6159.16	8	210.7	0.022	0.014	1.66	0.035	0.148	0.098

Scenario 3 - Existing Sewer System + VPTSP + GP Buildout ADWF (Peak Hour)

T02	6195.75	T03	6193.82	15	389.9	0.005	0.011	2.25	0.157	0.143	0.179
E58	6157.66	E36	6152.75	8	106.6	0.046	0.014	1.75	0.035	0.144	0.096
T06	6190.69	T07	6185.71	15	357.3	0.014	0.011	3.92	0.264	0.140	0.175
W74	6198.13	W77	6196.45	10	305.1	0.006	0.009	2.12	0.063	0.139	0.116
E10	6170.98	E56	6164.60	8	119.6	0.053	0.014	1.81	0.035	0.140	0.093
W73	6200.60	W74	6198.13	8	175.4	0.014	0.009	1.46	0.026	0.135	0.090
E59	6159.16	E58	6157.66	8	196.4	0.008	0.014	1.85	0.035	0.137	0.092
E43	6166.59	E42	6164.73	8	392.4	0.005	0.014	1.07	0.020	0.135	0.090
E35	6142.90	E34	6142.00	8	248.4	0.004	0.014	0.02	0.000	0.135	0.090
E42	6164.73	E41	6163.44	8	250.9	0.005	0.014	1.11	0.020	0.131	0.088
W49B	6212.68	W49A	6209.67	4	197.8	0.015	0.024	0.45	0.002	0.127	0.042
W15	6201.30	W14	6200.80	10	16.7	0.030	0.011	3.92	0.102	0.127	0.105
E08	6191.52	E09	6190.98	8	298.3	0.002	0.009	1.11	0.017	0.118	0.079
E55	6174.75	E56	6164.60	6	258.7	0.039	0.014	0.00	0.000	0.121	0.060
P13	6130.04	T44A	6119.54	8	68.8	0.153	0.009	0.93	0.013	0.117	0.078
E49	6176.69	E43	6166.59	6	199.5	0.051	0.014	0.45	0.003	0.114	0.057
E63	6170.92	E40	6162.53	6	181.0	0.046	0.014	0.00	0.000	0.109	0.054
W50R	6207.99	W49	6207.30	8	83.0	0.008	0.024	0.00	0.000	0.109	0.072
E44	6168.57	E43	6166.59	8	388.4	0.005	0.014	0.45	0.006	0.104	0.070
W01	6196.40	W02	6191.76	8	89.7	0.052	0.014	4.54	0.061	0.109	0.073
E09	6190.98	E10	6170.98	8	388.7	0.051	0.014	2.89	0.033	0.099	0.066
W01B	6200.24	W01	6196.40	8	143.9	0.027	0.014	0.67	0.008	0.105	0.070
T01	6197.20	T02	6195.75	15	192.2	0.008	0.011	0.43	0.014	0.094	0.117
W40	6205.97	W40A	6204.80	10	65.4	0.018	0.014	1.13	0.019	0.094	0.078
W42	6206.69	W40	6205.97	8	136.0	0.005	0.014	0.94	0.010	0.096	0.064
P04	6131.43	P03	6130.66	8	174.1	0.004	0.009	1.03	0.010	0.090	0.060
C4	6209.50	W01	6196.40	6	214.2	0.061	0.014	0.00	0.000	0.100	0.050
W43	6208.07	W42	6206.69	8	269.0	0.005	0.014	0.83	0.009	0.096	0.064
E42A	6172.38	E42	6164.73	6	76.7	0.100	0.014	0.00	0.000	0.089	0.045
W08B	6195.85	W08A	6195.50	10	153.2	0.002	0.014	0.80	0.020	0.122	0.102
W09	6196.50	W08B	6195.85	10	179.3	0.004	0.014	0.88	0.020	0.115	0.096
E61	6167.48	E60	6163.70	6	246.5	0.015	0.014	0.00	0.000	0.082	0.041
P06	6131.89	P04	6131.43	8	88.9	0.005	0.009	1.22	0.010	0.080	0.053
W08A	6195.50	W08	6194.90	10	207.5	0.003	0.014	0.90	0.020	0.112	0.093
P07	6132.36	P06	6131.89	8	91.2	0.005	0.009	1.24	0.010	0.079	0.052
W11	6197.90	W10	6197.30	10	184.7	0.003	0.014	0.92	0.020	0.110	0.092
P08	6133.31	P07	6132.36	8	172.5	0.006	0.009	1.28	0.010	0.078	0.052
W44	6209.56	W43	6208.07	8	300.4	0.005	0.014	0.57	0.005	0.081	0.054
P12	6154.64	P03	6130.66	6	248.0	0.097	0.009	0.36	0.001	0.077	0.039
E07	6192.80	E08	6191.52	8	221.4	0.006	0.014	0.03	0.000	0.077	0.051
W10	6197.30	W09	6196.50	10	210.8	0.004	0.014	0.96	0.020	0.108	0.090

Scenario 3 - Existing Sewer System + VPTSP + GP Buildout ADWF (Peak Hour)

W08	6194.90	W07	6193.75	10	233.1	0.005	0.014	0.96	0.020	0.108	0.090
A83	6170.48	E44	6168.57	8	426.6	0.004	0.014	0.73	0.006	0.075	0.050
W11A	6198.10	W11	6197.90	10	63.6	0.003	0.014	0.79	0.016	0.108	0.090
P03	6130.66	P13	6130.04	8	136.7	0.005	0.009	1.70	0.012	0.069	0.046
A86	6207.06	W11	6197.90	6	51.4	0.178	0.009	0.00	0.000	0.095	0.047
W71	6208.46	W73	6200.60	8	262.8	0.030	0.009	0.67	0.004	0.065	0.043
T47	6144.47	T46	6137.22	6	299.6	0.024	0.011	1.25	0.014	0.143	0.071
T50A	6138.02	T46	6137.22	6	37.4	0.021	0.011	0.16	0.001	0.110	0.055
A82	6172.54	A83	6170.48	8	438.0	0.005	0.014	0.41	0.002	0.064	0.043
W19	6198.40	W11A	6198.10	10	47.7	0.006	0.014	0.96	0.016	0.095	0.079
W41	6242.85	W40	6205.97	6	236.1	0.156	0.014	0.00	0.000	0.061	0.031
W52	6267.50	W40	6205.97	6	494.1	0.125	0.009	0.00	0.000	0.061	0.031
W28R	6209.61	W70	6208.91	8	114.2	0.006	0.014	0.79	0.004	0.057	0.038
W07	6193.75	W7A	6192.35	10	281.7	0.005	0.014	1.53	0.020	0.078	0.065
A84	6171.79	A83	6170.48	6	56.5	0.023	0.014	0.00	0.000	0.052	0.026
E17	6190.77	E10	6170.98	8	163.1	0.121	0.014	0.25	0.001	0.058	0.039
E11	6181.95	E10	6170.98	8	270.8	0.041	0.009	0.00	0.000	0.050	0.033
W45	6215.00	W44	6209.56	8	310.8	0.018	0.014	0.33	0.001	0.049	0.032
W12	6199.05	W19	6198.40	10	219.9	0.003	0.014	0.23	0.002	0.064	0.053
A18	6226.07	W19	6198.40	6	330.3	0.084	0.009	1.51	0.010	0.102	0.051
W06	6188.50	W05	6186.30	8	290.3	0.008	0.014	0.62	0.002	0.046	0.031
W27R	6211.38	W28R	6209.61	6	65.2	0.027	0.014	0.00	0.000	0.043	0.021
W70	6208.91	W71	6208.46	8	61.8	0.007	0.009	1.25	0.004	0.042	0.028
W17	6197.60	T01	6197.20	8	5.5	0.073	0.011	0.00	0.000	0.040	0.026
W05	6186.30	W04	6183.80	8	341.0	0.007	0.014	0.88	0.002	0.036	0.024
H88	6179.40	A82	6172.54	6	51.5	0.133	0.014	0.00	0.000	0.034	0.017
W61A	6206.51	W62	6204.25	8	181.9	0.012	0.009	0.71	0.002	0.033	0.022
W61	6208.51	W61A	6206.51	8	137.3	0.015	0.009	1.00	0.002	0.026	0.017
A80	6173.90	A82	6172.54	8	288.0	0.005	0.014	0.00	0.000	0.025	0.017
E47	6187.90	E49	6176.69	6	218.2	0.051	0.014	0.00	0.000	0.024	0.012
E27	6162.40	E29	6148.00	8	160.6	0.090	0.009	1.97	0.003	0.023	0.015
W72	6212.72	W71	6208.46	6	90.7	0.047	0.009	0.00	0.000	0.023	0.011
W60	6208.83	W61	6208.51	6	47.5	0.007	0.009	0.00	0.000	0.017	0.009
E28	6168.10	E27	6162.40	6	127.8	0.045	0.014	0.00	0.000	0.014	0.007
E26	6192.80	E27	6162.40	6	165.7	0.184	0.014	0.00	0.000	0.014	0.007
E06	6193.66	E07	6192.80	8	343.1	0.003	0.014	0.00	0.000	0.007	0.005
E31	6177.11	E32	6154.49	6	185.1	0.122	0.014	0.00	0.000	0.006	0.003
A68	6205.95	A67	6187.47	4	120.2	0.154	0.011	0.00	0.000	0.000	0.000
A46	6283.80	A45	6240.52	4	153.0	0.283	0.011	0.00	0.000	0.000	0.000
R20	6235.68	R19	6221.55	6	224.3	0.063	0.009	0.00	0.000	0.000	0.000
R21	6237.00	R20	6235.68	6	60.9	0.022	0.009	0.00	0.000	0.000	0.000

Scenario 3 - Existing Sewer System + VPTSP + GP Buildout ADWF (Peak Hour)

E13	6223.40	E12	6205.00	6	272.2	0.068	0.014	0.00	0.000	0.000	0.000
E51	6174.00	E63	6170.92	6	171.2	0.018	0.014	0.00	0.000	0.000	0.000
R19	6221.55	R18	6203.31	6	262.7	0.069	0.009	0.00	0.000	0.000	0.000
H104	6343.76	H103	6338.71	6	265.4	0.019	0.009	0.00	0.000	0.000	0.000
C1	6220.00	C2	6215.76	6	147.8	0.029	0.009	0.00	0.000	0.000	0.000
A26	6431.20	A27	6390.02	6	216.2	0.191	0.011	2.33	0.005	0.046	0.023
A17	6266.57	A18	6226.07	6	292.4	0.139	0.009	3.71	0.010	0.055	0.027
R32	6438.52	R30	6397.40	6	383.0	0.107	0.009	0.00	0.000	0.000	0.000
H89	6195.00	H88	6179.40	6	73.3	0.213	0.014	0.00	0.000	0.000	0.000
R35	6527.25	R34	6492.02	6	354.5	0.099	0.009	0.00	0.000	0.000	0.000
R28	6377.00	R27	6373.42	6	150.2	0.024	0.009	0.00	0.000	0.000	0.000
W01C	6198.62	W01B	6200.24	8	158.8	-0.010	0.014	0.00	0.000	0.000	0.000
C2	6215.76	C3	6211.20	6	148.8	0.031	0.009	0.00	0.000	0.000	0.000
A37A	6289.49	A37	6276.25	6	137.0	0.097	0.011	0.00	0.000	0.000	0.000
A37B	6300.03	A37A	6289.49	6	199.7	0.053	0.011	0.00	0.000	0.000	0.000
A88	6255.14	A87	6238.06	6	54.0	0.316	0.009	0.00	0.000	0.000	0.000
A87	6238.06	A86	6207.06	6	225.8	0.137	0.009	0.00	0.000	0.000	0.000
A70	6192.16	A71	6189.96	6	336.1	0.007	0.011	0.00	0.000	0.020	0.010
A25	6442.50	A26	6431.20	6	110.2	0.103	0.011	0.00	0.000	0.019	0.009
A28	6399.90	A27	6390.02	6	114.8	0.086	0.011	0.00	0.000	0.027	0.014
A33	6291.81	A34	6270.50	6	459.4	0.046	0.011	1.81	0.005	0.054	0.027
S53	6501.60	S52	6477.50	6	290.8	0.083	0.011	2.34	0.005	0.046	0.023
A58	6189.07	A59	6187.89	6	114.8	0.010	0.011	0.00	0.000	0.000	0.000
A55	6225.90	A58	6189.07	6	325.9	0.113	0.011	0.00	0.000	0.000	0.000
S52	6477.50	S51	6456.40	6	307.3	0.069	0.011	2.22	0.005	0.047	0.024
A56	6227.51	A55	6225.90	6	87.7	0.018	0.011	0.00	0.000	0.000	0.000
A32	6312.94	A33	6291.81	6	453.9	0.047	0.011	1.92	0.005	0.052	0.026
A57	6230.50	A56	6227.51	6	125.6	0.024	0.011	0.00	0.000	0.000	0.000
A60	6197.30	A59	6187.89	6	318.4	0.030	0.011	0.00	0.000	0.000	0.000
A62	6200.59	A63	6189.85	6	401.4	0.027	0.011	0.00	0.000	0.000	0.000
WY-A30	6367.64	A30	6354.41	6	350.8	0.038	0.011	1.87	0.005	0.053	0.026
A30	6354.41	A31	6331.83	6	414.9	0.054	0.011	1.97	0.005	0.051	0.025
A47	6270.09	A45	6240.52	6	393.7	0.075	0.011	0.00	0.000	0.000	0.000
A45	6240.52	A44	6226.50	6	295.5	0.047	0.011	0.00	0.000	0.000	0.000
A44	6226.50	A42	6209.99	6	349.7	0.047	0.011	0.00	0.000	0.000	0.000
A34	6270.50	A35	6260.00	6	249.2	0.042	0.011	2.15	0.005	0.048	0.024
A40	6231.01	A39	6228.59	6	179.1	0.014	0.011	0.00	0.000	0.000	0.000
A66	6188.90	A67	6187.47	6	194.2	0.007	0.011	0.00	0.000	0.000	0.000
A69	6191.40	A67	6187.47	6	172.6	0.023	0.011	0.00	0.000	0.000	0.000
H94	6266.20	A78	6252.82	6	175.4	0.076	0.011	0.00	0.000	0.000	0.000
H95	6287.00	H94	6266.20	6	188.4	0.110	0.011	0.00	0.000	0.000	0.000

Scenario 3 - Existing Sewer System + VPTSP + GP Buildout ADWF (Peak Hour)

A78	6252.82	A76	6224.80	6	490.9	0.057	0.011	0.00	0.000	0.000	0.000
A79	6179.00	A80A	6176.00	6	64.2	0.047	0.014	0.00	0.000	0.000	0.000
H92	6277.37	H91	6261.21	6	209.7	0.077	0.009	0.00	0.000	0.000	0.000
A80A	6176.00	A80	6173.90	6	57.9	0.036	0.014	0.00	0.000	0.000	0.000
A74	6184.20	T21	6170.83	6	114.7	0.117	0.014	0.00	0.000	0.000	0.000
A76	6224.80	A75	6196.26	6	271.3	0.105	0.011	0.00	0.000	0.000	0.000
A77	6235.70	A76	6224.80	6	312.6	0.035	0.011	0.00	0.000	0.000	0.000
A72	6194.12	A71	6189.96	6	59.7	0.070	0.011	0.00	0.000	0.020	0.010
A38	6221.80	A71	6189.96	6	284.8	0.112	0.011	2.74	0.005	0.041	0.020
H97	6253.93	E45	6200.14	6	127.5	0.422	0.014	0.00	0.000	0.000	0.000
A73	6189.48	T20	6171.56	6	97.4	0.184	0.014	0.00	0.000	0.000	0.000
A65	6188.50	T16	6174.88	6	95.2	0.143	0.011	0.00	0.000	0.000	0.000
A42	6209.99	A65	6188.50	6	227.6	0.094	0.011	0.00	0.000	0.000	0.000
A27	6390.02	A29	6373.50	6	439.4	0.038	0.011	1.80	0.005	0.054	0.027
E63A	6176.10	E63	6170.92	6	344.2	0.015	0.014	0.00	0.000	0.000	0.000
W34	6209.72	W33A	6207.90	6	161.7	0.011	0.011	0.00	0.000	0.000	0.000
A35	6260.00	A38	6221.80	6	253.7	0.151	0.011	2.71	0.005	0.041	0.021
A39	6228.59	A38	6221.80	6	304.6	0.022	0.011	0.00	0.000	0.022	0.011
A63	6189.85	A65	6188.50	6	228.3	0.006	0.011	0.00	0.000	0.000	0.000
A43	6238.36	A42	6209.99	6	170.1	0.167	0.011	0.00	0.000	0.000	0.000
A31	6331.83	A32	6312.94	6	411.8	0.046	0.011	1.91	0.005	0.052	0.026
A16	6296.00	A17	6266.57	6	362.2	0.081	0.009	0.00	0.000	0.026	0.013
W33A	6207.90	W32	6204.90	6	185.7	0.016	0.011	0.00	0.000	0.000	0.000
E12	6205.00	E11	6181.95	6	124.6	0.185	0.014	0.00	0.000	0.000	0.000
R33	6479.22	R32	6438.52	6	402.5	0.101	0.009	0.00	0.000	0.000	0.000
R34	6492.02	R33	6479.22	6	158.3	0.081	0.009	0.00	0.000	0.000	0.000
W31	6203.49	W30	6202.96	6	95.5	0.006	0.011	0.00	0.000	0.000	0.000
S51	6456.40	A26	6431.20	6	296.1	0.085	0.011	2.64	0.005	0.042	0.021
A75	6196.26	A74	6184.20	6	118.5	0.102	0.014	0.00	0.000	0.000	0.000
A36	6274.65	A35	6260.00	6	259.8	0.056	0.011	0.00	0.000	0.020	0.010
A41	6228.10	A42	6209.99	6	342.3	0.053	0.011	0.00	0.000	0.000	0.000
C3	6211.20	C4	6209.50	6	142.1	0.012	0.009	0.00	0.000	0.000	0.000
E62	6173.52	E61	6167.48	6	315.2	0.019	0.014	0.00	0.000	0.000	0.000
E46	6190.00	E47	6187.90	6	334.9	0.006	0.014	0.00	0.000	0.000	0.000
E54	6181.34	E55	6174.75	6	307.9	0.021	0.014	0.00	0.000	0.000	0.000
T50	6138.76	T50A	6138.02	6	106.2	0.007	0.011	0.75	0.001	0.039	0.019
T54	6139.31	T50	6138.76	6	63.3	0.009	0.011	0.00	0.000	0.022	0.011
T51	6147.03	T50	6138.76	6	103.3	0.080	0.011	0.92	0.001	0.034	0.017
T52	6147.58	T51	6147.03	6	72.1	0.008	0.011	0.88	0.001	0.035	0.017
T53	6148.29	T52	6147.58	6	108.2	0.007	0.011	0.63	0.001	0.044	0.022
T57	6141.70	T56	6140.81	6	41.2	0.022	0.011	0.00	0.000	0.000	0.000

