Appendix I

Wastewater Analysis

Wastewater Analysis for

CAL POLY
SAN LUIS OBISPO

California Polytechnic State University, San Luis Obispo Master Plan 2035

Watearth Project No. 2018-314.1-CA

August 2019

Prepared for:

Ascent Environmental, Inc.
455 Capitol Mall, Suite 300
Sacramento, CA 95814

Contact **Watearth** Principal
Jennifer J. Walker PE, DWRE, ENV SP, CFM, QSD
445 South Figueroa, Suite 3128
Los Angeles, CA 90071
213-248-4554
jwalker@watearth.com

California Polytechnic State University, San Luis Obispo

Wastewater Analysis for Master Plan 2035

Watearth No. 2018-314.1-CA

Contents

Table of Tables

List of Figures

List of Exhibits

List of Appendices

1 Executive Summary

1.1 Purpose of the Wastewater Analysis

The purpose of this wastewater analysis technical memorandum is to assess adequate capacity of the existing and proposed wastewater system requirements based on the Environmental Impact Report evaluating Cal Poly's *2035 Master Plan.*

1.2 Project Summary

The Cal Poly campus is undergoing a 20-year master planning effort that will guide the development and use of campus lands through the year 2035. In order to accommodate planned growth in enrollment, Cal Poly has undertaken development of a *2035 Master Plan* to provide for needed academic facilities, additional student and non-student housing on campus, recreation and athletics facilities, and other support facilities on the Cal Poly campus to increase the student population from 20,944 in 2015 to 25,000 in 2035. To accommodate the additional students, Cal Poly determined they needed a total building development in academic facilities, new housing, and other support services of 1,290,000 gross square feet (GSF). Non-building projects include water conservation efforts such as replacing existing building fixtures with low-flow options, removing landscaping or replacing with low-water use alternatives, and increasing efficiency of irrigation for playfields including treatments for improving water retention. Proposed building projects include the following:

- Academic Center Library Addition
- Classroom and Offices Building
- Engineering Project Building
- Davidson Music Center Renovation and Addition
- Health Center
-
- Slack and Grand Residential Neighborhood for Faculty and Staff
- University-based Retirement Community
- Student Housing (multiple buildings)
- Beef Cattle Evaluation Center
-
- Facilities Operations Complex
- Technology Park Facility
- Operations and Farm Shop Relocation
- IT Services Consolidation
- Wastewater Reclamation Facility (WRF)

1.3 Summary of Analysis

1.3.1 Summary of Methodology

The methodology for analysis was intended to identify potential increases of wastewater flow to the City's Water Resources Reclamation Facility (City WRRF), which is established via the existing capacity agreements for wastewater treatment and conveyance. Several standard factors were calculated to identify any impacts based on the proposed project elements compared to existing wastewater flows. These include Annual Average Wastewater Flows, Peak Dry

Weather, and Peak Wet Weather. Key factors included proposed buildings by type of use and size, water conservation efforts by land use type, and the on-campus Water Reclamation Facility (WRF). The *Master Plan 2035* proposed project elements are intended to be phased during the planning period so the reporting is in five-year increments including 2015 (baseline year), 2020, 2025, 2030, and 2035 (final year).

The City's existing wastewater collection system was evaluated using the City-supplied SewerCAD model to conduct node-specific checks on capacity needs based on the proposed phases of development and changes in flows to the City WRRF. The node-specific checks analyzed 30 different scenarios.

The planning-level analysis of water quality of the wastewater discharge reviewed the existing water quality parameters and compared to anticipated changes due to increased water conservation efforts and construction of the project element WRF.

1.3.2 Summary of Results

Calculations for the Average Annual Wastewater Flows is shown in Table 1. The analysis years are 2015 (based the Corrected Adjusted 2015 flows), 2020, 2025, 2030, and 2035 for the proposed project elements for student residential, non-student residential, and academic and support services (non-residential) buildings. The analysis includes two scenarios for construction of the first phase of the WRF; year 2022 is most likely case and year 2026 is worst case with the second phase of the WRF following in 2028 under both scenarios. Near-term development of housing and other proposed construction between the 2020 and 2025 will result in an increase above the current allowable limits at the end of that term. The proposed near-term project element WRF needs to be operational in approximately 2022 to prevent increases in average annual wastewater flows to the City as compared to baseline 2015 conditions.

Additionally, the average annual wastewater flow of 0.478 million gallons per day (MGD) in 2035 without the WRF exceeds Cal Poly's 0.471 MGD capacity agreement with the City indicating that the WRF is critical for development of the *2035 Master Plan*.

Modeling of the City's wastewater conveyance system indicates adequate capacity for average daily dry weather flows (ADWF) that are based on October and March through 2035. However, there are existing capacity issues in the City's wastewater collection system in peak wet weather flow (PWWF) conditions and in some peak dry weather flow (PDWF) conditions. Estimates of various flow conditions show an increase of Cal Poly's flows into the City's system when peaking factors are applied to Cal Poly's flows and the WFR capacity is removed. Cal Poly's flows for all modeled flow conditions also increase as compared to baseline 2015 conditions with or without the WRF. Additionally, Cal Poly's estimated 2015 baseline through 2035 PWWF exceed the 1.2 MGD transmission capacity with or without the WRF.

The WRF is planned to provide tertiary treatment with ultraviolet disinfection for wastewater treated on-campus meeting regulatory requirements for use as irrigation water on food products. The proposed project does not include replacement of existing sewer conveyance throughout the campus, which could reduce the amount of inflow and infiltration (I/I) during wet weather.

Table 1: Summary of Average Annual Wastewater Flows (GPD)

	Average Annual Wastewater Flows (GPD)				
Wastewater Flow Source	**2015**	**2020**	**2025**	**2030**	**2035**
Baseline	197,557	197,557	197,557	197,557	197,557
Student Housing Residential Projects					
2,000 beds projected for 2022 (Unnamed)	0	0	50,568	50,568	50,568
600 beds projected for 2024 (Unnamed)	0	0	15,170	15,170	15,170
1,500 beds projected for 2027 (Unnamed)	0	0	0	37,926	37,926
1,500 beds projected for 2031 (Unnamed)	0	0	0	0	37,926
1,600 beds projected for 2035 (Unnamed)	0	0	0	0	40,454
Subtotal Student Residential Projects	**0**	**0**	**65,738**	**103,664**	**182,045**
Non-Student Housing Residential Projects					
Slack and Grand Residential Neighborhood[1]	0	0	33,278	33,278	33,278
University-based Retirement Community[1]	0	0	0	21,129	21,129
Subtotal Non-Student Residential Projects	**0**	**0**	**33,278**	**54,407**	**54,407**
Subtotal All Residential Projects	**0**	**0**	**99,016**	**158,071**	**236,451**
Non-Residential Projects					
Academic Center Library Addition	0	0	1,710	3,847	5,984
Classroom and Offices Building	0	0	1,080	2,430	3,779
Beef Cattle Evaluation Center (BCEC) Expansion	0	0	425	956	1,487
Engineering Projects Buildings	0	0	1,420	3,194	4,969
Facilities Operations Complex	0	0	2,160	4,859	7,559
Davidson Music Center Renovation/Addition	0	0	339	763	1,186
Building 19 - Dining Commons Renovation and Addition	0	0	1,870	4,207	6,544
Operations and Farm Shop Relocation	0	0	2,167	4,876	7,585
IT Services Consolidation	0	0	225	506	787
Fermentation Building[2]	0	0	186	419	652
Vista Grande[2]	0	0	256	575	895
Health Center[1]	0	0	1,394	3,136	4,878

Wastewater Flow Source	Average Annual Wastewater Flows (GPD) 2015	2020	2025	2030	2035
Tech Park Expansion[1]	0	0	2,187	4,921	7,655
Subtotal All Non-Residential Projects	**0**	**0**	**15,417**	**34,688**	**53,960**
Total Increased Flow	**0**	**0**	**114,433**	**192,759**	**290,411**
Reduction due to Conservation	0	2,187	8,747	8,747	8,747
Reduction due to Off-campus Properties	0	1,154	1,154	1,154	1,154
Reduction due to On-campus WRF (Likely Case)	0	0	169,621	339,242	339,242
Reduction due to On-campus WRF (Worst Case)	0	0	0	339,242	339,242
Total Reduced Flow (Likely Case)	0	3,341	179,523	349,144	349,144
Total Reduced Flow (Worst Case)	0	3,341	9,902	349,144	349,144
Total Cal Poly Flow Excluding WRF	197,557	194,216	302,088	380,414	478,066
Total Cal Poly Flow to City of SLO System (Likely Case)	197,557	194,216	132,467	41,172	138,824
Total Cal Poly Flow to City of SLO System (Worst Case)	197,557	194,216	302,088	41,172	138,824
Change in Cal Poly Flow to City of SLO System (Likely Case)	**0**	**-3,341**	**-65,090**	**-156,385**	**-58,733**
Change in Cal Poly Flow to City of SLO System (Worst Case)	**0**	**-3,341**	**104,531**	**-156,385**	**-58,733**

[1] These are projects with Public Private Partnerships (PPP).

[2] This building was reviewed for CEQA under the 2001 Amendment but was not constructed by 2015, therefore it is not included in the 2015 Corrected Adjusted baseline flows. This facility is included here to incorporate the wastewater flows for this review.

1.4 Determination

As shown in Table 1 above, the proposed development scenario will result in up to 290,411 GPD (0.29 MGD) of new wastewater production in year 2035 with the proposed project elements excluding the WRF project element. With the WRF project element, the proposed change in flow to the City WRRF in 2035 is a reduction of -58,733 GPD (-0.059 MGD). The two scenarios of bringing the on-campus WRF online demonstrates the differences in phasing of various proposed building projects during the intermediate years of 2025 and 2030. The actual construction phasing of the proposed buildings in relation to bringing the two phases of the WRF online will determine the wastewater flows to the City WRRF however, this analysis shows that the WRF is effective at maintaining and/or reducing proposed project wastewater flows for the *2035 Master Plan* once the WRF is online in 2022 or 2026. If the WRF is delayed beyond 2022, proposed residential and non-residential buildings need to be delayed until it is online to avoid increasing annual average wastewater flows above 2015 baseline levels.

Although Cal Poly's ADWF increase as the WRF's capacity is held constant at average day flows, the City's wastewater collection system has adequate capacity for Cal Poly's ADWF through 2035. Capacity for conveyance of PWWF appears to be an issue in 2015 baseline conditions through 2035. Increases in PWWF from Cal Poly due to build-out of the *2035 Master Plan* exacerbates existing capacity issues in peak conditions and the 1.2 MGD transmission capacity is likely to be exceeded as new residential and non-residential buildings are brought online even if there are no historical exceedances. Given that estimated 2015 baseline PWWF exceed the PWWF, even accounting for peak treatment capacity of the WRF will likely still result in additional PWWF capacity issues and the 1.2 MGD transmission capacity being exceeded. The *Draft Utility Master Plan* is also critical to identify improvements that may reduce inflow and infiltration (I/I) into the Cal Poly system. Further, additional peak transmission capacity may need to be negotiated with the City Because existing I/I conditions are assumed in this analysis and no assumptions are made on future reductions. But since the Utility Master Plan is not due until 2020, only the current I/I conditions can be used.

The average annual wastewater flow of 0.478 million gallons per day (MGD) in 2035 without the WRF exceeds Cal Poly's 0.471 MGD wastewater treatment capacity agreement with the City by 0.07 MGD indicating that the WRF is critical for development of the *2035 Master Plan*. Additionally, Cal Poly's estimated 2015 baseline through 2035 PWWF exceed the 1.2 MGD transmission capacity with or without the WRF.

2 Introduction

As more fully discussed in the *2035 Master Plan EIR* Project Description, California Polytechnic State University, San Luis Obispo (Cal Poly) campus is undergoing a master planning effort that will guide the development and use of campus lands through the year 2035. In order to accommodate planned growth in enrollment, Cal Poly has undertaken development of a *2035 Master Plan* to provide for needed academic facilities, additional housing on campus, recreation and athletics facilities, and other support facilities on the Cal Poly campus.

The previous *Master Plan* was published in 2001 and most of the main campus facilities have been developed to accommodate the 20,944-headcount enrollment at the Cal Poly, as of the 2015/2016 academic year. Under the current planning effort, Cal Poly anticipates reaching a 25,000 headcount by 2035 through steady growth due to desirability of the Cal Poly as well statewide goals, among others.

2.1 Purpose and Applicability for the Wastewater Technical Analysis

The purpose of this report is to support the *Master Plan EIR* Utilities and Services Chapter as well as inform the Hydrology and Water Quality Chapter pursuant to the CEQA. The intent is to evaluate wastewater flow projections to compare current conditions (year 2015) to proposed conditions (year 2035). While typically a water supply-related topic, water conservation features related to indoor fixtures will also reduce the volume of wastewater discharge from Cal Poly to the City's Water Resources Recovery Facility (City WRRF). As such, water conservation is considered here for future projected flows in addition to the proposed construction of an on-campus Water Reclamation Facility (WRF).

This wastewater analysis relies on best available data from a baseline year of 2015, consisting of wastewater flow data, headcount projects for students, faculty, and staff, and building projections provided by the City, Cal Poly, and other subcontractors and consultants for Cal Poly and the City.

2.2 Regulatory Setting

This section provides an overview of local, state, and federal regulations in wastewater management. Wastewater and disposal are regulated pursuant to the federal Clean Water Act, administered by the US Environmental Protection Agency (EPA), and in California through the Porter-Cologne Water Quality Control Act (Porter-Cologne) through National Discharge Pollution Elimination System (NPDES) permits. This system is separate from stormwater conveyance systems, which is managed through the municipal separate storm sewer system (MS4) permit.

2.2.1 Federal Regulations

2.2.1.1 Clean Water Act

The Clean Water Act of 1972 and amendments is a wide-ranging federal regulation to regulate discharges into the Water of the United States, sometimes referred to as Waters of the Nation. The most applicable section to this project is Section 402, established the National Pollutant

Discharge Elimination System (NPDES) to regulate the discharge of pollutants from point sources. The standards are intended to protect the beneficial uses of the receiving water. The NPDES permit establishes the required water quality requirements for discharged wastewater, including wastewater treatment plant requirements and reuse/reclaimed water. Cal Poly wastewater is currently managed entirely by the City's WRRF, of which Cal Poly retains a capacity interest for treatment of campus wastewater. The City's WRRF discharges to San Luis Obispo Creek under NPDES permit No. CA0049224, Regional Board Order No. R3-2002-0043, issued in March 2005.

2.2.2 State Regulations

2.2.2.1 California Water Code

The purpose of the California Water Code is to ensure that water resources are put to beneficial use, reduce and prevent waste and unreasonable uses, and conserve water for the public welfare. The code regulates the right to water, water quality, and water quantity. The Water Code is the enabling legislation for implementation of the federal Clean Water Act.

2.2.2.2 Porter-Cologne Water Quality Control Act

The intent of the State of California's Porter-Cologne Water Quality Control Act (California Water Code Section 13000 et seq.) is to put California's water resources to beneficial use to the fullest extent possible, limit wasteful practices, and promote conservation. The regulation addresses water quality protection and management including wastewater discharges and reuse of wastewater, among others. The State Water Resources Control Board administers the Act.

2.2.2.3 California State Water Resources Control Board

The California State Water Resources Control Board (SWRCB) manages and administers federal and state water quality control programs. Procedures are provided by statute, but the board has the authority to establish rules and regulations to help it carry out its work. All board activities are governed by state water policy and are administered in accordance with policies and procedures in the California Water Code. The project is within the Central Coast Regional Board (Region 3) jurisdiction.

2.2.2.4 Water Reclamation Requirements for Recycled Water Use

The SWRCB Order QA 2016-0068-DDW was passed in response to the Governor's proclamation of a Drought State of Emergency on January 17, 2014 and provides policy guidelines for recycling water for water reuse. This General Order is applicable to recycled water projects where recycled water is used or transported for non-potable uses and is administered by SWRCB. The level of treatment and disinfection dictates how the recycle can be used for non-potable purposes. The highest level of treatment and disinfection is tertiary treated and disinfection and can be used on food crops intended for human consumption. Cal Poly currently uses non-potable surface water from Whale Rock to irrigate agriculture areas and sports fields.

Cal Poly intends to use wastewater treated through the WRF for irrigation for edible food crops as well as for use on the recreational and landscaping areas (Hartman Engineering, 2019;

California Waterboard, 2019). This generally requires tertiary disinfection to meet edible food irrigation requirements. California regulates recycled discharges under a General Order, Water Reclamation Requirements for Recycled Water Use (California Waterboard, 2019). Water quality requirements for reuse and recycled wastewater are contained in the Water Code, specifically in Title 22 of the California Code of Regulations (Hartman Engineering, 2019; California Waterboard, 2019). Onsite wastewater treatment system operators must obtain permits for operation and discharge of the wastewater, including discharges to land as recycled/reused water. The discharge water must meet effluent regulations and the facility must be operated by a certified treatment plant operator.

2.2.3 Local Regulations

2.2.3.1 City of San Luis Obispo Public Works Department.

The City has adopted standard specifications as a guide for the standardization of water utility installations within the City (Resolution No. 10137). These specifications also identify Countywide Standards (such as water-sewer separation criteria) that have been accepted by the City Council upon the recommendation of the City Engineer. While Cal Poly is located outside of the City limits, these specifications outline requirements for wastewater system installations, which apply to Cal Poly for connections to the City system.

3 Existing Conditions

The *2035 Master Plan EIR* Project Description provides a full detail of the existing Campus conditions. Below is a summary of the headcount, buildings, and other features based on year 2015, the base year for evaluation under CEQA. See Exhibit 4 for the existing wastewater system map with connections to the City system and Exhibit 5 for existing land uses.

3.1 Environmental Setting

3.1.1 Location and Topography

For the purposes of the *2035 Master Plan* and this wastewater analysis, the area being evaluated consists of Cal Poly's approximately 1,321-acre main campus area and off campus properties as shown in Exhibits 1, 2, and 3. Located in San Luis Obispo County, California, the Cal Poly campus abuts the City to the south and west, and open space, ranch land, and public land to the north and east (Exhibit 1). The campus is generally bound by U.S. Highway 101 (US-101) to the north and east of California State Route 1 (CA-1), at 1 Grand Avenue, San Luis Obispo, California (Exhibit 1). The campus consists of rolling hills 10 miles inland from the Pacific Ocean and is dominated by coastal sage scrub plant community as well as drought-adapted chaparral and mixed oak woodland habitats, which is evident in the drab green and browns of the vegetation in Exhibit 2.

Cal Poly owns and operates several off-campus properties (see Table 2). These properties are included in this analysis to show existing and proposed wastewater service delivery method and how that would change during the *2035 Master Plan* management period and changes to application of Cal Poly's allotment.

Table 2 Off-Campus Properties for Water Supply Analysis

Off Main Campus Property	Existing Wastewater Service Source	Existing Volumes (AFY)	Proposed Project Wastewater Service Source
Bella Moñtana Housing (existing residential development)	Cal Poly's allocation	Approximately 11-12 AFY	No change
Chorro St Lofts (City)	Cal Poly's allocation	0.05 AFY	City
Chorro State Offices (City)	Cal Poly's allocation	1.3 AFY	City
Grand Ave Houses (3)	City	N/A	No change

*Information provided by Cal Poly.

Cal Poly has additional land holdings that are not subject to the *2035 Master Plan*. This includes the Chorro Ranch, Serrano Ranch House, Peterson Ranch, Escuela Ranch, and Chorro House properties, which are not serviced by Cal Poly's water supply for the main campus (Whale Rock Reservoir or groundwater, as described below) and are excluded from this analysis.

3.2 Student Enrollment and Other Campus Occupants

Student enrollment during the academic year 2015-2016 was 20,944 (headcount). According to research conducted by Cal Poly, students who live on campus, especially during the first two years, are more successful academically, which means that Cal Poly needs to have on-campus housing available for at least the freshman and sophomore students as well as upper division undergraduates. Currently Cal Poly provides a variety of housing options including traditional dormitories (multiple occupant rooms with common restrooms and limited to no kitchen facilities in the building) to apartment-style housing.

3.3 Existing Buildings and Uses

Existing campus facilities comprise approximately 149 major buildings (Exhibit 5). Within the Academic Core, there are approximately 80 buildings that include student housing (residential), academic, administration, recreation, and support services. Recognizable facilities include the Robert E. Kennedy Library, the Julian A. McPhee University Union, ASI Recreation Center, Alex G. Spanos Stadium, Robert A. Mott Athletics Center, several galleries, and the Performing Arts Center. The Project Description in the 2035 Master Plan EIR includes additional details on these existing buildings. Since the metered and Corrected Adjusted 2015 annual average wastewater flows used as the basis of this analysis capture all existing wastewater flows from existing buildings (Section 3.8), further details on existing buildings are not the square footage and type of existing buildings is not required on a granular level for this analysis.

3.4 Agricultural Lands, Open Space and Landscape Areas

The campus is defined by its natural setting punctuated by dramatic topography and views of the Morros volcanic peaks, rolling hills, rock outcroppings, and stands of trees and vegetation. The campus retains visual connection to the surrounding landscape by strategically siting building massing in a manner that does not block or obstruct surrounding vistas. Open spaces, abundant trees and landscaping, including the iconic Dexter Lawn, reinforce the campus's connection with its surroundings. The campus contains numerous casual recreational areas and trails. Through the water conservation projects, the amount of irrigated landscaping is being reduced through removing turf and replacing with low water vegetation and/or no vegetation.

Agricultural land is located within the North Campus and West Campus to the north of the Academic core (Exhibits 5 and 6 illustrate agricultural land locations, open space, and landscape areas). Existing water demand for irrigation of the agricultural lands is approximately 320 AFY (285,658 GPD). Irrigation demands for other open space and landscape areas is not reported separately from the total Cal Poly metered demand.

3.5 Cal Poly Wastewater System

The Cal Poly wastewater system collects wastewater from residential, mixed-use, academic buildings, recreational facilities, and other wastewater generating sources within the Campus boundaries (City of San Luis Obispo Sewer System Management Plan Update, 2014; Hartman Engineering, 2019). Wastewater flows from the Academic Core are primarily collected and conveyed by gravity lines with wastewater from the YTT housing complex collected and pumped by a lift station through a force main due to the higher elevations of the area. There is also a lift station and associated force main by the crops unit on the north side of Highland.

Cal Poly's wastewater discharges to a single collection point near Mustang Drive, southwest of the campus's stadium via a 15-inch sewer line (City of San Luis Obispo Sewer System Management Plan Update, 2014; Hartman Engineering, 2019). Exhibit 4 includes a graphic illustrating the Cal Poly discharge location and on-campus sewer system. From this collection point, approximately four miles of pipeline ranging from 10 to 48 inches deliver Cal Poly and other collected wastewater from facilities outside of Cal Poly to the City owned and operated WRRF (Public Utilities Department, City of San Luis Obispo, 2018).

3.6 Wastewater Agreements with City

Since 1957, Cal Poly has purchased capacity rights to the City's wastewater transmission (collection) lines and treatment capacity at the City's WRRF, as shown in Table 3 (Cal Poly and City Resolution No. 5961 for Share of WWTP, 1986; Capacity Interest in City of San Luis Obispo Wastewater System Facilities, 2007; Hartman Engineering, 2019; City of San Luis Obispo, 1964; California Polytechnic State University, San Luis Obispo, a. 2007). Cal Poly has participated in cost sharing of conveyance infrastructure and wastewater treatment improvements and has an agreement for rate structure and capacity share. The current treatment agreement was established in 1993 for a permanent wastewater treatment capacity share of 0.471 MGD in the City's WRRF, while Cal Poly's 1.2 MGD share of the wastewater transmission line capacity dates to the 1986 Resolution 5961 (Cal Poly and City Resolution No. 5961 for Share of WWTP, 1986; Hartman Engineering, 2019).

Table 3 History of Wastewater System Improvements and Associated Agreements Involving Cal Poly

Year	Cal Poly Wastewater Improvements (Hartman Engineering, 2019)
1957	Sewer line from Peach/Nipomo to Marsh/Higuera enlarged
1958	Certain sewer lines increased capacity to 0.64 MGD (20-year agreement)
1963	Capacity rights purchased in WRRF to 0.78 MGD
1983	Memo demonstrate Cal Poly usage in the City's WRRF is 0.6 MGD out of the 5.23 MGD designed capacity
1986	Resolution No. 5961 increases transmission line capacity to 1.2 MGD and reduces treatment capacity to 0.6 MGD
1993	Capacity of wastewater flows from Cal Poly set at 471,000 GPD (0.471 MGD)

A Memorandum of Understanding ("MOU") between the City of San Luis Obispo ("City") and California Polytechnic State University ("University") regarding Capacity Interest in City Facilities, dated May 1, 2007 between Cal Poly and the City determined and reinforced Cal Poly's equity interest in the municipal water and wastewater treatment facilities (Capacity Interest in City of San Luis Obispo Wastewater System Facilities, 2007). This MOU included water treatment capacity average demand equivalent to 1,000 acre-feet as calculated on an annual basis and wastewater daily dry weather flow as calculated on a monthly average of 0.471 MGD (Cal Poly and City Resolution No. 5961 for Share of WWTP, 1986; Capacity Interest in City of San Luis Obispo Wastewater System Facilities, 2007). The agreements include sewer rates specific to the Cal Poly based on their equity interest in the wastewater system. The City's WRRF is designed for an average daily dry weather flow of 5.1 MGD (Water and Wastewater Element, Wastewater Service Section 2.0), with Cal Poly's interest in the average daily dry weather flow equaling approximately 9.2% of the total treatment capacity. While there is no specific peak daily or peak wet weather flow specified for treatment capacity, the City considers wet weather to occur between December and March (City of San Luis Obispo Sewer System Management Plan Update, 2014).

3.7 City Wastewater Collection System

As indicated above, Cal Poly's wastewater discharges to the City's wastewater collection system at a single collection point at the Parshall Flume near Mustang Drive, southwest of the campus's stadium via a 15-inch sewer line. Under the service agreement with the City, Cal Poly has rights to a 1.2 MGD share of wastewater transmission line conveyance capacity (Capacity Interest in City of San Luis Obispo Wastewater System Facilities, 2007; Hartman Engineering, 2019).

The City's wastewater collection system consists of one hundred and fifty miles of sewer pipes, ranging from 6 to 30 inches in diameter, with approximately 80% of these being 6-inch and 8-inch pipes (Water System Consulting, Inc, December, 2015; City of San Luis Obispo, 2004; Hartman Engineering, 2019). Appendix A includes the City's SewerCAD node map and shows the general layout of the wastewater collection system. Municipal wastewater infrastructure also includes 2,900 manholes, nine sewage lift stations, and three miles of force main. Wastewater is delivered through the sewer system to the City's WRRF, located on Prado Road near U.S. Highway 101. The City is required to maintain a minimum average daily release, year-round, of treated effluent to San Luis Obispo Creek at a rate of 2.5 cubic feet per second (CFS) (1.6 MGD or 1,800 acre-feet per year [AFY]) to provide satisfactory habitat and flow volume for the cold water fisheries habitat in San Luis Obispo Creek (Water System Consulting, Inc, December, 2015).

3.8 Cal Poly Annual Average Wastewater Flows

Cal Poly's metered 2015 annual average wastewater flow is used as the baseline for this analysis with the Corrected Adjusted flow of 197,557 GPD provided by Cal Poly (Veium, a. 2018) used to most accurately represent baseline conditions and account for construction between 2015 and current conditions at Cal Poly (California Polytechnic State University, San Luis Obipso, 2019). The 2015 baseline value is used for annual average wastewater flow projections through 2035 in Section 4.9 of this report and forms the basis for determining whether or not Cal Poly has adequate wastewater treatment capacity through 2035.

The 2015 baseline and wastewater flow projections are also used to estimate average daily dry weather wastewater flows (ADWF), peak dry weather wastewater flows (PDWF), and peak wet weather wastewater flows (PWWF) used in the SewerCAD modeling of the City's wastewater collection system. For reference, Table 5 in Section 3.9 shows Cal Poly's annual average wastewater flows from 2014 to 2017.

3.9 Cal Poly Average Daily Dry Weather Wastewater Flows

While not used to determine adequacy of wastewater treatment capacity, ADWF are used in the SewerCAD modelling analysis of the City's wastewater collection system described in Section 4.10. While annual average wastewater flows represents wastewater flows generated by Cal Poly, ADWF reflects the drier months of October and May when Cal Poly is in session and when I/I into Cal Poly's wastewater collection system is minimal. The City of San Luis Obispo's *Wastewater Collection System Infrastructure Renewal Strategy* report (Water System Consulting, Inc, December, 2015)defines ADWF as the average sewage flow for the months of May and October. As such, ADWF is calculated using October and May metered wastewater data from Cal Poly to provide consistent values for incorporation into the City's SewerCAD model. Background information and data is provided below along with the recommended factor to convert annual average wastewater flow to ADWF based on metered data.

For adequate planning and operations of municipal wastewater infrastructure, Cal Poly is required to annually provide development and population projections to the City. Additionally, this annual update must include an analysis of planned and projected water and/or wastewater treatment capacity needs for the next five years. Table 4 summarizes Cal Poly wastewater flow reporting for the 2014-2015, 2015-2016, and 2016-2017 academic years (generally late September through early June) with the lower flow summer months excluded. These academic year flows are generally higher than annual average flows as the summer months have significantly lower student enrollment. Additionally, inflow and infiltration (I/I) into the Cal Poly wastewater collection system is significantly lower during the dry summer months.

As shown in this Table 4, average daily flows decreased from 299,905 GPD in the 2014-2015 academic year to 288,371 GPD in the 2016-2017 academic year. While enrollment remained consistent in the intervening years, these wastewater flow decreases are likely due to ongoing water conservation efforts being implemented by Cal Poly, which translate into slightly reduced wastewater flows (i.e., from low water use fixtures, toilets, etc.). Continued water conservation efforts by Cal Poly are anticipated to have an additional positive effect on reducing wastewater flows from Cal Poly.

Table 4 Cal Poly Average Annual Academic Calendar Wastewater Flows

Year	Academic Calendar	Average Flow (GPD)	Year-to-Year % Change
2014	9/15/2014 – 6/12/2015	299,905	-
2015	9/14/2015 – 6/10/2016	288,409	-3.83
2016	9/15/2016 – 6/16/2017	286,371	-0.70

Source: (Cal Poly and City Resolution No. 5961 for Share of WWTP, 1986)

As shown in Table 5, monthly average wastewater flows from Cal Poly range from a low of 0.21 MGD in 2015 to a high of 0.27 MGD in 2017. Based on the wastewater flow data provided in Table 5, Cal Poly's average monthly wastewater flow for the 2013 to 2017 calendar years is approximately 0.244 MGD. This is generally consistent with the unpublished report reviewing wastewater options including developing an on-campus WRF, which states that "the campus produces an annual daily average of 250,000 gallons (0.25 MGD) that flows to one collection point near the stadium before entering the City sanitary sewer system (Hartman Engineering, 2019). It then flows to the City's WRRF."

The calculation for average daily flow (in GPD) for a specific year is standardized to account for the different number of days in the months as well as leap years and provides a representative value that can be compared to different years. The monthly average flowrate is the total flow divided by the number of days in that month. These standardized values are then averaged to obtain the annual averaged-monthly average flow. It should be noted that multiplying the "Annual Average" by 365 days will not provide the annual total wastewater flow. Note that the monthly average wastewater flows are not the same value as average annual wastewater flows and overstates average flows as compared to Cal Poly's true Corrected Adjusted 2015 baseline of 197,557 GPD (Veium, a. 2018; Daily Wastewater Flows, 15 minute increment for Cal Poly, 2014-2017).