Scenario 3 - Existing Sewer System + VPTSP + GP Buildout ADWF (Peak Hour)

T56	6140.81	T55	6139.91	6	114.3	0.008	0.011	0.00	0.000	0.000	0.000
H99	6325.00	H98	6300.65	6	323.1	0.075	0.009	0.00	0.000	0.000	0.000
T55	6139.91	T54	6139.31	6	89.6	0.007	0.011	0.00	0.000	0.000	0.000
H102	6312.81	H101	6301.43	6	160.3	0.071	0.014	0.00	0.000	0.000	0.000
H106	6320.37	H105	6308.40	6	225.6	0.053	0.009	0.00	0.000	0.000	0.000
H105	6308.40	H101	6301.43	6	156.7	0.044	0.009	0.00	0.000	0.000	0.000
H101	6301.43	H100	6274.02	6	97.9	0.280	0.009	0.00	0.000	0.000	0.000
H98	6300.65	H97	6253.93	6	342.5	0.136	0.014	0.00	0.000	0.000	0.000
H100	6274.02	H97	6253.93	6	122.0	0.165	0.014	0.00	0.000	0.000	0.000
E45	6200.14	E46	6190.00	6	219.6	0.046	0.014	0.00	0.000	0.000	0.000
H87	6258.40	H85	6221.25	6	108.1	0.344	0.009	0.00	0.000	0.000	0.000
E53	6183.02	E52	6179.55	6	199.8	0.017	0.014	0.00	0.000	0.000	0.000
E52	6179.55	E51	6174.00	6	254.3	0.022	0.014	0.00	0.000	0.000	0.000
E50	6176.54	E51	6174.00	6	173.6	0.015	0.014	0.00	0.000	0.000	0.000
A29	6373.50	WY-A30	6367.64	6	148.4	0.039	0.011	1.77	0.005	0.055	0.027
E16	6196.92	E17	6190.77	6	183.3	0.034	0.014	1.17	0.001	0.030	0.015
T47A	6148.60	T47	6144.47	6	220.0	0.019	0.011	2.01	0.014	0.103	0.051
I45	6162.25	I46	6161.17	6	101.6	0.011	0.011	0.00	0.000	0.000	0.000
E25	6185.67	E24	6183.36	6	60.8	0.038	0.014	0.00	0.000	0.000	0.000
T48A	6150.78	T48	6149.75	6	127.8	0.008	0.011	1.47	0.013	0.123	0.061
A37	6276.25	A36	6274.65	6	312.5	0.005	0.011	0.00	0.000	0.000	0.000
T59	6139.47	T58	6138.95	6	51.5	0.010	0.011	0.00	0.000	0.000	0.000
T48	6149.75	T47A	6148.60	6	92.5	0.012	0.011	1.75	0.014	0.113	0.056
W31A	6203.82	W31	6203.49	6	74.8	0.004	0.011	0.00	0.000	0.000	0.000
W32	6204.90	W31A	6203.82	6	27.5	0.039	0.011	0.00	0.000	0.000	0.000
W25R	6219.26	W72	6212.72	6	159.7	0.041	0.009	0.00	0.000	0.000	0.000
T58	6138.95	T50A	6138.02	6	59.4	0.016	0.011	0.00	0.000	0.016	0.008
W26	6216.50	W27R	6211.38	6	107.4	0.048	0.014	0.00	0.000	0.000	0.000
I48	6165.85	I47	6161.28	6	137.2	0.033	0.011	0.00	0.000	0.000	0.000
A15	6339.98	A17	6266.57	6	442.9	0.166	0.009	4.26	0.010	0.050	0.025
W57	6222.40	W58	6221.20	6	141.4	0.008	0.009	0.00	0.000	0.000	0.000
H85	6221.25	A84	6171.79	6	61.5	0.804	0.014	0.00	0.000	0.000	0.000
R23	6239.48	R21	6237.00	6	115.7	0.021	0.009	0.00	0.000	0.000	0.000
R22	6257.85	R21	6237.00	6	165.1	0.126	0.009	0.00	0.000	0.000	0.000
R27	6373.42	R26	6315.62	6	297.5	0.194	0.009	0.00	0.000	0.000	0.000
R31	6402.16	R30	6397.40	6	81.1	0.059	0.009	0.00	0.000	0.000	0.000
R30	6397.40	R28	6377.00	6	207.4	0.098	0.009	0.00	0.000	0.000	0.000
R26	6315.62	R25	6228.20	6	276.0	0.317	0.009	0.00	0.000	0.000	0.000
R29	6382.72	R28	6377.00	6	135.9	0.042	0.009	0.00	0.000	0.000	0.000
H86	6233.90	H85	6221.25	6	161.3	0.078	0.009	0.00	0.000	0.000	0.000
H90	6241.00	H89	6195.00	6	82.0	0.561	0.014	0.00	0.000	0.000	0.000

Scenario 3 - Existing Sewer System + VPTSP + GP Buildout ADWF (Peak Hour)

H91	6261.21	H87	6258.40	6	194.0	0.014	0.009	0.00	0.000	0.000	0.000
E24	6183.36	E23	6182.44	6	134.9	0.007	0.014	0.00	0.000	0.000	0.000
R36	6532.02	R35	6527.25	6	450.7	0.011	0.009	0.00	0.000	0.000	0.000
R24	6240.89	R23	6239.48	6	79.9	0.018	0.009	0.00	0.000	0.000	0.000
A14	6342.00	A15	6339.98	6	321.5	0.006	0.009	0.00	0.000	0.025	0.012
A24	6452.90	A25	6442.50	6	316.1	0.033	0.011	0.00	0.000	0.000	0.000
W55	6346.00	W54	6325.00	6	122.6	0.171	0.009	0.00	0.000	0.000	0.000
W54	6325.00	W53	6284.20	6	317.6	0.128	0.009	0.00	0.000	0.000	0.000
W56	6367.24	W55	6346.00	6	454.3	0.047	0.009	0.00	0.000	0.000	0.000
W53	6284.20	W52	6267.50	6	87.7	0.190	0.009	0.00	0.000	0.000	0.000
H103	6338.71	H102	6312.81	6	174.2	0.149	0.009	0.00	0.000	0.000	0.000
W59	6216.33	W60	6208.83	8	143.9	0.052	0.009	0.00	0.000	0.000	0.000
W50A	6209.59	W50	6208.76	8	99.5	0.008	0.024	0.00	0.000	0.000	0.000
W50B	6211.27	W50A	6209.59	8	47.6	0.035	0.024	0.00	0.000	0.000	0.000
W50	6208.76	W50R	6207.99	8	91.6	0.008	0.024	0.00	0.000	0.000	0.000
E14	6222.16	E15	6221.13	8	205.9	0.005	0.014	0.64	0.001	0.031	0.020
E01	6203.03	E02	6202.06	8	277.8	0.003	0.014	0.00	0.000	0.000	0.000
E04	6212.90	E03	6201.08	8	313.9	0.038	0.014	0.00	0.000	0.000	0.000
E03	6201.08	E06	6193.66	8	125.1	0.059	0.014	0.00	0.000	0.000	0.000
E15	6221.13	E16	6196.92	8	312.1	0.078	0.014	0.96	0.001	0.023	0.016
W30	6202.96	W17	6197.60	8	190.2	0.028	0.011	0.00	0.000	0.000	0.000
W58	6221.20	W59	6216.33	8	173.0	0.028	0.009	0.00	0.000	0.000	0.000
E23	6182.44	E11	6181.95	8	137.0	0.004	0.014	0.00	0.000	0.000	0.000
E02	6202.06	E03	6201.08	8	278.8	0.004	0.014	0.00	0.000	0.000	0.000

Scenario 1 - Existing Sewer System PWWF

Start Node	Invert (Start) (ft)	Stope Node	Invert (Stop) (ft)	Diameter (in)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Manning's n	Velocity	Flow (Maximum) (MGD)	Depth/Diame ter	Depth (Maximum) (ft)
T37	6134.09	T37A	6126.71	12	311.6	0.024	0.011	4.39	1.715	0.719	0.719
T45	6114.80	T40	6104.10	6	294.9	0.036	0.011	3.45	0.340	0.725	0.363
T41	6084.93	T43	6074.15	12	286.0	0.038	0.014	5.39	2.078	0.710	0.710
I49	6151.10	T34A	6147.86	6	78.1	0.041	0.011	0.00	0.000	0.500	0.250
T43	6074.46	TTSA	6068.27	10	315.7	0.020	0.011	7.50	2.077	0.733	0.611
T18	6172.23	T19	6172.22	15	352.3	0.000	0.011	2.04	1.001	0.595	0.744
A71	6189.96	T19	6172.17	6	111.5	0.160	0.011	0.00	0.000	0.500	0.250
I46	6161.17	T32	6152.50	6	35.3	0.245	0.011	0.00	0.000	0.500	0.250
T39	6122.47	T39A	6118.28	15	107.2	0.039	0.011	3.86	1.715	0.548	0.684
A59	6187.89	T11	6178.42	6	70.8	0.134	0.011	0.00	0.000	0.500	0.250
T17	6173.70	T18	6172.31	15	354.6	0.004	0.011	2.32	1.001	0.535	0.669
T35	6135.54	T36	6135.04	15	136.3	0.004	0.011	3.52	1.684	0.582	0.728
M1	6193.30	T09	6180.69	6	177.7	0.071	0.011	0.00	0.000	0.500	0.250
T37A	6127.12	T38	6124.19	12	222.5	0.013	0.011	5.87	1.715	0.560	0.560
T34	6147.24	T35	6135.68	12	516.5	0.022	0.011	5.93	1.685	0.547	0.547
T34A	6147.67	T34	6147.26	15	190.9	0.002	0.011	3.81	1.685	0.545	0.682
T46	6137.22	T37	6134.09	6	429.3	0.007	0.011	0.54	0.032	0.546	0.273
GV148	6168.77	T23	6167.91	15	308.7	0.003	0.011	2.95	1.190	0.507	0.633
T19	6172.21	T20	6171.57	15	189.0	0.003	0.011	2.92	1.158	0.500	0.625
T20	6171.56	T21	6171.00	15	333.1	0.002	0.011	2.89	1.158	0.504	0.631
A67	6187.47	T17	6173.88	6	90.3	0.150	0.011	0.00	0.000	0.474	0.237
T22	6169.61	GV148	6168.77	15	298.6	0.003	0.011	3.04	1.190	0.495	0.619
T31	6153.03	T32	6152.44	15	319.8	0.002	0.011	3.17	1.192	0.480	0.600
T25	6164.79	T26	6164.11	15	313.9	0.002	0.011	3.15	1.190	0.481	0.602
T21	6170.97	T22	6169.62	15	450.1	0.003	0.011	3.16	1.190	0.480	0.601
T14	6176.34	T15	6175.29	15	362.3	0.003	0.011	2.70	0.946	0.455	0.568
T15	6175.28	T16	6175.00	15	184.4	0.002	0.011	2.68	0.946	0.457	0.571
T30	6153.45	T31	6153.11	15	146.3	0.002	0.011	3.21	1.192	0.475	0.594
T26	6164.09	T26A	6163.72	15	138.9	0.003	0.011	3.23	1.190	0.472	0.590
T36	6135.02	T37	6133.91	15	388.1	0.003	0.011	4.22	1.684	0.502	0.628
T12	6177.65	T13	6177.20	15	187.8	0.002	0.011	2.78	0.946	0.444	0.555
T23	6167.87	T24	6166.89	15	484.5	0.002	0.011	3.33	1.190	0.461	0.576
T10	6179.38	T11	6178.39	15	446.5	0.002	0.011	2.78	0.921	0.435	0.544
T26A	6163.71	T27	6163.36	15	143.1	0.002	0.011	3.38	1.190	0.455	0.569
T28	6160.34	T29	6154.48	12	242.7	0.024	0.011	5.35	1.190	0.452	0.452
T24	6166.99	T25	6164.96	15	410.9	0.005	0.011	3.43	1.190	0.451	0.563
T29	6154.48	T30	6153.78	15	181.2	0.004	0.011	3.44	1.190	0.450	0.563
T13	6177.18	T14	6176.43	15	345.9	0.002	0.011	2.96	0.946	0.423	0.529

Scenario 1 - Existing Sewer System PWWF

W02	6191.76	T09	6180.69	8	36.0	0.307	0.009	1.61	0.120	0.426	0.284
T33	6152.30	T34A	6147.86	15	308.3	0.014	0.011	4.60	1.679	0.469	0.586
I47	6161.28	T33	6152.30	6	48.7	0.184	0.011	0.00	0.000	0.455	0.228
T11	6178.37	T12	6177.70	15	304.2	0.002	0.011	2.96	0.946	0.423	0.529
T39A	6118.72	T39B	6115.51	15	305.7	0.011	0.014	4.82	1.715	0.459	0.574
T09	6180.69	T10	6179.53	15	398.7	0.003	0.011	2.94	0.912	0.414	0.517
T08	6181.09	T09	6180.39	15	290.2	0.002	0.011	2.69	0.789	0.397	0.497
T16	6174.97	T17	6173.71	15	393.5	0.003	0.011	3.23	0.987	0.410	0.512
W7A	6192.35	T08	6181.40	8	42.9	0.255	0.014	0.30	0.024	0.395	0.263
R09	6179.04	R07	6177.61	10	388.1	0.004	0.009	2.48	0.442	0.504	0.420
T32	6152.41	T33	6152.30	15	64.4	0.002	0.011	3.77	1.193	0.420	0.526
W04	6183.80	T08	6181.40	8	18.3	0.131	0.014	0.07	0.005	0.383	0.256
W46	6201.41	W13	6201.10	10	333.6	0.001	0.024	0.59	0.098	0.477	0.398
W77	6196.45	T04A	6191.75	10	215.0	0.022	0.011	1.65	0.252	0.458	0.382
R07	6177.61	R06	6177.33	10	223.0	0.001	0.009	2.68	0.449	0.480	0.400
R11	6180.44	R10	6179.81	10	252.7	0.002	0.009	2.70	0.429	0.462	0.385
T40A	6100.47	T41	6084.93	12	205.9	0.075	0.009	10.53	2.078	0.412	0.412
R13	6182.30	R12A	6181.92	10	147.7	0.003	0.009	2.75	0.429	0.454	0.379
T07	6185.71	T08	6181.40	12	115.5	0.037	0.011	4.40	0.760	0.373	0.373
R12A	6181.92	R12	6181.39	10	216.9	0.002	0.009	2.82	0.429	0.446	0.372
R12	6181.39	R11	6180.44	10	323.9	0.003	0.009	2.86	0.429	0.442	0.368
R10	6179.81	R09	6179.04	10	310.2	0.002	0.009	2.94	0.442	0.442	0.368
R14	6183.41	R13	6182.30	10	285.9	0.004	0.009	3.02	0.429	0.424	0.353
R01	6166.50	T33	6152.30	10	159.2	0.089	0.011	4.14	0.487	0.379	0.315
T27	6163.34	T28	6160.34	12	91.8	0.033	0.011	7.55	1.190	0.349	0.349
R16	6186.30	R15	6185.30	10	344.7	0.003	0.009	3.13	0.429	0.413	0.344
W36	6202.56	W36A	6201.95	10	165.8	0.004	0.014	1.82	0.247	0.410	0.342
W37	6203.23	W36	6202.56	10	276.8	0.002	0.014	1.70	0.224	0.401	0.334
T38	6124.81	T39	6122.47	15	180.9	0.013	0.011	6.76	1.715	0.357	0.446
E30A	6121.96	T44	6120.73	8	175.9	0.007	0.009	3.55	0.302	0.403	0.269
W38	6203.80	W37	6203.23	10	180.8	0.003	0.014	1.69	0.219	0.396	0.330
T04A	6191.75	T05	6191.63	15	167.6	0.001	0.011	2.30	0.638	0.381	0.477
R15	6185.30	R14	6183.41	10	403.2	0.005	0.009	3.38	0.429	0.390	0.325
T40	6104.10	T40A	6100.47	15	131.1	0.028	0.014	8.06	2.054	0.358	0.447
E34	6142.00	E33	6141.04	8	70.1	0.014	0.014	3.40	0.276	0.389	0.259
R04	6175.40	R03	6174.10	10	198.7	0.007	0.009	3.56	0.454	0.391	0.326
T39C	6109.21	T40	6104.10	15	116.1	0.044	0.009	6.91	1.715	0.352	0.441
R18	6203.31	R10	6179.81	6	204.3	0.115	0.009	0.00	0.000	0.393	0.196
E29	6148.00	E30	6124.00	4	279.8	0.086	0.009	0.38	0.006	0.369	0.123
T05	6191.63	T5A	6191.07	15	120.5	0.005	0.011	2.47	0.639	0.361	0.452
T04	6192.53	T04A	6191.75	15	189.5	0.004	0.011	1.56	0.383	0.351	0.439