Table 5 Cal Poly Monthly Average Wastewater Flows by Year (MGD)

	2013	2014	2015	2016	2017
Jan		0.33	0.30	0.34	0.38
Feb		0.39	0.31	0.31	0.48
Mar		0.30	0.23	0.26	0.31
Apr	0.40	0.39	0.32	0.31	0.34
May	0.37	0.40	0.29	0.31	0.34
Jun	0.20	0.20	0.15	0.14	0.18
Jul	0.05	0.05	0.05	0.03	0.06
Aug	0.08	0.04	0.04	0.05	0.09
Sep	0.37	0.19	0.18	0.13	0.30
Oct	0.38	0.37	0.31	0.29	0.37
Nov	0.31	0.30	0.26	0.25	0.28
Dec	0.16	0.17	0.13	0.21	0.12
Average	**0.26**	**0.26**	**0.21**	**0.22**	**0.27**

Based on provided 15-minute sewer flows Cal Poly as provided by City (Daily Wastewater Flows, 15 minute increment for Cal Poly, 2014-2017).

The City provided metered wastewater flows between the years of 2014 to 2017, taken from the metered single discharge point for the campus (Daily Wastewater Flows, 15 minute increment for Cal Poly, 2014-2017). Table 5 summarizes the calculations for monthly average and annual averaged-monthly average flows. Additionally, average flows for each month between 2014 and

2017 are summarized in Table 6 and illustrated in Figure 1. The percentage of flow for October and May as compared to the annual average daily flow for 2014 to 2017 is 144% of the annual average wastewater flows. Thus, the ADWF used in wastewater flow projections is 1.44 times the annual average wastewater flow.

Table 6: Wastewater Flow Summary

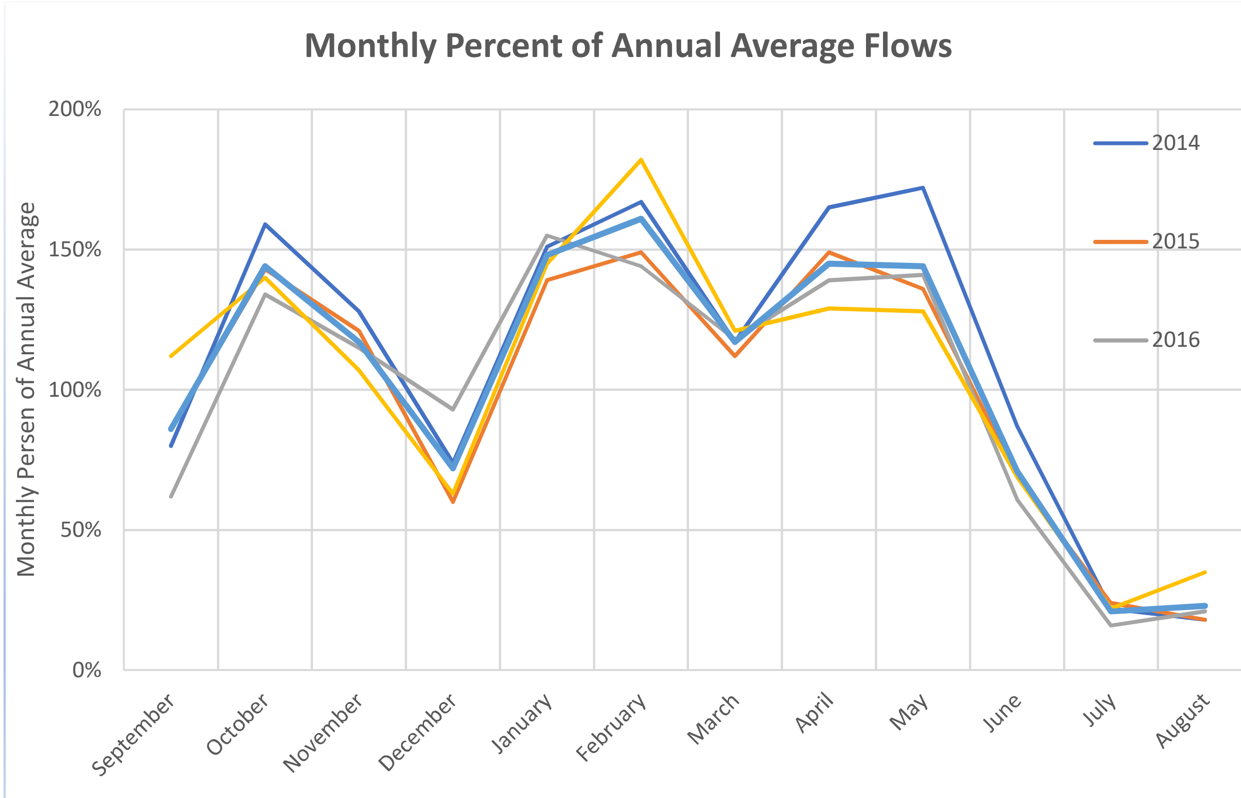
	2014		2015		2016		2017	
	Monthly Average (GPD)	% of Annual Average	Monthly Average (GPD)	% of *Monthly* Average	Monthly Average (GPD)	% of Monthly Average	Monthly Average (GPD)	% of Monthly Average
September	173,447	80%	169,558	86%	126,696	62%	275,939	112%
October	344,828	159%	282,597	143%	274,311	134%	345,333	140%
November	277,171	128%	239,477	121%	234,912	115%	262,321	107%
December	159,385	74%	118,931	60%	189,913	93%	156,076	63%
January	327,080	151%	275,585	139%	316,905	155%	356,725	145%
February	361,907	167%	293,658	149%	293,806	144%	447,076	182%
March	253,087	117%	220,674	112%	241,042	118%	297,546	121%
April	358,330	165%	294,168	149%	283,341	139%	318,767	129%
May	371,941	172%	269,382	136%	289,195	141%	314,957	128%
June	187,849	87%	136,153	69%	124,429	61%	168,977	69%
July	48,509	22%	46,571	24%	32,073	16%	54,529	22%
August	38,105	18%	34,819	18%	43,746	21%	85,836	35%
Annual Average* (GPD)	216,688	100%	197,557	100%	204,396	100%	246,213	100%

Note: Data for March 2014 and December 2017 was incomplete; values were averaged from the other three years' data sets to complete these months (Daily Wastewater Flows, 15 minute increment for Cal Poly, 2014-2017; Veium, a. 2018).

Table 7: Average Monthly Flows Between 2014 and 2017

	2014 - 2017 Average	
	Monthly Average (GPD)	% of Annual Average
September	186,410	86%
October	311,767	144%
November	253,470	117%
December	156,076	72%
January	319,074	148%
February	349,112	161%
March	253,087	117%
April	313,651	145%
May	311,369	144%
June	154,352	71%
July	45,421	21%
August	50,627	23%
Annual Average* (GPD)	216,214	100%

Figure 1: Monthly Averages as a percent of Annual Average Wastewater Flows



3.10 Cal Poly Peak Daily Dry Weather Wastewater Flows

PDWF are calculated to obtain the peak capacity needs of a wastewater system including conveyance piping and lift stations. Peak flows are calculated by applying a peaking factor to the ADWF average annual flows, to obtain a peak daily dry weather flow. The City of San Luis Obispo's *Wastewater Collection System Infrastructure Renewal Strategy* report (Water System Consulting, Inc, December, 2015) defines PDWF as "the maximum sewage flow the collection system will experience during dry weather; typically defined as being sustained for one hour." The City uses a peaking factor of 2.6 times average daily flow to yield PDWF (Watearth, Inc., 2018).

Cal Poly's proportion of the City's wastewater transmission capacity of 1.2 MGD divided by Cal Poly's City WRRF average monthly treatment capacity of 0.471 MGD yields a factor of 2.54, which is similar to this value of 2.6. To be consistent with values used in the City's SewerCAD model, a peaking factor of 2.6 times ADWF is used to calculate PDWF (Section 4.11) and for performing the SewerCAD modeling of the City's wastewater collection system discussed in Section 5.

Peaking factors related to annual average wastewater flow and peak daily wastewater flow (the peak daily wastewater flow divided by the annual average flowrate, are summarized for the years 2014 to 2017 in Table 8 below. Peak daily flows between 2014 and 2017 ranged from 2.10 to 2.87 times higher than annual average daily flows. While the 2015 baseline year Cal Poly peaking factor is 2.45, the average for 2014 through 2017 is 2.51. Since 2017 was an extremely wet year with high I/I, the 2017 peak daily dry weather flow peaking factor may be overstated. Note that this data is for informational purposes and is not used for wastewater flow projections or SewerCAD modeling of the City's wastewater collection system.

Table 8: Calculated Annual Peaking Factor (2014-2017)

Year	Peak Daily Flow (GPD)	Annual Average Flow (GPD)	Annual Average to Peak Peaking Factor (unitless)
2014	451,970	215,577	2.10
2015	440,191	179,725	2.45
2016	515,513	197,364	2.61
2017	665,702	231,894	2.87

3.11 Cal Poly Peak Daily Wet Weather Wastewater Flows

The City considers wet weather flows to occur between December to March (City of San Luis Obispo Sewer System Management Plan Update, 2014). Wet season flows provide a maximum quantity and can be used for sizing of infrastructure such as conveyance piping and to ensure that sanitary sewer overflows do not occur and systems remain in compliance with permit requirements. PWWF addresses capacity issues in waste water systems by considering how rain and/or groundwater entering the conveyance system affects I/I (United States Environmental Protection Agency, June, 2014). While inflow is not anticipated to be as significant at Cal Poly as for residential areas (unregulated connections to the wastewater system area less likely than for older residences), infiltration from rainfall tends to increase over time as a wastewater system ages due to increased separation at joints, cracks, tree roots, and other items that increase the amount of infiltration into older wastewater collection systems.

Cal Poly's MOU with the City has a limit for the monthly average daily dry weather flow of 0.471 MGD and this was exceeded in February 2017 by approximately two-percent with a total average daily flow of 0.48 MGD (see Table 5 and Figure 2). As indicated in the rainfall data used in this analysis, February 2017 was an extremely wet month for San Luis Obispo with well above average rainfall data. The additional inflow associated with heavy rainfall was likely a primary contributing factor to this outlier month and all other months between April 2013 and December 2017 are well under the 0.471 MGD average daily flow stated in Cal Poly's MOU with the City. Peak flows during February 2017 correspond with well above average rainfall amounts and saturated soils, which is an indicator of high I/I.

As shown in Figure 3, February 2017 was an above average rainfall month. As such, the higher than normal wastewater flows associated with the 1.19-inch February 20, 2017 rainfall event were likely due in part to the two rainfall events that saturated soil conditions two days prior to this rainfall event. Additionally, the February 20, 2017 event was preceded by 7.93 inches of rainfall received during the time-frame from January 3, 2017 through February 19, 2017. While the 3.18-inch January 4, 2017 rainfall event was much higher than the February 20, 2017 event, it occurred in the beginning of the 2017 rainy season at a time where the antecedent soil moisture conditions were very dry, thus resulting in less I/I into the Cal Poly wastewater collection system. San Luis Obispo rainfall data is taken from Station 160 (University of California Cooperative Extension, San Luis Obispo County, 2019).

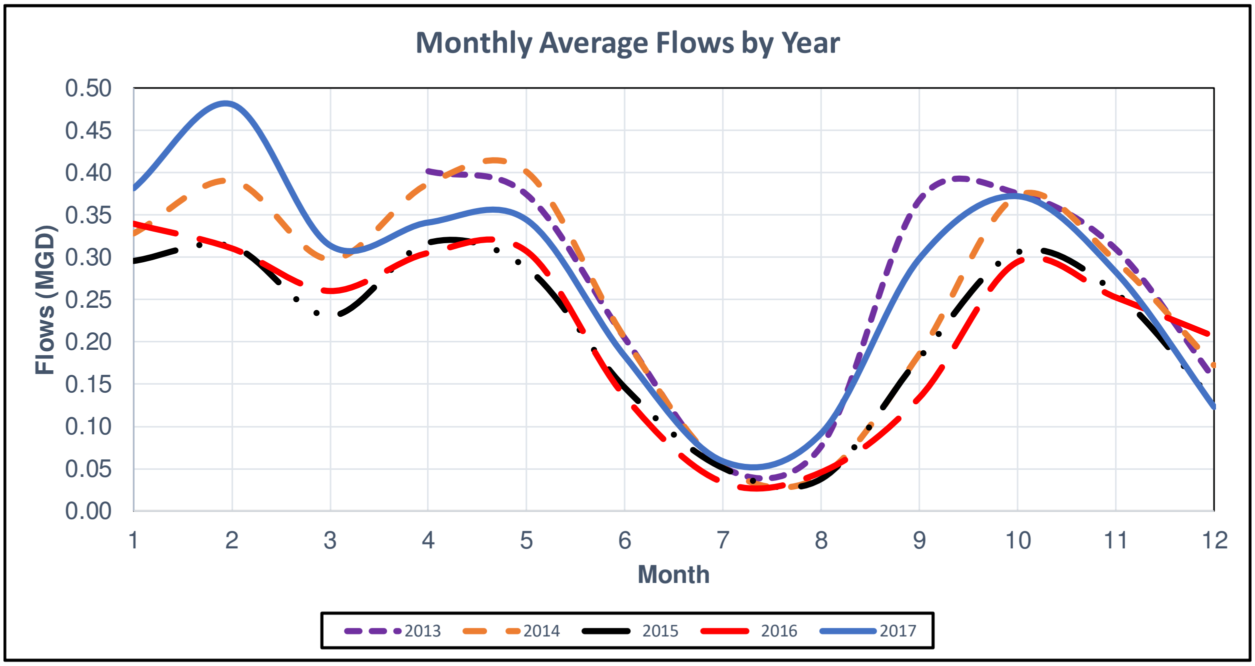


Figure 2: 2013 – 2017 Monthly Average Daily Flows

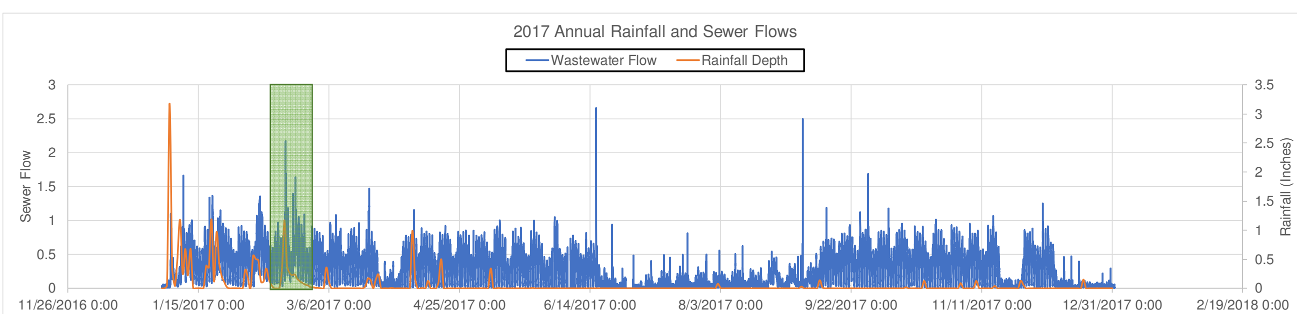


Figure 3: 2017 Rainfall and 15-Minute Incremental Cal Poly Wastewater Flows (Daily Wastewater Flows, 15 minute increment for Cal Poly, 2014-2017; University of California Cooperative Extension, San Luis Obispo County, 2019)

For the City's SewerCAD modeling, PWWF is defined as the peak wet weather flow that is sustained for one-hour (Water Systems Consulting, 2015) and is defined as the PDWF plus I/I. Cal Poly's peak one-hour flow is evaluated for a wet year of 2017. For 2017, this value was 1.054 MGD on January 20, 2017 between 10:30 and 11:30 am, but to be conservative a value for 2015 was doubled to 2.108 MGD was used. The 2.108 MGD value from 2015 is used and the 2015 PDWF of 708,835 GPD (0.709 MGD) is subtracted and yields a peak hourly I/I of 1.399 MGD or 971 GPM). This peak hourly I/I value is assumed to remain constant through 2035 in the PWWF projections included in Section 4.12.

3.12 Cal Poly Wastewater Pre-Treatment Requirements

A pretreatment agreement between the City and Cal Poly (Title 13, Public Services, Section 13.08, Sewers, of the City's Municipal Code) is consistent with Cal Poly's *Class I – Significant Industrial Waste Discharge Permit* (Permit No. 259-S) (Pre-treatment Permit No. 259-S for Cal Poly, 2016). Cal Poly's permit limits the concentration of common wastewater constituents found in the effluent from large facilities such as Cal Poly. The permit also contains provisions for monitoring and reporting requirements as well as compliance schedules (Pre-treatment Permit No. 259-S for Cal Poly, 2016). Table 9 is copied directly from the permit and no values are identified under 40 CFR 433.17 for any regulated parameters.

Table 9 Wastewater Discharge Limitations for Cal Poly (Expires December 2019) (Pre-treatment Permit No. 259-S for Cal Poly, 2016)

Regulated Parameter	Ordinance 13.08.040 and 13.08.050 (Pre-treatment Permit No. 259-S for Cal Poly, 2016)	40 CFR 433.17	
	Local Limits Daily Average (mg/L)	Daily Maximum (mg/L)	Maximum Monthly Average
Ammonia	50	Not applicable	
Biochemical Oxygen Demand (BOD)	400	Not applicable	
Chloride	1,523	Not applicable	
Copper, total	0.20	-	-
Sodium	1,200	Not applicable	
Total Dissolved Solids (TDS)	2,215	Not applicable	
Total Suspended Solids (TSS)	2,346	Not applicable	
Zinc, Total	0.50	-	-
Total Toxic Organics (TTO)	Presence	-	Not applicable

Table 9 lists Cal Poly's current and past wastewater effluent limits for regulated constituents as compared to 2017 average annual and maximum monthly monitored values. Cal Poly's 2017 annual average and maximum monthly wastewater effluent levels exceeded current limits for: Ammonia (NH3-N) and Total Toxic Organics (TTO). Additionally, Cal Poly's 2017 maximum monthly levels exceeded current limits for Biological oxygen demand (BOD) and Copper (Cu).

Cal Poly staff attribute these exceedances primarily to ongoing indoor fixture water conservation efforts that reduce the amount of water being discharged to the sewer that would otherwise dilute more concentrated waste streams, including NH_3-N and BOD. It is expected that concentrations will decrease with the *2035 Master Plan* build out as the ratio of students that live off campus to living on campus decreases. As more students live on campus, gray water from sources such as showers and sinks will dilute the wastewater stream. TTO levels in Cal Poly's wastewater stream are caused primarily by academic lab activities and is being addressed through awareness and educational outreach (Hartman Engineering, 2019).

Table 10 Cal Poly Effluent Water Quality Results Compared to City Effluent Limitations Per Agreement (Hartman Engineering, 2019)

Regulated Parameter	*Pre-2012 Effluent Limits (mg/L)*	*2012/2016 Daily Effluent Limits Max (mg/L)*	*Sample Frequency*	*Sample Type*	*2017 Annual Ave.(mg/L)*	*2017 Monthly Max. (mg/L)*
Ammonia	30	50	Monthly	Composite	67	100
Biological Oxygen Demand (BOD)	400	400	Monthly	Composite	393	552
Chloride	400	1,523	Monthly	Composite	149	302
Sodium	712.3	1,200	Monthly	Composite	98	179
Total Dissolved Solids (TDS)	-	2,215	Monthly	Composite	629	910
Total Suspended Solids (TSS)	250	1,346	Monthly	Composite	518	780
Copper	0.10	0.20	Monthly	Composite	0.14	0.24
Zinc	0.50	0.50	Monthly	Composite	0.19	0.41
Total Toxic Organics (TTO)	Presence	Presence	Monthly	Composited Grab/Grab	0.18	0.59

Items in red exceed the City Effluent Limits based on current limits. See Table 9 for current limits.

4 Proposed Project Elements for Wastewater

The *2035 Master Plan EIR* Project Description provides a full detail of the proposed project elements. This section describes how proposed project elements such as proposed residential and non-residential buildings that support increased headcount, the proposed WRF, and indoor water conservation impact the on-campus and downstream City wastewater collection and treatment systems. See Exhibit 6 for proposed land uses and WRF location.

4.1 Student Enrollment and Other Campus Occupants

The projected headcount for enrollment during the academic year 2035-2036 is 25,000. This is a net increase of 4,056 students. This information is provided for informational purposes as wastewater flow projections are based on proposed non-residential buildings and occupancy of residential buildings (as represented by bed counts) as described below. The type and size of proposed residential and non-residential buildings and recreational facilities is a function of the proposed student headcount as well as the necessary faculty and support staff to support the additional students.

4.2 Proposed Buildings and Uses

Cal Poly proposes to construct residential and non-residential (academic, administrative, recreational, and other support services) buildings in support of the projected increase in student enrollment and corresponding increase in academic and other supporting staff. Many of the near-term projects will be delivered as PPP projects, which include the Slack and Grand Residential Neighborhood, the University-based Retirement Community, Health Center, and the Tech Center Expansion. Remaining residential and non-residential projects could follow either a traditional delivery method or a PPP delivery method depending on funding mechanism.

Table 12 lists all planned non-residential buildings and the GSF associated with each non-residential building. Table 11 provides a summary of potential phased construction of all non-residential buildings types to be completed by 2035 under the *2035 Master Plan*. This includes 585,638 GSF for residential projects and 704,362 GSF for non-residential buildings. The exact year of construction is unknown for each building, so the general rate of construction for each specific building is distributed linearly over the life of the Master Planning horizon between the years 2022 and 2035.

Table 11 Total Residential, Academic, Administrative, and Support Space Growth Projections

Enrollment Year	Total GSF	Total Cumulative GSF
MP EIR Base Year 2015–2020	*0*	*0*
2020-2022	*0*	*0*
2022–2023	*184,000*	*184,000*
2024–2026	*276,000*	*460,000*
2027–2029	*276,000*	*736,000*
2030–2032	*276,000*	*1,012,000*
2033 - 2035	*278,000*	***1,290,000***

Based on *2035 Master Plan Draft Environmental Impact Report (EIR)* Project Description.

Table 12 Proposed New Construction Non-Residential Buildings for 2022 to 2035

Facility	Anticipated Completion	Size (GSF)
Academic Center Library Addition	2022 - 2035	114,000
Classroom and Offices Building	2022 - 2035	72,000
Beef Cattle Evaluation Center (BCEC) Expansion	2022 - 2035	10,000
Engineering Projects Buildings	2022 - 2035	71,000
Facilities Operations Complex	2022 - 2035	108,000
Davidson Music Center Renovation/Addition	2022 - 2035	22,600
Building 19 - Dining Commons Renovation and Addition	2022 - 2035	44,000
Operations and Farm Shop Relocation	2022 - 2035	51,000
IT Services Consolidation	2022 - 2035	15,000
Vista Grande Dining Complex[1]	2020 - 2035	38,965
Fermentation Sciences[1]	2022 - 2035	N/A
Health Center[2]	2022 - 2035	32,797
Tech Park Expansion[2]	2022 - 2035	125,000
TOTAL NON-RESIDENTIAL PROJECTS		704,362

[1] This building was reviewed for CEQA under the 2001 Amendment but was not constructed by 2015, therefore it is not included in the 2015 Corrected Adjusted baseline flows. This facility is included here to incorporate the wastewater flows for this review.

[2] These are projects with Public Private Partnerships (PPP).

Table 13 lists proposed residential buildings included in the *2035 Master Plan* along with proposed year of completion and number of beds with a total of 8,230 beds planned by 2035 (California Polytechnic State University, San Luis Obipso, 2019). Proposed student residential projects are not yet named and include five projects with a total of 7,200 beds by 2035. Non-student housing for faculty and staff include the Slack and Grand Residential Neighborhood and the University-based Retirement Community, for a total of 1,030 beds by 2035. This is a total of 8,230 beds for all residential building types by 2035.

Table 13 Proposed Residential Buildings for 2022 to 2035

Facility	Anticipated Completion	Size (# of Bed)
Unnamed Residential	2022	2,000 beds
Unnamed Residential	2024	600 beds
Unnamed Residential	2027	1,500 beds
Unnamed Residential	2031	1,500 beds
Unnamed Residential	2035	1,600 beds
Slack and Grand Residential Neighborhood[1]	2023	630 beds
University-based Retirement Community[1]	2028	400 beds
TOTAL RESIDENTIAL PROJECTS		8,230 beds

[1] Non-Student Housing.

4.3 Agricultural Lands, Open Space and Landscape Areas

While agricultural lands, open space, and landscape areas will not generate wastewater, these areas are included in the wastewater analysis as portions of these areas will or could receive recycled water from the planned on-campus WRF. The use of recycled water from the on-campus WRF for irrigation affects the total quantity of wastewater that would be sent to the City WRRF, which is reflected in the annual average wastewater flow projections discussed in Section 4.9. While reclaimed wastewater from the planned WRF could be mixed with Cal Poly's untreated wastewater effluent to meet effluent pre-treatment requirements, the primary role of the WRF is to provide an alternative source to potable water for irrigation. Recycled water from the WRF will initially be available for agricultural lands and some landscape areas primarily to the north of the Academic Core.

As indicated in Section 3.4, existing water demand for irrigation of the agricultural lands is approximately 320 AFY (285,658 GPD) (Hartman Engineering, 2019). There is adequate demand for the 190 AFY (169,621 GPD) of reclaimed water treated by the first phase of the WRF within the agricultural lands alone. The irrigation demand for the agricultural lands is 84% of the ultimate WRF capacity of 380 AFY (339,342 GPD). Due to lack of recycled water distribution infrastructure outside of agriculture lands, recycled water will likely not be available to serve the Academic Core until 2029 or beyond, based on information provided by Cal Poly (Watearth, Inc., 2018).

Given the large agricultural demand, which exceeds the volume of available reclaimed water from the WRF until the second phase is online in 2028, reclaimed water is not available for the Academic Core until 2028 or later. The additional landscape areas proposed as part of the *2035 Master Plan* are included in the proposed land use shown on Exhibit 6 and generate an additional average annual irrigation demand of 43,744 GPD by 2035. Due to the planned implementation of water conservation measures, the existing irrigation demand is reduced by 83,918 GPD. This yields a total reduction in average annual irrigation demand of 40,173 GPD even though additional landscape areas are proposed for irrigation as part of the *2035 Master Plan*.

4.4 Cal Poly Wastewater System

Changes to the Cal Poly wastewater system and operation are not planned as part of the *2035 Master Plan* with the exception of the planned first phase of the WRF slated to be online in 2022 in the likely scenario and 2026 in the worst-case scenario. Under all scenarios the WRF is anticipated to be online by 2028. The WRF is discussed in further detail in Section 4.9.5 as it relates to reducing Cal Poly's wastewater flows and in Section 4.8 related to operational items and wastewater treatment performance. The *Cal Poly Draft Utility Master Plan* is currently under development separate from the *2035 Master Plan* and *2035 Master Plan EIR* efforts and slated for completion in 2020. This study may identify Capital Improvements Plan (CIP) projects related to Cal Poly's wastewater collection and conveyance system. Additionally, during planning and detailed design for individual projects it may be determined that other wastewater collection improvements or service lines to individual buildings are facilities are required.

4.5 Wastewater Agreements with City

No change to Cal Poly's current wastewater agreements with the City are planned as part of the *2035 Master Plan*. However, a capacity analysis of the City's wastewater collection system between Cal Poly's discharge point and the City WRRF is included in Section 5. If impacts on the City's wastewater system are identified, this capacity analysis is intended to provide data related to available capacity and potential capacity share between Cal Poly and the City.

4.6 City Wastewater Collection System

No change to the City's wastewater collection system or Cal Poly's discharge point into the City's wastewater conveyance system at the Parshall Flume are planned as part of the *2035 Master Plan*. However, a capacity analysis of the City's wastewater conveyance system between Cal Poly's discharge point and the City WRRF is included in Section 5. This capacity analysis is intended to evaluate and quantity potential impacts on the City's wastewater collection system related to buildout of the *2035 Master Plan* for both the likely scenario of the first phase of the WRF being online by 2022 and the worst-case scenario of the first phase of the WRF being online by 2026.

4.7 On-Campus WRF Capacity

Cal Poly plans to construct an on-campus WRF in the West Campus in the agricultural lands to the north (Appendix B and Exhibit 6). Wastewater treatment systems have several common elements regardless of size and configuration that act to remove pollutants of concern. Package plants for wastewater treatment provide the treatment capabilities found in conventional activated sludge treatment plants within a compressed surface area by replacing elements with a space saving alternative. A bioreactive membrane provides microfiltration with an integrated biological process, replacing settling ponds and other filtration systems. UV disinfection can be added to the effluent stream. Additional treatment and pollutant removal options can be added to the system including for non-biological pollutants such as copper and salinity. Sludge is still produced and will have similar characteristics as a conventional activated sludge treatment plan. Effluent from package plants can be discharged to a settling pond, which may further reduce pollutants of concern that adhere to particulates, such as copper. The sediments of a discharge pond, as proposed in this project, should be tested prior to dredging and disposal.

Cal Poly selected a package plant with a membrane reactor for treatment and ultraviolet (UV) for disinfection to meet project needs and operational constraints. The sizing of the plant will not result in disconnecting the campus from the City wastewater system, but will result in reductions in the quantity of wastewater discharged to the City's system. Evaluation and design of treatment elements, piping, and other infrastructure is not addressed here, but will be part of the preliminary engineering process to develop and install the WRF.

The WRF is anticipated to produce between 235 to 440 AFY (0.21 to 0.39 MGD) (Hartman Engineering, 2019; Veium, a. 2018) with a target size of 380 AFY (0.34 MGD) of recycled water constructed in two equally-sized phases of 190 AFY (169,621 GPD) each. In the likely scenario, the first phase of the WRF is anticipated to be online no later than 2022 with the second phase online in 2028. In the worst-case scenario, the first phase of the WRF is anticipated to be online in 2026 with the second phase online in 2028 (Table 14). While the WRF is a near-term project, this analysis is being performed at a program level-of-detail.

Table 14 Likely WRF Scenario and Worst-Case WRF Scenario and Phasing

	WRF Capacity (AFY)				WRF Capacity (GPD)			
Scenario	2022	2026	2028	2035	2022	2026	2028	2035
Likely	190	190	380	380	169,621	169,621	339,242	339,242
Worst-Case	0	190	380	380	0	169,621	339,242	339,242

Anticipated discharge water quality values are dependent on the source surface water background characteristics and operational maintenance of the WRF plant. When operated per manufacturer directions, package plants provide a reliable water treatment option. Additional treatment units can be added if specific water quality discharge issues are identified to meet regulatory and non-regulatory needs. In addition, Cal Poly plans to reuse the wastewater with no intent to discharge to local surface water bodies except for the system-related detention ponds. Cal Poly may use some of the WRF-treated water as make-up water for wastewater discharges to the City's wastewater system, if the City requires Cal Poly to maintain specific discharge limits, or for mixing with untreated Cal Poly wastewater effluent to better meet permit requirements. Quantities will be determined as needed to meet operational requirements.

4.8 On-Campus WRF Operations and Treatment Performance

Cal Poly plans to handle construction and operation of the WRF through a Water Purchase Agreement (WPA) to streamline permitting, operations, and regulatory compliance (Hartman Engineering, 2019). The skilled operators provided as part of a WPA will help ensure that the WRF operates as efficiently and effectively as possible. The most common reasons for unexpected operational results and fluctuations in treatment and constituent removal efficiency, include the following (Tchobanoglous, Burton, & Metcalf & Eddy, 1991):

- Large and sudden temperature changes (less likely to be an issue for Cal Poly more than for package plants in climates with highly fluctuating temperatures);
- Variable removal efficiency of grease and scum from the primary clarifier (except with oxidation ditches that do not use primary clarifiers);
- Very low flows that make designing self-cleansing conduits and channels difficult;
- Fluctuations in flow, BOD loading, and other influent parameters;
- Hydraulic shock loads, or the large fluctuations in flow from small communities; and
    - Hydraulic shocks can be an issue with high I/I (US EPA, 2000)
- Insufficient control of the air supply rate.

Potential for operational fluctuation is minimized by using skilled and experienced operators through the proposed WPA. The potential for hydraulic shocks will be reduced as planned CIP projects defined in the *Cal Poly Draft Utility Master Plan* are constructed to address I/I issues. Self-cleansing conduits and channels will be designed with appropriate conveyance to function adequately during lower flows in the summer months (Hartman Engineering, 2019).

Package plant treatment data was obtained from multiple sources specific to wastewater treatment and package plants with membrane filtration and UV disinfection. Sources are documented as footnotes to Table 15.

Table 14 illustrates expected Cal Poly WRF performance and effluent concentrations for nutrients (as evidenced by the ammonia form of nitrogen [NH_3-N]), salinity (sodium and chloride), and other limited and monitored constituents based on 2017 monitoring data. As shown, all anticipated loading rates in the reclaimed wastewater treated by the planned tertiary treatment (membrane) WRF are all well below the current maximum effluent limits with the exception of TTO. Membrane filtration treatment can be provided by Nanofiltration (NF) or reverse osmosis (RO) with RO performance or percent removal typically be greater than NF. The use of NF membrane filtration is assumed where performance differs as it provides more conservative (lower) constituent removal rates. However, RO membrane filtration would further decrease the levels of monitored constituents below already acceptable levels with the use of NF membrane filtration.

The WRF is not expected to have an effect on total toxic organics (TTO) unless specific treatment measures (i.e., absorption with activated carbon) are incorporated into the design. As indicated above, exceedance of this constituent is expected to be addressed by educational and behavioral changes. However, RO membrane filtration would reduce TTO. The use of RO would also further decrease the levels of monitored constituents below already acceptable levels with the use of NF membrane filtration.

Table 15 Expected Cal Poly WRF Performance and Effluent Concentrations

Constituent	Pre-2012 Effluent Limits (mg/L)	2012/2016 Daily Effluent Limits Max (mg/L)	2017 Annual Ave.(mg/L)	2017 Monthly Max. (mg/L)	Typical Removal Rates (%)	Estimated Annual Ave. (mg/L)	Estimated Monthly Max. (mg/L)
Ammonia (NH_3-N)[1]	30	50	67	100	89%	8	11
Biological Oxygen Demand (BOD)[1]	400	400	393	552	99%	5	6
Chloride[2]	400	1,523	149	302	0%	149	302
Sodium[2]	712.3	1,200	98	179	0%	98	179
Total Dissolved Solids (TDS)[3]	-	2,215	629	910	84%	101	146
Total Suspended Solids (TSS)[4]	250	1,346	518	780	53%	243	367
Copper[5]	0.1	0.2	0.14	0.24	90%	0.01	0.02
Zinc[5]	0.5	0.5	0.19	0.41	90%	0.02	0.04
Total Toxic Organics (TTO)[6]	Presence	Presence	0.18	0.59	---	0.18	0.59

Notes:

1. Based on tertiary treatment data from Wastewater treatment and use in agriculture - FAO irrigation and drainage paper 47 (http://www.fao.org/3/t0551e/t0551e05.htm).
2. Assumed nanofiltration (NF) rather than reverse osmosis (RO) for conservative results and based on data from https://proact-usa.com/membrane-filtration/.
3. Based on NF rather than RO for a more conservative estimate. The Ability of a Nanofiltration Membrane to Remove Hardness and Ions from Diluted Seawater (https://www.premierwatermn.com/water-quality/water-contaminants/total-dissolved-solids/). RO typical removal rates range from 90% to 99%.
4. Based on primary treatment data from Wastewater treatment and use in agriculture - FAO irrigation and drainage paper 47 (http://www.fao.org/3/t0551e/t0551e05.htm).
5. Based on data from Removal of Heavy Metals from Wastewater by Membrane Processes: A Comparative Study

(https://www.researchgate.net/publication/223105094_Removal_of_Heavy_Metals_from_Wastewater_by_Membrane_Processes_A_Comparative_Study). Assumed NF, although RO may provide higher removal rates. Assumed same removal efficiency for Zinc as Copper.

6. TTO to be addressed by educational measures and behavioral changes rather than through WRF. RO or activated carbon capable of high removal rates. However, removal of TTO by NF is minimal from Evaluation & Assessment of Removal Technology for Specific Organic Contaminants in NJ Drinking Water, November, 2008. (https://www.nj.gov/dep/watersupply/pdf/treatment_b&v_final08_rpt.pdf).

Neither the effluent limits nor the actual Cal Poly average annual or maximum monthly values before treatment are expected to change as a result of the WRF under either the likely or worst-case scenario. Therefore, loading rates for regulated and monitored constituents within wastewater effluent discharged to the City's conveyance system for treatment at the City's WRRF is not expected to change significantly from current levels based on construction of Cal Poly's WRF. However, the WRF provides Cal Poly with the added operational flexibility to mix relatively clean reclaimed wastewater that has undergone tertiary treatment with untreated wastewater prior to discharge to the City's collection system. This operational option is contingent upon the WRF design including piping and conveyance elements to readily accommodate mixing of reclaimed wastewater with untreated wastewater from Cal Poly prior to discharge to the City's conveyance system (i.e., the WRF needs to also have a connection to allow discharge to Cal Poly's wastewater system).

Using 2017 data, mixing approximately 30% tertiary treated reclaimed wastewater from the WRF with 70% Cal Poly's untreated effluent would eliminate average annual exceedances of NH_3-N and the monthly maximum exceedance of BOD, and Cu. To eliminate the monthly maximum exceedance of NH_3-N, approximately 60% tertiary treated reclaimed water from the WRF would need to be mixed with 40% Cal Poly's untreated effluent. While this level of mixing is impractical given the WRF's role in water supply for Cal Poly, it offers operational flexibility for permit compliance.

Due to planned additional indoor fixture water conservation measures that will also reduce the volume of wastewater flows, the average and maximum loading rates for some monitored and regulated constituents may increase during buildout of the *2035 Master Plan*. Depending on operational procedures, the WRF is anticipated to reduce exceedances of wastewater effluent limits for the wastewater effluent being discharged to the City's wastewater collection system.

4.9 Cal Poly Annual Average Wastewater Flows

Cal Poly proposes an incremental increase in headcount and capital improvement projects during the planning horizon through 2035. New and renovated/expanded facilities are divided into residential and non-residential buildings to project wastewater flows. This analysis calculates the projected wastewater flows at various stages of the *2035 Master Plan* implementation (analysis years 2020, 2025, 2030, and 2035) as compared to the 2015 baseline year.

The following sections discuss residential annual average wastewater flows, non-residential annual average wastewater flows, wastewater flow reductions due to indoor water conservation measures, reductions in Cal Poly's untreated wastewater flows to the City system, and changes in how wastewater flows from two off-campus buildings (Chorro State and Chorro Lofts) are allocated. Residential and non-residential buildings are listed separately and individual projects listed as individual line items to facilitate future planning.

Wastewater flow projections are provided through buildout of the *2035 Master Plan* and include a likely scenario of the first phase of the WRF being online in 2022 and a worst-case scenario of the first phase of the WRF being online in 2026. Total annual average wastewater flows, increases in annual average wastewater flows, and proposed changes in annual average wastewater flows being discharged into the City's wastewater collection system are included. The wastewater flow projections are also used to estimate ADWF, PDWF, and PWWF used in the SewerCAD modeling of the City's wastewater collection system in Sections 4.10, 4.11, and 4.12.

4.9.1 Residential Annual Average Wastewater Flows

Calculation of proposed wastewater flows for residential projects is based on the number of beds of the project, which takes into account shared restrooms and operation of the building even when unoccupied. Residential annual average wastewater flow projections are based on the following assumptions:

1. Note that the traditional terminology of gallons per capita per day (GPCD) is not used in this analysis as residential buildings on university campuses have different water demand and wastewater flow patterns than typical single-family or multi-family residential users as they typically do not include kitchens. Additionally, wastewater flows from classrooms, academic buildings, and other support facilities are evaluated separately from housing in the non-residential category using standard usage rates and building categories as described in Section 4.9.2.
2. 98% of water supplied for domestic use is discharged as wastewater flow (Connecticut State Department of Public Health, 2006). Typical indoor water use values range from 96% to 100%, so a mid-range value is selected.
3. All residential beds are occupied immediately after completion of the project.
4. For Slack and Grand and the University-based Retirement Community, an annual average water use per bed of 55 GPD/resident was assigned for water demand with 98% of that demand returned as wastewater flow, or 53.9 GPD/resident (City of San Luis Obispo Sewer System Management Plan Update, 2014; City of Santa Barbara, Water Resources Division, 2009; Connecticut State Department of Public Health, 2006; Hartman Engineering, 2019)
5. For student housing, an annual average water use per bed of 25.8 GPD/resident was used, as calculated based on metered data from Cal Poly's existing Poly Canyon Village residential area from July 2016 to June 2017 (Hartman Engineering, 2019). Assuming 98% of the water demand is returned as wastewater flow yields an annual average wastewater flow per bed of 25.8 GPD/resident.

As shown in Table 16 below, a total annual average wastewater flow increase from residential projects is estimated at 236,451 GPD by 2035. The first unnamed residential project is slated to be operational in 2022 with the fourth unnamed residential project slated to be operational in

2035. The Slack and Grand Residential Neighborhood PPP project is projected to contribute an annual average wastewater flow of 33,278 GPD when it comes online in 2023. The University-based Retirement Community is projected to contribute an annual average wastewater flow of 21,129 GPD in 2028.

Table 16: Projected Annual Average Wastewater Flows from Residential Projects Based on Potable Water Demand

Facility	Year Completed	# of Beds	Potable Demand (GPD/ Bed)	Potable Demand (GPD/ bed)	Annual Average Water Demand (Gallons/ Year)	Annual Wastewater Flow (GPD)
2,000 beds projected for 2022 (Unnamed)	2022	2,000	25.8	51,600	18,834,000	50,568
600 beds projected for 2024 (Unnamed)	2024	600	25.8	15,480	5,650,200	15,170
1,500 beds projected for 2027 (Unnamed)	2027	1,500	25.8	38,700	14,125,500	37,926
1,500 beds projected for 2031 (Unnamed)	2031	1,500	25.8	38,700	14,125,500	37,926
1,600 beds projected for 2035 (Unnamed)	2035	1,600	25.8	41,280	15,067,200	40,454
Subtotal Student Residential Projects		**7,200**		**185,760**	**67,802,400**	**182,045**
Slack and Grand Residential Neighborhood[1]	2023	630	53.9	33,957	12,394,305	33,278
University-based Retirement Community[1]	2028	400	53.9	21,560	7,869,400	21,129
Subtotal Non-Student Housing Projects		**1,030**		**55,517**	**20,263,705**	**54,407**
TOTAL STUDENT AND NON-STUDENT RESIDENTIAL PROJECTS		**8,230**		**241,277**	**88,066,105**	**236,451**

[1] These are projects with known Public Private Partnerships (PPP).

4.9.2 Non-Residential Buildings Annual Average Wastewater Flows

Consistent with the residential wastewater flow projections and appropriate for the usage categories of the proposed non-residential buildings, it is assumed that 98% of water use for non-residential buildings is returned as wastewater flow (Connecticut State Department of Public Health, 2006). Typical indoor water use values range from 96% to 100%, so a mid-range value is selected and is applied consistently with residential buildings.

Water demands for the 704,362 GSF of non-residential (academic) buildings were estimated using demand factors per building surface area from the City of Santa Barbara Water Resources Division report *"Water Demand Factor Update Report"* (City of Santa Barbara, Water Resources Division, 2009), which lists water demand factors for different land use categories and building types including institutional, service commercial, industrial, office, and retail buildings based on square footage. This water demand source was selected based on the close geographical proximity to Cal Poly as well as the alignment of provided building categories that are consistent with categories proposed as part of Cal Poly's *2035 Master Plan* expansion.

The City provides domestic sewage generation factors for Average Dry-Weather Flow (ADWF), the categories are more limited and do not align as well with Cal Poly's specific proposed building types as does the City of Santa Barbara's data (City of Santa Barbara, Water Resources Division, 2009; City of San Luis Obispo, December 2015; City of San Luis Obispo Sewer System Management Plan Update, 2014; Connecticut State Department of Public Health, 2006). Even when converted to annual average wastewater flow using the 1.44 factor discussed in Section 3.9, the City's wastewater yield values do not align with Cal Poly proposed building types. Cal Poly's buildings wastewater yield lower and less conservative flow projections than the City of Santa Barbara's values.

Proposed non-residential buildings are assigned to the most similar usage category (Table 16) based on the (City of Santa Barbara, Water Resources Division, 2009). The institutional is not used as it is only applicable for an entire institution and is not relevant for individual buildings within a larger institutional setting. The following provides a definition for the categories used in Table 17 (City of Santa Barbara, Water Resources Division, 2009), which are grouped by similar water demand uses:

- Office – general office space, business, professional, or research;
- Industrial – includes general industrial land uses including assembly, warehousing and storage, manufacturing, and constructed related services;
- Commercial Service – includes items such as restaurants, food service, live or movie theater, auto repair, and veterinary services.

These categories were assigned to each building, and average daily water demands and wastewater flows were estimated for each building as shown in Table 17 below. This water demand source lists metered water use for each building type based on metered data collected by the City of Santa Barbara in 2005 to 2006. Due to the timeframe of data collection, it is assumed that the metered data included a high percentage of low flow fixtures on new and retrofitted buildings and a lower percentage of older, higher flow fixtures that had yet to be replaced. Since all new Cal Poly facilities will be constructed with low-flow and ultra-low-flow fixtures to meet current standards and Cal Poly's sustainability goals, these values provide a conservative estimate for projections.

Where projects are partially or fully in replacement of existing buildings, the water demands and wastewater flows are calculated to only represent the increase in flow from the baseline, rather than the proposed building's entire flow. Annual average wastewater flows are estimated at 53,960 GPD by 2035 for non-residential buildings.

Table 17: Projected Non-Residential Buildings Annual Average Wastewater Flows Based on Potable Water Demand

Facility	Year Completed	Size (GSF)	Category[3]	Demand Factor (GPD/ GSF)[3]	Annual Average Water Demand (GPD)	Annual Average Wastewater Flows (GPD)
Academic Center Library Addition	2022 - 2035	114,000	Office	0.053562	6,106	5,984
Classroom and Offices Building	2022 - 2035	72,000	Office	0.053562	3,856	3,779
Beef Cattle Evaluation Center (BCEC) Expansion	2022 - 2035	10,000	Commercial Veterinary	0.151759	1,518	1,487
Engineering Projects Buildings	2022 - 2035	71,000	Industrial Assembly/ Manufacturer	0.071416	5,071	4,969
Facilities Operations Complex	2022 - 2035	108,000	Industrial	0.071416	7,713	7,559
Davidson Music Center Renovation/Addition	2022 - 2035	22,600	Office	0.053562	1,211	1,186
Building 19 - Dining Commons Renovation and Addition	2022 - 2035	44,000	Commercial Service	0.151759	6,677	6,544
Operations and Farm Shop Relocation	2022 - 2035	51,000	Commercial Auto Repair	0.151759	7,740	7,585
IT Services Consolidation	2022 - 2035	15,000	Office	0.053562	803	787
Health Center[2]	2022 - 2035	32,797	Commercial Service	0.151759	4,977	4,878
Tech Park Expansion[2]	2022 - 2035	125,000	50% Office/ 50% Industrial	0.062489	7,811	7,655
Fermentation Building[1]	2022 - 2035	N/A	N/A	N/A	1,303	652
Vista Grande[1]	2020 - 2035	38,965	33.3% Office/66.6% Commercial Service	0.119027	913	895
TOTAL NON-RESIDENTIAL PROJECTS		704,362			55,699	53,960

[1] This building was reviewed for CEQA under the 2001 Amendment but was not constructed by 2015, therefore it is not included in the 2015 Corrected Adjusted baseline flows. This facility is included here to incorporate the wastewater flows for this review.
[2] These are projects with Public Private Partnerships (PPP).
[3] Indoor use factors taken from the City of Santa Barbara *Water Demand Factor Report* (City of Santa Barbara, Water Resources Division, 2009).

4.9.3 Annual Average Wastewater Flow Reductions from Indoor Water Conservation

Domestic water usage is closely tied to wastewater flows. Certain water conservation efforts such as low-flow toilets and other low-flow fixtures will lead to reduction in wastewater flows. These types of water conservation efforts are a factor in projecting future wastewater flows. Cal Poly conducted audits of existing buildings and other water uses including landscape irrigation to identify potential water conservation opportunities (California Polytechnic State University, San Luis Obispo; Water Savers, LLC, 2014).

As summarized by Cal Poly for the low flow plumbing retrofits, CalSense audit, and AquaCents turf replacement, Cal Poly anticipates achieving a total of 10 AFY (8,927 GPD) of annual average water conservation savings from indoor fixtures by 2025, with 50% of this savings realized between 2019 and 2022 and the remaining 50% between 2023 and 2025 (Water Savers, LLC, 2014; California Polytechnic State University, San Luis Obispo; AquaCents Water Management, Inc, 2017). With 98% of water demands returned as wastewater flows, a reduction annual average wastewater flows of 8,747 GPD is realized by 2025 from changes in indoor fixtures. As such, an annual average wastewater flow reduction of 2,187 GPD and 8,747 GPD of water conservation savings is applied in analysis years 2020 and 2025, respectively.

4.9.4 Reduction in Annual Average Wastewater Flows from Off-Campus Properties

As described in Section 3.1 and Table 2, two of Cal Poly's off-campus properties are being moved from Cal Poly's wastewater allocations to be served by the City's system. Chorro State and Chorro Lofts are included in Cal Poly's 2015 baseline flows and are removed from Cal Poly's wastewater flows in all analysis years from 2020 to 2035 (Veium, a. 2018). The annual average wastewater flows are 46 GPD, 1,108 GPD, and 1,154 GPD for Chorro State, Chorro Lofts, and the total of the two, respectively. This change is reflected in the "Off-Campus Properties" line item in Table 18 below.

4.9.5 Reduction in Annual Average Wastewater Flows from Proposed Cal Poly On-Campus WRF

The on-campus WRF is expected to reduce wastewater flows from Cal Poly into the City wastewater conveyance system. As shown in Table 18, the WRF is planned to have an initial capacity of 190 AFY (169,621 GPD) with the first phase online in 2022 under the likely scenario and 2026 under the worst-case scenario. The full WRF capacity of 380 AFY (339,242 GPD) is expected to be online in 2028.

4.9.6 Summary of Annual Average Wastewater Flows

Table 18 summarizes the total annual average wastewater flow from Cal Poly and the additional annual average wastewater flow from all proposed residential and non-residential projects by analysis year, reductions in wastewater flows from indoor water conservation, and changes in how the allocation for off-campus properties are handled. For non-residential buildings, completion dates are unknown and buildings are assumed to be phased with GSF and associated wastewater flows distributed linearly between 2022 and 2035. While it appears that flows increase over time, wastewater flows from each specific non-residential building will remain constant once a specific building is operational. Total Cal Poly annual average wastewater flows range from 194,216 GPD in 2020 to 478,066 GPD in 2035 representing a 142% increase over the 2015 baseline conditions at full buildout of the *2035 Master Plan*.

Both a likely scenario and a worst-case scenario for the WRF being online and operational are included. In the likely scenario, the first phase of the WRF is online in 2022 and the second phase in 2028. In the worst-case scenario, the first phase of the WRF is online in 2026 and the second phase in 2028. In both scenarios, the WRF capacity is 190 AFY (169,621 GPD) in the first phase and expanded by 190 AFY (169,621 GPD) in the second phase to a total of 380 AFY (339,242 GPD). The WRF is reflected in analysis years 2025 (first phase) and 2030 (both phases online) for the likely scenario and 2030 (both phases online) for the worst-case scenario.

As shown, annual average wastewater flows from Cal Poly to the City's wastewater collection system decrease from a 2015 baseline of 197,557 GPD to 138,824 GPD at full *2035 Master Plan* buildout in 2035 in both the likely and worst-case WRF scenarios, assuming all reclaimed water treated by the WRF is used for on-campus irrigation. In the likely scenario of the WRF online in 2022, for all analysis years from 2020 to 2035, annual average wastewater flows are reduced below current levels by a high of 156,385 GPD in 2030 (implies all flow could be treated by the WRF) and a low of 3,341 GPD in 2020. The only difference between the likely and worst-case scenario related to flows into the Cal Poly system is that in 2025, the likely scenario reduces flows into the Cal Poly wastewater collection system by 65,090 GPD whereas the worst-case scenario increases flows into the Cal Poly wastewater collection system by 104,531 GPD.

Under the likely scenario of the first phase of the WRF online in 2022, the WRF capacity is adequate to fully meet Cal Poly's additional annual average wastewater flow treatment needs for all key analysis and calendar years, including those years with near-term projects slated to be online. Adequate annual average wastewater treatment capacity will be available for all residential and non-residential projects as scheduled. While not anticipated or likely even feasible, if any projects were operational prior to the first phase WRF coming online in any year, Cal Poly's annual average wastewater conveyance capacity would not be adequate as compared to 2015 baseline conditions. Under the worst-case scenario or any scenario where the WRF is delayed beyond 2023, planned residential and non-residential buildings would need to be delayed until the WRF is online to maintain annual average wastewater flows at or below 2015 baseline conditions. While Cal Poly's average monthly conveyance capacity of 0.471 MGD is adequate through 2030, the average annual wastewater flow of 0.478 MGD in 2035 without the WRF exceeds Cal Poly's 0.471 MGD capacity agreement with the City by 0.07 MGD indicating that the WRF is critical for development of the *2035 Master Plan*.

Table 18: Summary of Annual Average Wastewater Flows in GPD

	Average Annual Wastewater Flows (GPD)				
Wastewater Flow Source	**2015**	**2020**	**2025**	**2030**	**2035**
Baseline	197,557	197,557	197,557	197,557	197,557
Student Housing Residential Projects					
2,000 beds projected for 2022 (Unnamed)	0	0	50,568	50,568	50,568
600 beds projected for 2024 (Unnamed)	0	0	15,170	15,170	15,170
1,500 beds projected for 2027 (Unnamed)	0	0	0	37,926	37,926
1,500 beds projected for 2031 (Unnamed)	0	0	0	0	37,926
1,600 beds projected for 2035 (Unnamed)	0	0	0	0	40,454
Subtotal Student Residential Projects	**0**	**0**	**65,738**	**103,664**	**182,045**
Non-Student Housing Residential Projects					
Slack and Grand Residential Neighborhood[1]	0	0	33,278	33,278	33,278
University-based Retirement Community[1]	0	0	0	21,129	21,129
Subtotal Non-Student Residential Projects	**0**	**0**	**33,278**	**54,407**	**54,407**
Subtotal All Residential Projects	**0**	**0**	**99,016**	**158,071**	**236,451**
Non-Residential Projects					
Academic Center Library Addition	0	0	1,710	3,847	5,984
Classroom and Offices Building	0	0	1,080	2,430	3,779
Beef Cattle Evaluation Center (BCEC) Expansion	0	0	425	956	1,487
Engineering Projects Buildings	0	0	1,420	3,194	4,969
Facilities Operations Complex	0	0	2,160	4,859	7,559
Davidson Music Center Renovation/Addition	0	0	339	763	1,186
Building 19 - Dining Commons Renovation and Addition	0	0	1,870	4,207	6,544
Operations and Farm Shop Relocation	0	0	2,167	4,876	7,585
IT Services Consolidation	0	0	225	506	787
Fermentation Building[2]	0	0	186	419	652
Vista Grande[2]	0	0	256	575	895
Health Center[1]	0	0	1,394	3,136	4,878

Wastewater Flow Source	Average Annual Wastewater Flows (GPD) 2015	2020	2025	2030	2035
Tech Park Expansion[1]	0	0	2,187	4,921	7,655
Subtotal All Non-Residential Projects	**0**	**0**	**15,417**	**34,688**	**53,960**
Total Increased Flow	**0**	**0**	**114,433**	**192,759**	**290,411**
Reduction due to Conservation	0	2,187	8,747	8,747	8,747
Reduction due to Off-campus Properties	0	1,154	1,154	1,154	1,154
Reduction due to On-campus WRF (Likely Case)	0	0	169,621	339,242	339,242
Reduction due to On-campus WRF (Worst Case)	0	0	0	339,242	339,242
Total Reduced Flow (Likely Case)	0	3,341	179,523	349,144	349,144
Total Reduced Flow (Worst Case)	0	3,341	9,902	349,144	349,144
Total Cal Poly Flow Excluding WRF	197,557	194,216	302,088	380,414	478,066
Total Cal Poly Flow to City of SLO System (Likely Case)	197,557	194,216	132,467	41,172	138,824
Total Cal Poly Flow to City of SLO System (Worst Case)	197,557	194,216	302,088	41,172	138,824
Change in Cal Poly Flow to City of SLO System (Likely Case)	**0**	**-3,341**	**-65,090**	**-156,385**	**-58,733**
Change in Cal Poly Flow to City of SLO System (Worst Case)	**0**	**-3,341**	**104,531**	**-156,385**	**-58,733**

[1] These are projects with known Public Private Partnerships (PPP).

[2] This building was reviewed for CEQA under the 2001 Amendment but was not constructed by 2015, therefore it is not included in the 2015 Corrected Adjusted baseline flows. This facility is included here to incorporate the wastewater flows for this review.

4.10 Average Daily Dry Weather Wastewater Flows

ADWF – average daily dry weather wastewater flows
PDWF – peak dry weather wastewater flows
PWWF – peak wet weather wastewater flows

As discussed in Section 3.9 above, ADWF is calculated as 1.44 times Cal Poly's total annual average wastewater flows. ADWF is calculated for key years 2015, 2020, 2025, 2030, and 2035 in Table 19 in Section 4.12 below and is further adapted for use in the SewerCAD modeling of the City's wastewater collection system analysis as discussed in Section 5. This table also present the ADWF used in the likely and worst-case modeling scenarios once the planned WRF capacity in a given analysis year is subtracted. For simplicity, ADWF is presented along with PDWF, and PWWF since these values are calculated for use in the SewerCAD modeling of the City's wastewater collection system.

ADWF values for the likely case and worst-case WRF scenario are identical in all analysis years except for 2025, since the WRF is online in 2025 in the likely case scenario, but not in the worst-case scenario. ADWF into the City's wastewater collection system range from 279,671 GPD in 2020, 265,386 GPD in 2025, 208,555 GPD in 2030, and 349,173 GPD in 2035. The only difference in the worst-case scenario is that ADWF into the City's wastewater collection system increase to 435,007 GPD in 2025. ADWF into the City's wastewater collection system decreases compared to 2015 baseline for all analysis years except for an increase of 64,691 GPD in 2035 under the likely scenario of the WRF. Under the worst-case scenario of the WRF, ADWF into the City's wastewater collection system increases by 150,525 GPD as compared to the 2015 baseline. ADWF into the City's wastewater collection system is below Cal Poly's average monthly capacity of 0.471 MGD for all analysis years through 2035.

4.11 Peak Daily Dry Weather Wastewater Flows

As discussed in Section 3.10, a peaking factor of 2.6 is applied to Cal Pol's ADWF to estimate Cal Poly's PDWF used in the SewerCAD modeling of the City's wastewater collection system analysis. While this potentially overestimates peak dry weather flows, it is consistent with the peaking factor used by the City and provides a conservative basis for comparison. PDWF is calculated for key years 2015, 2020, 2025, 2030, and 2035 in Table 19 in Section 4.12 below. This table also presents the PDWF used in the likely and worst-case modeling scenarios once the planned WRF capacity in a given analysis year is subtracted. As indicated in Section 4.10, ADWF, PDWF, and PWWF are presented in this table for use in the SewerCAD modeling of the City's wastewater collection system.

PDWF values for the likely case and worst-case WRF scenario are identical in all analysis years except for 2025, since the WRF is online in 2025 in the likely case scenario, but not in the worst-case scenario. PDWF into the City's wastewater collection system range from 0.727 MGD in 2020, to 0.961 MGD in 2025, 1.09 MGD in 2030, and 1.45 MGD in 2035. The only difference in the worst-case scenario is that PDWF into the City's wastewater collection system in 2025 increase to 1.13 MGD. PDWF into the City's wastewater collection system decreases in 2020 by 12,510 GPD as compared to the 2015 baseline, but increases for all remaining analysis years by a high of 710,984 GPD for the likely scenario of the WRF. Under the worst-case scenario of the WRF, PDWF into the City's wastewater collection system increases by 391,365 GPD as compared to the 2015 baseline. PDWF into the City's wastewater collection system is below Cal

Poly's transmission capacity of 1.2 MGD through 2030 for both the likely and worst-case scenarios of the WRF and is 0.25 MGD higher than allotment in 2035 based on the average WRF capacity. While the WRF is likely to have peak capacity to accommodate higher than average annual flows, this should be a design consideration of the WRF or selection of the specific package plant.

4.12 Peak Daily Wet Weather Wastewater Flows

As discussed in Section 3.11, an I/I value of 1.399 MGD (971 GPM) is added to PDWF to obtain PWWF for the entire Cal Poly flow excluding and including the WRF. PDWF is calculated for key years 2015, 2020, 2025, 2030, and 2035 in Table 19. This table also presents the PWWF used in the likely and worst-case modeling scenarios once the planned WRF capacity in a given analysis year is subtracted. As indicated in Section 4.10, ADWF, PDWF, and PWWF are presented in this table for use in the SewerCAD modeling of the City's wastewater collection system.

PWWF values for the likely case and worst-case WRF scenario are identical in all analysis years except for 2025, since the WRF is online in 2025 in the likely case scenario, but not in the worst-case scenario. PWWF into the City's wastewater collection system range from 2.13 MGD in 2020 to 2.36 MGD in 2025, 2.48 MGD in 2030, and 2.85 MGD in 2035 for the likely case scenario. For the worst-case scenario, the only difference is that PWWF into the City's wastewater collection system in 2025 increase to 2.53 MGD. PDWF into the City's wastewater collection system decreases in 2020 by 12,510 GPD as compared to the 2015 baseline, but increases for all remaining analysis years by a high of 710,984 GPD for the likely scenario of the WRF. Under the worst-case scenario of the WRF, PDWF into the City's wastewater collection system increases by 391,365 GPD as compared to the 2015 baseline.

PWWF into the City's wastewater collection system is above Cal Poly's transmission capacity of 1.2 MGD for all analysis years through 2035, including the 2015 baseline year. While the WRF is likely to have additional peak capacity to accommodate higher than average annual flows, it may not be adequate to reduce PWWF to 1.2 MGD. In addition to water conservation measures and the on-campus WRF, Capital Improvements to Cal Poly's wastewater collection system may be needed to reduce the potential for future wet months to exceed the 0.471 MGD average daily flow and/or the 1.2 MGD conveyance capacity. Cal Poly is reviewing their wastewater conveyance system including addressing I/I as part of the *Cal Poly Draft Utility Master Plan* effort, which is expected to be completed in 2020. This effort that is currently underway will quantify I/I and identify economically viable CIP projects to reduce I/I to accommodate expansion and growth of student population as well as to replace aging wastewater infrastructure. CIP projects will likely reduce I/I and result in reductions in peak daily wet weather flows from Cal Poly. There will likely be more accurate findings from Master Utility Plan, and that we did not include any proposed (by City) improvements or maintenance by Cal Poly.

Table 19 provides a summary of the ADWF, PDWF, and PWWF used in the SewerCAD modeling of the City Wastewater System in relation to the proposed improvements for this report. A safety factor was added to the calculated I/I, which are represented in this table. For comparison, the calculated only I/I value is shown in Table 19a, where only the PWWF value changes.