Scenario 1 - Existing Sewer System PWWF

R06	6177.33	R04	6175.40	10	317.7	0.006	0.009	3.91	0.449	0.361	0.301
E30	6124.00	E30A	6121.96	8	106.7	0.019	0.011	4.13	0.302	0.360	0.240
T44	6120.73	T44A	6119.54	8	165.1	0.007	0.009	4.11	0.302	0.362	0.241
E33	6141.04	E33A	6134.26	8	364.4	0.019	0.014	4.05	0.290	0.354	0.236
W13	6201.10	W14	6200.80	10	182.7	0.002	0.024	0.97	0.100	0.334	0.278
R25	6228.20	R03	6174.10	6	442.4	0.122	0.009	0.00	0.000	0.353	0.177
E36	6152.75	E34	6142.00	8	266.8	0.040	0.014	3.88	0.265	0.342	0.228
W38A	6204.49	W38	6203.80	10	111.2	0.006	0.014	2.02	0.214	0.341	0.284
E33B	6126.00	E30	6124.00	8	79.8	0.025	0.014	4.32	0.292	0.340	0.226
E33A	6134.26	E33B	6126.00	8	274.3	0.030	0.014	4.33	0.290	0.337	0.225
R17	6187.40	R16	6186.30	12	268.6	0.004	0.009	2.92	0.429	0.338	0.338
R03	6174.10	R02	6172.40	10	277.7	0.006	0.009	4.61	0.487	0.340	0.283
T5A	6191.07	T06	6190.69	15	254.9	0.001	0.011	2.85	0.648	0.329	0.412
W48	6205.54	W47	6202.90	10	191.4	0.014	0.024	0.79	0.078	0.324	0.270
W36A	6201.95	W15	6201.30	10	204.4	0.003	0.014	2.32	0.247	0.342	0.285
W47	6202.90	W47A	6202.49	10	177.6	0.002	0.024	1.01	0.098	0.320	0.267
W39	6204.60	W38A	6204.49	10	157.8	0.001	0.014	0.84	0.081	0.318	0.265
W47A	6202.49	W46	6201.41	10	42.8	0.025	0.024	1.01	0.098	0.322	0.268
W49A	6209.67	W49	6207.30	6	160.1	0.015	0.024	0.38	0.012	0.305	0.152
T44B	6115.91	T45	6114.80	8	33.0	0.034	0.009	5.81	0.340	0.306	0.204
W24R	6194.82	T5A	6191.07	12	203.9	0.018	0.024	0.09	0.009	0.294	0.294
W49	6207.30	W48	6205.54	8	236.5	0.007	0.024	1.31	0.073	0.295	0.196
T44A	6119.54	T44B	6115.91	8	147.5	0.025	0.009	6.25	0.340	0.290	0.194
R7A	6178.02	R07	6177.61	10	18.4	0.022	0.009	0.02	0.002	0.351	0.292
T39B	6115.13	T39C	6109.21	15	102.0	0.058	0.009	11.70	1.715	0.240	0.300
E39	6160.90	E38	6158.84	8	357.5	0.006	0.014	1.54	0.074	0.267	0.178
W76	6200.78	W75	6199.86	6	166.5	0.006	0.009	2.30	0.062	0.266	0.133
W62	6204.25	W38	6203.80	8	147.8	0.003	0.009	0.09	0.004	0.263	0.175
E32	6154.49	E33	6141.04	6	101.9	0.132	0.014	0.03	0.001	0.264	0.132
W38B	6206.00	W38A	6204.49	6	126.9	0.012	0.009	0.00	0.000	0.257	0.129
W14	6200.80	T02	6195.75	10	41.8	0.121	0.011	4.99	0.348	0.252	0.210
E40	6162.53	E39	6160.90	8	305.6	0.005	0.014	1.67	0.074	0.252	0.168
W40A	6204.80	W39	6204.60	10	74.6	0.003	0.014	0.64	0.044	0.250	0.208
E37	6157.08	E36	6152.75	8	286.5	0.015	0.014	1.94	0.083	0.248	0.165
E38	6158.84	E37	6157.08	8	379.4	0.005	0.014	1.80	0.078	0.246	0.164
W75	6199.86	W74	6198.13	8	182.2	0.009	0.009	2.32	0.091	0.232	0.155
E56	6164.60	E60	6163.70	8	158.1	0.006	0.014	2.05	0.082	0.233	0.155
R02	6172.40	R01	6166.50	10	175.4	0.034	0.009	7.79	0.487	0.233	0.195
E41	6163.44	E40	6162.53	8	158.7	0.006	0.014	1.26	0.048	0.228	0.152
T03	6193.82	T04	6192.53	15	233.0	0.006	0.011	2.84	0.383	0.227	0.283
E60	6163.70	E59	6159.16	8	210.7	0.022	0.014	2.14	0.082	0.226	0.151

Scenario 1 - Existing Sewer System PWWF

T02	6195.75	T03	6193.82	15	389.9	0.005	0.011	2.92	0.383	0.222	0.277
E58	6157.66	E36	6152.75	8	106.6	0.046	0.014	2.25	0.082	0.222	0.148
T06	6190.69	T07	6185.71	15	357.3	0.014	0.011	5.09	0.648	0.218	0.273
W74	6198.13	W77	6196.45	10	305.1	0.006	0.009	2.77	0.155	0.215	0.180
E10	6170.98	E56	6164.60	8	119.6	0.053	0.014	2.31	0.082	0.215	0.143
W73	6200.60	W74	6198.13	8	175.4	0.014	0.009	1.88	0.064	0.209	0.139
E59	6159.16	E58	6157.66	8	196.4	0.008	0.014	2.38	0.082	0.210	0.140
E43	6166.59	E42	6164.73	8	392.4	0.005	0.014	1.40	0.048	0.209	0.139
E35	6142.90	E34	6142.00	8	248.4	0.004	0.014	0.02	0.001	0.213	0.142
E42	6164.73	E41	6163.44	8	250.9	0.005	0.014	1.46	0.048	0.204	0.136
W49B	6212.68	W49A	6209.67	4	197.8	0.015	0.024	0.58	0.005	0.196	0.065
W15	6201.30	W14	6200.80	10	16.7	0.030	0.011	4.73	0.247	0.206	0.171
E08	6191.52	E09	6190.98	8	298.3	0.002	0.009	1.47	0.041	0.182	0.121
E55	6174.75	E56	6164.60	6	258.7	0.039	0.014	0.00	0.000	0.186	0.093
P13	6130.04	T44A	6119.54	8	68.8	0.153	0.009	1.18	0.032	0.184	0.122
E49	6176.69	E43	6166.59	6	199.5	0.051	0.014	0.57	0.008	0.177	0.089
E63	6170.92	E40	6162.53	6	181.0	0.046	0.014	0.00	0.000	0.170	0.085
W50R	6207.99	W49	6207.30	8	83.0	0.008	0.024	0.00	0.000	0.171	0.114
E44	6168.57	E43	6166.59	8	388.4	0.005	0.014	0.60	0.014	0.162	0.108
W01	6196.40	W02	6191.76	8	89.7	0.052	0.014	5.49	0.120	0.153	0.102
E09	6190.98	E10	6170.98	8	388.7	0.051	0.014	3.82	0.082	0.151	0.101
W01B	6200.24	W01	6196.40	8	143.9	0.027	0.014	0.97	0.021	0.152	0.101
T01	6197.20	T02	6195.75	15	192.2	0.008	0.011	0.61	0.036	0.145	0.181
W40	6205.97	W40A	6204.80	10	65.4	0.018	0.014	1.46	0.044	0.140	0.117
W42	6206.69	W40	6205.97	8	136.0	0.005	0.014	1.18	0.022	0.139	0.093
P04	6131.43	P03	6130.66	8	174.1	0.004	0.009	1.32	0.025	0.140	0.093
C4	6209.50	W01	6196.40	6	214.2	0.061	0.014	0.00	0.000	0.141	0.071
W43	6208.07	W42	6206.69	8	269.0	0.005	0.014	1.05	0.020	0.138	0.092
E42A	6172.38	E42	6164.73	6	76.7	0.100	0.014	0.00	0.000	0.138	0.069
W08B	6195.85	W08A	6195.50	10	153.2	0.002	0.014	0.84	0.024	0.133	0.111
W09	6196.50	W08B	6195.85	10	179.3	0.004	0.014	0.92	0.024	0.125	0.104
E61	6167.48	E60	6163.70	6	246.5	0.015	0.014	0.00	0.000	0.125	0.063
P06	6131.89	P04	6131.43	8	88.9	0.005	0.009	1.58	0.025	0.123	0.082
W08A	6195.50	W08	6194.90	10	207.5	0.003	0.014	0.96	0.024	0.122	0.102
P07	6132.36	P06	6131.89	8	91.2	0.005	0.009	1.62	0.025	0.121	0.081
W11	6197.90	W10	6197.30	10	184.7	0.003	0.014	0.97	0.024	0.121	0.101
P08	6133.31	P07	6132.36	8	172.5	0.006	0.009	1.65	0.025	0.120	0.080
W44	6209.56	W43	6208.07	8	300.4	0.005	0.014	0.79	0.012	0.119	0.080
P12	6154.64	P03	6130.66	6	248.0	0.097	0.009	0.53	0.004	0.120	0.060
E07	6192.80	E08	6191.52	8	221.4	0.006	0.014	0.04	0.001	0.118	0.079
W10	6197.30	W09	6196.50	10	210.8	0.004	0.014	1.01	0.024	0.118	0.098

Scenario 1 - Existing Sewer System PWWF

W08	6194.90	W07	6193.75	10	233.1	0.005	0.014	1.01	0.024	0.118	0.098
A83	6170.48	E44	6168.57	8	426.6	0.004	0.014	0.96	0.014	0.116	0.077
W11A	6198.10	W11	6197.90	10	63.6	0.003	0.014	0.72	0.016	0.113	0.094
P03	6130.66	P13	6130.04	8	136.7	0.005	0.009	2.20	0.029	0.107	0.072
A86	6207.06	W11	6197.90	6	51.4	0.178	0.009	0.00	0.000	0.104	0.052
W71	6208.46	W73	6200.60	8	262.8	0.030	0.009	0.89	0.010	0.100	0.067
T47	6144.47	T46	6137.22	6	299.6	0.024	0.011	0.00	0.000	0.100	0.050
T50A	6138.02	T46	6137.22	6	37.4	0.021	0.011	0.00	0.000	0.100	0.050
A82	6172.54	A83	6170.48	8	438.0	0.005	0.014	0.53	0.006	0.098	0.065
W19	6198.40	W11A	6198.10	10	47.7	0.006	0.014	0.95	0.016	0.093	0.078
W41	6242.85	W40	6205.97	6	236.1	0.156	0.014	0.00	0.000	0.091	0.045
W52	6267.50	W40	6205.97	6	494.1	0.125	0.009	0.00	0.000	0.091	0.045
W28R	6209.61	W70	6208.91	8	114.2	0.006	0.014	1.05	0.010	0.087	0.058
W07	6193.75	W7A	6192.35	10	281.7	0.005	0.014	1.61	0.024	0.085	0.071
A84	6171.79	A83	6170.48	6	56.5	0.023	0.014	0.00	0.000	0.079	0.039
E17	6190.77	E10	6170.98	8	163.1	0.121	0.014	0.00	0.000	0.075	0.050
E11	6181.95	E10	6170.98	8	270.8	0.041	0.009	0.00	0.000	0.075	0.050
W45	6215.00	W44	6209.56	8	310.8	0.018	0.014	0.43	0.003	0.074	0.050
W12	6199.05	W19	6198.40	10	219.9	0.003	0.014	0.46	0.005	0.073	0.061
A18	6226.07	W19	6198.40	6	330.3	0.084	0.009	0.00	0.000	0.071	0.036
W06	6188.50	W05	6186.30	8	290.3	0.008	0.014	0.80	0.005	0.070	0.046
W27R	6211.38	W28R	6209.61	6	65.2	0.027	0.014	0.00	0.000	0.064	0.032
W70	6208.91	W71	6208.46	8	61.8	0.007	0.009	1.63	0.010	0.064	0.043
W17	6197.60	T01	6197.20	8	5.5	0.073	0.011	0.00	0.000	0.061	0.040
W05	6186.30	W04	6183.80	8	341.0	0.007	0.014	1.15	0.005	0.054	0.036
H88	6179.40	A82	6172.54	6	51.5	0.133	0.014	0.00	0.000	0.052	0.026
W61A	6206.51	W62	6204.25	8	181.9	0.012	0.009	0.90	0.004	0.049	0.033
W61	6208.51	W61A	6206.51	8	137.3	0.015	0.009	1.28	0.004	0.039	0.026
A80	6173.90	A82	6172.54	8	288.0	0.005	0.014	0.00	0.000	0.039	0.026
E47	6187.90	E49	6176.69	6	218.2	0.051	0.014	0.00	0.000	0.037	0.018
E27	6162.40	E29	6148.00	8	160.6	0.090	0.009	2.52	0.006	0.035	0.023
W72	6212.72	W71	6208.46	6	90.7	0.047	0.009	0.00	0.000	0.034	0.017
W60	6208.83	W61	6208.51	6	47.5	0.007	0.009	0.00	0.000	0.026	0.013
E28	6168.10	E27	6162.40	6	127.8	0.045	0.014	0.00	0.000	0.021	0.011
E26	6192.80	E27	6162.40	6	165.7	0.184	0.014	0.00	0.000	0.021	0.011
E06	6193.66	E07	6192.80	8	343.1	0.003	0.014	0.00	0.000	0.012	0.008
E31	6177.11	E32	6154.49	6	185.1	0.122	0.014	0.00	0.000	0.009	0.005
A68	6205.95	A67	6187.47	4	120.2	0.154	0.011	0.00	0.000	0.000	0.000
A46	6283.80	A45	6240.52	4	153.0	0.283	0.011	0.00	0.000	0.000	0.000
R20	6235.68	R19	6221.55	6	224.3	0.063	0.009	0.00	0.000	0.000	0.000
R21	6237.00	R20	6235.68	6	60.9	0.022	0.009	0.00	0.000	0.000	0.000

Scenario 1 - Existing Sewer System PWWF

E13	6223.40	E12	6205.00	6	272.2	0.068	0.014	0.00	0.000	0.000	0.000
E51	6174.00	E63	6170.92	6	171.2	0.018	0.014	0.00	0.000	0.000	0.000
R19	6221.55	R18	6203.31	6	262.7	0.069	0.009	0.00	0.000	0.000	0.000
H104	6343.76	H103	6338.71	6	265.4	0.019	0.009	0.00	0.000	0.000	0.000
C1	6220.00	C2	6215.76	6	147.8	0.029	0.009	0.00	0.000	0.000	0.000
A26	6431.20	A27	6390.02	6	216.2	0.191	0.011	0.00	0.000	0.000	0.000
A17	6266.57	A18	6226.07	6	292.4	0.139	0.009	0.00	0.000	0.000	0.000
R32	6438.52	R30	6397.40	6	383.0	0.107	0.009	0.00	0.000	0.000	0.000
H89	6195.00	H88	6179.40	6	73.3	0.213	0.014	0.00	0.000	0.000	0.000
R35	6527.25	R34	6492.02	6	354.5	0.099	0.009	0.00	0.000	0.000	0.000
R28	6377.00	R27	6373.42	6	150.2	0.024	0.009	0.00	0.000	0.000	0.000
W01C	6198.62	W01B	6200.24	8	158.8	-0.010	0.014	0.00	0.000	0.546	0.364
C2	6215.76	C3	6211.20	6	148.8	0.031	0.009	0.00	0.000	0.000	0.000
A37A	6289.49	A37	6276.25	6	137.0	0.097	0.011	0.00	0.000	0.000	0.000
A37B	6300.03	A37A	6289.49	6	199.7	0.053	0.011	0.00	0.000	0.000	0.000
A88	6255.14	A87	6238.06	6	54.0	0.316	0.009	0.00	0.000	0.000	0.000
A87	6238.06	A86	6207.06	6	225.8	0.137	0.009	0.00	0.000	0.000	0.000
A70	6192.16	A71	6189.96	6	336.1	0.007	0.011	0.00	0.000	0.000	0.000
A25	6442.50	A26	6431.20	6	110.2	0.103	0.011	0.00	0.000	0.000	0.000
A28	6399.90	A27	6390.02	6	114.8	0.086	0.011	0.00	0.000	0.000	0.000
A33	6291.81	A34	6270.50	6	459.4	0.046	0.011	0.00	0.000	0.000	0.000
S53	6501.60	S52	6477.50	6	290.8	0.083	0.011	0.00	0.000	0.000	0.000
A58	6189.07	A59	6187.89	6	114.8	0.010	0.011	0.00	0.000	0.000	0.000
A55	6225.90	A58	6189.07	6	325.9	0.113	0.011	0.00	0.000	0.000	0.000
S52	6477.50	S51	6456.40	6	307.3	0.069	0.011	0.00	0.000	0.000	0.000
A56	6227.51	A55	6225.90	6	87.7	0.018	0.011	0.00	0.000	0.000	0.000
A32	6312.94	A33	6291.81	6	453.9	0.047	0.011	0.00	0.000	0.000	0.000
A57	6230.50	A56	6227.51	6	125.6	0.024	0.011	0.00	0.000	0.000	0.000
A60	6197.30	A59	6187.89	6	318.4	0.030	0.011	0.00	0.000	0.000	0.000
A62	6200.59	A63	6189.85	6	401.4	0.027	0.011	0.00	0.000	0.000	0.000
WY-A30	6367.64	A30	6354.41	6	350.8	0.038	0.011	0.00	0.000	0.000	0.000
A30	6354.41	A31	6331.83	6	414.9	0.054	0.011	0.00	0.000	0.000	0.000
A47	6270.09	A45	6240.52	6	393.7	0.075	0.011	0.00	0.000	0.000	0.000
A45	6240.52	A44	6226.50	6	295.5	0.047	0.011	0.00	0.000	0.000	0.000
A44	6226.50	A42	6209.99	6	349.7	0.047	0.011	0.00	0.000	0.000	0.000
A34	6270.50	A35	6260.00	6	249.2	0.042	0.011	0.00	0.000	0.000	0.000
A40	6231.01	A39	6228.59	6	179.1	0.014	0.011	0.00	0.000	0.000	0.000
A66	6188.90	A67	6187.47	6	194.2	0.007	0.011	0.00	0.000	0.000	0.000
A69	6191.40	A67	6187.47	6	172.6	0.023	0.011	0.00	0.000	0.000	0.000
H94	6266.20	A78	6252.82	6	175.4	0.076	0.011	0.00	0.000	0.000	0.000
H95	6287.00	H94	6266.20	6	188.4	0.110	0.011	0.00	0.000	0.000	0.000