Table 19: Projected ADWF, PDWF, and PWWF for use in City Wastewater System Modeling in GPD

	2015	2020	2025	2030	2035
Total Cal Poly Wastewater Flows	**Average Annual Wastewater Flows (GPD)**				
Average Annual Flows	197,557	194,216	302,088	380,414	478,066
ADWF (No WRF)	284,482	279,671	435,007	547,797	688,415
PDWF (No WRF)	739,653	727,144	1,131,019	1,424,272	1,789,880
PWWF (No WRF)	2,139,217	2,126,708	2,530,583	2,823,836	3,189,444
Modeling Flow Scenario Values for Likely Case WRF Scenario	**Modeling Flows (GPD)**				
ADWF (Likely Case)	284,482	279,671	265,386	208,555	349,173
PDWF (Likely Case)	739,653	727,144	961,398	1,085,030	1,450,638
PWWF (Likely Case)	2,139,217	2,126,708	2,360,962	2,484,594	2,850,202
Modeling Flow Scenario Values for Worst Case WRF Scenario	**Modeling Flows (GPD)**				
ADWF (Worst Case)	284,482	279,671	435,007	208,555	349,173
PDWF (Worst Case)	739,653	727,144	1,131,019	1,085,030	1,450,638
PWWF (Worst Case)	2,139,217	2,126,708	2,530,583	2,484,594	2,850,202

Note: These values are a calculated flow with an added safety factor and should not be used for design or in determining compliance with agreements and discharge limits.

Table 19a: Projected ADWF, PDWF, and PWWF for use in City Wastewater System Modeling in GPD without safety factor

	2015	2020	2025	2030	2035
Total Cal Poly Wastewater Flows	**Average Annual Wastewater Flows (GPD)**				
Average Annual Flows	197,557	194,216	302,088	380,414	478,066
ADWF (No WRF)	284,482	279,671	435,007	547,797	688,415
PDWF (No WRF)	739,653	727,144	1,131,019	1,424,272	1,789,880
PWWF (No WRF)	1,085,018	1,072,509	1,476,384	1,769,637	2,135,245
Modeling Flow Scenario Values for Likely Case WRF Scenario	**Modeling Flows (GPD)**				
ADWF (Likely Case)	284,482	279,671	265,386	208,555	349,173
PDWF (Likely Case)	739,653	727,144	961,398	1,085,030	1,450,638
PWWF (Likely Case)	1,085,018	1,072,509	1,306,763	1,430,395	1,796,003
Modeling Flow Scenario Values for Worst Case WRF Scenario	**Modeling Flows (GPD)**				
ADWF (Worst Case	284,482	279,671	435,007	208,555	349,173
PDWF (Worst Case)	739,653	727,144	1,131,019	1,085,030	1,450,638
PWWF (Worst Case)	1,085,018	1,072,509	1,476,384	1,430,395	1,796,003

4.13 Cal Poly Wastewater Pre-Treatment Requirements

No change to the Cal Poly's wastewater pre-treatment requirements are planned as part of the *2035 Master Plan*. However, a full discussion on permitting, monitored constituents removal, and other WRF-related items is included in Section 3.12.

5 City Wastewater System Conveyance Capacity

A detailed study of the Cal Poly wastewater conveyance system is currently underway as part of the *Cal Poly Utility Master Plan* but will not be available for inclusion in the *2035 Master Plan* EIR. The City expressed concern that the additional wastewater needs for the campus expansion could impact the City's wastewater systems. This section provides the results of a high-level analysis of general capacity of the City wastewater distribution system's capacity at the Cal Poly points of connection. To evaluate capacity of the City's water distribution system, Watearth obtained SewerCAD models of the City's wastewater distribution system. The City's wastewater collection connects to Cal Poly primarily through a six-inch Parshall Flume and includes 3.8 miles of VCP and PVC pipelines ranging in size from 10 to 48 inches to the City WRRF.

5.1 City Wastewater Collection System and SewerCAD Models

The City's wastewater node/link map is included in Appendix A. A range of modeling scenarios is included in the City's wastewater models, including: ADWF, PDWF, and PWWF at current conditions and build-out . While not tied to particular analysis years, current conditions are assumed to represent 2015 baseline conditions and build out is assumed to represent 2035 conditions.

From the City's SewerCAD node/link Node J05-7 is the Cal Poly sewer metering location near Spanos Stadium and just upstream of Cal Poly's discharge into the City's wastewater collection system at Node J06-2 and the wastewater line leaving the Cal Poly campus is Line 4296 with a 15-inch diameter. Wastewater flows from Cal Poly are conveyed to the City's WRRF through 3.8 miles of vitrified clay pipe (VCP) and polyvinyl chloride (PVC) pipelines ranging in size from 10 to 48 inches.

Cal Poly's wastewater flows in the current wastewater node map provided by the City are listed as:

- Annual Average Wastewater Flow (AAF) (assumed to correspond to ADWF) = 250 GPM (360,003 GPD);
- Ex. Peak Dry Weather Flow (PDWF) = AAF * 2.6 peaking factor = 650 GPM (936,000 GPD);
- Ex. Peak Wet Weather Flow (PWWF) = PDF + I/I at 789 GPM = 1,439 GPM (2.07 MGD).

Table 20 and Table 21 below show the AAF, PDWF, and PWWF values at Node J05-7 in the original model provided by the City in both current and build out conditions. These are similar to, but do not exactly match the values listed on the wastewater node map (Appendix A). However, the most Cal Poly wastewater flows used in this modeling effort are based on results obtained in the current study based on the *2035 Master Plan* as opposed to data currently in the City's SewerCAD model.

Table 20: City-Provided Cal Poly Flows in City SewerCAD Models in GPM

	Inflow (Sanitary Loading)			Inflow (Wet)	Total
Scenario	Pattern Load - Base Flow and Pattern (Fixed) (GPM)	Pattern Load - Base Flow and Pattern (Fixed) (GPM)	Pattern Load - Base Flow and Pattern (Fixed) (GPM)	Fixed Load (GPM)	Flow (GPM)
ADWF_Current	250	16	0	0	267
PDWF_Current	650	-	-	0	650
PWWF_Current	250	16	0	1,759	2,026
ADWF_BO	250	16	347	0	614
PDWF_BO	1,553	-	-	0	1,553
PWWF_BO	250	16	347	1,759	2,373

Table 21: City-Provided Cal Poly Flows in City SewerCAD Models in GPD

	Inflow (Sanitary Loading)			Inflow (Wet)	Total
Scenario	Pattern Load - Base Flow and Pattern (Fixed) (GPD)	Pattern Load - Base Flow and Pattern (Fixed) (GPD)	Pattern Load - Base Flow and Pattern (Fixed) (GPD)	Fixed Load (GPD)	Flow (GPD)
ADWF_Current	360,214	23,719	0	0	383,933
PDWF_Current	936,556	-	-	0	936,556
PWWF_Current	360,214	23,719	0	2,533,136	2,917,069
ADWF_BO	360,214	23,719	500,000	0	883,933
PDWF_BO	2,236,556	-	-	0	2,236,556
PWWF_BO	360,214	23,719	500,000	2,533,136	3,417,069

The model provided originally by the City had incorrect/inaccurate elevation data for various variables such as manhole rim, ground, and invert elevation. These issues either caused the model to provide incorrect/inaccurate results, or created a critical error preventing the model from running at all. In order to correct these issues, the following changes were made in consultation with Bentley Systems technical support to ensure only those revisions required to stabilize and run the models were made:

1. In the manholes FlexTable in SewerCAD, all rim elevations were set to be equal to ground elevations by checking the “Set Rim to Ground Elevation?” column for each manhole. This was done as ground elevations provided a more complete and accurate elevation data set than rim elevations, which were typically set at zero feet in the model.
2. Ground elevations were assigned to three manholes where no elevation data was included in the model. Elevations were estimated by referencing the manhole location in SewerCAD to Google Earth and taking elevations from Google Earth. Specifically;
    a. MH-13 was set to 177 feet,
    b. MH-14 was set to 319 feet, and
    c. MH-15 was set to 207 feet.
3. For the numerous manholes with invert elevations set at zero, invert elevation was set to a constant three feet below ground elevation. This is a relatively conservative assumption that may show an artificial, but consistent capacity issue in both 2015 baseline and other analysis years at some locations, since capacity data HGL is partially based on pipe invert elevations and slope.
4. In the Conduit FlexTable in SewerCAD, where the start and/or stop invert elevation was set to zero, the “set invert to start” and/or “set invert to stop” columns were marked to TRUE, indicating that the manhole elevations should be used, rather than conduit elevations.
5. Steps one through four eliminated most of the 1,000+ errors and revealed critical errors related to conduits being modeled as diversion links without an assigned upstream diversion pipe to flow to. This was corrected by transferring the diversion link properties to the nearest upstream pipe with two upstream links as follows:
    a. Diversion properties of Conduit 4357 were transferred to the adjacent upstream Conduit 3550;
    b. Diversion properties of Conduit 4221 were transferred to the second upstream Conduit 5247.

5.2 City Wastewater Collection System Key Analysis Points

The purpose of this evaluation of City’s system is to spot check capacity within the City’s wastewater conveyance system. While it is not intended to be a comprehensive evaluation of the City’s wastewater conveyance system, it provides valuable information for the CEQA process based on evaluations of flow capacities of wastewater lines and an analysis of potential for impacts from changes in Cal Poly’s flows at five (5) key points within the City’s wastewater conveyance system.

These five key points were selected, with input provided by the City at a November 16, 2018 meeting, to encompass Cal Poly’s connection point to the City’s wastewater conveyance system at the Parshall Flume, the final node before the City’s WRRF., (City of San Luis Obispo Sewer System Management Plan Update, 2014; Watearth, Inc., 2018). According to the City staff, the following locations within the City's wastewater conveyance system have capacity issues during wet weather:

1. Carmel and Marsh Street;
2. Bridge Street;
3. Sana Rosa/Oak Skate Park.

Based on these items, the five key points selected for analysis include:

- Key Location 1: Cal Poly's connection to the City's system (J06-2) just downstream of Cal Poly's sewer metering location near Spanos Stadium;
- Key Location 2: Point along path between Cal Poly and the City's WRRF, and near Santa Rosa/Oak Skate Park (J07-83);
- Key Location 3: Point along path between Cal Poly and the City's WRRF, Carmel Street and Marsh Street (J10-34);
- Key Location 4: Point along path between Cal Poly and the City's WRRF, near Bridge Street and Higuera Street (J12-11);
- Key Location 5: Final node before City's WRRF (I15-9).

5.3 Wastewater Flows Used in City Wastewater Collection System Analysis

Table 19 summarizes the projected and estimated Cal Poly ADWF, PDWF, and PWWF used in the SewerCAD analysis of the City's wastewater collection system at the analysis years of 2015, 2020, 2025, 2030, and 2035. As discussed in Sections 4.10, 4.11, and 4.12, the average WRF treatment capacity is subtracted as appropriate for the likely and worst-case scenarios of the WRF to estimate total Cal Poly flows into the City's wastewater collection system. Note that this approach does not account for the possibility of the WRF to treat a certain level of peak flows above average annual wastewater flows.

These flows replace pattern loads in the original models (listed in Table 20 and Table 21 above), so that the total Cal Poly flow modeled in SewerCAD exactly equals the wastewater flows listed in Table 19. Note that the only model input data changed for this analysis is the City of Cal Poly's Base Sanitary and Inflow flow values at Node J05-7, which represents the Cal Poly sewer metering location near Spanos Stadium and just upstream of Cal Poly's discharge into the City's wastewater collection system at Node J06-2.

ADWF modeling runs are developed by duplicating the City's ADWF_Current and ADWF_BO and renaming them to follow the naming convention developed for this project described in Section 5.4. PDWF modeling runs are developed similarly to the ADWF modeling runs. PWWF modeling runs are developed by duplicating a scenario based on the "Static Water Infiltration and Inflow" alternative used in the City's SewerCAD model for the PWWF scenarios. This alternative is renamed "Cal Poly PWWF", and the Inflow (Additional I/I) for Manhole J05-7 is changed from 2,533,136 to 1,568,944 (1.569 MGD/1,078 GPM) and incorporated into the PDWF runs. This I/I alternative is used for all runs using the PWWF flow condition.

5.4 City Wastewater Collection System Analysis Modeling Scenarios

A range of modeling scenarios is analyzed, including various City and Cal Poly flows under various conditions, including: ADWF, PDWF, and PWWF. The following 30 modeling runs encompassing various timeframes and flow scenarios were evaluated:

a. **Runs 1 – 3:** ADWF, PDWF, and PWWF for Baseline (2015) City and 2015 Cal Poly flows;
b. **Runs 4 – 6:** ADWF, PDWF, and PWWF for Baseline (2015) City flows and 2020 Cal Poly flows;
c. **Runs 7 – 9:** ADWF, PDWF, and PWWF for Baseline (2015) City flows and 2025 Cal Poly flows with likely case scenario WRF flows;
d. **Runs 10 – 12:** ADWF, PDWF, and PWWF for Baseline (2015) City flows and 2025 Cal Poly flows with worst case scenario WRF flows;
e. **Runs 13 – 15:** ADWF, PDWF, and PWWF for Baseline (2015) City flows and Cal Poly flows of 0.471 MGD, 1.2 MGD, and 2.769 MGD (1.2 MGD + I/I of 1.569 MGD) for ADWF, PDWF, and PWWF, respectively;
f. **Runs 16 – 18:** ADWF, PDWF, and PWWF for 2035 City flows and 2025 Cal Poly flows with likely case scenario WRF flows;
g. **Runs 19 – 21:** ADWF, PDWF, and PWWF for 2035 City flows and 2025 Cal Poly flows with worst case scenario WRF flows;
h. **Runs 22 – 24:** ADWF, PDWF, and PWWF for 2035 City and 2030 Cal Poly flows;
i. **Runs 25 – 27:** ADWF, PDWF, and PWWF for 2035 City flows and 2035 Cal Poly flows;
j. **Runs 28 – 30:** ADWF, PDWF, and PWWF for 2035 City flows and Cal Poly flows of 0.471 MGD, 1.2MGD, and 2.769 MGD (1.2 MGD + I/I of 1.569 MGD) for ADWF, PDWF, and PWWF, respectively.

Table 22 provides an overview of the model names, run numbers, Cal Poly flow years or amount, and City flow years. Model input and output from each of these 30 runs is included in Appendix C.

This page intentionally left blank.

Table 22: City's SewerCAD Modeling Runs and Names

		Cal Poly Wastewater Flows Year or Amount									City Wastewater Flows Year		City Wastewater Flow Condition		
Model Run Number	**Model Name**	**2015 (Baseline)**	**0.471 MGD**	**1.2 MGD**	**2.769 MGD**	**2020**	**2025 Likely WRF**	**2025 Worst-Case WRF**	**2030**	**2035**	**Current (2015)**	**BO (2035)**	**ADWF**	**PDWF**	**PWWF**
1	CP2015-City2015-ADWF	●									●		●		
2	CP2015-City2015-PDWF	●									●			●	
3	CP2015-City2015-PWWF	●									●				●
4	CP2020-City2015-ADWF					●					●		●		
5	CP2020-City2015-PDWF					●					●			●	
6	CP2020-City2015-PWWF					●					●				●
7	CP2025LIKELY-City2015-ADWF						●				●		●		
8	CP2025LIKELY-City2015-PDWF						●				●			●	
9	CP2025LIKELY-City2015-PWWF						●				●				●
10	CP2025WORST-City2015-ADWF							●			●		●		
11	CP2025WORST-City2015-PDWF							●			●			●	
12	CP2025WORST-City2015-PWWF							●			●				●
13	CP0.471MGD-City2015-ADWF		●								●		●		
14	CP1.2MGD-City2015-PDWF			●							●			●	
15	CP2.769MGD-City2015-PWWF				●						●				●
16	CP2025LIKELY-City2035-ADWF						●					●	●		
17	CP2025LIKELY-City2035-PDWF						●					●		●	

		Cal Poly Wastewater Flows Year or Amount									City Wastewater Flows Year		City Wastewater Flow Condition		
Model Run Number	**Model Name**	**2015 (Baseline)**	**0.471 MGD**	**1.2 MGD**	**2.769 MGD**	**2020**	**2025 Likely WRF**	**2025 Worst-Case WRF**	**2030**	**2035**	**Current (2015)**	**BO (2035)**	**ADWF**	**PDWF**	**PWWF**
18	CP2025LIKELY-City2035-PWWF						●					●			●
19	CP2025WORST-City2035-ADWF							●				●	●		
20	CP2025WORST-City2035-PDWF							●				●		●	
21	CP2025WORST-City2035-PWWF							●				●			●
22	CP2030-City2035-ADWF								●			●	●		
23	CP2030-City2035-PDWF								●			●		●	
24	CP2030-City2035-PWWF								●			●			●
25	CP2035-City2035-ADWF									●		●	●		
26	CP2035-City2035-PDWF									●		●		●	
27	CP2035-City2035-PWWF									●		●			●
28	CP0.471MGD-City2035-ADWF		●									●	●		
29	CP1.2MGD-City2035-PDWF			●								●		●	
30	CP2.769MGD-City2035-PWWF				●							●			●

5.5 City Wastewater Collection System Analysis Modeling Results

SewerCAD input and output data is included in the series of tables in Appendix C for all nodes/links in the main lines between Cal Poly's point-of-connection and the City's WRRF. This includes 3.8 miles of vitrified clay pipe (VCP) and polyvinyl chloride (PVC) pipelines ranging in size from 10 to 48 inches. Hydraulic grade line (HGL) plots from Cal Poly's connection to the City's system through 3.8 miles of VCP and PVC pipelines ranging in size from 10 to 48 inches to the City's WRRF are included in the figures in Appendix D.

As shown in these HGL plots and detailed results in Appendix C and D, all HGL results are below natural ground in baseline City and Cal Poly 2015 conditions and remain below natural ground in all conditions for ADWF and PDWF flows. All PWWF scenarios show areas with existing severe capacity constraints (bottlenecks) as demonstrated by HGLs that spike above natural ground near:

1. Key Location 1: near Cal Poly's connection to the City's system (J06-2) just downstream of Cal Poly's sewer metering location near Spanos Stadium;
2. Key Location 3: near Carmel Street and Marsh Street (J10-34);
3. Key Location 4: near Bridge Street and Higuera Street (J12-11);
4. Key Location 5: Final node before City's WRRF (I15-9).

While existing and exacerbated capacity constraints are captured in the key location reporting tables in the following sections, the HGL graphs in Appendix D illustrate the full extent of capacity issues as selected key locations may not capture the exact point of constrictions in the City's wastewater collection system. In reviewing the detailed results, it appears that the bottle necking is likely caused by individual pipe segments of lower diameter.

For Key Location 1, the eight-inch sanitary sewer leaving Cal Poly does not have capacity for Cal Poly PWWF scenario flows. Pipe ID 3667 (second bottleneck), approximately 2,000 feet upstream of Key Location 3, is only 12 inches in diameter, but both upstream and downstream pipes are 30 inches in diameter. Additionally, Pipe 3447 (third bottle neck) between Key Location 4 and 5 is 21 inches in diameter, but both upstream and downstream and downstream pipes are 36 inches. For Key Location 5, the final three sanitary sewer segments just upstream of the City WRRF are 30 inches in diameter, while upstream pipes are 48 inches in diameter. While the HGL is below natural ground, it nearly exceeds natural ground for PWWF conditions.

Table 23 summarizes available capacity at five key points within the City's wastewater collection system as described in Section 5.3. Capacity issues are shown at Key Location 1 for PDWF and PWWF and at Key Location 5 for all flow conditions. Note that Key Locations 2 through 4 do not exactly align with locations of HGL spikes and pipe bottlenecks identified in the HGL graphs in Appendix D. Additionally, modifications required to troubleshoot and run the SewerCAD model may affect results.

Page intentional left blank.

Table 23: Summary of SewerCAD Modeling and Capacity Results At Five Key Locations In City Wastewater Collection System

Model Run Number	Model Name	Wastewater Flows Year/Value		Flow Values (GPD)		Flow Condition	Key Location 1 - J06-2		Key Location 2 - J07-83		Key Location 3 - J10-34		Key Location 4 - J12-11		Key Location 5 - I15-9	
		Cal Poly	City	Cal Poly	City		Available Capacity (gpd)	HGL Distance Beneath Ground (ft)	Available Capacity	HGL Distance Beneath Ground (ft)	Available Capacity	HGL Distance Beneath Ground (ft)	Available Capacity	HGL Distance Beneath Ground (ft)	Available Capacity	HGL Distance Beneath Ground (ft)
1	City_ADWF_2015 CP_2015	2015	2015	284,482	9,558,008	ADWF	520,677	5.24	7,403,680	12.43	29,035,516	8.99	33,116,148	12.61	-7,228,896	4.69
2	City_PDWF_2015 CP_2015	2015	2015	739,653	11,391,394	PDWF	65,506	5.05	6,756,872	12.26	27,718,716	8.68	31,572,964	12.39	-9,513,044	4.54
3	City_PWWF_2015 CP_2015	2015	2015	2,308,597	35,972,576	PWWF	-1,560,362	4.54	2,552,493	11.59	14,232,470	6.54	13,325,083	5.56	-35,638,454	2.77
4	City_ADWF_2015 CP_2020	2020	2015	289,294	9,558,008	ADWF	515,865	5.24	7,398,868	12.43	29,030,704	8.99	33,111,336	12.61	-7,233,708	4.69
5	City_PDWF_2015 CP_2020	2020	2015	752,163	11,391,394	PDWF	52,996	5.05	6,744,362	12.26	27,706,206	8.67	31,560,454	12.38	-9,525,554	4.54
6	City_PWWF_2015 CP_2020	2020	2015	2,321,107	35,972,576	PWWF	-1,572,872	4.54	2,539,983	11.59	14,219,960	6.54	13,312,573	5.55	-35,650,964	2.77
7	City_ADWF_2015 CP_2025_Likely	2025_Likely	2015	293,268	9,558,008	ADWF	511,891	5.24	7,394,894	12.43	29,026,730	8.99	33,107,362	12.61	-7,237,683	4.69
8	City_PDWF_2015 CP_2025_Likely	2025_Likely	2015	1,033,889	11,391,394	PDWF	-228,730	4.96	6,462,636	12.20	27,424,480	8.62	31,278,728	12.36	-9,807,279	4.52
9	City_PWWF_2015 CP_2025_Likely	2025_Likely	2015	2,602,833	35,972,578	PWWF	-1,854,598	4.42	2,258,257	11.56	13,938,235	6.49	13,030,847	5.29	-35,932,689	2.74
10	City_ADWF_2015 CP_2025_Worst	2025_Worst	2015	462,889	9,558,008	ADWF	342,270	5.16	7,225,273	12.38	28,857,109	8.94	32,937,741	12.59	-7,407,304	4.68
11	City_PDWF_2015 CP_2025_Worst	2025_Worst	2015	1,203,510	11,391,395	PDWF	-398,351	4.92	6,293,015	12.17	27,254,859	8.59	31,109,107	12.34	-9,976,900	4.51
12	City_PWWF_2015 CP_2025_Worst	2025_Worst	2015	2,772,454	35,972,576	PWWF	-2,024,220	4.32	2,088,637	11.55	13,768,613	6.46	12,861,226	5.13	-36,102,311	2.72
13	City_ADWF_2015 CP_0.471 MGD	0.471 MGD	2015	471,000	9,558,008	ADWF	334,159	5.15	7,217,162	12.38	28,848,998	8.94	32,929,630	12.59	-7,415,415	4.68
14	City_PDWF_2015 CP_1.2 MGD	1.2 MGD	2015	1,200,000	11,391,394	PDWF	-394,841	4.92	6,296,525	12.17	27,258,369	8.59	31,112,617	12.34	-9,973,390	4.51
15	City_PWWF_2015 CP_1.2 MGD	1.2 MGD	2015	2,768,944	35,972,578	PWWF	-2,020,710	4.32	2,092,146	11.55	13,772,124	6.46	12,864,737	5.14	-36,098,800	2.72
16	City_ADWF_2035 CP_2025_Likely	2025_Likely	2035	293,268	10,017,361	ADWF	456,891	5.21	7,334,557	12.41	28,848,055	8.94	32,889,944	12.56	-7,697,035	4.66
17	City_PDWF_2035 CP_2025_Likely	2025_Likely	2035	1,033,889	12,278,404	PDWF	-334,935	4.93	6,346,126	12.18	27,079,459	8.56	30,858,894	12.29	-10,694,290	4.47
18	City_PWWF_2035 CP_2025_Likely	2025_Likely	2035	2,602,833	36,859,587	PWWF	-1,960,803	4.36	2,141,747	11.55	13,544,484	6.42	12,562,283	4.57	-36,819,701	2.64
19	City_ADWF_2035 CP_2025_Worst	2025_Worst	2035	462,889	10,017,361	ADWF	59,407	5.13	7,164,936	12.36	28,678,434	8.88	32,720,323	12.54	-7,866,656	4.65
20	City_PDWF_2035 CP_2025_Worst	2025_Worst	2035	1,203,510	12,278,405	PDWF	-732,419	4.89	6,176,505	12.15	26,909,838	8.53	30,689,273	12.28	-10,863,911	4.46
21	City_PWWF_2035 CP_2025_Worst	2025_Worst	2035	2,772,454	36,859,588	PWWF	-2,358,287	4.19	1,972,126	11.54	13,374,862	6.39	12,392,662	4.41	-36,989,320	2.62
22	City_ADWF_2035 CP_2030	2030	2035	235,641	10,017,361	ADWF	286,655	5.24	7,392,184	12.42	28,905,682	8.96	32,947,571	12.57	-7,639,409	4.67
23	City_PDWF_2035 CP_2030	2030	2035	1,155,454	12,278,405	PDWF	-684,363	4.90	6,224,561	12.16	26,957,894	8.54	30,737,329	12.28	-10,815,855	4.46
24	City_PWWF_2035 CP_2030	2030	2035	2,724,398	36,859,586	PWWF	-2,310,231	4.24	2,020,182	11.54	13,422,919	6.40	12,440,717	4.46	-36,941,265	2.63
25	City_ADWF_2035 CP_2035	2035	2035	375,464	10,017,361	ADWF	146,832	5.17	7,252,361	12.38	28,765,859	8.90	32,807,748	12.55	-7,779,232	4.66

Model Run Number	Model Name	Wastewater Flows Year/Value		Flow Values (GPD)		Flow Condition	Key Location 1 - J06-2		Key Location 2 - J07-83		Key Location 3 - J10-34		Key Location 4 - J12-11		Key Location 5 - I15-9	
		Cal Poly	City	Cal Poly	City		Available Capacity (gpd)	HGL Distance Beneath Ground (ft)	Available Capacity	HGL Distance Beneath Ground (ft)	Available Capacity	HGL Distance Beneath Ground (ft)	Available Capacity	HGL Distance Beneath Ground (ft)	Available Capacity	HGL Distance Beneath Ground (ft)
26	City_PDWF_2035 CP_2035	2035	2035	1,518,994	12,278,404	PDWF	-1,047,903	4.81	5,861,021	12.10	26,594,354	8.47	30,373,789	12.25	-11,179,395	4.44
27	City_PWWF_2035 CP_2035	2035	2035	3,087,938	36,859,587	PWWF	-2,673,771	3.90	1,656,642	11.51	13,059,379	6.34	12,077,178	4.33	-37,304,806	2.59
28	City_ADWF_2035 CP_0.471 MGD	0.471 MGD	2035	471,000	10,017,362	ADWF	51,296	5.13	7,156,825	12.36	28,670,323	8.88	32,712,212	12.54	-7,874,767	4.65
29	City_PDWF_2035 CP_1.2 MGD	1.2 MGD	2035	1,200,000	12,278,404	PDWF	-501,046	4.89	6,180,015	12.15	26,913,348	8.53	30,692,783	12.28	-10,860,401	4.46
30	City_PWWF_2035 CP_1.2 MGD	1.2 MGD	2035	2,768,944	36,859,587	PWWF	-2,354,777	4.20	1,975,636	11.54	13,378,373	6.39	12,396,170	4.41	-36,985,812	2.62

Due to development of the *2035 Master Plan* and accounting for average WRF treatment capacity, for all flow conditions modeled, Cal Poly flows increase as follows:

1. The ADWF for Cal Poly increased from 284,482 GPD in 2015 to 375,464 GPD in 2035, or an increase of 31% over the 20-year period.
2. The PDWF increased from 739,653 GPD in 2015 to 1,518,994 GPD in 2035. This represents a 105% increase in the 20-year period.
3. The PWWF increased from 2,308,597 GPD in 2015 to 3,087,938 GPD in 2035. This represents a 33% increase in the 20-year period.
4. The ADWF for the City at Cal Poly's point-of-connection to the City's system increased from 9,558,008 GPD in 2015 to 10,017,362 GPD in 2035. This represents a 5% increase in the 20-year period.
5. The PDWF for the City at Cal Poly's point-of-connection to the City's system increased from 11,391,394 GPD in 2015 to 12,278,404 GPD in 2035. This represents a 7% increase in the 20-year period.
6. The PWWF for the City at Cal Poly's point-of-connection to the City's system increased from 35,972,576 GPD in 2015 to 36,859,587 GPD in 2035. This represents a 2% increase in the 20-year period.

Table 24 and Table 25 below shows changes in HGL elevation and capacity due to development of the *2035 Master Plan*, respectively, as under the City 2015 and City 2035 conditions. Values in red highlight indicate that the HGL elevation is above the top of pipe in Table 244, and that the flows exceed the pipe capacity calculated by SewerCAD in Table 25.

Table 24: HGL Elevation Changes between Similar Flow Conditions

Scenarios Compared (City:Cal Poly)	Increase in HGL Under City 2015 Conditions (gpd)				
	Key Location 1	Key Location 2	Key Location 3	Key Location 4	Key Location 5
	Increase in HGL Under City 2015 Conditions (gpd)				
ADWF 2015 to 2020	0.00	0.00	0.00	0.00	0.00
ADWF 2015 to 2025 Likely Case	0.00	0.00	0.00	0.00	0.00
ADWF 2015 to 2025 Worst Case	0.08	0.05	0.05	0.02	0.00
PDWF 2015 to 2020	0.00	0.00	0.01	0.01	0.00
PDWF 2015 to 2025 Likely Case	0.09	0.06	0.06	0.03	0.02
PDWF 2015 to 2025 Worst Case	0.13	0.09	0.09	0.05	0.03
PWWF 2015 to 2020	0.00	0.00	0.00	0.01	0.00
PWWF 2015 to 2025 Likely Case	0.12	0.03	0.05	0.27	0.03

Scenarios Compared (City:Cal Poly)	Increase in HGL Under City 2015 Conditions (gpd)				
	Key Location 1	Key Location 2	Key Location 3	Key Location 4	Key Location 5
PWWF 2015 to 2025 Worst Case	0.22	0.04	0.08	0.43	0.05
	Increase in HGL Under City 2035 Conditions (gpd)				
ADWF 2025 Likely Case to 2025 Worst Case	0.08	0.05	0.06	0.02	0.01
ADWF 2025 Likely Case to 2030	-0.03	-0.01	-0.02	-0.01	-0.01
ADWF 2025 Likely Case to 2035	0.04	0.03	0.04	0.01	0.00
PDWF 2025 Likely Case to 2025 Worst Case	0.04	0.03	0.03	0.01	0.01
PDWF 2025 Likely Case to 2030	0.03	0.02	0.02	0.01	0.01
PDWF 2025 Likely Case to 2035	0.12	0.08	0.09	0.04	0.03
PWWF 2025 Likely Case to 2025 Worst Case	0.17	0.01	0.03	0.16	0.02
PWWF 2025 Likely Case to 2030	0.12	0.01	0.02	0.11	0.01
PWWF 2025 Likely Case to 2035	0.46	0.04	0.08	0.24	0.05
	Increase in HGL at 0.471 and 1.2 MGD Cal Poly Flows for City 2015 Conditions and City 2035 Conditions (gpd)				
0.471 MGD Flows as ADWF 2015 to 2035	0.02	0.02	0.06	0.05	0.03
1.2 MGD Flows as PDWF 2015 to 2035	0.03	0.02	0.06	0.06	0.05
1.2 MGD Flows as PWWF 2015 to 2035	0.12	0.01	0.07	0.73	0.10

Table 25: Capacity Changes between Similar Flow Conditions

Scenarios Compared (City:Cal Poly)	Decrease in Available Capacity Under City 2015 Conditions (gpd)				
	Key Location 1	Key Location 2	Key Location 3	Key Location 4	Key Location 5
	Decrease in Capacity Under City 2015 Conditions (gpd)				
ADWF 2015 to 2020	4,812	4,812	4,812	4,812	4,812
ADWF 2015 to 2025 Likely Case	8,786	8,786	8,786	8,786	8,787
ADWF 2015 to 2025 Worst Case	178,407	178,407	178,407	178,407	178,408

Scenarios Compared (City:Cal Poly)	Decrease in Available Capacity Under City 2015 Conditions (gpd)				
	Key Location 1	Key Location 2	Key Location 3	Key Location 4	Key Location 5
PDWF 2015 to 2020	12,510	12,510	12,510	12,510	12,510
PDWF 2015 to 2025 Likely Case	294,236	294,236	294,236	294,236	294,235
PDWF 2015 to 2025 Worst Case	463,857	463,857	463,857	463,857	463,856
PWWF 2015 to 2020	12,510	12,510	12,510	12,510	12,510
PWWF 2015 to 2025 Likely Case	294,236	294,236	294,235	294,236	294,235
PWWF 2015 to 2025 Worst Case	463,858	463,856	463,857	463,857	463,857
	Decrease in Capacity Under City 2035 Conditions (gpd)				
ADWF 2025 Likely Case to 2025 Worst Case	397,484	169,621	169,621	169,621	169,621
ADWF 2025 Likely Case to 2030	170,236	-57,627	-57,627	-57,627	-57,626
ADWF 2025 Likely Case to 2035	310,059	82,196	82,196	82,196	82,197
PDWF 2025 Likely Case to 2025 Worst Case	397,484	169,621	169,621	169,621	169,621
PDWF 2025 Likely Case to 2030	349,428	121,565	121,565	121,565	121,565
PDWF 2025 Likely Case to 2035	712,968	485,105	485,105	485,105	485,105
PWWF 2025 Likely Case to 2025 Worst Case	397,484	169,621	169,622	169,621	169,619
PWWF 2025 Likely Case to 2030	349,428	121,565	121,565	121,566	121,564
PWWF 2025 Likely Case to 2035	712,968	485,105	485,105	485,105	485,105
	Decrease in Capacity at 0.471 and 1.2 MGD Cal Poly Flows for City 2015 Conditions and City 2035 Conditions (gpd)				
0.471 MGD Flows as ADWF 2015 to 2035	282,863	60,337	178,675	217,418	459,352
1.2 MGD Flows as PDWF 2015 to 2035	106,205	116,510	345,021	419,834	887,011
1.2 MGD Flows as PWWF 2015 to 2035	334,067	116,510	393,751	468,567	887,012

6. Conclusions and Recommendations

The Cal Poly *2035 Master Plan* uses year 2015 as the baseline year to identify existing conditions. The year 2015 roughly corresponds with the completion of the previous master plan effort and represents when the *2001 Master Plan* projects are generally completed or have been programed into capital improvements. Due to drought conditions and sensitivity to obtaining additional water needs, Cal Poly proposes an on-campus WRF as a near-term project to treat wastewater, which will also serve to provide reuse water for agricultural irrigation purposes. Cal Poly will receive up to 959 AFY (Whale Rock water right) via the City's potable water conveyance system to the main campus instead of a portion being conveyed through the non-potable (raw water) system for agricultural purposes. The WRF will provide approximately 380 AFY of recycled water meeting agricultural and landscape irrigation needs.

The WRF will most likely be brought online in two phases; as a result, the analysis compares the baseline year (2015) with two scenarios depending on when the WRF goes online. The first phase of the WRF would likely have 190 AFY (169,621 GPD) and come online in 2022 or under worst-case scenario in 2026. The second phase of the WRF is assumed to be online in 2028 and brings the total capacity to 380 AFY (339,242 GPD) for both scenarios. For downstream City wastewater collection capacity, the available capacity within the City's system is also considered. Below is a summary of conclusions and recommendations related to wastewater flows and potential for impacts due to development within Cal Poly through completion of the *2035 Master Plan*:

1. **Total Cal Poly Annual Average Wastewater Flows:** Total Cal Poly annual average wastewater flows range from 194,216 GPD in 2020 to 478,066 GPD in 2035 representing a 144% increase over the 2015 baseline conditions at full buildout of the *2035 Master Plan*.

2. **Wastewater Treatment Capacity Without WRF:** While not anticipated or likely even feasible, if proposed projects were operational prior to the first phase WRF coming online in any year, Cal Poly's annual average wastewater treatment capacity would not be adequate per agreements with the City. Under any scenario where the WRF is delayed beyond 2022, planned residential and non-residential buildings would need to be delayed until the WRF is online.

   Due to water conservation savings and reallocation of flows from off-campus properties, Cal Poly's 2020 flows are 3,341 GPD less than baseline conditions and thus Cal Poly's current capacity at the City's WRRF is adequate to serve the 2020 analysis year without any additional new residential or non-residential buildings.

3. **Wastewater Treatment Capacity With Likely Scenario of WRF:** As a *2035 Master Plan* element projected to be online or operational in 2022 under the likely scenario, the WRF provides adequate capacity to treat proposed additional wastewater flows from Cal Poly while maintaining wastewater discharges into the City's wastewater collection system at or below 2015 baseline conditions for analysis years 2025, 2030, and 2035. However, the WRF has no effect on Cal Poly's projected 2020 wastewater flows, since it will not be operational until 2022. The first phase of the WRF of 190 AFY (169,621 GPD) provides adequate wastewater treatment capacity to treat proposed additional annual average wastewater flow through 2027 until the second phase of the WRF is online in 2028 for a total capacity of 380 AFY (339,242 GPD). Adequate annual average

wastewater treatment capacity will be available for all residential and non-residential projects as scheduled.

Annual average wastewater flows from Cal Poly to the City's wastewater collection system decrease from a 2015 baseline of 197,557 GPD to 138,824 GPD at full *2035 Master Plan* buildout in 2035 in both the likely and worst-case WRF scenarios, assuming all reclaimed water treated by the WRF is used for on-campus irrigation, replacing or supplementing the non-potable water supplied under the existing 2015 conditions. Under the likely scenario of the WRF, Cal Poly's annual average wastewater flows into the City's system are reduced by 65,090 GPD, 156,385 GPD, and 58,733 GPD for analysis years 2025, 2030, and 2035, respectively. This excess capacity in interim analysis years provides greater flexibility if funding is made available to bring proposed residential and non-residential buildings online sooner than anticipated in the phasing used for this analysis.

3. **Wastewater Treatment Capacity With Worst-Case Scenario of WRF:** The only identified difference between the likely and worst-case scenario related to wastewater flows into the Cal Poly collection system is that in 2025, the likely scenario reduces flows into the Cal Poly wastewater collection system by 65,710 GPD whereas the worst-case scenario increases flows into the Cal Poly wastewater collection system by 104,531 GPD. Under the worst-case scenario or any scenario where the WRF is delayed beyond 2022, planned residential and non-residential buildings would need to be delayed until the first 190 AFY (169,621 GPD) phase of the WRF is online in order to avoid increasing annual average wastewater flows as compared to 2015 baseline conditions.
4. **Wastewater Treatment Capacity for Slack and Grand Residential Neighborhood:** With the WRF online, Cal Poly has adequate annual average wastewater treatment capacity for the Slack and Grand Residential Neighborhood, which is projected to contribute an annual average wastewater flow of 33,278 GPD in 2023. While not anticipated or likely even feasible, if Slack and Grand Residential Neighborhood is online prior to the WRF coming online in 2021, Cal Poly's annual average wastewater treatment capacity would not be adequate.
5. **Impacts to City's WRRF:** Potential for impacts to the City's WRRF related to average annual wastewater flows from Cal Poly to the City's wastewater collection system are consistent with likely scenario and worst-case scenario wastewater treatment capacity discussed under items two through four above. In years with significant reductions of annual average wastewater flow into the City's wastewater collection system, Cal Poly may need to operate the WRF in a manner to continue returning untreated or treated wastewater flows to the City's wastewater collection system and WRRF. We recommend Cal Poly coordinate with the City regarding minimum discharge from Cal Poly into the City's wastewater collection system given that once the WRF is online, discharges from Cal Poly are reduced by more than 30% from the baseline flow of 197,557 GPD in all analysis years and by 156,385 GPD, or 79% in 2030.
6. **City Conveyance Capacity under ADWF:** Based on the results of the SewerCAD modeling, there is adequate City wastewater conveyance capacity under ADWF for all Cal Poly flow conditions modeled to maintain HGLs below natural ground (Appendix D). Capacity issues are noted in 2015 baseline conditions and all modeled years for

ADWF at Key Location 5 near the City's WRRF with or without the WRF. Cal Poly's ADWF is estimated to increase by 31 % from 284,482 GPD in 2015 to 375,464 GPD in 2035. The ADWF for the City at Cal Poly's point-of-connection is shown to increase by 5% from 9,558,008 GPD in 2015 to 10,017,362 GPD in 2035. Cal Poly's baseline 2015 ADWF is 3% of the total ADWF and 3.7% of the total ADWF in 2035 at Cal Poly's point-of-connection to the City's system. If improvements are determined to be required by the City near Key Location 5 to avoid sanitary sewer overflows in peak conditions, Cal Poly's cost share or increased rates should be based on Cal Poly's percent of overall ADWF at the actual location of the repairs rather than at Cal Poly's point-of-connection.

7. **City Conveyance Capacity under PDWF:** Based on the results of the SewerCAD modeling, HGLs remain below ground for all conditions modeled for the flow path between Cal Poly's point-of-connection at the Parshall Flume to the City WRRF. However, Table 23 indicates capacity issues at Key Location 1 starting in 2025 with or without the WRF and at Key Location 5 (similar to ADWF). Additional capacity issues are identified at Key Location 1 starting in 2025 with or without the WRF and at both City 2015 and 2035 flow conditions. Cal Poly's PDWF is estimated to increase by 105 % from 739,653 GPD in 2015 to 1,518,994 GPD in 2035. The PDWF for the City is shown to increase by 7% from 11,391,394 GPD in 2015 to 12,278,404 GPD in 2035. Cal Poly's baseline 2015 PDWF is 6.0% of the total PDWF of 12.13 MGD and 11.0% of the total PDWF of 13.80 MGD in 2035.

   If improvements are determined to be required by the City near Key Location 1 to avoid sanitary sewer overflows in peak conditions, Cal Poly's cost share or increased rates should be limited. For improvements further downstream or near Key Location 5, Cal Poly's cost share or rate increase should be based on Cal Poly's percent of overall PDWF at the actual location of the repairs rather than at Cal Poly's point-of-connection.

8. **City Conveyance Capacity under PWWF:** Based on the results of the SewerCAD modeling, HGLs (Appendix D) spike above ground at four locations for all PWWF modeling runs. Table 23 also indicates capacity issues at Key Locations 1 and 5 for all PWWF modeling runs. Additional capacity issues likely exist at the other two bottleneck locations discussed in Section 5.4. Cal Poly's PDWF is estimated to increase by 33 % from 2.31 MGD in 2015 to 3.09 MGD in 2035. The PDWF for the City is shown to increase by 7% from 35.97 MGD in 2015 to 36.86 MGD in 2035. Cal Poly's baseline 2015 PDWF is 6.0% of the total PWWF of 38.28 MGD and 7.7% of the total PWWF of 39.95 MGD in 2035.

   If improvements are determined to be required by the City near Key Location 1 to avoid sanitary sewer overflows in peak conditions, Cal Poly's cost share or increased rates should be limited to no more than 6% to 7.7%. For improvements further downstream or near Key Location 5, Cal Poly's cost share or rate increase should be based on Cal Poly's percent of overall PDWF at the actual location of the repairs rather than at Cal Poly's point-of-connection.

9. **City Capacity Agreement:** Using peaking factors estimated from metered data with an applied safety factor and with the WRF online in either the likely or worst-case scenario, Cal Poly's annual average wastewater flows do not exceed the 0.471 MGD average monthly treatment capacity. However, capacity for conveyance of PWWF appears to be

an issue in 2015 baseline conditions through 2035. Increases in PWWF from Cal Poly due to build-out of the *2035 Master Plan* exacerbates existing capacity issues in peak conditions and the 1.2 MGD transmission capacity is likely to be exceeded as new residential and non-residential buildings are brought online even if there are no historical exceedances. Given that estimated 2015 baseline PWWF exceed the PWWF, even accounting for peak treatment capacity of the WRF will likely still result in additional PWWF capacity issues and the 1.2 MGD transmission capacity being exceeded.

10. **Environmental Impacts of WRF:** Implementation of the WRF does not affect the concentrations of monitored constituents in Cal Poly's untreated wastewater effluent and thus does not impact the City's WRRF. For wastewater treated by tertiary treatment (membrane filtration and UV disinfection) by the WRF, the effluent will be significantly cleaner and, other than TTO (unless specifically targeted or RO is used), all constituents will be below Cal Poly's permitted concentration limits.

    Since this reclaimed wastewater will primarily be used for agricultural irrigation on campus as opposed to discharging to the City's wastewater collection and treatment system, much of this cleaner effluent will not enter the City's wastewater collection system nor is it intended to be discharged to local streams. Depending on associated infrastructure being in place, implementation of the WRF does provide opportunities for operational flexibility and mixing of tertiary treated wastewater with Cal Poly's raw wastewater effluent if needed to return lower levels of monitored constituents to the City's WRRF.

11. **Inflow & Infiltration (I/I):** Existing I/I of 1,568,944 GPD (1,089 GPM) is accounted for in the 2015 baseline PWWF and the projected PWWF for the analysis periods between 2020 and 2035. We understand that the *Cal Poly Utility Master Plan* is anticipated to include CIP projects targeted to reduce I/I into Cal Poly's wastewater conveyance system and thus PWWFs. While estimates of I/I reduction are not part of this study, PWWFs are likely to decrease beyond those presented due to future CIP and I/I reduction projects. Without replacement or repair of wastewater collection infrastructure as the Cal Poly system ages, the I/I could worsen over time. However, development of the *2035 Master Plan* will not result in either an increase or a decrease in I/I.

12. **Future WRF Expansion:** The planned 380 AFY (0.34 MGD) WRF is adequate to maintain wastewater flows from Cal Poly into the City's system at or below existing levels once it is online through the full buildout of the *2035 Master Plan*. At the 2035 analysis year, there is a projected excess treatment capacity of 63,831 GPD. While this provides an excess capacity of 13%, it is unlikely to be adequate for significant additional development beyond that included in the *2035 Master Plan*. Additional capacity may also be desired to better buffer peak flows being discharged into the City's wastewater collection system. As such, future expansion of the WRF is an option to provide wastewater treatment capacity for future development (post 2035). Because of the modular nature of package treatment plants, the WRF can be readily expanded if needed in the future provided adjacent land space is available at the time.

13. **Additional Water Conservation:** While Cal Poly has already implemented and plans to progressively implement water conservation measures as part of the *2035 Master Plan* and ongoing sustainability and potable water use reduction measures, we recommend Cal

Poly continue to evaluate opportunities to further apply advanced indoor water conservation measures and process measures to reduce water demands and associated wastewater flows from both residential and non-residential buildings.

6 References

AquaCents Water Management, Inc. (2017). *Stadium injection summary.*

Cal Poly and City Resolution No. 5961 for Share of WWTP. (1986, May 20).

California Polytechnic State University, San Luis Obipso. (2019). *Phasing and Base Line Data for 2035 Master Plan, Revision 10.*

California Polytechnic State University, San Luis Obispo. (a. 2007). *Cal Poly Water and Wastewater Issues Agenda.*

California Polytechnic State University, San Luis Obispo. (n.d.). Internal audit of existing fixture types.

California Water Boards. (n.d.). *Wastewater*. Retrieved February 2019, from California Water Boards: https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/wastewater.html

California Waterboard. (2019). *Water Reclamation Requirements for Recycled Water Use*. Retrieved from California Waterboard: https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/requirements.html

(2007). *Capacity Interest in City of San Luis Obispo Wastewater System Facilities.* City of San Luis Obispo and California Polytehnic State University, San Luis Obispo.

City of San Luis Obispo. (1964). *Agreement for Purchase of Capacity Rights in Water Treatment Facilities.* Board of Trustees of the Californa State Colleges and City of San Luis Obispo.

City of San Luis Obispo. (2004). *Dalido/San Luis Marketplace Annexation and Development Final Enivronmental Impact Report.*

City of San Luis Obispo. (2014). *Water Resource Recovery Facility Draft Facilities Plan.* HDR.

City of San Luis Obispo. (December 2015). *Final Portable Water Distribution System Operations Master Plan.*

(2014). *City of San Luis Obispo Sewer System Management Plan Update.* San Luis Obispo, CA: City of San Luis Obispo.

City of Santa Barbara, Water Resources Division. (2009). *Water Demand Factor Update Report.* Santa Barbara.

Connecticut State Department of Public Health. (2006). *Estimating Wastewater Flows*. Retrieved from https://www.ct.gov/deep/lib/deep/water_regulating_and_discharges/subsurface/2006designmanual/completesec_3.pdf

(2014-2017). *Daily Wastewater Flows, 15 minute increment for Cal Poly.* City of San Luis Obispo.

Hartman Engineering. (2019). *Feasibility Study of Water Supply for Master Plan.* San Luis Obispo, CA.

(2016). *Pre-treatment Permit No. 259-S for Cal Poly.* City of San Luis Obispo.

Public Utilities Department, City of San Luis Obispo. (2018). *Grand Avenue Housing Project Agenda, June 12, 2018.*

Tchobanoglous, G., Burton, F. L., & Metcalf & Eddy. (1991). *Wastewater Engineering: Treatment, Disposal and Reuse* (2nd Revised ed.). New York: McGraw-Hill Education.

United States Environmental Protection Agency. (June, 2014). *Guide for Estimating Infiltration and Inflow.* Water Infrastructure Outreach. Retrieved from https://www3.epa.gov/region1/sso/pdfs/Guide4EstimatingInfiltrationInflow.pdf

University of California Cooperative Extension, San Luis Obispo County. (2019). *San Luis Obispo West, San Luis Obispo*. Retrieved 2019, from http://cesanluisobispo.ucanr.edu/about/weather_189/?weather=station&station=160

US EPA. (2000, September). *Package Plants.* Retrieved 2019, from National Pollutant Discharge Elimination System: https://www3.epa.gov/npdes/pubs/package_plant.pdf

Veium, E. (a. 2018). *Cal Poly Master Plan Water Supply Assessment Technical Memo for Corrected Adjusted 2015 Demands.* California Polytechnic State University, San Luis Obispo.

Watearth, Inc. (2018). *November 16, 2018 Meeting Minutes with Watearth, SWCA Environmental Consultants, and Cal Pol SLO.*

(n.d.). *Water and Wastewater Element, Wastewater Service Section 2.0.* City of San Luis Obispo.

Water Savers, LLC. (2014). *Water Conservation Proposal: Irrigation Scope.*

Water System Consulting, Inc. (December, 2015). *Wastewater Collection System Infrastructure Renewal Strategy for the City of San Luis Obispo.*

7 Exhibits

1 – Vicinity Map

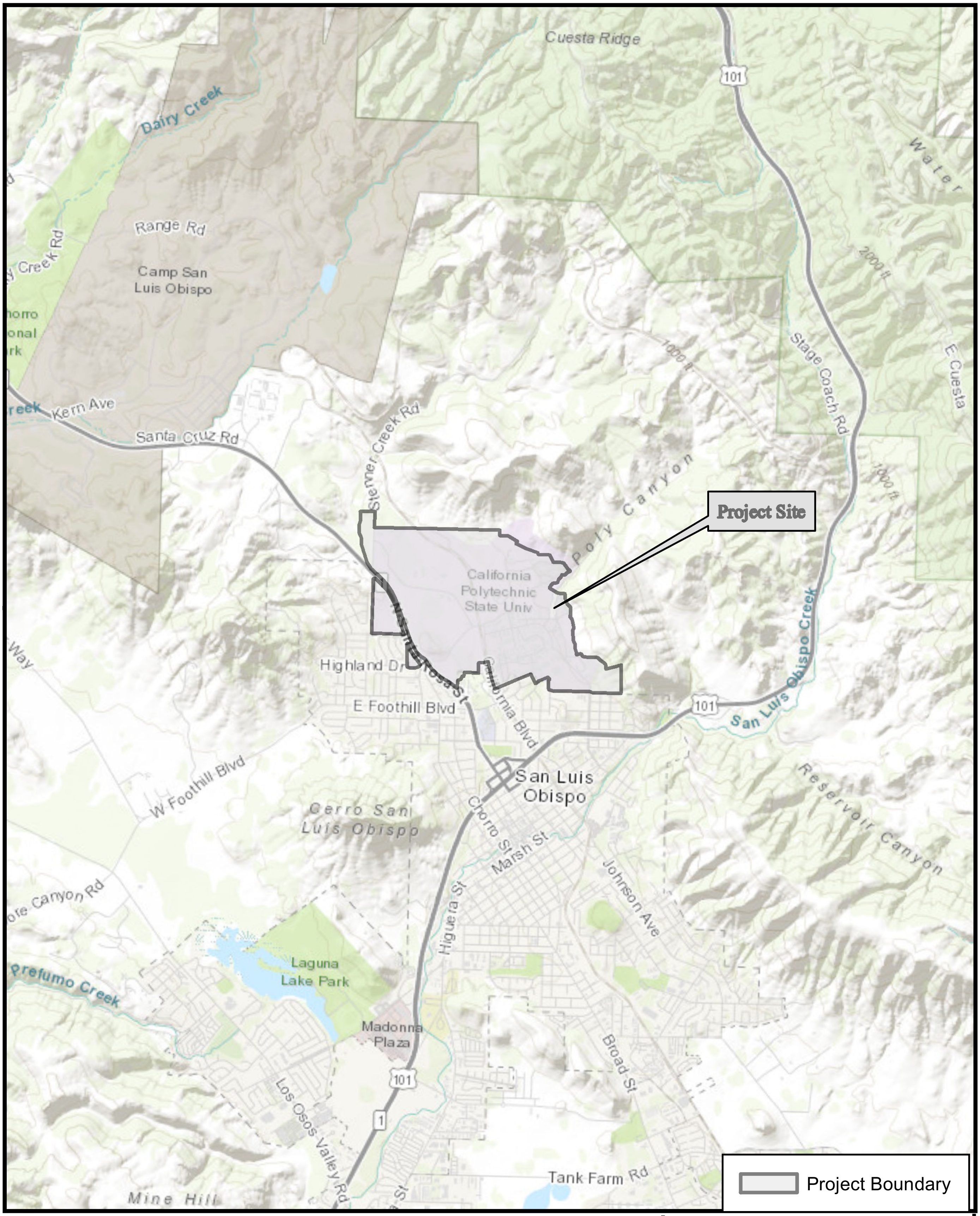
2 – Aerial Photograph

3 – Topographic Map

4 – Cal Poly Campus Wastewater System Map and Connections to City

5 – Existing Land Use

6 – Proposed Land Use



1 " = 5,000 '

0 5,000

Feet

Datum: NAD83
Units: US Feet

CALIFORNIA POLYTECHNIC STATE UNIVERSITY
SAN LUIS OBISPO 2035 MASTER PLAN
WASTEWATER ANALYSIS

VICINITY MAP

Watearth
Water Resources + Green Infrastructure

Date: Aug 13, 2019

Exhibit 1

Sources:
Cal Poly Master Plan Comprehensive, November 2017
The City of San Luis Obispo Open GIS Data, 2018

1 " = 1,500 '
0 1,500
Feet

Datum: NAD83
Units: US Feet

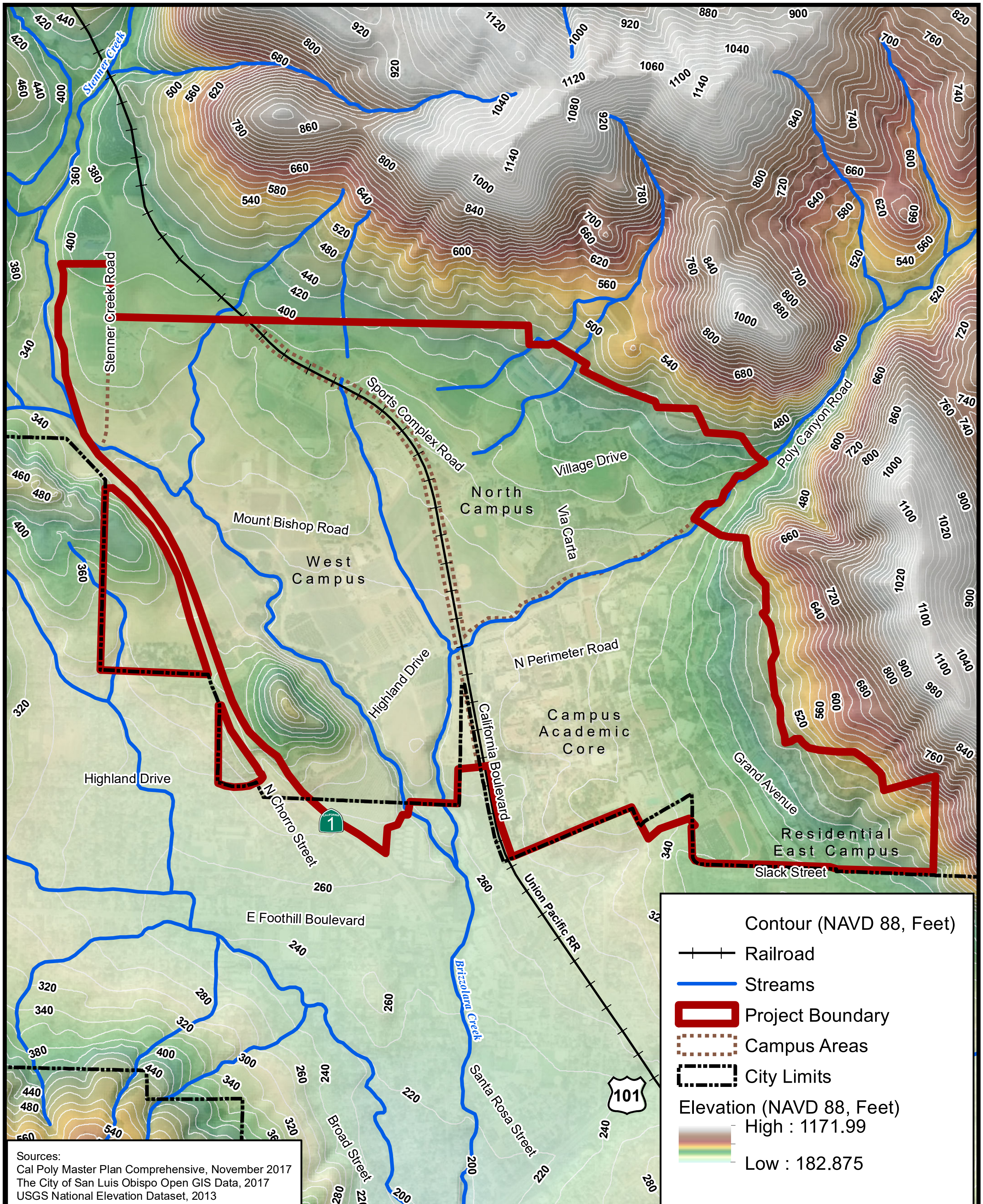
CALIFORNIA POLYTECHNIC STATE UNIVERSITY
SAN LUIS OBISPO 2035 MASTER PLAN
WASTEWATER ANALYSIS

AERIAL MAP

Watearth
Water Resources + Green Infrastructure

Date: Aug 13, 2019

Exhibit 2



Sources:
Cal Poly Master Plan Comprehensive, November 2017
The City of San Luis Obispo Open GIS Data, 2017
USGS National Elevation Dataset, 2013

1 " = 1,500 '
0 1,500
Feet

Datum: NAD83
Units: US Feet

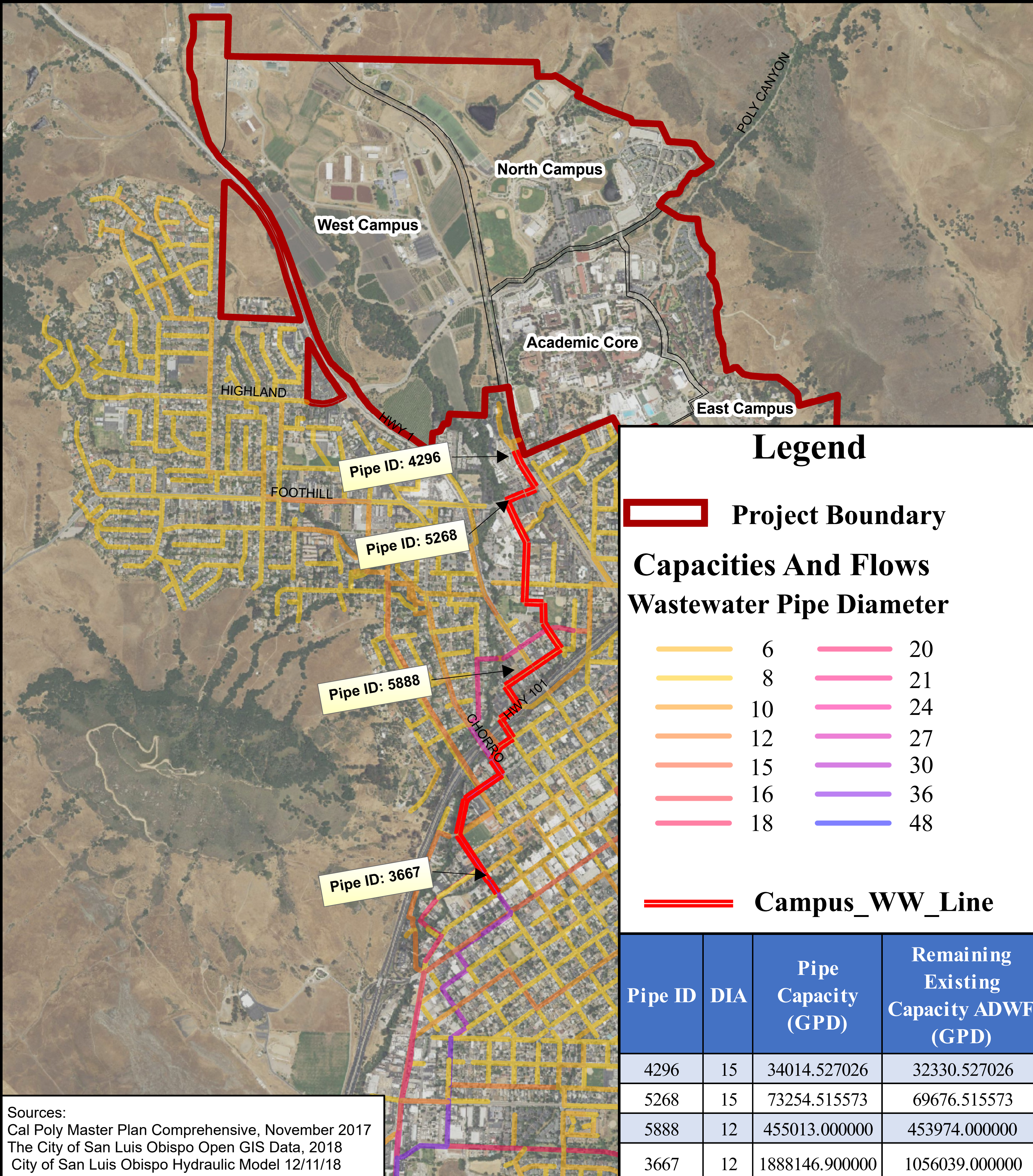
CALIFORNIA POLYTECHNIC STATE UNIVERSITY
SAN LUIS OBISPO 2035 MASTER PLAN
WASTEWATER ANALYSIS