Scenario 1 - Existing Sewer System PWWF

A78	6252.82	A76	6224.80	6	490.9	0.057	0.011	0.00	0.000	0.000	0.000
A79	6179.00	A80A	6176.00	6	64.2	0.047	0.014	0.00	0.000	0.000	0.000
H92	6277.37	H91	6261.21	6	209.7	0.077	0.009	0.00	0.000	0.000	0.000
A80A	6176.00	A80	6173.90	6	57.9	0.036	0.014	0.00	0.000	0.000	0.000
A74	6184.20	T21	6170.83	6	114.7	0.117	0.014	0.00	0.000	0.500	0.250
A76	6224.80	A75	6196.26	6	271.3	0.105	0.011	0.00	0.000	0.000	0.000
A77	6235.70	A76	6224.80	6	312.6	0.035	0.011	0.00	0.000	0.000	0.000
A72	6194.12	A71	6189.96	6	59.7	0.070	0.011	0.00	0.000	0.000	0.000
A38	6221.80	A71	6189.96	6	284.8	0.112	0.011	0.00	0.000	0.000	0.000
H97	6253.93	E45	6200.14	6	127.5	0.422	0.014	0.00	0.000	0.000	0.000
A73	6189.48	T20	6171.56	6	97.4	0.184	0.014	0.00	0.000	0.500	0.250
A65	6188.50	T16	6174.88	6	95.2	0.143	0.011	0.00	0.000	0.500	0.250
A42	6209.99	A65	6188.50	6	227.6	0.094	0.011	0.00	0.000	0.000	0.000
A27	6390.02	A29	6373.50	6	439.4	0.038	0.011	0.00	0.000	0.000	0.000
E63A	6176.10	E63	6170.92	6	344.2	0.015	0.014	0.00	0.000	0.000	0.000
W34	6209.72	W33A	6207.90	6	161.7	0.011	0.011	0.00	0.000	0.000	0.000
A35	6260.00	A38	6221.80	6	253.7	0.151	0.011	0.00	0.000	0.000	0.000
A39	6228.59	A38	6221.80	6	304.6	0.022	0.011	0.00	0.000	0.000	0.000
A63	6189.85	A65	6188.50	6	228.3	0.006	0.011	0.00	0.000	0.000	0.000
A43	6238.36	A42	6209.99	6	170.1	0.167	0.011	0.00	0.000	0.000	0.000
A31	6331.83	A32	6312.94	6	411.8	0.046	0.011	0.00	0.000	0.000	0.000
A16	6296.00	A17	6266.57	6	362.2	0.081	0.009	0.00	0.000	0.000	0.000
W33A	6207.90	W32	6204.90	6	185.7	0.016	0.011	0.00	0.000	0.000	0.000
E12	6205.00	E11	6181.95	6	124.6	0.185	0.014	0.00	0.000	0.000	0.000
R33	6479.22	R32	6438.52	6	402.5	0.101	0.009	0.00	0.000	0.000	0.000
R34	6492.02	R33	6479.22	6	158.3	0.081	0.009	0.00	0.000	0.000	0.000
W31	6203.49	W30	6202.96	6	95.5	0.006	0.011	0.00	0.000	0.000	0.000
S51	6456.40	A26	6431.20	6	296.1	0.085	0.011	0.00	0.000	0.000	0.000
A75	6196.26	A74	6184.20	6	118.5	0.102	0.014	0.00	0.000	0.000	0.000
A36	6274.65	A35	6260.00	6	259.8	0.056	0.011	0.00	0.000	0.000	0.000
A41	6228.10	A42	6209.99	6	342.3	0.053	0.011	0.00	0.000	0.000	0.000
C3	6211.20	C4	6209.50	6	142.1	0.012	0.009	0.00	0.000	0.000	0.000
E62	6173.52	E61	6167.48	6	315.2	0.019	0.014	0.00	0.000	0.000	0.000
E46	6190.00	E47	6187.90	6	334.9	0.006	0.014	0.00	0.000	0.000	0.000
E54	6181.34	E55	6174.75	6	307.9	0.021	0.014	0.00	0.000	0.000	0.000
T50	6138.76	T50A	6138.02	6	106.2	0.007	0.011	0.00	0.000	0.000	0.000
T54	6139.31	T50	6138.76	6	63.3	0.009	0.011	0.00	0.000	0.000	0.000
T51	6147.03	T50	6138.76	6	103.3	0.080	0.011	0.00	0.000	0.000	0.000
T52	6147.58	T51	6147.03	6	72.1	0.008	0.011	0.00	0.000	0.000	0.000
T53	6148.29	T52	6147.58	6	108.2	0.007	0.011	0.00	0.000	0.000	0.000
T57	6141.70	T56	6140.81	6	41.2	0.022	0.011	0.00	0.000	0.000	0.000

Scenario 1 - Existing Sewer System PWWF

T56	6140.81	T55	6139.91	6	114.3	0.008	0.011	0.00	0.000	0.000	0.000
H99	6325.00	H98	6300.65	6	323.1	0.075	0.009	0.00	0.000	0.000	0.000
T55	6139.91	T54	6139.31	6	89.6	0.007	0.011	0.00	0.000	0.000	0.000
H102	6312.81	H101	6301.43	6	160.3	0.071	0.014	0.00	0.000	0.000	0.000
H106	6320.37	H105	6308.40	6	225.6	0.053	0.009	0.00	0.000	0.000	0.000
H105	6308.40	H101	6301.43	6	156.7	0.044	0.009	0.00	0.000	0.000	0.000
H101	6301.43	H100	6274.02	6	97.9	0.280	0.009	0.00	0.000	0.000	0.000
H98	6300.65	H97	6253.93	6	342.5	0.136	0.014	0.00	0.000	0.000	0.000
H100	6274.02	H97	6253.93	6	122.0	0.165	0.014	0.00	0.000	0.000	0.000
E45	6200.14	E46	6190.00	6	219.6	0.046	0.014	0.00	0.000	0.000	0.000
H87	6258.40	H85	6221.25	6	108.1	0.344	0.009	0.00	0.000	0.000	0.000
E53	6183.02	E52	6179.55	6	199.8	0.017	0.014	0.00	0.000	0.000	0.000
E52	6179.55	E51	6174.00	6	254.3	0.022	0.014	0.00	0.000	0.000	0.000
E50	6176.54	E51	6174.00	6	173.6	0.015	0.014	0.00	0.000	0.000	0.000
A29	6373.50	WY-A30	6367.64	6	148.4	0.039	0.011	0.00	0.000	0.000	0.000
E16	6196.92	E17	6190.77	6	183.3	0.034	0.014	0.00	0.000	0.000	0.000
T47A	6148.60	T47	6144.47	6	220.0	0.019	0.011	0.00	0.000	0.000	0.000
I45	6162.25	I46	6161.17	6	101.6	0.011	0.011	0.00	0.000	0.000	0.000
E25	6185.67	E24	6183.36	6	60.8	0.038	0.014	0.00	0.000	0.000	0.000
T48A	6150.78	T48	6149.75	6	127.8	0.008	0.011	0.00	0.000	0.000	0.000
A37	6276.25	A36	6274.65	6	312.5	0.005	0.011	0.00	0.000	0.000	0.000
T59	6139.47	T58	6138.95	6	51.5	0.010	0.011	0.00	0.000	0.000	0.000
T48	6149.75	T47A	6148.60	6	92.5	0.012	0.011	0.00	0.000	0.000	0.000
W31A	6203.82	W31	6203.49	6	74.8	0.004	0.011	0.00	0.000	0.000	0.000
W32	6204.90	W31A	6203.82	6	27.5	0.039	0.011	0.00	0.000	0.000	0.000
W25R	6219.26	W72	6212.72	6	159.7	0.041	0.009	0.00	0.000	0.000	0.000
T58	6138.95	T50A	6138.02	6	59.4	0.016	0.011	0.00	0.000	0.000	0.000
W26	6216.50	W27R	6211.38	6	107.4	0.048	0.014	0.00	0.000	0.000	0.000
I48	6165.85	I47	6161.28	6	137.2	0.033	0.011	0.00	0.000	0.000	0.000
A15	6339.98	A17	6266.57	6	442.9	0.166	0.009	0.00	0.000	0.000	0.000
W57	6222.40	W58	6221.20	6	141.4	0.008	0.009	0.00	0.000	0.000	0.000
H85	6221.25	A84	6171.79	6	61.5	0.804	0.014	0.00	0.000	0.000	0.000
R23	6239.48	R21	6237.00	6	115.7	0.021	0.009	0.00	0.000	0.000	0.000
R22	6257.85	R21	6237.00	6	165.1	0.126	0.009	0.00	0.000	0.000	0.000
R27	6373.42	R26	6315.62	6	297.5	0.194	0.009	0.00	0.000	0.000	0.000
R31	6402.16	R30	6397.40	6	81.1	0.059	0.009	0.00	0.000	0.000	0.000
R30	6397.40	R28	6377.00	6	207.4	0.098	0.009	0.00	0.000	0.000	0.000
R26	6315.62	R25	6228.20	6	276.0	0.317	0.009	0.00	0.000	0.000	0.000
R29	6382.72	R28	6377.00	6	135.9	0.042	0.009	0.00	0.000	0.000	0.000
H86	6233.90	H85	6221.25	6	161.3	0.078	0.009	0.00	0.000	0.000	0.000
H90	6241.00	H89	6195.00	6	82.0	0.561	0.014	0.00	0.000	0.000	0.000

Scenario 1 - Existing Sewer System PWWF

H91	6261.21	H87	6258.40	6	194.0	0.014	0.009	0.00	0.000	0.000	0.000
E24	6183.36	E23	6182.44	6	134.9	0.007	0.014	0.00	0.000	0.000	0.000
R36	6532.02	R35	6527.25	6	450.7	0.011	0.009	0.00	0.000	0.000	0.000
R24	6240.89	R23	6239.48	6	79.9	0.018	0.009	0.00	0.000	0.000	0.000
A14	6342.00	A15	6339.98	6	321.5	0.006	0.009	0.00	0.000	0.000	0.000
A24	6452.90	A25	6442.50	6	316.1	0.033	0.011	0.00	0.000	0.000	0.000
W55	6346.00	W54	6325.00	6	122.6	0.171	0.009	0.00	0.000	0.000	0.000
W54	6325.00	W53	6284.20	6	317.6	0.128	0.009	0.00	0.000	0.000	0.000
W56	6367.24	W55	6346.00	6	454.3	0.047	0.009	0.00	0.000	0.000	0.000
W53	6284.20	W52	6267.50	6	87.7	0.190	0.009	0.00	0.000	0.000	0.000
H103	6338.71	H102	6312.81	6	174.2	0.149	0.009	0.00	0.000	0.000	0.000
W59	6216.33	W60	6208.83	8	143.9	0.052	0.009	0.00	0.000	0.000	0.000
W50A	6209.59	W50	6208.76	8	99.5	0.008	0.024	0.00	0.000	0.000	0.000
W50B	6211.27	W50A	6209.59	8	47.6	0.035	0.024	0.00	0.000	0.000	0.000
W50	6208.76	W50R	6207.99	8	91.6	0.008	0.024	0.00	0.000	0.000	0.000
E14	6222.16	E15	6221.13	8	205.9	0.005	0.014	0.00	0.000	0.000	0.000
E01	6203.03	E02	6202.06	8	277.8	0.003	0.014	0.00	0.000	0.000	0.000
E04	6212.90	E03	6201.08	8	313.9	0.038	0.014	0.00	0.000	0.000	0.000
E03	6201.08	E06	6193.66	8	125.1	0.059	0.014	0.00	0.000	0.000	0.000
E15	6221.13	E16	6196.92	8	312.1	0.078	0.014	0.00	0.000	0.000	0.000
W30	6202.96	W17	6197.60	8	190.2	0.028	0.011	0.00	0.000	0.000	0.000
W58	6221.20	W59	6216.33	8	173.0	0.028	0.009	0.00	0.000	0.000	0.000
E23	6182.44	E11	6181.95	8	137.0	0.004	0.014	0.00	0.000	0.000	0.000
E02	6202.06	E03	6201.08	8	278.8	0.004	0.014	0.00	0.000	0.000	0.000

Scenario 2 - Existing Sewer System + VPTSP PWWF

Start Node	Invert (Start) (ft)	Stope Node	Invert (Stop) (ft)	Diameter (in)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Manning's n	Velocity	Flow (Maximum) (MGD)	Depth/Diame ter	Depth (Maximum) (ft)
T37	6134.09	T37A	6126.71	12	311.6	0.024	0.011	5.35	2.210	0.758	0.758
T45	6114.80	T40	6104.10	6	294.9	0.036	0.011	3.45	0.340	0.725	0.363
T41	6084.93	T43	6074.15	12	286.0	0.038	0.014	6.02	2.573	0.785	0.785
I49	6151.10	T34A	6147.86	6	78.1	0.041	0.011	0.00	0.000	0.500	0.250
T43	6074.46	TTSA	6068.27	10	315.7	0.020	0.011	7.90	2.658	1.000	0.833
T18	6172.23	T19	6172.22	15	352.3	0.000	0.011	2.40	1.495	0.734	0.918
A71	6189.96	T19	6172.17	6	111.5	0.160	0.011	0.00	0.000	0.500	0.250
I46	6161.17	T32	6152.50	6	35.3	0.245	0.011	0.00	0.000	0.500	0.250
T39	6122.47	T39A	6118.28	15	107.2	0.039	0.011	4.41	2.210	0.604	0.755
A59	6187.89	T11	6178.42	6	70.8	0.134	0.011	0.00	0.000	0.500	0.250
T17	6173.70	T18	6172.31	15	354.6	0.004	0.011	2.64	1.495	0.671	0.839
T35	6135.54	T36	6135.04	15	136.3	0.004	0.011	3.73	2.179	0.690	0.862
M1	6193.30	T09	6180.69	6	177.7	0.071	0.011	0.00	0.000	0.500	0.250
T37A	6127.12	T38	6124.19	12	222.5	0.013	0.011	6.20	2.210	0.662	0.662
T34	6147.24	T35	6135.68	12	516.5	0.022	0.011	6.36	2.179	0.640	0.640
T34A	6147.67	T34	6147.26	15	190.9	0.002	0.011	4.09	2.179	0.637	0.797
T46	6137.22	T37	6134.09	6	429.3	0.007	0.011	0.49	0.032	0.600	0.300
GV148	6168.77	T23	6167.91	15	308.7	0.003	0.011	3.20	1.684	0.630	0.788
T19	6172.21	T20	6171.57	15	189.0	0.003	0.011	3.19	1.652	0.621	0.777
T20	6171.56	T21	6171.00	15	333.1	0.002	0.011	3.15	1.652	0.629	0.786
A67	6187.47	T17	6173.88	6	90.3	0.150	0.011	0.00	0.000	0.500	0.250
T22	6169.61	GV148	6168.77	15	298.6	0.003	0.011	3.29	1.684	0.614	0.768
T31	6153.03	T32	6152.44	15	319.8	0.002	0.011	3.45	1.686	0.592	0.740
T25	6164.79	T26	6164.11	15	313.9	0.002	0.011	3.42	1.684	0.595	0.743
T21	6170.97	T22	6169.62	15	450.1	0.003	0.011	3.43	1.684	0.594	0.742
T14	6176.34	T15	6175.29	15	362.3	0.003	0.011	3.03	1.440	0.579	0.724
T15	6175.28	T16	6175.00	15	184.4	0.002	0.011	2.99	1.440	0.584	0.731
T30	6153.45	T31	6153.11	15	146.3	0.002	0.011	3.49	1.686	0.587	0.733
T26	6164.09	T26A	6163.72	15	138.9	0.003	0.011	3.52	1.684	0.582	0.727
T36	6135.02	T37	6133.91	15	388.1	0.003	0.011	4.45	2.179	0.593	0.741
T12	6177.65	T13	6177.20	15	187.8	0.002	0.011	3.08	1.439	0.570	0.713
T23	6167.87	T24	6166.89	15	484.5	0.002	0.011	3.62	1.684	0.568	0.710
T10	6179.38	T11	6178.39	15	446.5	0.002	0.011	3.12	1.415	0.556	0.695
T26A	6163.71	T27	6163.36	15	143.1	0.002	0.011	3.73	1.683	0.554	0.693
T28	6160.34	T29	6154.48	12	242.7	0.024	0.011	5.89	1.683	0.550	0.550
T24	6166.99	T25	6164.96	15	410.9	0.005	0.011	3.73	1.684	0.554	0.693
T29	6154.48	T30	6153.78	15	181.2	0.004	0.011	3.75	1.683	0.552	0.690
T13	6177.18	T14	6176.43	15	345.9	0.002	0.011	3.32	1.440	0.536	0.671

Scenario 2 - Existing Sewer System + VPTSP PWWF

W02	6191.76	T09	6180.69	8	36.0	0.307	0.009	1.13	0.120	0.532	0.355
T33	6152.30	T34A	6147.86	15	308.3	0.014	0.011	4.85	2.173	0.551	0.688
I47	6161.28	T33	6152.30	6	48.7	0.184	0.011	0.00	0.000	0.500	0.250
T11	6178.37	T12	6177.70	15	304.2	0.002	0.011	3.26	1.439	0.544	0.680
T39A	6118.72	T39B	6115.51	15	305.7	0.011	0.014	5.14	2.210	0.533	0.666
T09	6180.69	T10	6179.53	15	398.7	0.003	0.011	3.29	1.406	0.530	0.663
T08	6181.09	T09	6180.39	15	290.2	0.002	0.011	3.11	1.283	0.516	0.645
T16	6174.97	T17	6173.71	15	393.5	0.003	0.011	3.58	1.481	0.517	0.646
W7A	6192.35	T08	6181.40	8	42.9	0.255	0.014	0.22	0.024	0.511	0.341
R09	6179.04	R07	6177.61	10	388.1	0.004	0.009	2.48	0.442	0.504	0.420
T32	6152.41	T33	6152.30	15	64.4	0.002	0.011	4.22	1.686	0.503	0.628
W04	6183.80	T08	6181.40	8	18.3	0.131	0.014	0.05	0.005	0.500	0.333
W46	6201.41	W13	6201.10	10	333.6	0.001	0.024	0.59	0.098	0.477	0.398
W77	6196.45	T04A	6191.75	10	215.0	0.022	0.011	1.65	0.252	0.458	0.382
R07	6177.61	R06	6177.33	10	223.0	0.001	0.009	2.68	0.449	0.480	0.400
R11	6180.44	R10	6179.81	10	252.7	0.002	0.009	2.70	0.429	0.462	0.385
T40A	6100.47	T41	6084.93	12	205.9	0.075	0.009	11.09	2.574	0.466	0.466
R13	6182.30	R12A	6181.92	10	147.7	0.003	0.009	2.75	0.429	0.454	0.379
T07	6185.71	T08	6181.40	12	115.5	0.037	0.011	3.49	0.760	0.450	0.450
R12A	6181.92	R12	6181.39	10	216.9	0.002	0.009	2.82	0.429	0.446	0.372
R12	6181.39	R11	6180.44	10	323.9	0.003	0.009	2.86	0.429	0.442	0.368
R10	6179.81	R09	6179.04	10	310.2	0.002	0.009	2.94	0.442	0.442	0.368
R14	6183.41	R13	6182.30	10	285.9	0.004	0.009	3.02	0.429	0.424	0.353
R01	6166.50	T33	6152.30	10	159.2	0.089	0.011	3.65	0.487	0.420	0.350
T27	6163.34	T28	6160.34	12	91.8	0.033	0.011	8.29	1.683	0.421	0.421
R16	6186.30	R15	6185.30	10	344.7	0.003	0.009	3.13	0.429	0.413	0.344
W36	6202.56	W36A	6201.95	10	165.8	0.004	0.014	1.82	0.247	0.410	0.342
W37	6203.23	W36	6202.56	10	276.8	0.002	0.014	1.70	0.224	0.401	0.334
T38	6124.81	T39	6122.47	15	180.9	0.013	0.011	7.16	2.210	0.412	0.515
E30A	6121.96	T44	6120.73	8	175.9	0.007	0.009	3.55	0.302	0.403	0.269
W38	6203.80	W37	6203.23	10	180.8	0.003	0.014	1.69	0.219	0.396	0.330
T04A	6191.75	T05	6191.63	15	167.6	0.001	0.011	2.30	0.638	0.381	0.477
R15	6185.30	R14	6183.41	10	403.2	0.005	0.009	3.38	0.429	0.390	0.325
T40	6104.10	T40A	6100.47	15	131.1	0.028	0.014	8.43	2.549	0.406	0.508
E34	6142.00	E33	6141.04	8	70.1	0.014	0.014	3.40	0.276	0.389	0.259
R04	6175.40	R03	6174.10	10	198.7	0.007	0.009	3.56	0.454	0.391	0.326
T39C	6109.21	T40	6104.10	15	116.1	0.044	0.009	7.44	2.210	0.402	0.503
R18	6203.31	R10	6179.81	6	204.3	0.115	0.009	0.00	0.000	0.393	0.196
E29	6148.00	E30	6124.00	4	279.8	0.086	0.009	0.38	0.006	0.369	0.123
T05	6191.63	T5A	6191.07	15	120.5	0.005	0.011	2.47	0.639	0.361	0.452
T04	6192.53	T04A	6191.75	15	189.5	0.004	0.011	1.56	0.383	0.351	0.439

Scenario 2 - Existing Sewer System + VPTSP PWWF

R06	6177.33	R04	6175.40	10	317.7	0.006	0.009	3.91	0.449	0.361	0.301
E30	6124.00	E30A	6121.96	8	106.7	0.019	0.011	4.13	0.302	0.360	0.240
T44	6120.73	T44A	6119.54	8	165.1	0.007	0.009	4.11	0.302	0.362	0.241
E33	6141.04	E33A	6134.26	8	364.4	0.019	0.014	4.05	0.290	0.354	0.236
W13	6201.10	W14	6200.80	10	182.7	0.002	0.024	0.97	0.100	0.334	0.278
R25	6228.20	R03	6174.10	6	442.4	0.122	0.009	0.00	0.000	0.353	0.177
E36	6152.75	E34	6142.00	8	266.8	0.040	0.014	3.88	0.265	0.342	0.228
W38A	6204.49	W38	6203.80	10	111.2	0.006	0.014	2.02	0.214	0.341	0.284
E33B	6126.00	E30	6124.00	8	79.8	0.025	0.014	4.32	0.292	0.340	0.226
E33A	6134.26	E33B	6126.00	8	274.3	0.030	0.014	4.33	0.290	0.337	0.225
R17	6187.40	R16	6186.30	12	268.6	0.004	0.009	2.92	0.429	0.338	0.338
R03	6174.10	R02	6172.40	10	277.7	0.006	0.009	4.61	0.487	0.340	0.283
T5A	6191.07	T06	6190.69	15	254.9	0.001	0.011	2.85	0.648	0.329	0.412
W48	6205.54	W47	6202.90	10	191.4	0.014	0.024	0.79	0.078	0.324	0.270
W36A	6201.95	W15	6201.30	10	204.4	0.003	0.014	2.32	0.247	0.342	0.285
W47	6202.90	W47A	6202.49	10	177.6	0.002	0.024	1.01	0.098	0.320	0.267
W39	6204.60	W38A	6204.49	10	157.8	0.001	0.014	0.84	0.081	0.318	0.265
W47A	6202.49	W46	6201.41	10	42.8	0.025	0.024	1.01	0.098	0.322	0.268
W49A	6209.67	W49	6207.30	6	160.1	0.015	0.024	0.38	0.012	0.305	0.152
T44B	6115.91	T45	6114.80	8	33.0	0.034	0.009	5.81	0.340	0.306	0.204
W24R	6194.82	T5A	6191.07	12	203.9	0.018	0.024	0.09	0.009	0.294	0.294
W49	6207.30	W48	6205.54	8	236.5	0.007	0.024	1.31	0.073	0.295	0.196
T44A	6119.54	T44B	6115.91	8	147.5	0.025	0.009	6.25	0.340	0.290	0.194
R7A	6178.02	R07	6177.61	10	18.4	0.022	0.009	0.02	0.002	0.350	0.292
T39B	6115.13	T39C	6109.21	15	102.0	0.058	0.009	12.58	2.210	0.273	0.341
E39	6160.90	E38	6158.84	8	357.5	0.006	0.014	1.54	0.074	0.267	0.178
W76	6200.78	W75	6199.86	6	166.5	0.006	0.009	2.30	0.062	0.266	0.133
W62	6204.25	W38	6203.80	8	147.8	0.003	0.009	0.09	0.004	0.263	0.175
E32	6154.49	E33	6141.04	6	101.9	0.132	0.014	0.03	0.001	0.264	0.132
W38B	6206.00	W38A	6204.49	6	126.9	0.012	0.009	0.00	0.000	0.257	0.129
W14	6200.80	T02	6195.75	10	41.8	0.121	0.011	4.99	0.348	0.252	0.210
E40	6162.53	E39	6160.90	8	305.6	0.005	0.014	1.67	0.074	0.252	0.168
W40A	6204.80	W39	6204.60	10	74.6	0.003	0.014	0.64	0.044	0.250	0.208
E37	6157.08	E36	6152.75	8	286.5	0.015	0.014	1.94	0.083	0.248	0.165
E38	6158.84	E37	6157.08	8	379.4	0.005	0.014	1.80	0.078	0.246	0.164
W75	6199.86	W74	6198.13	8	182.2	0.009	0.009	2.32	0.091	0.232	0.155
E56	6164.60	E60	6163.70	8	158.1	0.006	0.014	2.05	0.082	0.233	0.155
R02	6172.40	R01	6166.50	10	175.4	0.034	0.009	7.79	0.487	0.233	0.195
E41	6163.44	E40	6162.53	8	158.7	0.006	0.014	1.26	0.048	0.228	0.152
T03	6193.82	T04	6192.53	15	233.0	0.006	0.011	2.84	0.383	0.227	0.283
E60	6163.70	E59	6159.16	8	210.7	0.022	0.014	2.14	0.082	0.226	0.151

Scenario 2 - Existing Sewer System + VPTSP PWWF

T02	6195.75	T03	6193.82	15	389.9	0.005	0.011	2.92	0.383	0.222	0.277
E58	6157.66	E36	6152.75	8	106.6	0.046	0.014	2.25	0.082	0.222	0.148
T06	6190.69	T07	6185.71	15	357.3	0.014	0.011	5.09	0.648	0.218	0.273
W74	6198.13	W77	6196.45	10	305.1	0.006	0.009	2.77	0.155	0.215	0.180
E10	6170.98	E56	6164.60	8	119.6	0.053	0.014	2.31	0.082	0.215	0.143
W73	6200.60	W74	6198.13	8	175.4	0.014	0.009	1.88	0.064	0.209	0.139
E59	6159.16	E58	6157.66	8	196.4	0.008	0.014	2.38	0.082	0.210	0.140
E43	6166.59	E42	6164.73	8	392.4	0.005	0.014	1.40	0.048	0.209	0.139
E35	6142.90	E34	6142.00	8	248.4	0.004	0.014	0.02	0.001	0.213	0.142
E42	6164.73	E41	6163.44	8	250.9	0.005	0.014	1.46	0.048	0.204	0.136
W49B	6212.68	W49A	6209.67	4	197.8	0.015	0.024	0.58	0.005	0.196	0.065
W15	6201.30	W14	6200.80	10	16.7	0.030	0.011	4.73	0.247	0.206	0.171
E08	6191.52	E09	6190.98	8	298.3	0.002	0.009	1.47	0.041	0.182	0.121
E55	6174.75	E56	6164.60	6	258.7	0.039	0.014	0.00	0.000	0.186	0.093
P13	6130.04	T44A	6119.54	8	68.8	0.153	0.009	1.18	0.032	0.184	0.122
E49	6176.69	E43	6166.59	6	199.5	0.051	0.014	0.57	0.008	0.177	0.089
E63	6170.92	E40	6162.53	6	181.0	0.046	0.014	0.00	0.000	0.170	0.085
W50R	6207.99	W49	6207.30	8	83.0	0.008	0.024	0.00	0.000	0.171	0.114
E44	6168.57	E43	6166.59	8	388.4	0.005	0.014	0.60	0.014	0.162	0.108
W01	6196.40	W02	6191.76	8	89.7	0.052	0.014	5.49	0.120	0.153	0.102
E09	6190.98	E10	6170.98	8	388.7	0.051	0.014	3.82	0.082	0.151	0.101
W01B	6200.24	W01	6196.40	8	143.9	0.027	0.014	0.97	0.021	0.152	0.101
T01	6197.20	T02	6195.75	15	192.2	0.008	0.011	0.61	0.036	0.145	0.181
W40	6205.97	W40A	6204.80	10	65.4	0.018	0.014	1.46	0.044	0.140	0.117
W42	6206.69	W40	6205.97	8	136.0	0.005	0.014	1.18	0.022	0.139	0.093
P04	6131.43	P03	6130.66	8	174.1	0.004	0.009	1.32	0.025	0.140	0.093
C4	6209.50	W01	6196.40	6	214.2	0.061	0.014	0.00	0.000	0.141	0.071
W43	6208.07	W42	6206.69	8	269.0	0.005	0.014	1.05	0.020	0.138	0.092
E42A	6172.38	E42	6164.73	6	76.7	0.100	0.014	0.00	0.000	0.138	0.069
W08B	6195.85	W08A	6195.50	10	153.2	0.002	0.014	0.84	0.024	0.133	0.111
W09	6196.50	W08B	6195.85	10	179.3	0.004	0.014	0.92	0.024	0.125	0.104
E61	6167.48	E60	6163.70	6	246.5	0.015	0.014	0.00	0.000	0.125	0.063
P06	6131.89	P04	6131.43	8	88.9	0.005	0.009	1.58	0.025	0.123	0.082
W08A	6195.50	W08	6194.90	10	207.5	0.003	0.014	0.96	0.024	0.122	0.102
P07	6132.36	P06	6131.89	8	91.2	0.005	0.009	1.62	0.025	0.121	0.081
W11	6197.90	W10	6197.30	10	184.7	0.003	0.014	0.97	0.024	0.121	0.101
P08	6133.31	P07	6132.36	8	172.5	0.006	0.009	1.65	0.025	0.120	0.080
W44	6209.56	W43	6208.07	8	300.4	0.005	0.014	0.79	0.012	0.119	0.080
P12	6154.64	P03	6130.66	6	248.0	0.097	0.009	0.53	0.004	0.120	0.060
E07	6192.80	E08	6191.52	8	221.4	0.006	0.014	0.04	0.001	0.118	0.079
W10	6197.30	W09	6196.50	10	210.8	0.004	0.014	1.01	0.024	0.118	0.098

Scenario 2 - Existing Sewer System + VPTSP PWWF

W08	6194.90	W07	6193.75	10	233.1	0.005	0.014	1.01	0.024	0.118	0.098
A83	6170.48	E44	6168.57	8	426.6	0.004	0.014	0.96	0.014	0.116	0.077
W11A	6198.10	W11	6197.90	10	63.6	0.003	0.014	0.72	0.016	0.113	0.094
P03	6130.66	P13	6130.04	8	136.7	0.005	0.009	2.20	0.029	0.107	0.072
A86	6207.06	W11	6197.90	6	51.4	0.178	0.009	0.00	0.000	0.104	0.052
W71	6208.46	W73	6200.60	8	262.8	0.030	0.009	0.89	0.010	0.100	0.067
T47	6144.47	T46	6137.22	6	299.6	0.024	0.011	0.00	0.000	0.100	0.050
T50A	6138.02	T46	6137.22	6	37.4	0.021	0.011	0.00	0.000	0.100	0.050
A82	6172.54	A83	6170.48	8	438.0	0.005	0.014	0.53	0.006	0.098	0.065
W19	6198.40	W11A	6198.10	10	47.7	0.006	0.014	0.95	0.016	0.093	0.078
W41	6242.85	W40	6205.97	6	236.1	0.156	0.014	0.00	0.000	0.091	0.045
W52	6267.50	W40	6205.97	6	494.1	0.125	0.009	0.00	0.000	0.091	0.045
W28R	6209.61	W70	6208.91	8	114.2	0.006	0.014	1.05	0.010	0.087	0.058
W07	6193.75	W7A	6192.35	10	281.7	0.005	0.014	1.61	0.024	0.085	0.071
A84	6171.79	A83	6170.48	6	56.5	0.023	0.014	0.00	0.000	0.079	0.039
E17	6190.77	E10	6170.98	8	163.1	0.121	0.014	0.00	0.000	0.075	0.050
E11	6181.95	E10	6170.98	8	270.8	0.041	0.009	0.00	0.000	0.075	0.050
W45	6215.00	W44	6209.56	8	310.8	0.018	0.014	0.43	0.003	0.074	0.050
W12	6199.05	W19	6198.40	10	219.9	0.003	0.014	0.46	0.005	0.073	0.061
A18	6226.07	W19	6198.40	6	330.3	0.084	0.009	0.00	0.000	0.071	0.036
W06	6188.50	W05	6186.30	8	290.3	0.008	0.014	0.80	0.005	0.070	0.046
W27R	6211.38	W28R	6209.61	6	65.2	0.027	0.014	0.00	0.000	0.064	0.032
W70	6208.91	W71	6208.46	8	61.8	0.007	0.009	1.63	0.010	0.064	0.043
W17	6197.60	T01	6197.20	8	5.5	0.073	0.011	0.00	0.000	0.061	0.040
W05	6186.30	W04	6183.80	8	341.0	0.007	0.014	1.15	0.005	0.054	0.036
H88	6179.40	A82	6172.54	6	51.5	0.133	0.014	0.00	0.000	0.052	0.026
W61A	6206.51	W62	6204.25	8	181.9	0.012	0.009	0.90	0.004	0.049	0.033
W61	6208.51	W61A	6206.51	8	137.3	0.015	0.009	1.28	0.004	0.039	0.026
A80	6173.90	A82	6172.54	8	288.0	0.005	0.014	0.00	0.000	0.039	0.026
E47	6187.90	E49	6176.69	6	218.2	0.051	0.014	0.00	0.000	0.037	0.018
E27	6162.40	E29	6148.00	8	160.6	0.090	0.009	2.52	0.006	0.035	0.023
W72	6212.72	W71	6208.46	6	90.7	0.047	0.009	0.00	0.000	0.034	0.017
W60	6208.83	W61	6208.51	6	47.5	0.007	0.009	0.00	0.000	0.026	0.013
E28	6168.10	E27	6162.40	6	127.8	0.045	0.014	0.00	0.000	0.021	0.011
E26	6192.80	E27	6162.40	6	165.7	0.184	0.014	0.00	0.000	0.021	0.011
E06	6193.66	E07	6192.80	8	343.1	0.003	0.014	0.00	0.000	0.012	0.008
E31	6177.11	E32	6154.49	6	185.1	0.122	0.014	0.00	0.000	0.009	0.005
A68	6205.95	A67	6187.47	4	120.2	0.154	0.011	0.00	0.000	0.000	0.000
A46	6283.80	A45	6240.52	4	153.0	0.283	0.011	0.00	0.000	0.000	0.000
R20	6235.68	R19	6221.55	6	224.3	0.063	0.009	0.00	0.000	0.000	0.000
R21	6237.00	R20	6235.68	6	60.9	0.022	0.009	0.00	0.000	0.000	0.000

Scenario 2 - Existing Sewer System + VPTSP PWWF

E13	6223.40	E12	6205.00	6	272.2	0.068	0.014	0.00	0.000	0.000	0.000
E51	6174.00	E63	6170.92	6	171.2	0.018	0.014	0.00	0.000	0.000	0.000
R19	6221.55	R18	6203.31	6	262.7	0.069	0.009	0.00	0.000	0.000	0.000
H104	6343.76	H103	6338.71	6	265.4	0.019	0.009	0.00	0.000	0.000	0.000
C1	6220.00	C2	6215.76	6	147.8	0.029	0.009	0.00	0.000	0.000	0.000
A26	6431.20	A27	6390.02	6	216.2	0.191	0.011	0.00	0.000	0.000	0.000
A17	6266.57	A18	6226.07	6	292.4	0.139	0.009	0.00	0.000	0.000	0.000
R32	6438.52	R30	6397.40	6	383.0	0.107	0.009	0.00	0.000	0.000	0.000
H89	6195.00	H88	6179.40	6	73.3	0.213	0.014	0.00	0.000	0.000	0.000
R35	6527.25	R34	6492.02	6	354.5	0.099	0.009	0.00	0.000	0.000	0.000
R28	6377.00	R27	6373.42	6	150.2	0.024	0.009	0.00	0.000	0.000	0.000
W01C	6198.62	W01B	6200.24	8	158.8	-0.010	0.014	0.00	0.000	0.546	0.364
C2	6215.76	C3	6211.20	6	148.8	0.031	0.009	0.00	0.000	0.000	0.000
A37A	6289.49	A37	6276.25	6	137.0	0.097	0.011	0.00	0.000	0.000	0.000
A37B	6300.03	A37A	6289.49	6	199.7	0.053	0.011	0.00	0.000	0.000	0.000
A88	6255.14	A87	6238.06	6	54.0	0.316	0.009	0.00	0.000	0.000	0.000
A87	6238.06	A86	6207.06	6	225.8	0.137	0.009	0.00	0.000	0.000	0.000
A70	6192.16	A71	6189.96	6	336.1	0.007	0.011	0.00	0.000	0.000	0.000
A25	6442.50	A26	6431.20	6	110.2	0.103	0.011	0.00	0.000	0.000	0.000
A28	6399.90	A27	6390.02	6	114.8	0.086	0.011	0.00	0.000	0.000	0.000
A33	6291.81	A34	6270.50	6	459.4	0.046	0.011	0.00	0.000	0.000	0.000
S53	6501.60	S52	6477.50	6	290.8	0.083	0.011	0.00	0.000	0.000	0.000
A58	6189.07	A59	6187.89	6	114.8	0.010	0.011	0.00	0.000	0.000	0.000
A55	6225.90	A58	6189.07	6	325.9	0.113	0.011	0.00	0.000	0.000	0.000
S52	6477.50	S51	6456.40	6	307.3	0.069	0.011	0.00	0.000	0.000	0.000
A56	6227.51	A55	6225.90	6	87.7	0.018	0.011	0.00	0.000	0.000	0.000
A32	6312.94	A33	6291.81	6	453.9	0.047	0.011	0.00	0.000	0.000	0.000
A57	6230.50	A56	6227.51	6	125.6	0.024	0.011	0.00	0.000	0.000	0.000
A60	6197.30	A59	6187.89	6	318.4	0.030	0.011	0.00	0.000	0.000	0.000
A62	6200.59	A63	6189.85	6	401.4	0.027	0.011	0.00	0.000	0.000	0.000
WY-A30	6367.64	A30	6354.41	6	350.8	0.038	0.011	0.00	0.000	0.000	0.000
A30	6354.41	A31	6331.83	6	414.9	0.054	0.011	0.00	0.000	0.000	0.000
A47	6270.09	A45	6240.52	6	393.7	0.075	0.011	0.00	0.000	0.000	0.000
A45	6240.52	A44	6226.50	6	295.5	0.047	0.011	0.00	0.000	0.000	0.000
A44	6226.50	A42	6209.99	6	349.7	0.047	0.011	0.00	0.000	0.000	0.000
A34	6270.50	A35	6260.00	6	249.2	0.042	0.011	0.00	0.000	0.000	0.000
A40	6231.01	A39	6228.59	6	179.1	0.014	0.011	0.00	0.000	0.000	0.000
A66	6188.90	A67	6187.47	6	194.2	0.007	0.011	0.00	0.000	0.000	0.000
A69	6191.40	A67	6187.47	6	172.6	0.023	0.011	0.00	0.000	0.000	0.000
H94	6266.20	A78	6252.82	6	175.4	0.076	0.011	0.00	0.000	0.000	0.000
H95	6287.00	H94	6266.20	6	188.4	0.110	0.011	0.00	0.000	0.000	0.000

Scenario 2 - Existing Sewer System + VPTSP PWWF

A78	6252.82	A76	6224.80	6	490.9	0.057	0.011	0.00	0.000	0.000	0.000
A79	6179.00	A80A	6176.00	6	64.2	0.047	0.014	0.00	0.000	0.000	0.000
H92	6277.37	H91	6261.21	6	209.7	0.077	0.009	0.00	0.000	0.000	0.000
A80A	6176.00	A80	6173.90	6	57.9	0.036	0.014	0.00	0.000	0.000	0.000
A74	6184.20	T21	6170.83	6	114.7	0.117	0.014	0.00	0.000	0.500	0.250
A76	6224.80	A75	6196.26	6	271.3	0.105	0.011	0.00	0.000	0.000	0.000
A77	6235.70	A76	6224.80	6	312.6	0.035	0.011	0.00	0.000	0.000	0.000
A72	6194.12	A71	6189.96	6	59.7	0.070	0.011	0.00	0.000	0.000	0.000
A38	6221.80	A71	6189.96	6	284.8	0.112	0.011	0.00	0.000	0.000	0.000
H97	6253.93	E45	6200.14	6	127.5	0.422	0.014	0.00	0.000	0.000	0.000
A73	6189.48	T20	6171.56	6	97.4	0.184	0.014	0.00	0.000	0.500	0.250
A65	6188.50	T16	6174.88	6	95.2	0.143	0.011	0.00	0.000	0.500	0.250
A42	6209.99	A65	6188.50	6	227.6	0.094	0.011	0.00	0.000	0.000	0.000
A27	6390.02	A29	6373.50	6	439.4	0.038	0.011	0.00	0.000	0.000	0.000
E63A	6176.10	E63	6170.92	6	344.2	0.015	0.014	0.00	0.000	0.000	0.000
W34	6209.72	W33A	6207.90	6	161.7	0.011	0.011	0.00	0.000	0.000	0.000
A35	6260.00	A38	6221.80	6	253.7	0.151	0.011	0.00	0.000	0.000	0.000
A39	6228.59	A38	6221.80	6	304.6	0.022	0.011	0.00	0.000	0.000	0.000
A63	6189.85	A65	6188.50	6	228.3	0.006	0.011	0.00	0.000	0.000	0.000
A43	6238.36	A42	6209.99	6	170.1	0.167	0.011	0.00	0.000	0.000	0.000
A31	6331.83	A32	6312.94	6	411.8	0.046	0.011	0.00	0.000	0.000	0.000
A16	6296.00	A17	6266.57	6	362.2	0.081	0.009	0.00	0.000	0.000	0.000
W33A	6207.90	W32	6204.90	6	185.7	0.016	0.011	0.00	0.000	0.000	0.000
E12	6205.00	E11	6181.95	6	124.6	0.185	0.014	0.00	0.000	0.000	0.000
R33	6479.22	R32	6438.52	6	402.5	0.101	0.009	0.00	0.000	0.000	0.000
R34	6492.02	R33	6479.22	6	158.3	0.081	0.009	0.00	0.000	0.000	0.000
W31	6203.49	W30	6202.96	6	95.5	0.006	0.011	0.00	0.000	0.000	0.000
S51	6456.40	A26	6431.20	6	296.1	0.085	0.011	0.00	0.000	0.000	0.000
A75	6196.26	A74	6184.20	6	118.5	0.102	0.014	0.00	0.000	0.000	0.000
A36	6274.65	A35	6260.00	6	259.8	0.056	0.011	0.00	0.000	0.000	0.000
A41	6228.10	A42	6209.99	6	342.3	0.053	0.011	0.00	0.000	0.000	0.000
C3	6211.20	C4	6209.50	6	142.1	0.012	0.009	0.00	0.000	0.000	0.000
E62	6173.52	E61	6167.48	6	315.2	0.019	0.014	0.00	0.000	0.000	0.000
E46	6190.00	E47	6187.90	6	334.9	0.006	0.014	0.00	0.000	0.000	0.000
E54	6181.34	E55	6174.75	6	307.9	0.021	0.014	0.00	0.000	0.000	0.000
T50	6138.76	T50A	6138.02	6	106.2	0.007	0.011	0.00	0.000	0.000	0.000
T54	6139.31	T50	6138.76	6	63.3	0.009	0.011	0.00	0.000	0.000	0.000
T51	6147.03	T50	6138.76	6	103.3	0.080	0.011	0.00	0.000	0.000	0.000
T52	6147.58	T51	6147.03	6	72.1	0.008	0.011	0.00	0.000	0.000	0.000
T53	6148.29	T52	6147.58	6	108.2	0.007	0.011	0.00	0.000	0.000	0.000
T57	6141.70	T56	6140.81	6	41.2	0.022	0.011	0.00	0.000	0.000	0.000

Scenario 2 - Existing Sewer System + VPTSP PWWF

T56	6140.81	T55	6139.91	6	114.3	0.008	0.011	0.00	0.000	0.000	0.000
H99	6325.00	H98	6300.65	6	323.1	0.075	0.009	0.00	0.000	0.000	0.000
T55	6139.91	T54	6139.31	6	89.6	0.007	0.011	0.00	0.000	0.000	0.000
H102	6312.81	H101	6301.43	6	160.3	0.071	0.014	0.00	0.000	0.000	0.000
H106	6320.37	H105	6308.40	6	225.6	0.053	0.009	0.00	0.000	0.000	0.000
H105	6308.40	H101	6301.43	6	156.7	0.044	0.009	0.00	0.000	0.000	0.000
H101	6301.43	H100	6274.02	6	97.9	0.280	0.009	0.00	0.000	0.000	0.000
H98	6300.65	H97	6253.93	6	342.5	0.136	0.014	0.00	0.000	0.000	0.000
H100	6274.02	H97	6253.93	6	122.0	0.165	0.014	0.00	0.000	0.000	0.000
E45	6200.14	E46	6190.00	6	219.6	0.046	0.014	0.00	0.000	0.000	0.000
H87	6258.40	H85	6221.25	6	108.1	0.344	0.009	0.00	0.000	0.000	0.000
E53	6183.02	E52	6179.55	6	199.8	0.017	0.014	0.00	0.000	0.000	0.000
E52	6179.55	E51	6174.00	6	254.3	0.022	0.014	0.00	0.000	0.000	0.000
E50	6176.54	E51	6174.00	6	173.6	0.015	0.014	0.00	0.000	0.000	0.000
A29	6373.50	WY-A30	6367.64	6	148.4	0.039	0.011	0.00	0.000	0.000	0.000
E16	6196.92	E17	6190.77	6	183.3	0.034	0.014	0.00	0.000	0.000	0.000
T47A	6148.60	T47	6144.47	6	220.0	0.019	0.011	0.00	0.000	0.000	0.000
I45	6162.25	I46	6161.17	6	101.6	0.011	0.011	0.00	0.000	0.000	0.000
E25	6185.67	E24	6183.36	6	60.8	0.038	0.014	0.00	0.000	0.000	0.000
T48A	6150.78	T48	6149.75	6	127.8	0.008	0.011	0.00	0.000	0.000	0.000
A37	6276.25	A36	6274.65	6	312.5	0.005	0.011	0.00	0.000	0.000	0.000
T59	6139.47	T58	6138.95	6	51.5	0.010	0.011	0.00	0.000	0.000	0.000
T48	6149.75	T47A	6148.60	6	92.5	0.012	0.011	0.00	0.000	0.000	0.000
W31A	6203.82	W31	6203.49	6	74.8	0.004	0.011	0.00	0.000	0.000	0.000
W32	6204.90	W31A	6203.82	6	27.5	0.039	0.011	0.00	0.000	0.000	0.000
W25R	6219.26	W72	6212.72	6	159.7	0.041	0.009	0.00	0.000	0.000	0.000
T58	6138.95	T50A	6138.02	6	59.4	0.016	0.011	0.00	0.000	0.000	0.000
W26	6216.50	W27R	6211.38	6	107.4	0.048	0.014	0.00	0.000	0.000	0.000
I48	6165.85	I47	6161.28	6	137.2	0.033	0.011	0.00	0.000	0.000	0.000
A15	6339.98	A17	6266.57	6	442.9	0.166	0.009	0.00	0.000	0.000	0.000
W57	6222.40	W58	6221.20	6	141.4	0.008	0.009	0.00	0.000	0.000	0.000
H85	6221.25	A84	6171.79	6	61.5	0.804	0.014	0.00	0.000	0.000	0.000
R23	6239.48	R21	6237.00	6	115.7	0.021	0.009	0.00	0.000	0.000	0.000
R22	6257.85	R21	6237.00	6	165.1	0.126	0.009	0.00	0.000	0.000	0.000
R27	6373.42	R26	6315.62	6	297.5	0.194	0.009	0.00	0.000	0.000	0.000
R31	6402.16	R30	6397.40	6	81.1	0.059	0.009	0.00	0.000	0.000	0.000
R30	6397.40	R28	6377.00	6	207.4	0.098	0.009	0.00	0.000	0.000	0.000
R26	6315.62	R25	6228.20	6	276.0	0.317	0.009	0.00	0.000	0.000	0.000
R29	6382.72	R28	6377.00	6	135.9	0.042	0.009	0.00	0.000	0.000	0.000
H86	6233.90	H85	6221.25	6	161.3	0.078	0.009	0.00	0.000	0.000	0.000
H90	6241.00	H89	6195.00	6	82.0	0.561	0.014	0.00	0.000	0.000	0.000

Scenario 2 - Existing Sewer System + VPTSP PWWF

H91	6261.21	H87	6258.40	6	194.0	0.014	0.009	0.00	0.000	0.000	0.000
E24	6183.36	E23	6182.44	6	134.9	0.007	0.014	0.00	0.000	0.000	0.000
R36	6532.02	R35	6527.25	6	450.7	0.011	0.009	0.00	0.000	0.000	0.000
R24	6240.89	R23	6239.48	6	79.9	0.018	0.009	0.00	0.000	0.000	0.000
A14	6342.00	A15	6339.98	6	321.5	0.006	0.009	0.00	0.000	0.000	0.000
A24	6452.90	A25	6442.50	6	316.1	0.033	0.011	0.00	0.000	0.000	0.000
W55	6346.00	W54	6325.00	6	122.6	0.171	0.009	0.00	0.000	0.000	0.000
W54	6325.00	W53	6284.20	6	317.6	0.128	0.009	0.00	0.000	0.000	0.000
W56	6367.24	W55	6346.00	6	454.3	0.047	0.009	0.00	0.000	0.000	0.000
W53	6284.20	W52	6267.50	6	87.7	0.190	0.009	0.00	0.000	0.000	0.000
H103	6338.71	H102	6312.81	6	174.2	0.149	0.009	0.00	0.000	0.000	0.000
W59	6216.33	W60	6208.83	8	143.9	0.052	0.009	0.00	0.000	0.000	0.000
W50A	6209.59	W50	6208.76	8	99.5	0.008	0.024	0.00	0.000	0.000	0.000
W50B	6211.27	W50A	6209.59	8	47.6	0.035	0.024	0.00	0.000	0.000	0.000
W50	6208.76	W50R	6207.99	8	91.6	0.008	0.024	0.00	0.000	0.000	0.000
E14	6222.16	E15	6221.13	8	205.9	0.005	0.014	0.00	0.000	0.000	0.000
E01	6203.03	E02	6202.06	8	277.8	0.003	0.014	0.00	0.000	0.000	0.000
E04	6212.90	E03	6201.08	8	313.9	0.038	0.014	0.00	0.000	0.000	0.000
E03	6201.08	E06	6193.66	8	125.1	0.059	0.014	0.00	0.000	0.000	0.000
E15	6221.13	E16	6196.92	8	312.1	0.078	0.014	0.00	0.000	0.000	0.000
W30	6202.96	W17	6197.60	8	190.2	0.028	0.011	0.00	0.000	0.000	0.000
W58	6221.20	W59	6216.33	8	173.0	0.028	0.009	0.00	0.000	0.000	0.000
E23	6182.44	E11	6181.95	8	137.0	0.004	0.014	0.00	0.000	0.000	0.000
E02	6202.06	E03	6201.08	8	278.8	0.004	0.014	0.00	0.000	0.000	0.000

Scenario 3 - Existing Sewer System + VPTSP + GP Buildout PWWF

Start Node	Invert (Start) (ft)	Stope Node	Invert (Stop) (ft)	Diameter (in)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Manning's n	Velocity	Flow (Maximum) (MGD)	Depth/Dia meter	Depth (Maximum) (ft)
T37	6134.09	T37A	6126.71	12	311.6	0.024	0.011	5.79	2.443	0.774	0.774
T45	6114.80	T40	6104.10	6	294.9	0.036	0.011	3.48	0.344	0.726	0.363
T41	6084.93	T43	6074.15	12	286.0	0.038	0.014	6.44	2.810	0.801	0.801
I49	6151.10	T34A	6147.86	6	78.1	0.041	0.011	0.00	0.000	0.500	0.250
T43	6074.46	TTSA	6068.27	10	315.7	0.020	0.011	7.97	2.810	1.000	0.833
T18	6172.23	T19	6172.22	15	352.3	0.000	0.011	2.44	1.559	0.753	0.941
A71	6189.96	T19	6172.17	6	111.5	0.160	0.011	0.17	0.012	0.530	0.265
I46	6161.17	T32	6152.50	6	35.3	0.245	0.011	0.00	0.000	0.500	0.250
T39	6122.47	T39A	6118.28	15	107.2	0.039	0.011	4.64	2.443	0.630	0.787
A59	6187.89	T11	6178.42	6	70.8	0.134	0.011	0.00	0.000	0.500	0.250
T17	6173.70	T18	6172.31	15	354.6	0.004	0.011	2.68	1.559	0.688	0.860
T35	6135.54	T36	6135.04	15	136.3	0.004	0.011	3.76	2.315	0.725	0.907
M1	6193.30	T09	6180.69	6	177.7	0.071	0.011	0.00	0.000	0.500	0.250
T37A	6127.12	T38	6124.19	12	222.5	0.013	0.011	6.31	2.443	0.713	0.713
T34	6147.24	T35	6135.68	12	516.5	0.022	0.011	6.46	2.315	0.665	0.665
T34A	6147.67	T34	6147.26	15	190.9	0.002	0.011	4.15	2.315	0.663	0.828
T46	6137.22	T37	6134.09	6	429.3	0.007	0.011	0.85	0.069	0.647	0.323
GV148	6168.77	T23	6167.91	15	308.7	0.003	0.011	3.23	1.760	0.650	0.812
T19	6172.21	T20	6171.57	15	189.0	0.003	0.011	3.22	1.728	0.640	0.800
T20	6171.56	T21	6171.00	15	333.1	0.002	0.011	3.18	1.728	0.648	0.810
A67	6187.47	T17	6173.88	6	90.3	0.150	0.011	0.00	0.000	0.500	0.250
T22	6169.61	GV148	6168.77	15	298.6	0.003	0.011	3.33	1.760	0.633	0.791
T31	6153.03	T32	6152.44	15	319.8	0.002	0.011	3.49	1.766	0.609	0.761
T25	6164.79	T26	6164.11	15	313.9	0.002	0.011	3.46	1.760	0.612	0.765
T21	6170.97	T22	6169.62	15	450.1	0.003	0.011	3.46	1.760	0.611	0.764
T14	6176.34	T15	6175.29	15	362.3	0.003	0.011	3.06	1.504	0.595	0.743
T15	6175.28	T16	6175.00	15	184.4	0.002	0.011	3.03	1.504	0.601	0.751
T30	6153.45	T31	6153.11	15	146.3	0.002	0.011	3.52	1.766	0.605	0.756
T26	6164.09	T26A	6163.72	15	138.9	0.003	0.011	3.55	1.760	0.599	0.748
T36	6135.02	T37	6133.91	15	388.1	0.003	0.011	4.41	2.315	0.629	0.786
T12	6177.65	T13	6177.20	15	187.8	0.002	0.011	3.11	1.497	0.585	0.731
T23	6167.87	T24	6166.89	15	484.5	0.002	0.011	3.65	1.760	0.585	0.731
T10	6179.38	T11	6178.39	15	446.5	0.002	0.011	3.15	1.472	0.570	0.712
T26A	6163.71	T27	6163.36	15	143.1	0.002	0.011	3.78	1.760	0.569	0.711
T28	6160.34	T29	6154.48	12	242.7	0.024	0.011	5.96	1.760	0.564	0.564
T24	6166.99	T25	6164.96	15	410.9	0.005	0.011	3.77	1.760	0.570	0.712
T29	6154.48	T30	6153.78	15	181.2	0.004	0.011	3.78	1.760	0.568	0.710
T13	6177.18	T14	6176.43	15	345.9	0.002	0.011	3.36	1.498	0.549	0.686

Scenario 3 - Existing Sewer System + VPTSP + GP Buildout PWWF

W02	6191.76	T09	6180.69	8	36.0	0.307	0.009	1.37	0.150	0.549	0.366
T33	6152.30	T34A	6147.86	15	308.3	0.014	0.011	4.90	2.309	0.574	0.717
I47	6161.28	T33	6152.30	6	48.7	0.184	0.011	0.00	0.000	0.500	0.250
T11	6178.37	T12	6177.70	15	304.2	0.002	0.011	3.29	1.497	0.558	0.697
T39A	6118.72	T39B	6115.51	15	305.7	0.011	0.014	5.26	2.443	0.567	0.709
T09	6180.69	T10	6179.53	15	398.7	0.003	0.011	3.32	1.463	0.543	0.679
T08	6181.09	T09	6180.39	15	290.2	0.002	0.011	3.10	1.311	0.526	0.657
T16	6174.97	T17	6173.71	15	393.5	0.003	0.011	3.62	1.545	0.530	0.663
W7A	6192.35	T08	6181.40	8	42.9	0.255	0.014	0.43	0.048	0.529	0.353
R09	6179.04	R07	6177.61	10	388.1	0.004	0.009	2.55	0.493	0.539	0.449
T32	6152.41	T33	6152.30	15	64.4	0.002	0.011	4.27	1.766	0.517	0.647
W04	6183.80	T08	6181.40	8	18.3	0.131	0.014	0.05	0.005	0.506	0.337
W46	6201.41	W13	6201.10	10	333.6	0.001	0.024	0.59	0.098	0.477	0.397
W77	6196.45	T04A	6191.75	10	215.0	0.022	0.011	1.65	0.252	0.459	0.383
R07	6177.61	R06	6177.33	10	223.0	0.001	0.009	2.76	0.504	0.514	0.428
R11	6180.44	R10	6179.81	10	252.7	0.002	0.009	2.78	0.481	0.493	0.411
T40A	6100.47	T41	6084.93	12	205.9	0.075	0.009	11.31	2.810	0.492	0.492
R13	6182.30	R12A	6181.92	10	147.7	0.003	0.009	2.84	0.481	0.485	0.404
T07	6185.71	T08	6181.40	12	115.5	0.037	0.011	3.46	0.763	0.455	0.455
R12A	6181.92	R12	6181.39	10	216.9	0.002	0.009	2.90	0.481	0.476	0.397
R12	6181.39	R11	6180.44	10	323.9	0.003	0.009	2.94	0.481	0.472	0.393
R10	6179.81	R09	6179.04	10	310.2	0.002	0.009	3.03	0.493	0.471	0.392
R14	6183.41	R13	6182.30	10	285.9	0.004	0.009	3.07	0.472	0.450	0.375
R01	6166.50	T33	6152.30	10	159.2	0.089	0.011	3.86	0.543	0.436	0.364
T27	6163.34	T28	6160.34	12	91.8	0.033	0.011	8.39	1.760	0.431	0.431
R16	6186.30	R15	6185.30	10	344.7	0.003	0.009	3.08	0.429	0.418	0.348
W36	6202.56	W36A	6201.95	10	165.8	0.004	0.014	1.82	0.250	0.413	0.344
W37	6203.23	W36	6202.56	10	276.8	0.002	0.014	1.71	0.227	0.403	0.336
T38	6124.81	T39	6122.47	15	180.9	0.013	0.011	7.32	2.443	0.438	0.547
E30A	6121.96	T44	6120.73	8	175.9	0.007	0.009	3.56	0.305	0.405	0.270
W38	6203.80	W37	6203.23	10	180.8	0.003	0.014	1.69	0.222	0.399	0.333
T04A	6191.75	T05	6191.63	15	167.6	0.001	0.011	2.30	0.641	0.382	0.478
R15	6185.30	R14	6183.41	10	403.2	0.005	0.009	3.38	0.455	0.407	0.339
T40	6104.10	T40A	6100.47	15	131.1	0.028	0.014	8.58	2.786	0.428	0.536
E34	6142.00	E33	6141.04	8	70.1	0.014	0.014	3.41	0.280	0.391	0.261
R04	6175.40	R03	6174.10	10	198.7	0.007	0.009	3.68	0.510	0.416	0.347
T39C	6109.21	T40	6104.10	15	116.1	0.044	0.009	7.62	2.443	0.425	0.532
R18	6203.31	R10	6179.81	6	204.3	0.115	0.009	0.00	0.000	0.419	0.210
E29	6148.00	E30	6124.00	4	279.8	0.086	0.009	0.38	0.006	0.371	0.124
T05	6191.63	T5A	6191.07	15	120.5	0.005	0.011	2.47	0.642	0.362	0.453
T04	6192.53	T04A	6191.75	15	189.5	0.004	0.011	1.56	0.386	0.352	0.440

Scenario 3 - Existing Sewer System + VPTSP + GP Buildout PWWF

R06	6177.33	R04	6175.40	10	317.7	0.006	0.009	4.04	0.504	0.385	0.320
E30	6124.00	E30A	6121.96	8	106.7	0.019	0.011	4.14	0.305	0.362	0.241
T44	6120.73	T44A	6119.54	8	165.1	0.007	0.009	4.12	0.305	0.364	0.242
E33	6141.04	E33A	6134.26	8	364.4	0.019	0.014	4.06	0.293	0.356	0.238
W13	6201.10	W14	6200.80	10	182.7	0.002	0.024	0.97	0.100	0.334	0.278
R25	6228.20	R03	6174.10	6	442.4	0.122	0.009	0.00	0.000	0.376	0.188
E36	6152.75	E34	6142.00	8	266.8	0.040	0.014	3.89	0.268	0.344	0.230
W38A	6204.49	W38	6203.80	10	111.2	0.006	0.014	2.03	0.217	0.343	0.286
E33B	6126.00	E30	6124.00	8	79.8	0.025	0.014	4.34	0.295	0.342	0.228
E33A	6134.26	E33B	6126.00	8	274.3	0.030	0.014	4.34	0.293	0.339	0.226
R17	6187.40	R16	6186.30	12	268.6	0.004	0.009	2.93	0.429	0.337	0.337
R03	6174.10	R02	6172.40	10	277.7	0.006	0.009	4.73	0.543	0.361	0.301
T5A	6191.07	T06	6190.69	15	254.9	0.001	0.011	2.85	0.651	0.330	0.413
W48	6205.54	W47	6202.90	10	191.4	0.014	0.024	0.79	0.078	0.324	0.270
W36A	6201.95	W15	6201.30	10	204.4	0.003	0.014	2.32	0.250	0.345	0.287
W47	6202.90	W47A	6202.49	10	177.6	0.002	0.024	1.01	0.098	0.320	0.267
W39	6204.60	W38A	6204.49	10	157.8	0.001	0.014	0.86	0.084	0.323	0.269
W47A	6202.49	W46	6201.41	10	42.8	0.025	0.024	1.01	0.098	0.322	0.268
W49A	6209.67	W49	6207.30	6	160.1	0.015	0.024	0.38	0.012	0.305	0.152
T44B	6115.91	T45	6114.80	8	33.0	0.034	0.009	5.83	0.344	0.308	0.205
W24R	6194.82	T5A	6191.07	12	203.9	0.018	0.024	0.09	0.009	0.294	0.294
W49	6207.30	W48	6205.54	8	236.5	0.007	0.024	1.31	0.073	0.295	0.196
T44A	6119.54	T44B	6115.91	8	147.5	0.025	0.009	6.27	0.344	0.292	0.194
R7A	6178.02	R07	6177.61	10	18.4	0.022	0.009	0.02	0.002	0.394	0.328
T39B	6115.13	T39C	6109.21	15	102.0	0.058	0.009	12.94	2.443	0.288	0.359
E39	6160.90	E38	6158.84	8	357.5	0.006	0.014	1.54	0.074	0.267	0.178
W76	6200.78	W75	6199.86	6	166.5	0.006	0.009	2.30	0.062	0.266	0.133
W62	6204.25	W38	6203.80	8	147.8	0.003	0.009	0.09	0.004	0.264	0.176
E32	6154.49	E33	6141.04	6	101.9	0.132	0.014	0.03	0.001	0.266	0.133
W38B	6206.00	W38A	6204.49	6	126.9	0.012	0.009	0.00	0.000	0.259	0.130
W14	6200.80	T02	6195.75	10	41.8	0.121	0.011	5.01	0.351	0.253	0.211
E40	6162.53	E39	6160.90	8	305.6	0.005	0.014	1.67	0.074	0.252	0.168
W40A	6204.80	W39	6204.60	10	74.6	0.003	0.014	0.66	0.047	0.256	0.213
E37	6157.08	E36	6152.75	8	286.5	0.015	0.014	1.93	0.083	0.249	0.166
E38	6158.84	E37	6157.08	8	379.4	0.005	0.014	1.80	0.078	0.246	0.164
W75	6199.86	W74	6198.13	8	182.2	0.009	0.009	2.32	0.091	0.232	0.155
E56	6164.60	E60	6163.70	8	158.1	0.006	0.014	2.08	0.085	0.238	0.158
R02	6172.40	R01	6166.50	10	175.4	0.034	0.009	8.02	0.543	0.247	0.206
E41	6163.44	E40	6162.53	8	158.7	0.006	0.014	1.26	0.048	0.228	0.152
T03	6193.82	T04	6192.53	15	233.0	0.006	0.011	2.85	0.386	0.227	0.284
E60	6163.70	E59	6159.16	8	210.7	0.022	0.014	2.17	0.085	0.231	0.154

Scenario 3 - Existing Sewer System + VPTSP + GP Buildout PWWF

T02	6195.75	T03	6193.82	15	389.9	0.005	0.011	2.93	0.386	0.223	0.279
E58	6157.66	E36	6152.75	8	106.6	0.046	0.014	2.30	0.085	0.225	0.150
T06	6190.69	T07	6185.71	15	357.3	0.014	0.011	5.10	0.651	0.219	0.273
W74	6198.13	W77	6196.45	10	305.1	0.006	0.009	2.77	0.155	0.215	0.180
E10	6170.98	E56	6164.60	8	119.6	0.053	0.014	2.34	0.085	0.219	0.146
W73	6200.60	W74	6198.13	8	175.4	0.014	0.009	1.88	0.064	0.209	0.139
E59	6159.16	E58	6157.66	8	196.4	0.008	0.014	2.40	0.085	0.214	0.143
E43	6166.59	E42	6164.73	8	392.4	0.005	0.014	1.40	0.048	0.209	0.139
E35	6142.90	E34	6142.00	8	248.4	0.004	0.014	0.02	0.001	0.214	0.143
E42	6164.73	E41	6163.44	8	250.9	0.005	0.014	1.46	0.048	0.204	0.136
W49B	6212.68	W49A	6209.67	4	197.8	0.015	0.024	0.58	0.005	0.196	0.065
W15	6201.30	W14	6200.80	10	16.7	0.030	0.011	4.74	0.250	0.207	0.173
E08	6191.52	E09	6190.98	8	298.3	0.002	0.009	1.47	0.041	0.182	0.121
E55	6174.75	E56	6164.60	6	258.7	0.039	0.014	0.00	0.000	0.190	0.095
P13	6130.04	T44A	6119.54	8	68.8	0.153	0.009	1.17	0.032	0.184	0.123
E49	6176.69	E43	6166.59	6	199.5	0.051	0.014	0.57	0.008	0.177	0.089
E63	6170.92	E40	6162.53	6	181.0	0.046	0.014	0.00	0.000	0.170	0.085
W50R	6207.99	W49	6207.30	8	83.0	0.008	0.024	0.00	0.000	0.171	0.114
E44	6168.57	E43	6166.59	8	388.4	0.005	0.014	0.60	0.014	0.162	0.108
W01	6196.40	W02	6191.76	8	89.7	0.052	0.014	5.83	0.150	0.172	0.114
E09	6190.98	E10	6170.98	8	388.7	0.051	0.014	3.77	0.082	0.153	0.102
W01B	6200.24	W01	6196.40	8	143.9	0.027	0.014	0.86	0.021	0.165	0.110
T01	6197.20	T02	6195.75	15	192.2	0.008	0.011	0.61	0.036	0.146	0.182
W40	6205.97	W40A	6204.80	10	65.4	0.018	0.014	1.48	0.047	0.145	0.121
W42	6206.69	W40	6205.97	8	136.0	0.005	0.014	1.24	0.025	0.147	0.098
P04	6131.43	P03	6130.66	8	174.1	0.004	0.009	1.32	0.025	0.140	0.093
C4	6209.50	W01	6196.40	6	214.2	0.061	0.014	0.00	0.000	0.158	0.079
W43	6208.07	W42	6206.69	8	269.0	0.005	0.014	1.10	0.023	0.148	0.099
E42A	6172.38	E42	6164.73	6	76.7	0.100	0.014	0.00	0.000	0.138	0.069
W08B	6195.85	W08A	6195.50	10	153.2	0.002	0.014	1.05	0.048	0.188	0.157
W09	6196.50	W08B	6195.85	10	179.3	0.004	0.014	1.14	0.048	0.178	0.148
E61	6167.48	E60	6163.70	6	246.5	0.015	0.014	0.00	0.000	0.128	0.064
P06	6131.89	P04	6131.43	8	88.9	0.005	0.009	1.58	0.025	0.123	0.082
W08A	6195.50	W08	6194.90	10	207.5	0.003	0.014	1.19	0.048	0.172	0.144
P07	6132.36	P06	6131.89	8	91.2	0.005	0.009	1.62	0.025	0.121	0.081
W11	6197.90	W10	6197.30	10	184.7	0.003	0.014	1.21	0.048	0.171	0.142
P08	6133.31	P07	6132.36	8	172.5	0.006	0.009	1.65	0.025	0.120	0.080
W44	6209.56	W43	6208.07	8	300.4	0.005	0.014	0.75	0.012	0.124	0.083
P12	6154.64	P03	6130.66	6	248.0	0.097	0.009	0.53	0.004	0.120	0.060
E07	6192.80	E08	6191.52	8	221.4	0.006	0.014	0.04	0.001	0.118	0.079
W10	6197.30	W09	6196.50	10	210.8	0.004	0.014	1.25	0.048	0.167	0.139

Scenario 3 - Existing Sewer System + VPTSP + GP Buildout PWWF

W08	6194.90	W07	6193.75	10	233.1	0.005	0.014	1.25	0.048	0.167	0.139
A83	6170.48	E44	6168.57	8	426.6	0.004	0.014	0.96	0.014	0.116	0.077
W11A	6198.10	W11	6197.90	10	63.6	0.003	0.014	1.04	0.040	0.167	0.139
P03	6130.66	P13	6130.04	8	136.7	0.005	0.009	2.20	0.029	0.107	0.072
A86	6207.06	W11	6197.90	6	51.4	0.178	0.009	0.00	0.000	0.147	0.073
W71	6208.46	W73	6200.60	8	262.8	0.030	0.009	0.89	0.010	0.100	0.067
T47	6144.47	T46	6137.22	6	299.6	0.024	0.011	1.60	0.034	0.223	0.112
T50A	6138.02	T46	6137.22	6	37.4	0.021	0.011	0.21	0.003	0.172	0.086
A82	6172.54	A83	6170.48	8	438.0	0.005	0.014	0.53	0.006	0.098	0.065
W19	6198.40	W11A	6198.10	10	47.7	0.006	0.014	1.26	0.040	0.147	0.122
W41	6242.85	W40	6205.97	6	236.1	0.156	0.014	0.00	0.000	0.094	0.047
W52	6267.50	W40	6205.97	6	494.1	0.125	0.009	0.00	0.000	0.094	0.047
W28R	6209.61	W70	6208.91	8	114.2	0.006	0.014	1.05	0.010	0.087	0.058
W07	6193.75	W7A	6192.35	10	281.7	0.005	0.014	1.99	0.048	0.121	0.101
A84	6171.79	A83	6170.48	6	56.5	0.023	0.014	0.00	0.000	0.079	0.039
E17	6190.77	E10	6170.98	8	163.1	0.121	0.014	0.33	0.003	0.090	0.060
E11	6181.95	E10	6170.98	8	270.8	0.041	0.009	0.00	0.000	0.077	0.051
W45	6215.00	W44	6209.56	8	310.8	0.018	0.014	0.43	0.003	0.074	0.050
W12	6199.05	W19	6198.40	10	219.9	0.003	0.014	0.30	0.005	0.098	0.082
A18	6226.07	W19	6198.40	6	330.3	0.084	0.009	1.96	0.025	0.157	0.078
W06	6188.50	W05	6186.30	8	290.3	0.008	0.014	0.80	0.005	0.070	0.046
W27R	6211.38	W28R	6209.61	6	65.2	0.027	0.014	0.00	0.000	0.064	0.032
W70	6208.91	W71	6208.46	8	61.8	0.007	0.009	1.63	0.010	0.064	0.043
W17	6197.60	T01	6197.20	8	5.5	0.073	0.011	0.00	0.000	0.061	0.040
W05	6186.30	W04	6183.80	8	341.0	0.007	0.014	1.15	0.005	0.054	0.036
H88	6179.40	A82	6172.54	6	51.5	0.133	0.014	0.00	0.000	0.052	0.026
W61A	6206.51	W62	6204.25	8	181.9	0.012	0.009	0.90	0.004	0.049	0.033
W61	6208.51	W61A	6206.51	8	137.3	0.015	0.009	1.28	0.004	0.039	0.026
A80	6173.90	A82	6172.54	8	288.0	0.005	0.014	0.00	0.000	0.039	0.026
E47	6187.90	E49	6176.69	6	218.2	0.051	0.014	0.00	0.000	0.037	0.018
E27	6162.40	E29	6148.00	8	160.6	0.090	0.009	2.52	0.006	0.035	0.023
W72	6212.72	W71	6208.46	6	90.7	0.047	0.009	0.00	0.000	0.034	0.017
W60	6208.83	W61	6208.51	6	47.5	0.007	0.009	0.00	0.000	0.026	0.013
E28	6168.10	E27	6162.40	6	127.8	0.045	0.014	0.00	0.000	0.021	0.011
E26	6192.80	E27	6162.40	6	165.7	0.184	0.014	0.00	0.000	0.021	0.011
E06	6193.66	E07	6192.80	8	343.1	0.003	0.014	0.00	0.000	0.012	0.008
E31	6177.11	E32	6154.49	6	185.1	0.122	0.014	0.00	0.000	0.009	0.005
A68	6205.95	A67	6187.47	4	120.2	0.154	0.011	0.00	0.000	0.000	0.000
A46	6283.80	A45	6240.52	4	153.0	0.283	0.011	0.00	0.000	0.000	0.000
R20	6235.68	R19	6221.55	6	224.3	0.063	0.009	0.00	0.000	0.000	0.000
R21	6237.00	R20	6235.68	6	60.9	0.022	0.009	0.00	0.000	0.000	0.000

Scenario 3 - Existing Sewer System + VPTSP + GP Buildout PWWF

E13	6223.40	E12	6205.00	6	272.2	0.068	0.014	0.00	0.000	0.000	0.000
E51	6174.00	E63	6170.92	6	171.2	0.018	0.014	0.00	0.000	0.000	0.000
R19	6221.55	R18	6203.31	6	262.7	0.069	0.009	0.00	0.000	0.000	0.000
H104	6343.76	H103	6338.71	6	265.4	0.019	0.009	0.00	0.000	0.000	0.000
C1	6220.00	C2	6215.76	6	147.8	0.029	0.009	0.00	0.000	0.000	0.000
A26	6431.20	A27	6390.02	6	216.2	0.191	0.011	3.03	0.012	0.070	0.035
A17	6266.57	A18	6226.07	6	292.4	0.139	0.009	4.86	0.025	0.084	0.042
R32	6438.52	R30	6397.40	6	383.0	0.107	0.009	0.00	0.000	0.000	0.000
H89	6195.00	H88	6179.40	6	73.3	0.213	0.014	0.00	0.000	0.000	0.000
R35	6527.25	R34	6492.02	6	354.5	0.099	0.009	0.00	0.000	0.000	0.000
R28	6377.00	R27	6373.42	6	150.2	0.024	0.009	0.00	0.000	0.000	0.000
W01C	6198.62	W01B	6200.24	8	158.8	-0.010	0.014	0.00	0.000	0.546	0.364
C2	6215.76	C3	6211.20	6	148.8	0.031	0.009	0.00	0.000	0.000	0.000
A37A	6289.49	A37	6276.25	6	137.0	0.097	0.011	0.00	0.000	0.000	0.000
A37B	6300.03	A37A	6289.49	6	199.7	0.053	0.011	0.00	0.000	0.000	0.000
A88	6255.14	A87	6238.06	6	54.0	0.316	0.009	0.00	0.000	0.000	0.000
A87	6238.06	A86	6207.06	6	225.8	0.137	0.009	0.00	0.000	0.000	0.000
A70	6192.16	A71	6189.96	6	336.1	0.007	0.011	0.00	0.000	0.030	0.015
A25	6442.50	A26	6431.20	6	110.2	0.103	0.011	0.00	0.000	0.028	0.014
A28	6399.90	A27	6390.02	6	114.8	0.086	0.011	0.00	0.000	0.042	0.021
A33	6291.81	A34	6270.50	6	459.4	0.046	0.011	2.37	0.012	0.083	0.042
S53	6501.60	S52	6477.50	6	290.8	0.083	0.011	3.02	0.012	0.071	0.035
A58	6189.07	A59	6187.89	6	114.8	0.010	0.011	0.00	0.000	0.000	0.000
A55	6225.90	A58	6189.07	6	325.9	0.113	0.011	0.00	0.000	0.000	0.000
S52	6477.50	S51	6456.40	6	307.3	0.069	0.011	2.91	0.012	0.072	0.036
A56	6227.51	A55	6225.90	6	87.7	0.018	0.011	0.00	0.000	0.000	0.000
A32	6312.94	A33	6291.81	6	453.9	0.047	0.011	2.53	0.012	0.080	0.040
A57	6230.50	A56	6227.51	6	125.6	0.024	0.011	0.00	0.000	0.000	0.000
A60	6197.30	A59	6187.89	6	318.4	0.030	0.011	0.00	0.000	0.000	0.000
A62	6200.59	A63	6189.85	6	401.4	0.027	0.011	0.00	0.000	0.000	0.000
WY-A30	6367.64	A30	6354.41	6	350.8	0.038	0.011	2.47	0.012	0.081	0.040
A30	6354.41	A31	6331.83	6	414.9	0.054	0.011	2.59	0.012	0.078	0.039
A47	6270.09	A45	6240.52	6	393.7	0.075	0.011	0.00	0.000	0.000	0.000
A45	6240.52	A44	6226.50	6	295.5	0.047	0.011	0.00	0.000	0.000	0.000
A44	6226.50	A42	6209.99	6	349.7	0.047	0.011	0.00	0.000	0.000	0.000
A34	6270.50	A35	6260.00	6	249.2	0.042	0.011	2.84	0.012	0.073	0.037
A40	6231.01	A39	6228.59	6	179.1	0.014	0.011	0.00	0.000	0.000	0.000
A66	6188.90	A67	6187.47	6	194.2	0.007	0.011	0.00	0.000	0.000	0.000
A69	6191.40	A67	6187.47	6	172.6	0.023	0.011	0.00	0.000	0.000	0.000
H94	6266.20	A78	6252.82	6	175.4	0.076	0.011	0.00	0.000	0.000	0.000
H95	6287.00	H94	6266.20	6	188.4	0.110	0.011	0.00	0.000	0.000	0.000

Scenario 3 - Existing Sewer System + VPTSP + GP Buildout PWWF

A78	6252.82	A76	6224.80	6	490.9	0.057	0.011	0.00	0.000	0.000	0.000
A79	6179.00	A80A	6176.00	6	64.2	0.047	0.014	0.00	0.000	0.000	0.000
H92	6277.37	H91	6261.21	6	209.7	0.077	0.009	0.00	0.000	0.000	0.000
A80A	6176.00	A80	6173.90	6	57.9	0.036	0.014	0.00	0.000	0.000	0.000
A74	6184.20	T21	6170.83	6	114.7	0.117	0.014	0.00	0.000	0.500	0.250
A76	6224.80	A75	6196.26	6	271.3	0.105	0.011	0.00	0.000	0.000	0.000
A77	6235.70	A76	6224.80	6	312.6	0.035	0.011	0.00	0.000	0.000	0.000
A72	6194.12	A71	6189.96	6	59.7	0.070	0.011	0.00	0.000	0.030	0.015
A38	6221.80	A71	6189.96	6	284.8	0.112	0.011	3.60	0.012	0.063	0.031
H97	6253.93	E45	6200.14	6	127.5	0.422	0.014	0.00	0.000	0.000	0.000
A73	6189.48	T20	6171.56	6	97.4	0.184	0.014	0.00	0.000	0.500	0.250
A65	6188.50	T16	6174.88	6	95.2	0.143	0.011	0.00	0.000	0.500	0.250
A42	6209.99	A65	6188.50	6	227.6	0.094	0.011	0.00	0.000	0.000	0.000
A27	6390.02	A29	6373.50	6	439.4	0.038	0.011	2.36	0.012	0.083	0.042
E63A	6176.10	E63	6170.92	6	344.2	0.015	0.014	0.00	0.000	0.000	0.000
W34	6209.72	W33A	6207.90	6	161.7	0.011	0.011	0.00	0.000	0.000	0.000
A35	6260.00	A38	6221.80	6	253.7	0.151	0.011	3.56	0.012	0.063	0.032
A39	6228.59	A38	6221.80	6	304.6	0.022	0.011	0.00	0.000	0.033	0.016
A63	6189.85	A65	6188.50	6	228.3	0.006	0.011	0.00	0.000	0.000	0.000
A43	6238.36	A42	6209.99	6	170.1	0.167	0.011	0.00	0.000	0.000	0.000
A31	6331.83	A32	6312.94	6	411.8	0.046	0.011	2.52	0.012	0.080	0.040
A16	6296.00	A17	6266.57	6	362.2	0.081	0.009	0.00	0.000	0.040	0.020
W33A	6207.90	W32	6204.90	6	185.7	0.016	0.011	0.00	0.000	0.000	0.000
E12	6205.00	E11	6181.95	6	124.6	0.185	0.014	0.00	0.000	0.000	0.000
R33	6479.22	R32	6438.52	6	402.5	0.101	0.009	0.00	0.000	0.000	0.000
R34	6492.02	R33	6479.22	6	158.3	0.081	0.009	0.00	0.000	0.000	0.000
W31	6203.49	W30	6202.96	6	95.5	0.006	0.011	0.00	0.000	0.000	0.000
S51	6456.40	A26	6431.20	6	296.1	0.085	0.011	3.46	0.012	0.064	0.032
A75	6196.26	A74	6184.20	6	118.5	0.102	0.014	0.00	0.000	0.000	0.000
A36	6274.65	A35	6260.00	6	259.8	0.056	0.011	0.00	0.000	0.030	0.015
A41	6228.10	A42	6209.99	6	342.3	0.053	0.011	0.00	0.000	0.000	0.000
C3	6211.20	C4	6209.50	6	142.1	0.012	0.009	0.00	0.000	0.000	0.000
E62	6173.52	E61	6167.48	6	315.2	0.019	0.014	0.00	0.000	0.000	0.000
E46	6190.00	E47	6187.90	6	334.9	0.006	0.014	0.00	0.000	0.000	0.000
E54	6181.34	E55	6174.75	6	307.9	0.021	0.014	0.00	0.000	0.000	0.000
T50	6138.76	T50A	6138.02	6	106.2	0.007	0.011	0.99	0.003	0.059	0.030
T54	6139.31	T50	6138.76	6	63.3	0.009	0.011	0.00	0.000	0.034	0.017
T51	6147.03	T50	6138.76	6	103.3	0.080	0.011	1.17	0.003	0.053	0.026
T52	6147.58	T51	6147.03	6	72.1	0.008	0.011	1.14	0.003	0.053	0.027
T53	6148.29	T52	6147.58	6	108.2	0.007	0.011	0.81	0.003	0.068	0.034
T57	6141.70	T56	6140.81	6	41.2	0.022	0.011	0.00	0.000	0.000	0.000

Scenario 3 - Existing Sewer System + VPTSP + GP Buildout PWWF

T56	6140.81	T55	6139.91	6	114.3	0.008	0.011	0.00	0.000	0.000	0.000
H99	6325.00	H98	6300.65	6	323.1	0.075	0.009	0.00	0.000	0.000	0.000
T55	6139.91	T54	6139.31	6	89.6	0.007	0.011	0.00	0.000	0.000	0.000
H102	6312.81	H101	6301.43	6	160.3	0.071	0.014	0.00	0.000	0.000	0.000
H106	6320.37	H105	6308.40	6	225.6	0.053	0.009	0.00	0.000	0.000	0.000
H105	6308.40	H101	6301.43	6	156.7	0.044	0.009	0.00	0.000	0.000	0.000
H101	6301.43	H100	6274.02	6	97.9	0.280	0.009	0.00	0.000	0.000	0.000
H98	6300.65	H97	6253.93	6	342.5	0.136	0.014	0.00	0.000	0.000	0.000
H100	6274.02	H97	6253.93	6	122.0	0.165	0.014	0.00	0.000	0.000	0.000
E45	6200.14	E46	6190.00	6	219.6	0.046	0.014	0.00	0.000	0.000	0.000
H87	6258.40	H85	6221.25	6	108.1	0.344	0.009	0.00	0.000	0.000	0.000
E53	6183.02	E52	6179.55	6	199.8	0.017	0.014	0.00	0.000	0.000	0.000
E52	6179.55	E51	6174.00	6	254.3	0.022	0.014	0.00	0.000	0.000	0.000
E50	6176.54	E51	6174.00	6	173.6	0.015	0.014	0.00	0.000	0.000	0.000
A29	6373.50	WY-A30	6367.64	6	148.4	0.039	0.011	2.33	0.012	0.084	0.042
E16	6196.92	E17	6190.77	6	183.3	0.034	0.014	1.53	0.003	0.045	0.023
T47A	6148.60	T47	6144.47	6	220.0	0.019	0.011	2.60	0.034	0.159	0.079
I45	6162.25	I46	6161.17	6	101.6	0.011	0.011	0.00	0.000	0.000	0.000
E25	6185.67	E24	6183.36	6	60.8	0.038	0.014	0.00	0.000	0.000	0.000
T48A	6150.78	T48	6149.75	6	127.8	0.008	0.011	1.90	0.032	0.190	0.095
A37	6276.25	A36	6274.65	6	312.5	0.005	0.011	0.00	0.000	0.000	0.000
T59	6139.47	T58	6138.95	6	51.5	0.010	0.011	0.00	0.000	0.000	0.000
T48	6149.75	T47A	6148.60	6	92.5	0.012	0.011	2.27	0.034	0.174	0.087
W31A	6203.82	W31	6203.49	6	74.8	0.004	0.011	0.00	0.000	0.000	0.000
W32	6204.90	W31A	6203.82	6	27.5	0.039	0.011	0.00	0.000	0.000	0.000
W25R	6219.26	W72	6212.72	6	159.7	0.041	0.009	0.00	0.000	0.000	0.000
T58	6138.95	T50A	6138.02	6	59.4	0.016	0.011	0.00	0.000	0.025	0.012
W26	6216.50	W27R	6211.38	6	107.4	0.048	0.014	0.00	0.000	0.000	0.000
I48	6165.85	I47	6161.28	6	137.2	0.033	0.011	0.00	0.000	0.000	0.000
A15	6339.98	A17	6266.57	6	442.9	0.166	0.009	5.52	0.025	0.077	0.039
W57	6222.40	W58	6221.20	6	141.4	0.008	0.009	0.00	0.000	0.000	0.000
H85	6221.25	A84	6171.79	6	61.5	0.804	0.014	0.00	0.000	0.000	0.000
R23	6239.48	R21	6237.00	6	115.7	0.021	0.009	0.00	0.000	0.000	0.000
R22	6257.85	R21	6237.00	6	165.1	0.126	0.009	0.00	0.000	0.000	0.000
R27	6373.42	R26	6315.62	6	297.5	0.194	0.009	0.00	0.000	0.000	0.000
R31	6402.16	R30	6397.40	6	81.1	0.059	0.009	0.00	0.000	0.000	0.000
R30	6397.40	R28	6377.00	6	207.4	0.098	0.009	0.00	0.000	0.000	0.000
R26	6315.62	R25	6228.20	6	276.0	0.317	0.009	0.00	0.000	0.000	0.000
R29	6382.72	R28	6377.00	6	135.9	0.042	0.009	0.00	0.000	0.000	0.000
H86	6233.90	H85	6221.25	6	161.3	0.078	0.009	0.00	0.000	0.000	0.000
H90	6241.00	H89	6195.00	6	82.0	0.561	0.014	0.00	0.000	0.000	0.000

Scenario 3 - Existing Sewer System + VPTSP + GP Buildout PWWF

H91	6261.21	H87	6258.40	6	194.0	0.014	0.009	0.00	0.000	0.000	0.000
E24	6183.36	E23	6182.44	6	134.9	0.007	0.014	0.00	0.000	0.000	0.000
R36	6532.02	R35	6527.25	6	450.7	0.011	0.009	0.00	0.000	0.000	0.000
R24	6240.89	R23	6239.48	6	79.9	0.018	0.009	0.00	0.000	0.000	0.000
A14	6342.00	A15	6339.98	6	321.5	0.006	0.009	0.00	0.000	0.038	0.019
A24	6452.90	A25	6442.50	6	316.1	0.033	0.011	0.00	0.000	0.000	0.000
W55	6346.00	W54	6325.00	6	122.6	0.171	0.009	0.00	0.000	0.000	0.000
W54	6325.00	W53	6284.20	6	317.6	0.128	0.009	0.00	0.000	0.000	0.000
W56	6367.24	W55	6346.00	6	454.3	0.047	0.009	0.00	0.000	0.000	0.000
W53	6284.20	W52	6267.50	6	87.7	0.190	0.009	0.00	0.000	0.000	0.000
H103	6338.71	H102	6312.81	6	174.2	0.149	0.009	0.00	0.000	0.000	0.000
W59	6216.33	W60	6208.83	8	143.9	0.052	0.009	0.00	0.000	0.000	0.000
W50A	6209.59	W50	6208.76	8	99.5	0.008	0.024	0.00	0.000	0.000	0.000
W50B	6211.27	W50A	6209.59	8	47.6	0.035	0.024	0.00	0.000	0.000	0.000
W50	6208.76	W50R	6207.99	8	91.6	0.008	0.024	0.00	0.000	0.000	0.000
E14	6222.16	E15	6221.13	8	205.9	0.005	0.014	0.84	0.003	0.046	0.031
E01	6203.03	E02	6202.06	8	277.8	0.003	0.014	0.00	0.000	0.000	0.000
E04	6212.90	E03	6201.08	8	313.9	0.038	0.014	0.00	0.000	0.000	0.000
E03	6201.08	E06	6193.66	8	125.1	0.059	0.014	0.00	0.000	0.000	0.000
E15	6221.13	E16	6196.92	8	312.1	0.078	0.014	1.26	0.003	0.036	0.024
W30	6202.96	W17	6197.60	8	190.2	0.028	0.011	0.00	0.000	0.000	0.000
W58	6221.20	W59	6216.33	8	173.0	0.028	0.009	0.00	0.000	0.000	0.000
E23	6182.44	E11	6181.95	8	137.0	0.004	0.014	0.00	0.000	0.000	0.000
E02	6202.06	E03	6201.08	8	278.8	0.004	0.014	0.00	0.000	0.000	0.000