TOPOGRAPHIC MAP

Watearth™
Water Resources + Green Infrastructure

Date: Aug 13, 2019

Exhibit 3

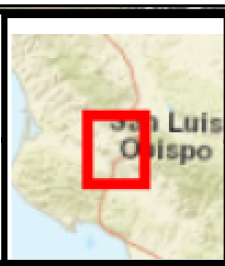


Pipe ID	DIA	Pipe Capacity (GPD)	Remaining Existing Capacity ADWF (GPD)
4296	15	34014.527026	32330.527026
5268	15	73254.515573	69676.515573
5888	12	455013.000000	453974.000000
3667	12	1888146.900000	1056039.000000

Sources:
Cal Poly Master Plan Comprehensive, November 2017
The City of San Luis Obispo Open GIS Data, 2018
City of San Luis Obispo Hydraulic Model 12/11/18

1" = 1500'
0 1,500
Feet

Datum: NAD83
Units: US Feet



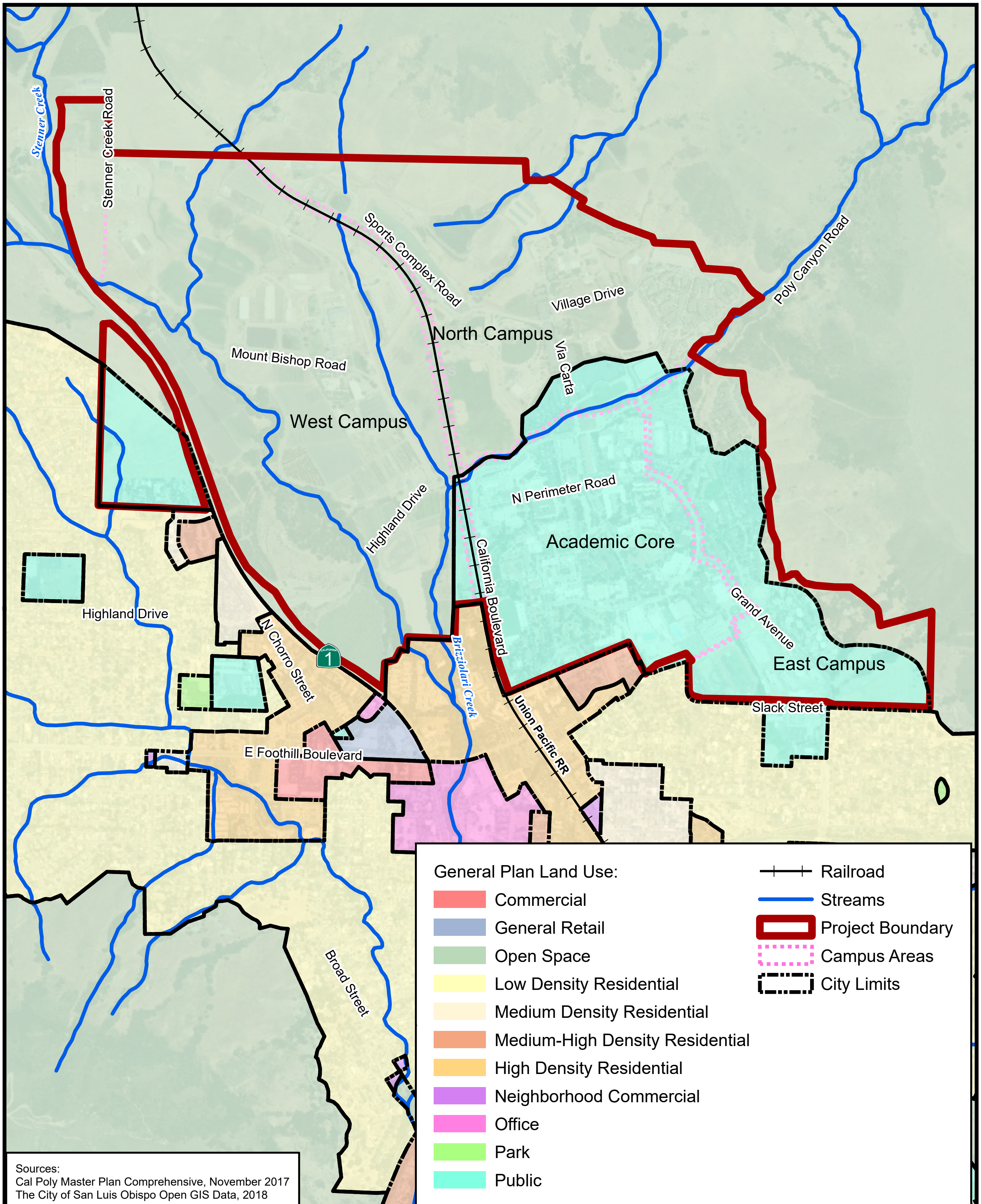
CALIFORNIA POLYTECHNIC STATE UNIVERSITY
SAN LUIS OBISPO 2035 MASTER PLAN
WASTEWATER ANALYSIS

CAL POLY CAMPUS WASTEWATER CONNECTION TO CITY

Watearth
Water Resources + Green Infrastructure

Date: March 25, 2019

Exhibit 4



1 " = 1,500 '

0 1,500

Feet

Datum: NAD83
Units: US Feet

San Luis Obispo

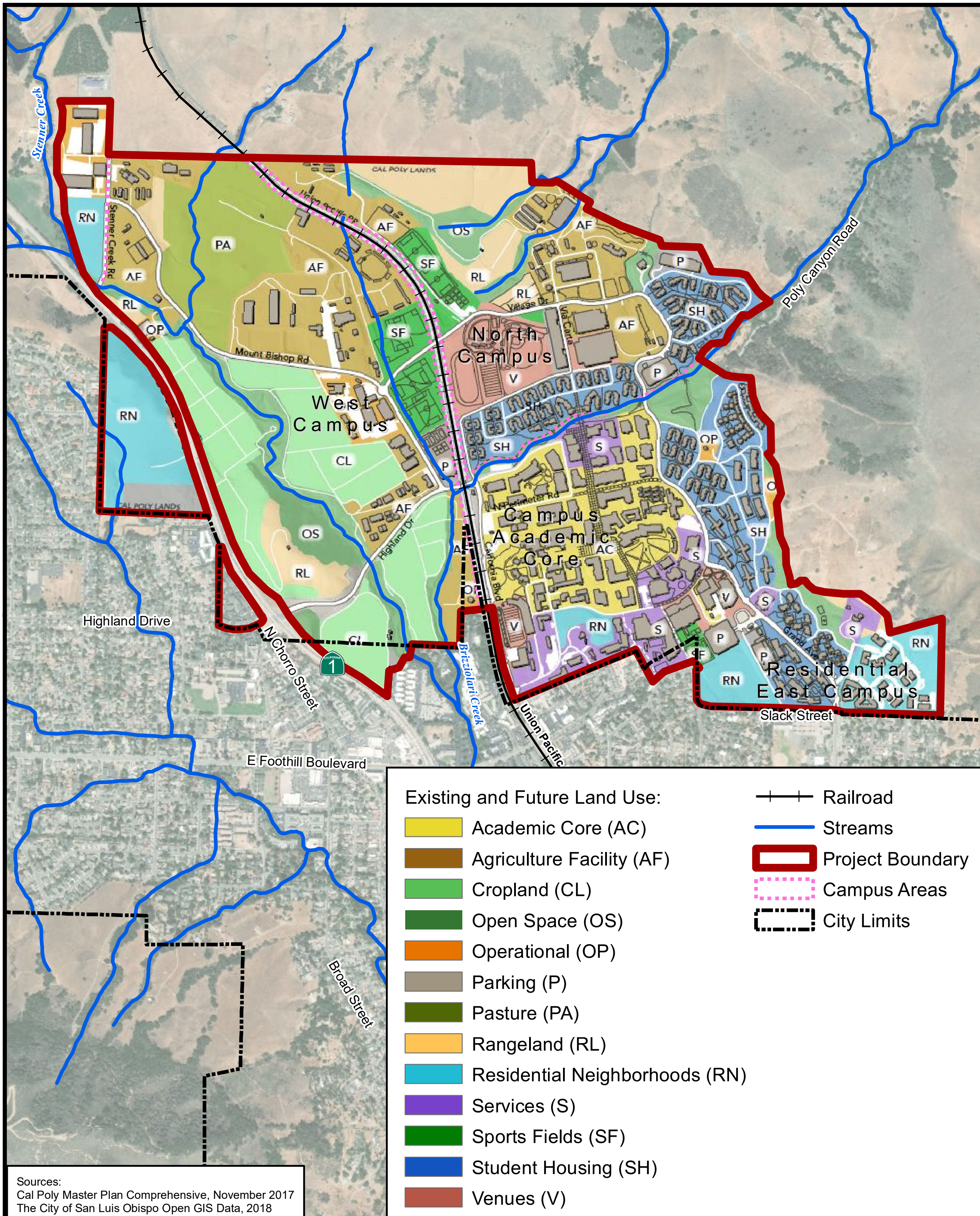
CALIFORNIA POLYTECHNIC STATE UNIVERSITY SAN LUIS OBISPO 2035 MASTER PLAN WASTEWATER ANALYSIS

EXISTING LAND USE

Watearth™
Water Resources + Green Infrastructure

Date: Mar 21, 2019

Exhibit 5



1 " = 1,500 '
0 1,500
Feet
Datum: NAD83
Units: US Feet

San Luis Obispo

CALIFORNIA POLYTECHNIC STATE UNIVERSITY
SAN LUIS OBISPO 2035 MASTER PLAN
WASTEWATER ANALYSIS

PROPOSED LAND USE

Watearth™
Water Resources + Green Infrastructure

Date: Aug 13, 2019

Exhibit 6

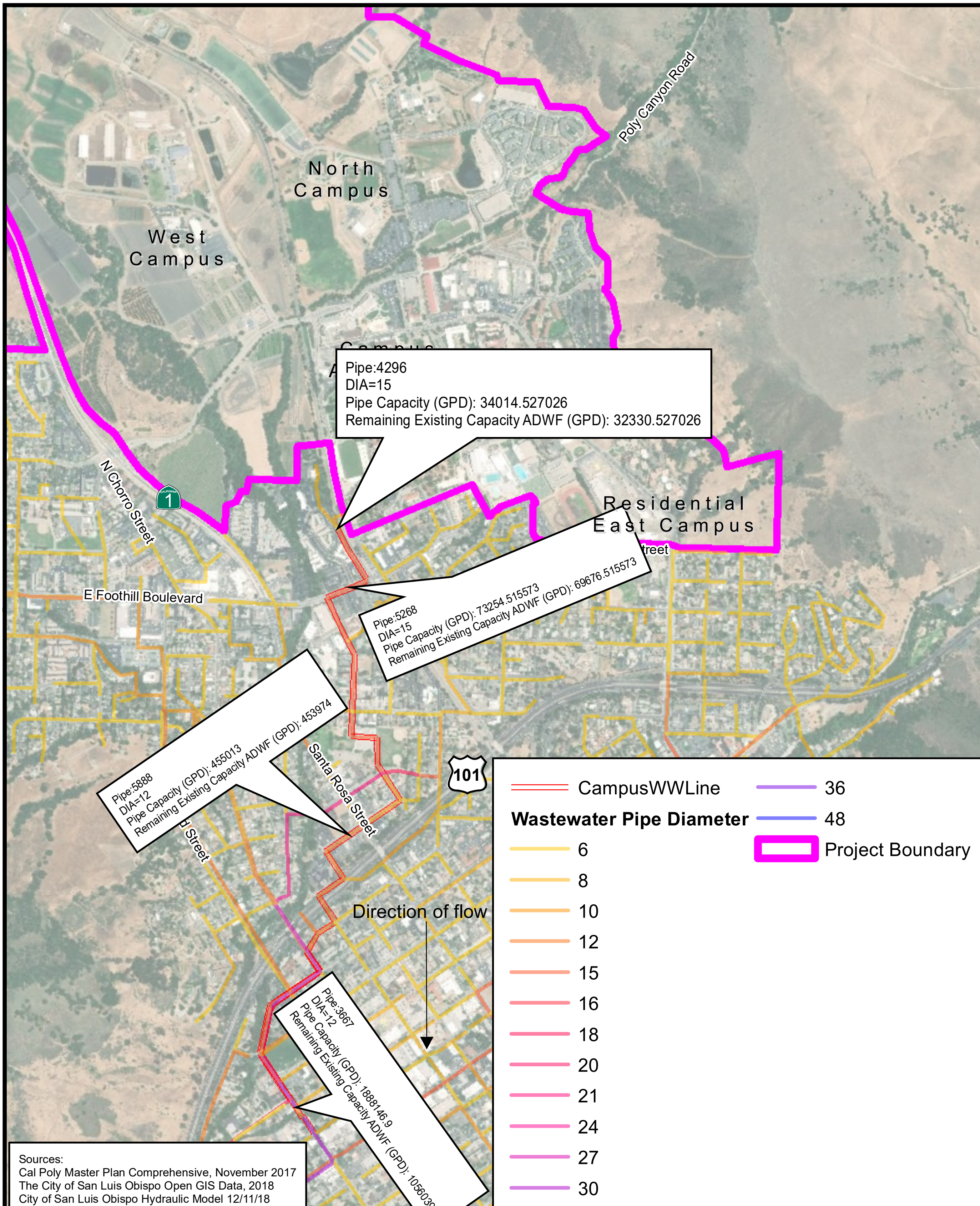
8 Appendices

A - City of San Luis Obispo SewerCAD Node Map

B – Proposed Development

C – SewerCAD Model Output Data

D – SewerCAD Hydraulic Grade Line Figures



1 " = 1,500 '
0 1,500
Feet

Datum: NAD83
Units: US Feet

CALIFORNIA POLYTECHNIC STATE UNIVERSITY
SAN LUIS OBISPO MASTER PLAN
WATER SUPPLY ASSESSMENT

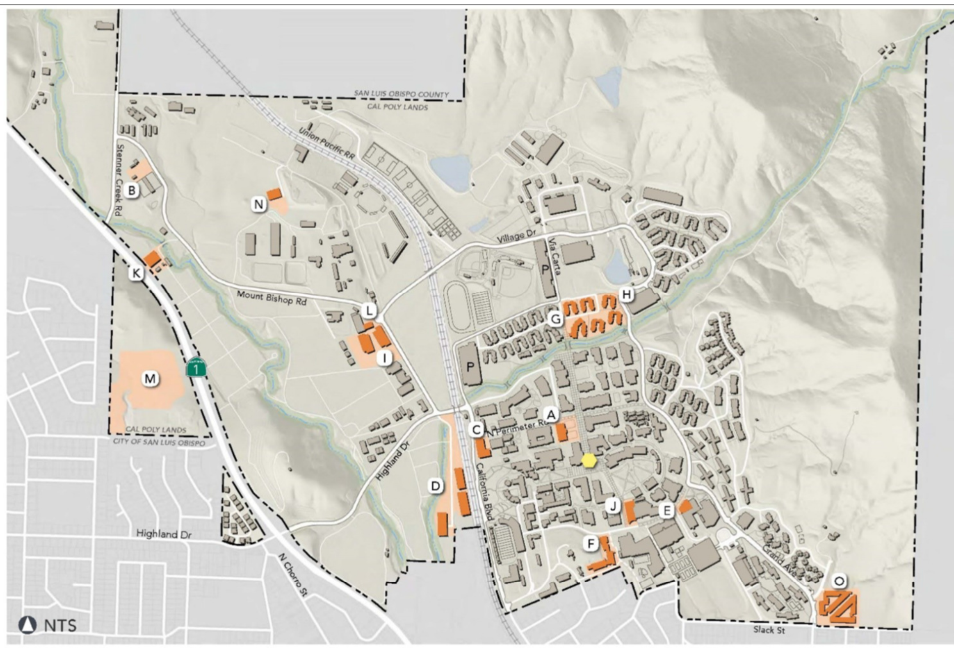
DRAFT SLO MODEL - WASTEWATER

Watearth
Water Resources + Green Infrastructure

Date: Dec 13, 2018

Appendix B

Proposed Development and Near-Term Projects



Potential Near-Term Project: **Building**

Potential Near-Term Project: **Area**

Note: All site locations and building outlines are approximate

A - Academic Center Library Addition
B - Beef Cattle Evaluation Center (BCEC) Expansion
C - Engineering Projects Building
D - Facilities Operations Complex
E - Davidson Music Center Renovation and Addition
F - Health Center
G - Student Housing
H - Student Housing
I - Technology Park Expansion
J - Building 19A - Dining Commons Addition
K - Operations and Farm Shop Relocation
L - IT Services Consolidation
M - University-based Retirement Community
N - Water Reclamation Facility (WRF)
O - Faculty and Staff Workforce Housing
Classroom and Offices Building (specific site in Academic Core to be determined)

Data Source: Cal Poly Master Plan 2035

SWCA ENVIRONMENTAL CONSULTANTS

Near-Term Projects

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 1 (City_ADWF_2015 CP_2015)

					Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
Link	ID	Link Name	US Node	DS Node	Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	J05-7-J05-8	_J05-7	J05-8	284,482	284,482	0	811,300	526,818	PVC	8	273	271.78	273.67	272.45	0.01079	0.013	3.28	273.31	272.05	276	274.78	0.36	0.4	113.1	0	113.1
2	3353	J05-8-POLY VAULT	J05-8	PolyVault	284,482	284,482	0	3,430,204	3,145,722	0	10	271.78	265.55	272.61	266.38	0.05868	0.013	5.89	272.07	265.89	274.78	271.46	0.54	0.49	106.2	113.1	219.3
3	3045	POLY VAULT-J06-2	PolyVault	J06-2	284,482	284,482	0	805,159	520,677	0	10	265.55	265.45	266.38	266.28	0.00323	0.013	2.09	265.89	265.74	271.46	270.98	0.49	0.54	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	285,613	284,482	1,131	2,566,826	2,281,213	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	2.14	265.73	264.92	270.98	269.39	0.97	0.98	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	304,372	284,482	19,890	4,834,667	4,530,295	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	3.4	264.92	259.36	269.39	268.74	0.98	0.97	415.3	461.8	877.1
6	3012	J06-14-J06-16	J06-14	J06-16	323,131	284,482	38,649	8,688,008	8,364,877	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	5.23	259.36	258.13	268.74	268.74	0.97	0.97	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	323,855	284,482	39,373	3,996,050	3,672,195	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	3.03	258.13	256.6	268.74	263.77	0.97	0.97	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	325,210	284,482	40,728	4,717,610	4,392,400	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	3.41	256.6	252.73	263.77	260.51	0.97	0.97	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	326,867	284,482	42,385	4,079,514	3,752,647	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	3.08	252.73	249.17	260.51	254.58	0.97	0.97	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	329,038	284,482	44,556	3,118,540	2,789,502	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	2.55	249.17	248.35	254.58	253.74	0.97	0.96	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	368,253	284,482	83,771	3,888,589	3,520,336	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	3.09	248.35	246.91	253.74	254.51	0.96	0.96	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	369,213	284,482	84,731	7,526,611	7,157,398	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	4.92	246.91	234.93	254.51	243	0.96	0.95	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	370,088	284,482	85,606	6,405,009	6,034,921	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	4.39	234.93	229.15	243	243	0.95	0.79	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	429,371	284,482	144,889	1,501,102	1,071,731	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	1.63	229.15	228.65	243	242	0.79	0.93	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	429,371	284,482	144,889	3,345,571	2,916,200	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	2.9	228.65	226.93	242	241.27	0.93	0.85	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	429,371	284,482	144,889	1,905,990	1,476,619	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	1.94	226.93	226.23	241.27	235.52	0.85	0.93	297.5	3243.2	3540.7
17	3391	K07-69-K07-28	K07-69	K07-28	429,371	284,482	144,889	7,497,885	7,068,514	0	15	225.91	222.53	227.16	223.78	0.03225	0.013	5.13	226.23	222.73	235.52	234.49	0.93	1.05	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	506,512	284,482	222,030	7,910,192	7,403,680	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	2.86	222.85	219.83	234.49	232.26	1.43	1.42	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	557,287	284,482	272,805	13,565,858	13,008,571	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	4.29	219.83	214.79	232.26	223.14	1.42	1.51	282.1	4153.3	4435.4
20	3410	J07-89-J07-90	J07-89	J07-90	557,577	284,482	273,095	10,436,597	9,879,020	PVC	12	214.55	208.61	215.55	209.61	0.05136	0.013	5.46	214.82	208.94	223.14	216	0.73	0.67	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	557,840	284,482	273,358	10,468,942	9,911,102	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	3.58	208.94	205.94	216	215.87	1.42	1.41	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	571,113	284,482	286,631	12,098,686	11,527,573	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	3.99	205.94	199.84	215.87	208.82	1.41	1.41	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	573,238	284,482	288,756	11,807,931	11,234,693	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	3.92	199.84	193.84	208.82	204.07	1.41	1.49	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	574,849	284,482	290,367	11,904,542	11,329,693	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	3.02	193.9	192.77	204.07	200.58	1.68	1.67	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	643,156	284,482	358,674	25,483,412	24,840,256	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	4.21	192.77	182.56	200.58	197	1.92	1.85	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	714,207	284,482	429,725	10,620,231	9,906,024	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	2.35	182.56	181.81	197	198.97	1.85	1.86	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	715,733	284,482	431,251	10,925,568	10,209,835	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	2.4	181.81	180.62	198.97	192.83	1.86	1.85	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	719,751	284,482	435,269	10,554,288	9,834,537	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	2.35	180.62	179.83	192.83	190	1.85	1.85	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	719,751	284,482	435,269	10,350,223	9,630,472	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	2.32	179.83	178.54	190	186.72	1.85	1.83	489.9	7477.1	7967
30	3003	J09-22-J09-24	J09-22	J09-24	723,987	284,482	439,505	9,083,654	8,359,667	PVC	27	178.12	178.07	180.37	180.32	0.00206	0.013	2.11	178.54	178.47	186.72	187.21	1.83	1.85	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	727,375	284,482	442,893	13,091,690	12,364,315	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	2.22	178.47	177.62	187.21	188.86	2.1	2.09	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	755,704	284,482	471,222	12,945,046	12,189,342	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	2.23	177.62	176.88	188.86	192.02	2.09	2.04	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	756,993	284,482	472,511	2,097,941	1,340,948	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	3.8	176.88	175.62	192.02	190.18	0.54	0.58	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	758,085	284,482	473,603	14,804,664	14,046,579	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	2.45	175.58	174.94	190.18	193.17	2.12	2.09	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	805,002	284,482	520,520	13,885,589	13,080,587	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	2.38	174.94	174.47	193.17	190	2.09	1.62	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	1,278,352	284,482	993,870	3,242,470	1,964,118	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	0.96	174.47	173.97	190	184	1.62	2.04	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	1,281,483	284,482	997,001	30,316,999	29,035,516	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	4.73	173.97	168.95	184	177.94	2.04	0.62	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	1,283,937	284,482	999,455	16,547,967	15,264,030	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	0.4	168.95	168.69	177.94	178.87	0.62	2.04	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	1,293,342	284,482	1,008,860	31,703,658	30,410,316	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	4.9	168.69	161.87	178.87	173.01	2.04	2.03	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	1,294,092	284,482	1,009,610	16,871,263	15,577,171	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	3.15	161.87	160.48	173.01	172.44	2.03	2.02	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	1,408,482	284,482	1,124,000	21,975,368	20,566,886	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	3.89	160.48	158.28	172.44	171	2.02	2.02	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	1,408,843	284,482	1,124,361	20,565,867	19,157,024	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	3.71	158.28	156.54	171	170.85	2.02	1.87	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	1,429,510	284,482	1,145,028	15,002,227	13,572,717	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	2.07	156.54	156.03	170.85	167.67	2.37	2.45	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	1,431,654	284,482	1,147,172	19,181,160	17,749,506	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	2.46	156.03	155.38	167.67	169.54	2.45	2.42	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	1,523,121	284,482	1,238,639	18,895,751	17,372,630	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	2.48	155.38	154.82	169.54	168.44	2.42	2.52	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	1,525,015	284,482	1,240,533	34,641,163	33,116,148	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	3.8	154.82	150.42	168.44	163.03	2.52	2.45	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	1,992,518	284,482	1,708,036	27,412,575	25,420,057	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	3.49	150.42	148.85	163.03	157.11	2.45	2.45	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	1,993,609	284,482	1,709,127	26,953,521	24,959,912	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	3.45	148.85	147.37	157.11	157	2.45	2.38	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	2,552,861	284,482	2,268,379	35,454,075	32,901,214	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	4.51	147.37	143.33	157	155.42	2.38	2.38	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	2,553,374	284,482	2,268,892	29,311,144	26,757,770	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	3.94	143.33	140.4	155.42	155.66	2.38	2.26	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	2,553,374	284,482	2,268,892	19,102,000	16,548,626	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	2.91	140.4	139.71	155.66	151	2.26	2.3	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	2,553,374	284,482	2,268,892	21,549,863	18,996,489	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	3.17	139.71	138.13	151	144.74	2.3	2.27	644.2	16163.9	16808.1
53	3447	I13-10-I13-11	I13-10	I13-11	2,553,374	284,482	2,268,892	19,647,126	17,093,752	PVC	21	137.4	133.13	139.15	134.88	0.03681	0.013	8.72	138.13	134.24	144.74	139.73	1.02	0.64	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	2,554,979	284,482	2,270,497	6,124,076	3,569,097	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	1.28	134.24	133.64	139.73	142.95	1.89	2.38	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	2,556,584	284,482	2,272,102	30,407,121	27,850,537	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	4.04	133.64	130.97	142.95	138	2.38	2.41	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	2,556,584	284,482	2,272,102	42,793,558	40,236,974	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	5.14	131	127.24	138	138	2.38	0.95	526.6	17999.7	18526.3
57	3436	I14-3-I14-5	I14-3	I14-5	2,556,584	284,482	2,272,102	21,484,290	18,927,706	PVC	36	125.19	124.9	128.19	127.9	0.00248	0.013	3.16	127.24	127.24	138	138	0.95	0.66	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	2,557,176	284,482	2,272,694	26,071,121	23,513,945	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	2.04	127.24	127.23	138	138	1.66	1.03	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	2,557,768	284,482	2,273,286	60,681,535	58,123,767	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	0.31	127.23	127.17	138	131.44	1.03	2.94	433	19454.5	19887.5
60	2975	I15-5-I15-7	I15-5	I15-7	2,557,768	284,482	2,273,286	33,047,844	30,490,076	PVC	48	126.11	126.09	130.11	130.09	0.00127	0.013	2.41	127.17	127.16	131.44	131.37	2.94	2.93	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	6,667,976	284,482	6,383,494	33,686,043	27,018,067	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	8.27	127.16	126.73	131.37	131.41	1.43	1.64	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	6,667,976	284,482	6,383,494	38,080,441	31,412,465	0	30	125.87	125	128.37	127.5	0.02064	0.013	9.02	126.94	126.84	131.41	131.36	1.43	0.66	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	9,837,754	284,482	9,553,272	2,608,858	-7,228,896	0	30	125	124.99	127.5	127.49	0.0001	0.013	3.1	126.84	126.31	131.36	131	0.66	1.18	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	9,842,490	284,482	9,558,008	30,788,053	20,945,563	0	36	124.99	124	127.99	127	0.0051	0.013	5.99	126.23	125.17	131	131	1.76	1.83	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 2 (City_PDWF_2015 CP_2015)

					Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
Link	ID	Link Name	US Node	DS Node	Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	J05-7-J05-8	_J05-7	J05-8	739,653	739,653	0	811,300	71,647	0	8	273	271.78	273.67	272.45	0.01079	0.013	4.08	273.51	272.28	276	274.78	0.16	0.17	113.1	0	113.1
2	3353	J05-8-POLY VAULT	J05-8	PolyVault	739,653	739,653	0	3,430,204	2,690,551	0	10	271.78	265.55	272.61	266.38	0.05868	0.013	7.76	272.26	266.14	274.78	271.46	0.35	0.24	106.2	113.1	219.3
3	3045	POLY VAULT-J06-2	PolyVault	J06-2	739,653	739,653	0	805,159	65,506	0	10	265.55	265.45	266.38	266.28	0.00323	0.013	2.59	266.14	265.93	271.46	270.98	0.24	0.35	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	741,731	739,653	2,078	2,566,826	1,825,095	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	2.8	265.91	265.08	270.98	269.39	0.79	0.82	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	776,179	739,653	36,526	4,834,667	4,058,488	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	4.47	265.08	259.52	269.39	268.74	0.82	0.81	415.3	461.8	877.1
6	3012	J06-14-J06-16	J06-14	J06-16	810,628	739,653	70,975	8,688,008	7,877,380	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	6.86	259.52	258.29	268.74	268.74	0.81	0.81	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	811,957	739,653	72,304	3,996,050	3,184,093	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	3.95	258.29	256.76	268.74	263.77	0.81	0.81	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	814,445	739,653	74,792	4,717,610	3,903,165	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	4.46	256.76	252.89	263.77	260.51	0.81	0.81	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	817,489	739,653	77,836	4,079,514	3,262,025	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	4.02	252.89	249.34	260.51	254.58	0.81	0.8	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	821,475	739,653	81,822	3,118,540	2,297,065	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	3.32	249.34	248.52	254.58	253.74	0.8	0.79	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	893,489	739,653	153,836	3,888,589	2,995,100	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	3.98	248.52	247.09	253.74	254.51	0.79	0.78	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	895,252	739,653	155,599	7,526,611	6,631,359	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	6.39	247.09	235.1	254.51	243	0.78	0.78	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	896,859	739,653	157,206	6,405,009	5,508,150	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	5.69	235.1	229.43	243	243	0.78	0.51	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	1,005,725	739,653	266,072	1,501,102	495,377	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	2.03	229.43	228.82	243	242	0.51	0.76	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	1,005,725	739,653	266,072	3,345,571	2,339,846	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	3.69	228.82	227.18	242	241.27	0.76	0.6	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	1,005,725	739,653	266,072	1,905,990	900,265	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	2.43	227.18	226.4	241.27	235.52	0.6	0.76	297.5	3243.2	3540.7
17	3391	K07-69-K07-28	K07-69	K07-28	1,005,725	739,653	266,072	7,497,885	6,492,160	0	15	225.91	222.53	227.16	223.78	0.03225	0.013	6.58	226.4	222.84	235.52	234.49	0.76	0.94	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	1,153,320	739,653	413,667	7,910,192	6,756,872	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	3.63	223.01	220	234.49	232.26	1.27	1.25	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	1,246,360	739,653	506,707	13,565,858	12,319,498	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	5.44	220	214.91	232.26	223.14	1.25	1.39	282.1	4153.3	4435.4
20	3410	J07-89-J07-90	J07-89	J07-90	1,246,891	739,653	507,238	10,436,597	9,189,706	PVC	12	214.55	208.61	215.55	209.61	0.05136	0.013	6.93	214.96	209.11	223.14	216	0.59	0.5	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	1,247,374	739,653	507,721	10,468,942	9,221,568	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	4.54	209.11	206.11	216	215.87	1.25	1.24	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	1,272,883	739,653	533,230	12,098,686	10,825,803	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	5.05	206.11	200.01	215.87	208.82	1.24	1.24	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	1,276,986	739,653	537,333	11,807,931	10,530,945	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	4.97	200.01	193.97	208.82	204.07	1.24	1.36	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	1,280,099	739,653	540,446	11,904,542	10,624,443	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	3.83	194.07	192.94	204.07	200.58	1.51	1.5	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	1,412,111	739,653	672,458	25,483,412	24,071,301	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	5.33	192.94	182.74	200.58	197	1.75	1.67	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	1,539,066	739,653	799,413	10,620,231	9,081,165	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	2.94	182.74	181.99	197	198.97	1.67	1.68	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	1,542,013	739,653	802,360	10,925,568	9,383,555	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	3	181.99	180.8	198.97	192.83	1.68	1.67	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	1,549,775	739,653	810,122	10,554,288	9,004,513	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	2.94	180.8	180.02	192.83	190	1.67	1.66	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	1,549,775	739,653	810,122	10,350,223	8,800,448	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	2.9	180.02	178.73	190	186.72	1.66	1.64	489.9	7477.1	7967
30	3003	J09-22-J09-24	J09-22	J09-24	1,557,955	739,653	818,302	9,083,654	7,525,699	PVC	27	178.12	178.07	180.37	180.32	0.00206	0.013	2.64	178.73	178.65	186.72	187.21	1.64	1.67	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	1,564,497	739,653	824,844	13,091,690	11,527,193	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	2.78	178.65	177.81	187.21	188.86	1.92	1.9	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	1,619,797	739,653	880,144	12,945,046	11,325,249	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	2.79	177.81	177.1	188.86	192.02	1.9	1.82	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	1,622,286	739,653	882,633	2,097,941	475,655	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	4.56	177.1	175.86	192.02	190.18	0.32	0.34	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	1,624,395	739,653	884,742	14,804,664	13,180,269	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	3.07	175.76	175.12	190.18	193.17	1.94	1.91	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	1,716,117	739,653	976,464	13,885,589	12,169,472	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	2.98	175.12	174.81	193.17	190	1.91	1.28	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	2,592,237	739,653	1,852,584	3,242,470	650,233	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	1.14	174.81	174.17	190	184	1.28	1.84	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	2,598,283	739,653	1,858,630	30,316,999	27,718,716	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	5.84	174.17	169.26	184	177.94	1.84	0.31	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	2,603,022	739,653	1,863,369	16,547,967	13,944,945	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	0.82	169.26	168.89	177.94	178.87	0.31	1.84	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	2,621,187	739,653	1,881,534	31,703,658	29,082,471	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	6.04	168.89	162.07	178.87	173.01	1.84	1.83	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	2,622,635	739,653	1,882,982	16,871,263	14,248,628	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	3.86	162.07	160.69	173.01	172.44	1.83	1.81	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	2,855,125	739,653	2,115,472	21,975,368	19,120,243	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	4.78	160.69	158.49	172.44	171	1.81	1.81	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	2,855,823	739,653	2,116,170	20,565,867	17,710,044	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	4.56	158.49	156.8	171	170.85	1.81	1.61	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	2,895,690	739,653	2,156,037	15,002,227	12,106,537	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	2.54	156.8	156.27	170.85	167.67	2.11	2.21	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	2,899,831	739,653	2,160,178	19,181,160	16,281,329	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	3.03	156.27	155.62	167.67	169.54	2.21	2.18	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	3,064,541	739,653	2,324,888	18,895,751	15,831,210	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	3.04	155.62	155.02	169.54	168.44	2.18	2.32	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	3,068,199	739,653	2,328,546	34,641,163	31,572,964	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	4.68	155.02	150.64	168.44	163.03	2.32	2.23	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	3,927,093	739,653	3,187,440	27,412,575	23,485,482	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	4.26	150.64	149.07	163.03	157.11	2.23	2.23	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	3,929,202	739,653	3,189,549	26,953,521	23,024,319	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	4.21	149.07	147.59	157.11	157	2.23	2.16	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	4,630,787	739,653	3,891,134	35,454,075	30,823,288	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	5.36	147.59	143.55	157	155.42	2.16	2.16	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	4,631,778	739,653	3,892,125	29,311,144	24,679,366	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	4.68	143.55	140.67	155.42	155.66	2.16	1.99	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	4,631,778	739,653	3,892,125	19,102,000	14,470,222	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	3.45	140.67	139.95	155.66	151	1.99	2.06	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	4,631,778	739,653	3,892,125	21,549,863	16,918,085	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	3.76	139.95	138.39	151	144.74	2.06	2.01	644.2	16163.9	16808.1
53	3447	I13-10-I13-11	I13-10	I13-11	4,631,778	739,653	3,892,125	19,647,126	15,015,348	PVC	21	137.4	133.13	139.15	134.88	0.03681	0.013	10.34	138.39	134.6	144.74	139.73	0.76	0.28	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	4,634,877	739,653	3,895,224	6,124,076	1,489,199	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	1.47	134.6	133.86	139.73	142.95	1.53	2.16	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	4,637,976	739,653	3,898,323	30,407,121	25,769,145	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	4.81	133.86	131.17	142.95	138	2.16	2.21	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	4,637,976	739,653	3,898,323	42,793,558	38,155,582	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	6.13	131.22	127.5	138	138	2.16	0.69	526.6	17999.7	18526.3
57	3436	I14-3-I14-5	I14-3	I14-5	4,637,976	739,653	3,898,323	21,484,290	16,846,314	PVC	36	125.19	124.9	128.19	127.9	0.00248	0.013	3.75	127.5	127.5	138	138	0.69	0.4	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	4,639,120	739,653	3,899,467	26,071,121	21,432,001	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	2.42	127.5	127.47	138	138	1.4	0.79	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	4,640,263	739,653	3,900,610	60,681,535	56,041,272	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	0.57	127.47	127.35	138	131.44	0.79	2.76	433	19454.5	19887.5
60	2975	I15-5-I15-7	I15-5	I15-7	4,640,263	739,653	3,900,610	33,047,844	28,407,581	PVC	48	126.11	126.09	130.11	130.09	0.00127	0.013	2.87	127.35	127.34	131.44	131.37	2.76	2.75	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	8,952,123	739,653	8,212,470	33,686,043	24,733,920	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	8.98	127.34	126.89	131.37	131.41	1.25	1.48	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	8,952,123	739,653	8,212,470	38,080,441	29,128,318	0	30	125.87	125	128.37	127.5	0.02064	0.013	9.81	127.12	127.05	131.41	131.36	1.25	0.45	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	12,121,902	739,653	11,382,249	2,608,858	-9,513,044	0	30	125	124.99	127.5	127.49	0.0001	0.013	3.82	127.05	126.46	131.36	131	0.45	1.03	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	12,131,047	739,653	11,391,394	30,788,053	18,657,006	0	36	124.99	124	127.99	127	0.0051	0.013	6.34	126.38	125.31	131	131	1.61	1.69	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 3 (City_PWWF_2015 CP_2015)

Link	ID	Link Name	US Node	DS Node	Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
					Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	J05-7-J05-8	_J05-7	J05-8	2,308,597	2,308,597	0	811,300	-1,497,297	0	8	273	271.78	273.67	272.45	0.01079	0.013	10.23	282.45	272.57	276	274.78	-8.78	-0.12	113.1	0	113.1
2	3353	J05-8-POLY VAULT	J05-8	PolyVault	2,337,059	2,308,597	28,462	3,430,204	1,093,145	0	10	271.78	265.55	272.61	266.38	0.05868	0.013	10.47	272.57	267.3	274.78	271.46	0.04	-0.92	106.2	113.1	219.3
3	3045	POLY VAULT-J06-2	PolyVault	J06-2	2,365,521	2,308,597	56,924	805,159	-1,560,362	0	10	265.55	265.45	266.38	266.28	0.00323	0.013	6.71	267.3	266.44	271.46	270.98	-0.92	-0.16	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	2,481,448	2,308,597	172,851	2,566,826	85,378	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	3.69	266.44	265.45	270.98	269.39	0.26	0.45	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	2,544,359	2,308,597	235,762	4,834,667	2,290,308	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	6.17	265.45	259.89	269.39	268.74	0.45	0.44	415.3	461.8	877.1
6	3012	J06-14-J06-16	J06-14	J06-16	2,607,270	2,308,597	298,673	8,688,008	6,080,738	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	9.58	259.89	258.67	268.74	268.74	0.44	0.43	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	2,637,061	2,308,597	328,464	3,996,050	1,358,989	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	5.38	258.67	257.14	268.74	263.77	0.43	0.43	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	2,668,011	2,308,597	359,414	4,717,610	2,049,599	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	6.13	257.14	253.28	263.77	260.51	0.43	0.42	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	2,699,517	2,308,597	390,920	4,079,514	1,379,997	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	5.5	253.28	249.8	260.51	254.58	0.42	0.34	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	2,731,965	2,308,597	423,368	3,118,540	386,575	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	4.43	249.8	249.01	254.58	253.74	0.34	0.3	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	3,572,459	2,308,597	1,263,862	3,888,589	316,130	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	5.56	249.01	247.58	253.74	254.51	0.3	0.29	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	3,602,685	2,308,597	1,294,088	7,526,611	3,923,926	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	9.39	247.58	236.69	254.51	243	0.29	-0.81	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	3,632,753	2,308,597	1,324,156	6,405,009	2,772,256	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	4.58	236.69	234.78	243	243	-0.81	-4.84	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	3,940,855	2,308,597	1,632,258	1,501,102	-2,439,753	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	4.97	234.78	232.3	243	242	-4.84	-2.72	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	3,969,317	2,308,597	1,660,720	3,345,571	-623,746	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	5	232.3	229.76	242	241.27	-2.72	-1.98	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	3,997,780	2,308,597	1,689,183	1,905,990	-2,091,790	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	5.04	229.76	226.92	241.27	235.52	-1.98	0.24	297.5	3243.2	3540.7
17	3391	K07-69-K07-28	K07-69	K07-28	4,026,242	2,308,597	1,717,645	7,497,885	3,471,643	0	15	225.91	222.53	227.16	223.78	0.03225	0.013	9.62	226.92	223.6	235.52	234.49	0.24	0.18	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	5,357,699	2,308,597	3,049,102	7,910,192	2,552,493	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	5.47	223.6	220.67	234.49	232.26	0.68	0.58	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	6,393,081	2,308,597	4,084,484	13,565,858	7,172,777	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	8.59	220.67	215.4	232.26	223.14	0.58	0.9	282.1	4153.3	4435.4
20	3410	J07-89-J07-90	J07-89	J07-90	6,422,074	2,308,597	4,113,477	10,436,597	4,014,523	PVC	12	214.55	208.61	215.55	209.61	0.05136	0.013	10.81	215.47	209.79	223.14	216	0.08	-0.18	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	6,451,019	2,308,597	4,142,422	10,468,942	4,017,923	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	7.08	209.79	206.8	216	215.87	0.57	0.55	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	6,730,662	2,308,597	4,422,065	12,098,686	5,368,024	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	7.99	206.8	200.7	215.87	208.82	0.55	0.55	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	6,740,945	2,308,597	4,432,348	11,807,931	5,066,986	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	7.85	200.7	194.53	208.82	204.07	0.55	0.8	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	6,750,236	2,308,597	4,441,639	11,904,542	5,154,306	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	6.05	194.74	193.61	204.07	200.58	0.84	0.83	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	7,324,623	2,308,597	5,016,026	25,483,412	18,158,789	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	8.57	193.61	189.06	200.58	197	1.08	-4.65	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	8,048,821	2,308,597	5,740,224	10,620,231	2,571,410	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	3.13	189.06	188.64	197	198.97	-4.65	-4.97	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	8,064,126	2,308,597	5,755,529	10,925,568	2,861,442	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	3.14	188.64	187.98	198.97	192.83	-4.97	-5.51	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	8,093,514	2,308,597	5,784,917	10,554,288	2,460,774	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	3.15	187.98	187.52	192.83	190	-5.51	-5.84	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	8,099,693	2,308,597	5,791,096	10,350,223	2,250,530	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	3.15	187.52	186.72	190	186.72	-5.84	-6.35	489.9	7477.1	7967
30	3003	J09-22-J09-24	J09-22	J09-24	8,120,232	2,308,597	5,811,635	9,083,654	963,422	PVC	27	178.12	178.07	180.37	180.32	0.00206	0.013	3.16	187.25	187.21	186.72	187.21	-6.88	-6.89	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	10,300,047	2,308,597	7,991,450	13,091,690	2,791,643	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	3.25	189.39	188.86	187.21	188.86	-8.82	-9.15	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	10,891,315	2,308,597	8,582,718	12,945,046	2,053,731	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	3.43	192.58	192.02	188.86	192.02	-12.87	-13.1	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	10,924,700	2,308,597	8,616,103	2,097,941	-8,826,759	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	21.52	211.58	178.5	192.02	190.18	-34.16	-2.3	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	10,932,988	2,308,597	8,624,391	14,804,664	3,871,676	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	3.45	178.5	178.13	190.18	193.17	-0.8	-1.1	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	11,178,924	2,308,597	8,870,327	13,885,589	2,706,665	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	3.52	178.13	177.52	193.17	190	-1.1	-1.43	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	16,072,302	2,308,597	13,763,705	3,242,470	-12,829,832	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	5.07	177.52	175.21	190	184	-1.43	0.8	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	16,084,529	2,308,597	13,775,932	30,316,999	14,232,470	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	9.7	175.21	171.4	184	177.94	0.8	-1.83	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	16,095,446	2,308,597	13,786,849	16,547,967	452,521	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	5.07	171.4	169.93	177.94	178.87	-1.83	0.8	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	16,150,684	2,308,597	13,842,087	31,703,658	15,552,974	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	10.04	169.93	164.69	178.87	173.01	0.8	-0.79	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	16,158,313	2,308,597	13,849,716	16,871,263	712,950	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	5.09	164.69	163.41	173.01	172.44	-0.79	-0.91	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	16,694,974	2,308,597	14,386,377	21,975,368	5,280,394	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	5.26	163.41	162.14	172.44	171	-0.91	-1.84	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	16,701,851	2,308,597	14,393,254	20,565,867	3,864,016	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	5.26	162.14	160.89	171	170.85	-1.84	-2.48	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	17,432,739	2,308,597	15,124,142	15,002,227	-2,430,512	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	3.82	160.89	160.31	170.85	167.67	-1.98	-1.83	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	17,455,416	2,308,597	15,146,819	19,181,160	1,725,744	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	3.82	160.31	159.75	167.67	169.54	-1.83	-1.95	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	21,293,885	2,308,597	18,985,288	18,895,751	-2,398,134	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	4.66	159.75	159.16	169.54	168.44	-1.95	-1.82	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	21,316,080	2,308,597	19,007,483	34,641,163	13,325,083	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	4.67	159.16	157.47	168.44	163.03	-1.82	-4.6	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	26,091,037	2,308,597	23,782,440	27,412,575	1,321,538	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	5.71	157.47	156.05	163.03	157.11	-4.6	-4.75	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	26,099,324	2,308,597	23,790,727	26,953,521	854,197	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	5.71	156.05	154.6	157.11	157	-4.75	-4.85	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	28,627,167	2,308,597	26,318,570	35,454,075	6,826,908	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	6.27	154.6	151.96	157	155.42	-4.85	-6.25	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	28,634,337	2,308,597	26,325,740	29,311,144	676,807	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	6.27	151.96	149.05	155.42	155.66	-6.25	-6.39	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	28,640,516	2,308,597	26,331,919	19,102,000	-9,538,516	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	6.27	149.05	147.59	155.66	151	-6.39	-5.58	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	28,646,697	2,308,597	26,338,100	21,549,863	-7,096,834	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	6.27	147.59	144.74	151	144.74	-5.58	-4.34	644.2	16163.9	16808.1
53	3447	I13-10-I13-11	I13-10	I13-11	28,652,875	2,308,597	26,344,278	19,647,126	-9,005,749	PVC	21	137.4	133.13	139.15	134.88	0.03681	0.013	18.43	148.81	139.73	144.74	139.73	-9.66	-4.85	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	28,662,153	2,308,597	26,353,556	6,124,076	-22,538,077	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	6.27	140.16	137.75	139.73	142.95	-4.03	-1.73	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	28,671,430	2,308,597	26,362,833	30,407,121	1,735,691	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	6.28	137.75	135.41	142.95	138	-1.73	-2.03	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	28,677,611	2,308,597	26,369,014	42,793,558	14,115,947	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	6.28	135.41	133.08	138	138	-2.03	-4.89	526.6	17999.7	18526.3
57	3436	I14-3-I14-5	I14-3	I14-5	28,683,790	2,308,597	26,375,193	21,484,290	-7,199,500	PVC	36	125.19	124.9	128.19	127.9	0.00248	0.013	6.28	133.08	132.56	138	138	-4.89	-4.66	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	28,691,113	2,308,597	26,382,516	26,071,121	-2,619,992	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	3.53	132.56	131.78	138	138	-3.66	-3.52	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	28,698,435	2,308,597	26,389,838	60,681,535	31,983,100	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	3.53	131.78	131.37	138	131.44	-3.52	-1.26	433	19454.5	19887.5
60	2975	I15-5-I15-7	I15-5	I15-7	28,704,614	2,308,597	26,396,017	33,047,844	4,343,230	PVC	48	126.11	126.09	130.11	130.09	0.00127	0.013	3.53	131.37	131.36	131.44	131.37	-1.26	-1.27	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	35,071,354	2,308,597	32,762,757	33,686,043	-1,385,311	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	11.05	131.36	131.12	131.37	131.41	-2.77	-2.75	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	35,077,535	2,308,597	32,768,938	38,080,441	3,002,906	0	30	125.87	125	128.37	127.5	0.02064	0.013	11.06	131.12	130.38	131.41	131.36	-2.75	-2.88	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	38,247,312	2,308,597	35,938,715	2,608,858	-35,638,454	0	30	125	124.99	127.5	127.49	0.0001	0.013	12.06	130.38	128.23	131.36	131	-2.88	-0.74	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	38,281,173	2,308,597	35,972,576	30,788,053	-7,493,120	0	36	124.99	124	127.99	127	0.0051	0.013	8.38	128.23	126.49	131	131	-0.24	0.51	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 4 (City_ADWF_2015 CP_2020)

					Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
Link	ID	Link Name	US Node	DS Node	Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	J05-7-J05-8	_J05-7	J05-8	289,294	289,294	0	811,300	522,006	0	8	273	271.78	273.67	272.45	0.01079	0.013	3.3	273.31	272.05	276	274.78	0.36	0.4	113.1	0	113.1
2	3353	J05-8-POLY VAULT	J05-8	PolyVault	289,294	289,294	0	3,430,204	3,140,910	0	10	271.78	265.55	272.61	266.38	0.05868	0.013	5.92	272.07	265.89	274.78	271.46	0.54	0.49	106.2	113.1	219.3
3	3045	POLY VAULT-J06-2	PolyVault	J06-2	289,294	289,294	0	805,159	515,865	0	10	265.55	265.45	266.38	266.28	0.00323	0.013	2.1	265.89	265.74	271.46	270.98	0.49	0.54	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	290,425	289,294	1,131	2,566,826	2,276,401	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	2.15	265.73	264.92	270.98	269.39	0.97	0.98	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	309,184	289,294	19,890	4,834,667	4,525,483	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	3.42	264.92	259.36	269.39	268.74	0.98	0.97	415.3	461.8	877.1
6	3012	J06-14-J06-16	J06-14	J06-16	327,943	289,294	38,649	8,688,008	8,360,065	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	5.25	259.36	258.13	268.74	268.74	0.97	0.97	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	328,667	289,294	39,373	3,996,050	3,667,383	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	3.04	258.13	256.6	268.74	263.77	0.97	0.97	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	330,022	289,294	40,728	4,717,610	4,387,588	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	3.42	256.6	252.73	263.77	260.51	0.97	0.97	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	331,679	289,294	42,385	4,079,514	3,747,835	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	3.1	252.73	249.17	260.51	254.58	0.97	0.97	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	333,850	289,294	44,556	3,118,540	2,784,690	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	2.57	249.17	248.36	254.58	253.74	0.97	0.95	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	373,065	289,294	83,771	3,888,589	3,515,524	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	3.1	248.36	246.92	253.74	254.51	0.95	0.95	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	374,025	289,294	84,731	7,526,611	7,152,586	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	4.94	246.92	234.93	254.51	243	0.95	0.95	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	374,900	289,294	85,606	6,405,009	6,030,109	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	4.41	234.93	229.15	243	243	0.95	0.79	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	434,183	289,294	144,889	1,501,102	1,066,919	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	1.64	229.15	228.65	243	242	0.79	0.93	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	434,183	289,294	144,889	3,345,571	2,911,388	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	2.91	228.65	226.94	242	241.27	0.93	0.84	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	434,183	289,294	144,889	1,905,990	1,471,807	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	1.94	226.94	226.23	241.27	235.52	0.84	0.93	297.5	3243.2	3540.7
17	3391	K07-69-K07-28	K07-69	K07-28	434,183	289,294	144,889	7,497,885	7,063,702	0	15	225.91	222.53	227.16	223.78	0.03225	0.013	5.15	226.23	222.73	235.52	234.49	0.93	1.05	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	511,324	289,294	222,030	7,910,192	7,398,868	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	2.86	222.85	219.83	234.49	232.26	1.43	1.42	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	562,099	289,294	272,805	13,565,858	13,003,759	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	4.3	219.83	214.79	232.26	223.14	1.42	1.51	282.1	4153.3	4435.4
20	3410	J07-89-J07-90	J07-89	J07-90	562,389	289,294	273,095	10,436,597	9,874,208	PVC	12	214.55	208.61	215.55	209.61	0.05136	0.013	5.48	214.82	208.94	223.14	216	0.73	0.67	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	562,652	289,294	273,358	10,468,942	9,906,290	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	3.59	208.94	205.94	216	215.87	1.42	1.41	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	575,925	289,294	286,631	12,098,686	11,522,761	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	4	205.94	199.84	215.87	208.82	1.41	1.41	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	578,050	289,294	288,756	11,807,931	11,229,881	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	3.93	199.84	193.84	208.82	204.07	1.41	1.49	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	579,661	289,294	290,367	11,904,542	11,324,881	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	3.03	193.91	192.77	204.07	200.58	1.67	1.67	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	647,968	289,294	358,674	25,483,412	24,835,444	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	4.22	192.77	182.56	200.58	197	1.92	1.85	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	719,019	289,294	429,725	10,620,231	9,901,212	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	2.36	182.56	181.81	197	198.97	1.85	1.86	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	720,545	289,294	431,251	10,925,568	10,205,023	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	2.41	181.81	180.62	198.97	192.83	1.86	1.85	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	724,563	289,294	435,269	10,554,288	9,829,725	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	2.35	180.62	179.83	192.83	190	1.85	1.85	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	724,563	289,294	435,269	10,350,223	9,625,660	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	2.32	179.83	178.54	190	186.72	1.85	1.83	489.9	7477.1	7967
30	3003	J09-22-J09-24	J09-22	J09-24	728,799	289,294	439,505	9,083,654	8,354,855	PVC	27	178.12	178.07	180.37	180.32	0.00206	0.013	2.12	178.54	178.47	186.72	187.21	1.83	1.85	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	732,187	289,294	442,893	13,091,690	12,359,503	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	2.22	178.47	177.62	187.21	188.86	2.1	2.09	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	760,516	289,294	471,222	12,945,046	12,184,530	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	2.23	177.62	176.88	188.86	192.02	2.09	2.04	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	761,805	289,294	472,511	2,097,941	1,336,136	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	3.81	176.88	175.62	192.02	190.18	0.54	0.58	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	762,897	289,294	473,603	14,804,664	14,041,767	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	2.45	175.59	174.94	190.18	193.17	2.11	2.09	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	809,814	289,294	520,520	13,885,589	13,075,775	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	2.39	174.94	174.47	193.17	190	2.09	1.62	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	1,283,164	289,294	993,870	3,242,470	1,959,306	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	0.96	174.47	173.97	190	184	1.62	2.04	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	1,286,295	289,294	997,001	30,316,999	29,030,704	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	4.74	173.97	168.95	184	177.94	2.04	0.62	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	1,288,749	289,294	999,455	16,547,967	15,259,218	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	0.41	168.95	168.69	177.94	178.87	0.62	2.04	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	1,298,154	289,294	1,008,860	31,703,658	30,405,504	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	4.91	168.69	161.87	178.87	173.01	2.04	2.03	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	1,298,904	289,294	1,009,610	16,871,263	15,572,359	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	3.15	161.87	160.48	173.01	172.44	2.03	2.02	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	1,413,293	289,294	1,123,999	21,975,368	20,562,075	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	3.89	160.48	158.28	172.44	171	2.02	2.02	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	1,413,655	289,294	1,124,361	20,565,867	19,152,212	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	3.71	158.28	156.54	171	170.85	2.02	1.87	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	1,434,322	289,294	1,145,028	15,002,227	13,567,905	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	2.07	156.54	156.04	170.85	167.67	2.37	2.44	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	1,436,466	289,294	1,147,172	19,181,160	17,744,694	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	2.47	156.04	155.38	167.67	169.54	2.44	2.42	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	1,527,933	289,294	1,238,639	18,895,751	17,367,818	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	2.49	155.38	154.82	169.54	168.44	2.42	2.52	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	1,529,827	289,294	1,240,533	34,641,163	33,111,336	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	3.81	154.82	150.42	168.44	163.03	2.52	2.45	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	1,997,330	289,294	1,708,036	27,412,575	25,415,245	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	3.5	150.42	148.85	163.03	157.11	2.45	2.45	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	1,998,421	289,294	1,709,127	26,953,521	24,955,100	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	3.46	148.85	147.37	157.11	157	2.45	2.38	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	2,557,673	289,294	2,268,379	35,454,075	32,896,402	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	4.51	147.37	143.33	157	155.42	2.38	2.38	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	2,558,186	289,294	2,268,892	29,311,144	26,752,958	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	3.94	143.33	140.4	155.42	155.66	2.38	2.26	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	2,558,186	289,294	2,268,892	19,102,000	16,543,814	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	2.91	140.4	139.71	155.66	151	2.26	2.3	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	2,558,186	289,294	2,268,892	21,549,863	18,991,677	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	3.17	139.71	138.13	151	144.74	2.3	2.27	644.2	16163.9	16808.1
53	3447	I13-10-I13-11	I13-10	I13-11	2,558,186	289,294	2,268,892	19,647,126	17,088,940	PVC	21	137.4	133.13	139.15	134.88	0.03681	0.013	8.73	138.13	134.24	144.74	139.73	1.02	0.64	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	2,559,791	289,294	2,270,497	6,124,076	3,564,285	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	1.28	134.24	133.64	139.73	142.95	1.89	2.38	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	2,561,396	289,294	2,272,102	30,407,121	27,845,725	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	4.05	133.64	130.97	142.95	138	2.38	2.41	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	2,561,396	289,294	2,272,102	42,793,558	40,232,162	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	5.15	131	127.24	138	138	2.38	0.95	526.6	17999.7	18526.3
57	3436	I14-3-I14-5	I14-3	I14-5	2,561,396	289,294	2,272,102	21,484,290	18,922,894	PVC	36	125.19	124.9	128.19	127.9	0.00248	0.013	3.16	127.24	127.24	138	138	0.95	0.66	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	2,561,988	289,294	2,272,694	26,071,121	23,509,133	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	2.04	127.24	127.23	138	138	1.66	1.03	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	2,562,580	289,294	2,273,286	60,681,535	58,118,955	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	0.32	127.23	127.17	138	131.44	1.03	2.94	433	19454.5	19887.5
60	2975	I15-5-I15-7	I15-5	I15-7	2,562,580	289,294	2,273,286	33,047,844	30,485,264	PVC	48	126.11	126.09	130.11	130.09	0.00127	0.013	2.41	127.17	127.16	131.44	131.37	2.94	2.93	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	6,672,788	289,294	6,383,494	33,686,043	27,013,255	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	8.27	127.16	126.73	131.37	131.41	1.43	1.64	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	6,672,788	289,294	6,383,494	38,080,441	31,407,653	0	30	125.87	125	128.37	127.5	0.02064	0.013	9.02	126.94	126.84	131.41	131.36	1.43	0.66	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	9,842,566	289,294	9,553,272	2,608,858	-7,233,708	0	30	125	124.99	127.5	127.49	0.0001	0.013	3.1	126.84	126.31	131.36	131	0.66	1.18	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	9,847,302	289,294	9,558,008	30,788,053	20,940,751	0	36	124.99	124	127.99	127	0.0051	0.013	5.99	126.24	125.17	131	131	1.75	1.83	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 5 (City_PDWF_2015 CP_2020)

					Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
Link	ID	Link Name	US Node	DS Node	Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	J05-7-J05-8	_J05-7	J05-8	752,163	752,163	0	811,300	59,137	0	8	273	271.78	273.67	272.45	0.01079	0.013	4.08	273.51	272.29	276	274.78	0.16	0.16	113.1	0	113.1
2	3353	J05-8-POLY VAULT	J05-8	PolyVault	752,163	752,163	0	3,430,204	2,678,041	0	10	271.78	265.55	272.61	266.38	0.05868	0.013	7.79	272.26	266.15	274.78	271.46	0.35	0.23	106.2	113.1	219.3
3	3045	POLY VAULT-J06-2	PolyVault	J06-2	752,163	752,163	0	805,159	52,996	0	10	265.55	265.45	266.38	266.28	0.00323	0.013	2.6	266.15	265.93	271.46	270.98	0.23	0.35	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	754,241	752,163	2,078	2,566,826	1,812,585	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	2.81	265.91	265.09	270.98	269.39	0.79	0.81	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	788,689	752,163	36,526	4,834,667	4,045,978	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	4.49	265.09	259.53	269.39	268.74	0.81	0.8	415.3	461.8	877.1
6	3012	J06-14-J06-16	J06-14	J06-16	823,138	752,163	70,975	8,688,008	7,864,870	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	6.89	259.53	258.3	268.74	268.74	0.8	0.8	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	824,467	752,163	72,304	3,996,050	3,171,583	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	3.97	258.3	256.77	268.74	263.77	0.8	0.8	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	826,955	752,163	74,792	4,717,610	3,890,655	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	4.48	256.77	252.9	263.77	260.51	0.8	0.8	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	829,999	752,163	77,836	4,079,514	3,249,515	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	4.04	252.9	249.34	260.51	254.58	0.8	0.8	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	833,985	752,163	81,822	3,118,540	2,284,555	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	3.33	249.34	248.53	254.58	253.74	0.8	0.78	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	905,999	752,163	153,836	3,888,589	2,982,590	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	4	248.53	247.09	253.74	254.51	0.78	0.78	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	907,762	752,163	155,599	7,526,611	6,618,849	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	6.41	247.09	235.1	254.51	243	0.78	0.78	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	909,369	752,163	157,206	6,405,009	5,495,640	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	5.72	235.1	229.44	243	243	0.78	0.5	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	1,018,235	752,163	266,072	1,501,102	482,867	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	2.03	229.44	228.83	243	242	0.5	0.75	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	1,018,235	752,163	266,072	3,345,571	2,327,336	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	3.7	228.83	227.18	242	241.27	0.75	0.6	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	1,018,235	752,163	266,072	1,905,990	887,755	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	2.44	227.18	226.41	241.27	235.52	0.6	0.75	297.5	3243.2	3540.7
17	3391	K07-69-K07-28	K07-69	K07-28	1,018,235	752,163	266,072	7,497,885	6,479,650	0	15	225.91	222.53	227.16	223.78	0.03225	0.013	6.61	226.41	222.84	235.52	234.49	0.75	0.94	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	1,165,830	752,163	413,667	7,910,192	6,744,362	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	3.64	223.01	220	234.49	232.26	1.27	1.25	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	1,258,870	752,163	506,707	13,565,858	12,306,988	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	5.46	220	214.91	232.26	223.14	1.25	1.39	282.1	4153.3	4435.4
20	3410	J07-89-J07-90	J07-89	J07-90	1,259,401	752,163	507,238	10,436,597	9,177,196	PVC	12	214.55	208.61	215.55	209.61	0.05136	0.013	6.95	214.96	209.11	223.14	216	0.59	0.5	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	1,259,884	752,163	507,721	10,468,942	9,209,058	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	4.55	209.11	206.11	216	215.87	1.25	1.24	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	1,285,393	752,163	533,230	12,098,686	10,813,293	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	5.07	206.11	200.01	215.87	208.82	1.24	1.24	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	1,289,496	752,163	537,333	11,807,931	10,518,435	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	4.98	200.01	193.97	208.82	204.07	1.24	1.36	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	1,292,609	752,163	540,446	11,904,542	10,611,933	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	3.84	194.07	192.94	204.07	200.58	1.51	1.5	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	1,424,621	752,163	672,458	25,483,412	24,058,791	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	5.34	192.94	182.74	200.58	197	1.75	1.67	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	1,551,576	752,163	799,413	10,620,231	9,068,655	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	2.95	182.74	181.99	197	198.97	1.67	1.68	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	1,554,523	752,163	802,360	10,925,568	9,371,045	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	3.01	181.99	180.8	198.97	192.83	1.68	1.67	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	1,562,285	752,163	810,122	10,554,288	8,992,003	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	2.94	180.8	180.02	192.83	190	1.67	1.66	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	1,562,285	752,163	810,122	10,350,223	8,787,938	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	2.9	180.02	178.73	190	186.72	1.66	1.64	489.9	7477.1	7967
30	3003	J09-22-J09-24	J09-22	J09-24	1,570,465	752,163	818,302	9,083,654	7,513,189	PVC	27	178.12	178.07	180.37	180.32	0.00206	0.013	2.65	178.73	178.66	186.72	187.21	1.64	1.66	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	1,577,007	752,163	824,844	13,091,690	11,514,683	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	2.79	178.66	177.81	187.21	188.86	1.91	1.9	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	1,632,307	752,163	880,144	12,945,046	11,312,739	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	2.79	177.81	177.1	188.86	192.02	1.9	1.82	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	1,634,797	752,163	882,634	2,097,941	463,144	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	4.57	177.1	175.86	192.02	190.18	0.32	0.34	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	1,636,905	752,163	884,742	14,804,664	13,167,759	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	3.07	175.76	175.13	190.18	193.17	1.94	1.9	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	1,728,627	752,163	976,464	13,885,589	12,156,962	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	2.98	175.13	174.81	193.17	190	1.9	1.28	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	2,604,747	752,163	1,852,584	3,242,470	637,723	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	1.14	174.81	174.17	190	184	1.28	1.84	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	2,610,793	752,163	1,858,630	30,316,999	27,706,206	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	5.85	174.17	169.27	184	177.94	1.84	0.3	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	2,615,532	752,163	1,863,369	16,547,967	13,932,435	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	0.82	169.27	168.89	177.94	178.87	0.3	1.84	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	2,633,697	752,163	1,881,534	31,703,658	29,069,961	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	6.05	168.89	162.07	178.87	173.01	1.84	1.83	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	2,635,145	752,163	1,882,982	16,871,263	14,236,118	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	3.87	162.07	160.69	173.01	172.44	1.83	1.81	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	2,867,635	752,163	2,115,472	21,975,368	19,107,733	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	4.79	160.69	158.49	172.44	171	1.81	1.81	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	2,868,334	752,163	2,116,171	20,565,867	17,697,533	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	4.57	158.49	156.8	171	170.85	1.81	1.61	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	2,908,200	752,163	2,156,037	15,002,227	12,094,027	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	2.54	156.8	156.27	170.85	167.67	2.11	2.21	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	2,912,341	752,163	2,160,178	19,181,160	16,268,819	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	3.03	156.27	155.62	167.67	169.54	2.21	2.18	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	3,077,051	752,163	2,324,888	18,895,751	15,818,700	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	3.05	155.62	155.02	169.54	168.44	2.18	2.32	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	3,080,709	752,163	2,328,546	34,641,163	31,560,454	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	4.68	155.02	150.65	168.44	163.03	2.32	2.22	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	3,939,603	752,163	3,187,440	27,412,575	23,472,972	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	4.26	150.65	149.08	163.03	157.11	2.22	2.22	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	3,941,712	752,163	3,189,549	26,953,521	23,011,809	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	4.21	149.08	147.59	157.11	157	2.22	2.16	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	4,643,297	752,163	3,891,134	35,454,075	30,810,778	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	5.37	147.59	143.55	157	155.42	2.16	2.16	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	4,644,287	752,163	3,892,124	29,311,144	24,666,857	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	4.69	143.55	140.67	155.42	155.66	2.16	1.99	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	4,644,287	752,163	3,892,124	19,102,000	14,457,713	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	3.45	140.67	139.96	155.66	151	1.99	2.05	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	4,644,287	752,163	3,892,124	21,549,863	16,905,576	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	3.76	139.96	138.39	151	144.74	2.05	2.01	644.2	16163.9	16808.1
53	3447	I13-10-I13-11	I13-10	I13-11	4,644,287	752,163	3,892,124	19,647,126	15,002,839	PVC	21	137.4	133.13	139.15	134.88	0.03681	0.013	10.35	138.39	134.6	144.74	139.73	0.76	0.28	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	4,647,387	752,163	3,895,224	6,124,076	1,476,689	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	1.47	134.6	133.86	139.73	142.95	1.53	2.16	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	4,650,487	752,163	3,898,324	30,407,121	25,756,634	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	4.81	133.86	131.17	142.95	138	2.16	2.21	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	4,650,487	752,163	3,898,324	42,793,558	38,143,071	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	6.14	131.22	127.51	138	138	2.16	0.68	526.6	17999.7	18526.3
57	3436	I14-3-I14-5	I14-3	I14-5	4,650,487	752,163	3,898,324	21,484,290	16,833,803	PVC	36	125.19	124.9	128.19	127.9	0.00248	0.013	3.75	127.51	127.5	138	138	0.68	0.4	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	4,651,630	752,163	3,899,467	26,071,121	21,419,491	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	2.43	127.5	127.47	138	138	1.4	0.79	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	4,652,773	752,163	3,900,610	60,681,535	56,028,762	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	0.57	127.47	127.35	138	131.44	0.79	2.76	433	19454.5	19887.5
60	2975	I15-5-I15-7	I15-5	I15-7	4,652,773	752,163	3,900,610	33,047,844	28,395,071	PVC	48	126.11	126.09	130.11	130.09	0.00127	0.013	2.87	127.35	127.34	131.44	131.37	2.76	2.75	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	8,964,633	752,163	8,212,470	33,686,043	24,721,410	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	8.98	127.34	126.89	131.37	131.41	1.25	1.48	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	8,964,633	752,163	8,212,470	38,080,441	29,115,808	0	30	125.87	125	128.37	127.5	0.02064	0.013	9.81	127.12	127.06	131.41	131.36	1.25	0.44	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	12,134,412	752,163	11,382,249	2,608,858	-9,525,554	0	30	125	124.99	127.5	127.49	0.0001	0.013	3.82	127.06	126.46	131.36	131	0.44	1.03	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	12,143,557	752,163	11,391,394	30,788,053	18,644,496	0	36	124.99	124	127.99	127	0.0051	0.013	6.34	126.38	125.31	131	131	1.61	1.69	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 6 (City_PWWF_2015 CP_2020)

					Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
Link	ID	Link Name	US Node	DS Node	Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	J05-7-J05-8	_J05-7	J05-8	2,321,107	2,321,107	0	811,300	-1,509,807	0	8	273	271.78	273.67	272.45	0.01079	0.013	10.29	282.56	272.57	276	274.78	-8.89	-0.12	113.1	0	113.1
2	3353	J05-8-POLY VAULT	J05-8	PolyVault	2,349,569	2,321,107	28,462	3,430,204	1,080,635	0	10	271.78	265.55	272.61	266.38	0.05868	0.013	10.48	272.57	267.32	274.78	271.46	0.04	-0.94	106.2	113.1	219.3
3	3045	POLY VAULT-J06-2	PolyVault	J06-2	2,378,031	2,321,107	56,924	805,159	-1,572,872	0	10	265.55	265.45	266.38	266.28	0.00323	0.013	6.75	267.32	266.44	271.46	270.98	-0.94	-0.16	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	2,493,958	2,321,107	172,851	2,566,826	72,868	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	3.69	266.44	265.45	270.98	269.39	0.26	0.45	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	2,556,869	2,321,107	235,762	4,834,667	2,277,798	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	6.18	265.45	259.89	269.39	268.74	0.45	0.44	415.3	461.8	877.1
6	3012	J06-14-J06-16	J06-14	J06-16	2,619,780	2,321,107	298,673	8,688,008	6,068,228	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	9.59	259.89	258.67	268.74	268.74	0.44	0.43	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	2,649,571	2,321,107	328,464	3,996,050	1,346,479	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	5.39	258.67	257.14	268.74	263.77	0.43	0.43	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	2,680,521	2,321,107	359,414	4,717,610	2,037,089	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	6.14	257.14	253.28	263.77	260.51	0.43	0.42	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	2,712,027	2,321,107	390,920	4,079,514	1,367,487	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	5.5	253.28	249.8	260.51	254.58	0.42	0.34	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	2,744,476	2,321,107	423,369	3,118,540	374,064	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	4.44	249.8	249.01	254.58	253.74	0.34	0.3	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	3,584,969	2,321,107	1,263,862	3,888,589	303,620	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	5.56	249.01	247.58	253.74	254.51	0.3	0.29	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	3,615,194	2,321,107	1,294,087	7,526,611	3,911,417	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	9.4	247.58	236.75	254.51	243	0.29	-0.87	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	3,645,263	2,321,107	1,324,156	6,405,009	2,759,746	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	4.6	236.75	234.83	243	243	-0.87	-4.89	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	3,953,365	2,321,107	1,632,258	1,501,102	-2,452,263	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	4.98	234.83	232.33	243	242	-4.89	-2.75	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	3,981,827	2,321,107	1,660,720	3,345,571	-636,256	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	5.02	232.33	229.78	242	241.27	-2.75	-2	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	4,010,290	2,321,107	1,689,183	1,905,990	-2,104,300	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	5.06	229.78	226.92	241.27	235.52	-2	0.24	297.5	3243.2	3540.7
17	3391	K07-69-K07-28	K07-69	K07-28	4,038,752	2,321,107	1,717,645	7,497,885	3,459,133	0	15	225.91	222.53	227.16	223.78	0.03225	0.013	9.63	226.92	223.6	235.52	234.49	0.24	0.18	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	5,370,209	2,321,107	3,049,102	7,910,192	2,539,983	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	5.47	223.6	220.67	234.49	232.26	0.68	0.58	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	6,405,591	2,321,107	4,084,484	13,565,858	7,160,267	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	8.6	220.67	215.4	232.26	223.14	0.58	0.9	282.1	4153.3	4435.4
20	3410	J07-89-J07-90	J07-89	J07-90	6,434,584	2,321,107	4,113,477	10,436,597	4,002,013	PVC	12	214.55	208.61	215.55	209.61	0.05136	0.013	10.81	215.47	209.79	223.14	216	0.08	-0.18	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	6,463,529	2,321,107	4,142,422	10,468,942	4,005,413	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	7.09	209.79	206.8	216	215.87	0.57	0.55	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	6,743,172	2,321,107	4,422,065	12,098,686	5,355,514	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	7.99	206.8	200.7	215.87	208.82	0.55	0.55	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	6,753,455	2,321,107	4,432,348	11,807,931	5,054,476	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	7.85	200.7	194.53	208.82	204.07	0.55	0.8	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	6,762,746	2,321,107	4,441,639	11,904,542	5,141,796	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	6.05	194.74	193.61	204.07	200.58	0.84	0.83	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	7,337,133	2,321,107	5,016,026	25,483,412	18,146,279	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	8.57	193.61	189.07	200.58	197	1.08	-4.66	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	8,061,331	2,321,107	5,740,224	10,620,231	2,558,900	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	3.14	189.07	188.64	197	198.97	-4.66	-4.97	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	8,076,637	2,321,107	5,755,530	10,925,568	2,848,931	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	3.14	188.64	187.99	198.97	192.83	-4.97	-5.52	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	8,106,024	2,321,107	5,784,917	10,554,288	2,448,264	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	3.15	187.99	187.52	192.83	190	-5.52	-5.84	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	8,112,203	2,321,107	5,791,096	10,350,223	2,238,020	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	3.16	187.52	186.72	190	186.72	-5.84	-6.35	489.9	7477.1	7967
30	3003	J09-22-J09-24	J09-22	J09-24	8,132,742	2,321,107	5,811,635	9,083,654	950,912	PVC	27	178.12	178.07	180.37	180.32	0.00206	0.013	3.16	187.25	187.21	186.72	187.21	-6.88	-6.89	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	10,312,557	2,321,107	7,991,450	13,091,690	2,779,133	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	3.25	189.4	188.86	187.21	188.86	-8.83	-9.15	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	10,903,825	2,321,107	8,582,718	12,945,046	2,041,221	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	3.44	192.58	192.02	188.86	192.02	-12.87	-13.1	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	10,937,210	2,321,107	8,616,103	2,097,941	-8,839,269	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	21.55	211.66	178.5	192.02	190.18	-34.24	-2.3	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	10,945,498	2,321,107	8,624,391	14,804,664	3,859,166	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	3.45	178.5	178.14	190.18	193.17	-0.8	-1.11	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	11,191,434	2,321,107	8,870,327	13,885,589	2,694,155	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	3.53	178.14	177.53	193.17	190	-1.11	-1.44	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	16,084,812	2,321,107	13,763,705	3,242,470	-12,842,342	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	5.07	177.53	175.21	190	184	-1.44	0.8	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	16,097,039	2,321,107	13,775,932	30,316,999	14,219,960	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	9.7	175.21	171.4	184	177.94	0.8	-1.83	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	16,107,956	2,321,107	13,786,849	16,547,967	440,011	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	5.08	171.4	169.93	177.94	178.87	-1.83	0.8	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	16,163,194	2,321,107	13,842,087	31,703,658	15,540,464	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	10.04	169.93	164.71	178.87	173.01	0.8	-0.81	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	16,170,823	2,321,107	13,849,716	16,871,263	700,440	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	5.1	164.71	163.43	173.01	172.44	-0.81	-0.93	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	16,707,484	2,321,107	14,386,377	21,975,368	5,267,884	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	5.27	163.43	162.16	172.44	171	-0.93	-1.86	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	16,714,361	2,321,107	14,393,254	20,565,867	3,851,506	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	5.27	162.16	160.91	171	170.85	-1.86	-2.5	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	17,445,249	2,321,107	15,124,142	15,002,227	-2,443,022	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	3.82	160.91	160.33	170.85	167.67	-2	-1.85	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	17,467,926	2,321,107	15,146,819	19,181,160	1,713,234	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	3.82	160.33	159.76	167.67	169.54	-1.85	-1.96	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	21,306,395	2,321,107	18,985,288	18,895,751	-2,410,644	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	4.66	159.76	159.18	169.54	168.44	-1.96	-1.84	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	21,328,590	2,321,107	19,007,483	34,641,163	13,312,573	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	4.67	159.18	157.48	168.44	163.03	-1.84	-4.61	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	26,103,547	2,321,107	23,782,440	27,412,575	1,309,028	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	5.71	157.48	156.06	163.03	157.11	-4.61	-4.76	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	26,111,834	2,321,107	23,790,727	26,953,521	841,687	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	5.72	156.06	154.6	157.11	157	-4.76	-4.85	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	28,639,677	2,321,107	26,318,570	35,454,075	6,814,398	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	6.27	154.6	151.97	157	155.42	-4.85	-6.26	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	28,646,847	2,321,107	26,325,740	29,311,144	664,297	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	6.27	151.97	149.05	155.42	155.66	-6.26	-6.39	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	28,653,025	2,321,107	26,331,918	19,102,000	-9,551,025	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	6.27	149.05	147.59	155.66	151	-6.39	-5.58	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	28,659,206	2,321,107	26,338,099	21,549,863	-7,109,343	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	6.27	147.59	144.74	151	144.74	-5.58	-4.34	644.2	16163.9	16808.1
53	3447	I13-10-I13-11	I13-10	I13-11	28,665,385	2,321,107	26,344,278	19,647,126	-9,018,259	PVC	21	137.4	133.13	139.15	134.88	0.03681	0.013	18.44	148.82	139.73	144.74	139.73	-9.67	-4.85	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	28,674,663	2,321,107	26,353,556	6,124,076	-22,550,587	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	6.28	140.18	137.76	139.73	142.95	-4.05	-1.74	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	28,683,940	2,321,107	26,362,833	30,407,121	1,723,181	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	6.28	137.76	135.41	142.95	138	-1.74	-2.03	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	28,690,121	2,321,107	26,369,014	42,793,558	14,103,437	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	6.28	135.41	133.08	138	138	-2.03	-4.89	526.6	17999.7	18526.3
57	3436	I14-3-I14-5	I14-3	I14-5	28,696,300	2,321,107	26,375,193	21,484,290	-7,212,010	PVC	36	125.19	124.9	128.19	127.9	0.00248	0.013	6.28	133.08	132.56	138	138	-4.89	-4.66	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	28,703,623	2,321,107	26,382,516	26,071,121	-2,632,502	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	3.53	132.56	131.79	138	138	-3.66	-3.53	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	28,710,945	2,321,107	26,389,838	60,681,535	31,970,590	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	3.54	131.79	131.37	138	131.44	-3.53	-1.26	433	19454.5	19887.5
60	2975	I15-5-I15-7	I15-5	I15-7	28,717,124	2,321,107	26,396,017	33,047,844	4,330,720	PVC	48	126.11	126.09	130.11	130.09	0.00127	0.013	3.54	131.37	131.36	131.44	131.37	-1.26	-1.27	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	35,083,864	2,321,107	32,762,757	33,686,043	-1,397,821	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	11.06	131.36	131.12	131.37	131.41	-2.77	-2.75	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	35,090,045	2,321,107	32,768,938	38,080,441	2,990,396	0	30	125.87	125	128.37	127.5	0.02064	0.013	11.06	131.12	130.38	131.41	131.36	-2.75	-2.88	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	38,259,822	2,321,107	35,938,715	2,608,858	-35,650,964	0	30	125	124.99	127.5	127.49	0.0001	0.013	12.06	130.38	128.23	131.36	131	-2.88	-0.74	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	38,293,683	2,321,107	35,972,576	30,788,053	-7,505,630	0	36	124.99	124	127.99	127	0.0051	0.013	8.38	128.23	126.49	131	131	-0.24	0.51	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 7 (City_ADWF_2015 CP_2025_Likely)

					Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
Link	ID	Link Name	US Node	DS Node	Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	J05-7-J05-8	_J05-7	J05-8	293,268	293,268	0	811,300	518,032	0	8	273	271.78	273.67	272.45	0.01079	0.013	3.31	273.31	272.06	276	274.78	0.36	0.39	113.1	0	113.1
2	3353	J05-8-POLY VAULT	J05-8	PolyVault	293,268	293,268	0	3,430,204	3,136,936	0	10	271.78	265.55	272.61	266.38	0.05868	0.013	5.94	272.07	265.9	274.78	271.46	0.54	0.48	106.2	113.1	219.3
3	3045	POLY VAULT-J06-2	PolyVault	J06-2	293,268	293,268	0	805,159	511,891	0	10	265.55	265.45	266.38	266.28	0.00323	0.013	2.1	265.9	265.74	271.46	270.98	0.48	0.54	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	294,399	293,268	1,131	2,566,826	2,272,427	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	2.15	265.74	264.92	270.98	269.39	0.96	0.98	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	313,158	293,268	19,890	4,834,667	4,521,509	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	3.43	264.92	259.36	269.39	268.74	0.98	0.97	415.3	461.8	877.1
6	3012	J06-14-J06-16	J06-14	J06-16	331,917	293,268	38,649	8,688,008	8,356,091	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	5.27	259.36	258.13	268.74	268.74	0.97	0.97	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	332,641	293,268	39,373	3,996,050	3,663,409	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	3.05	258.13	256.6	268.74	263.77	0.97	0.97	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	333,996	293,268	40,728	4,717,610	4,383,614	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	3.44	256.6	252.73	263.77	260.51	0.97	0.97	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	335,653	293,268	42,385	4,079,514	3,743,861	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	3.11	252.73	249.17	260.51	254.58	0.97	0.97	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	337,824	293,268	44,556	3,118,540	2,780,716	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	2.57	249.17	248.36	254.58	253.74	0.97	0.95	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	377,039	293,268	83,771	3,888,589	3,511,550	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	3.11	248.36	246.92	253.74	254.51	0.95	0.95	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	377,999	293,268	84,731	7,526,611	7,148,612	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	4.95	246.92	234.93	254.51	243	0.95	0.95	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	378,874	293,268	85,606	6,405,009	6,026,135	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	4.42	234.93	229.15	243	243	0.95	0.79	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	438,157	293,268	144,889	1,501,102	1,062,945	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	1.64	229.15	228.65	243	242	0.79	0.93	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	438,157	293,268	144,889	3,345,571	2,907,414	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	2.92	228.65	226.94	242	241.27	0.93	0.84	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	438,157	293,268	144,889	1,905,990	1,467,833	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	1.95	226.94	226.23	241.27	235.52	0.84	0.93	297.5	3243.2	3540.7
17	3391	K07-69-K07-28	K07-69	K07-28	438,157	293,268	144,889	7,497,885	7,059,728	0	15	225.91	222.53	227.16	223.78	0.03225	0.013	5.16	226.23	222.74	235.52	234.49	0.93	1.04	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	515,298	293,268	222,030	7,910,192	7,394,894	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	2.87	222.85	219.83	234.49	232.26	1.43	1.42	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	566,073	293,268	272,805	13,565,858	12,999,785	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	4.31	219.83	214.79	232.26	223.14	1.42	1.51	282.1	4153.3	4435.4
20	3410	J07-89-J07-90	J07-89	J07-90	566,363	293,268	273,095	10,436,597	9,870,234	PVC	12	214.55	208.61	215.55	209.61	0.05136	0.013	5.49	214.82	208.94	223.14	216	0.73	0.67	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	566,626	293,268	273,358	10,468,942	9,902,316	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	3.59	208.94	205.94	216	215.87	1.42	1.41	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	579,899	293,268	286,631	12,098,686	11,518,787	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	4	205.94	199.84	215.87	208.82	1.41	1.41	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	582,024	293,268	288,756	11,807,931	11,225,907	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	3.94	199.84	193.84	208.82	204.07	1.41	1.49	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	583,635	293,268	290,367	11,904,542	11,320,907	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	3.04	193.91	192.78	204.07	200.58	1.67	1.66	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	651,942	293,268	358,674	25,483,412	24,831,470	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	4.23	192.78	182.56	200.58	197	1.91	1.85	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	722,993	293,268	429,725	10,620,231	9,897,238	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	2.36	182.56	181.81	197	198.97	1.85	1.86	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	724,519	293,268	431,251	10,925,568	10,201,049	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	2.41	181.81	180.62	198.97	192.83	1.86	1.85	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	728,537	293,268	435,269	10,554,288	9,825,751	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	2.36	180.62	179.83	192.83	190	1.85	1.85	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	728,537	293,268	435,269	10,350,223	9,621,686	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	2.32	179.83	178.54	190	186.72	1.85	1.83	489.9	7477.1	7967
30	3003	J09-22-J09-24	J09-22	J09-24	732,773	293,268	439,505	9,083,654	8,350,881	PVC	27	178.12	178.07	180.37	180.32	0.00206	0.013	2.12	178.54	178.47	186.72	187.21	1.83	1.85	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	736,161	293,268	442,893	13,091,690	12,355,529	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	2.23	178.47	177.62	187.21	188.86	2.1	2.09	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	764,490	293,268	471,222	12,945,046	12,180,556	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	2.23	177.62	176.88	188.86	192.02	2.09	2.04	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	765,779	293,268	472,511	2,097,941	1,332,162	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	3.81	176.88	175.62	192.02	190.18	0.54	0.58	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	766,871	293,268	473,603	14,804,664	14,037,793	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	2.46	175.59	174.94	190.18	193.17	2.11	2.09	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	813,788	293,268	520,520	13,885,589	13,071,801	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	2.39	174.94	174.47	193.17	190	2.09	1.62	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	1,287,138	293,268	993,870	3,242,470	1,955,332	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	0.96	174.47	173.97	190	184	1.62	2.04	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	1,290,269	293,268	997,001	30,316,999	29,026,730	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	4.74	173.97	168.95	184	177.94	2.04	0.62	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	1,292,723	293,268	999,455	16,547,967	15,255,244	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	0.41	168.95	168.69	177.94	178.87	0.62	2.04	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	1,302,128	293,268	1,008,860	31,703,658	30,401,530	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	4.91	168.69	161.87	178.87	173.01	2.04	2.03	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	1,302,878	293,268	1,009,610	16,871,263	15,568,385	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	3.15	161.87	160.48	173.01	172.44	2.03	2.02	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	1,417,268	293,268	1,124,000	21,975,368	20,558,100	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	3.89	160.48	158.28	172.44	171	2.02	2.02	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	1,417,629	293,268	1,124,361	20,565,867	19,148,238	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	3.72	158.28	156.54	171	170.85	2.02	1.87	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	1,438,296	293,268	1,145,028	15,002,227	13,563,931	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	2.07	156.54	156.04	170.85	167.67	2.37	2.44	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	1,440,440	293,268	1,147,172	19,181,160	17,740,720	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	2.47	156.04	155.38	167.67	169.54	2.44	2.42	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	1,531,907	293,268	1,238,639	18,895,751	17,363,844	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	2.49	155.38	154.82	169.54	168.44	2.42	2.52	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	1,533,801	293,268	1,240,533	34,641,163	33,107,362	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	3.81	154.82	150.42	168.44	163.03	2.52	2.45	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	2,001,304	293,268	1,708,036	27,412,575	25,411,271	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	3.5	150.42	148.85	163.03	157.11	2.45	2.45	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	2,002,395	293,268	1,709,127	26,953,521	24,951,126	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	3.46	148.85	147.37	157.11	157	2.45	2.38	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	2,561,647	293,268	2,268,379	35,454,075	32,892,428	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	4.51	147.37	143.33	157	155.42	2.38	2.38	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	2,562,160	293,268	2,268,892	29,311,144	26,748,984	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	3.94	143.33	140.4	155.42	155.66	2.38	2.26	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	2,562,160	293,268	2,268,892	19,102,000	16,539,840	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	2.91	140.4	139.71	155.66	151	2.26	2.3	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	2,562,160	293,268	2,268,892	21,549,863	18,987,703	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	3.17	139.71	138.13	151	144.74	2.3	2.27	644.2	16163.9	16808.1
53	3447	I13-10-I13-11	I13-10	I13-11	2,562,160	293,268	2,268,892	19,647,126	17,084,966	PVC	21	137.4	133.13	139.15	134.88	0.03681	0.013	8.73	138.13	134.24	144.74	139.73	1.02	0.64	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	2,563,765	293,268	2,270,497	6,124,076	3,560,311	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	1.28	134.24	133.64	139.73	142.95	1.89	2.38	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	2,565,370	293,268	2,272,102	30,407,121	27,841,751	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	4.05	133.64	130.97	142.95	138	2.38	2.41	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	2,565,370	293,268	2,272,102	42,793,558	40,228,188	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	5.15	131	127.24	138	138	2.38	0.95	526.6	17999.7	18526.3
57	3436	I14-3-I14-5	I14-3	I14-5	2,565,370	293,268	2,272,102	21,484,290	18,918,920	PVC	36	125.19	124.9	128.19	127.9	0.00248	0.013	3.17	127.24	127.24	138	138	0.95	0.66	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	2,565,962	293,268	2,272,694	26,071,121	23,505,159	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	2.04	127.24	127.23	138	138	1.66	1.03	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	2,566,554	293,268	2,273,286	60,681,535	58,114,981	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	0.32	127.23	127.17	138	131.44	1.03	2.94	433	19454.5	19887.5
60	2975	I15-5-I15-7	I15-5	I15-7	2,566,554	293,268	2,273,286	33,047,844	30,481,290	PVC	48	126.11	126.09	130.11	130.09	0.00127	0.013	2.42	127.17	127.16	131.44	131.37	2.94	2.93	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	6,676,763	293,268	6,383,495	33,686,043	27,009,280	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	8.27	127.16	126.73	131.37	131.41	1.43	1.64	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	6,676,763	293,268	6,383,495	38,080,441	31,403,678	0	30	125.87	125	128.37	127.5	0.02064	0.013	9.02	126.94	126.84	131.41	131.36	1.43	0.66	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	9,846,541	293,268	9,553,273	2,608,858	-7,237,683	0	30	125	124.99	127.5	127.49	0.0001	0.013	3.1	126.84	126.31	131.36	131	0.66	1.18	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	9,851,276	293,268	9,558,008	30,788,053	20,936,777	0	36	124.99	124	127.99	127	0.0051	0.013	6	126.24	125.17	131	131	1.75	1.83	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 8 (City_PDWF_2015 CP_2025_Likely)

					Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
Link	ID	Link Name	US Node	DS Node	Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	J05-7-J05-8	_J05-7	J05-8	1,033,889	1,033,889	0	811,300	-222,589	0	8	273	271.78	273.67	272.45	0.01079	0.013	4.58	274.39	272.37	276	274.78	-0.72	0.08	113.1	0	113.1
2	3353	J05-8-POLY VAULT	J05-8	PolyVault	1,033,889	1,033,889	0	3,430,204	2,396,315	0	10	271.78	265.55	272.61	266.38	0.05868	0.013	8.52	272.35	266.29	274.78	271.46	0.26	0.09	106.2	113.1	219.3
3	3045	POLY VAULT-J06-2	PolyVault	J06-2	1,033,889	1,033,889	0	805,159	-228,730	0	10	265.55	265.45	266.38	266.28	0.00323	0.013	2.93	266.29	266.02	271.46	270.98	0.09	0.26	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	1,035,967	1,033,889	2,078	2,566,826	1,530,859	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	3.06	266	265.16	270.98	269.39	0.7	0.74	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	1,070,415	1,033,889	36,526	4,834,667	3,764,252	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	4.9	265.16	259.6	269.39	268.74	0.74	0.73	415.3	461.8	877.1
6	3012	J06-14-J06-16	J06-14	J06-16	1,104,864	1,033,889	70,975	8,688,008	7,583,144	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	7.51	259.6	258.37	268.74	268.74	0.73	0.73	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	1,106,193	1,033,889	72,304	3,996,050	2,889,857	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	4.31	258.37	256.84	268.74	263.77	0.73	0.73	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	1,108,681	1,033,889	74,792	4,717,610	3,608,929	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	4.86	256.84	252.97	263.77	260.51	0.73	0.73	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	1,111,725	1,033,889	77,836	4,079,514	2,967,789	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	4.38	252.97	249.41	260.51	254.58	0.73	0.73	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	1,115,711	1,033,889	81,822	3,118,540	2,002,829	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	3.6	249.41	248.6	254.58	253.74	0.73	0.71	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	1,187,725	1,033,889	153,836	3,888,589	2,700,864	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	4.31	248.6	247.16	253.74	254.51	0.71	0.71	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	1,189,488	1,033,889	155,599	7,526,611	6,337,123	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	6.93	247.16	235.17	254.51	243	0.71	0.71	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	1,191,095	1,033,889	157,206	6,405,009	5,213,914	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	6.18	235.17	229.56	243	243	0.71	0.38	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	1,299,962	1,033,889	266,073	1,501,102	201,140	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	2.13	229.56	228.9	243	242	0.38	0.68	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	1,299,962	1,033,889	266,073	3,345,571	2,045,609	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	3.95	228.9	227.29	242	241.27	0.68	0.49	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	1,299,962	1,033,889	266,073	1,905,990	606,028	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	2.59	227.29	226.48	241.27	235.52	0.49	0.68	297.5	3243.2	3540.7
17	3391	K07-69-K07-28	K07-69	K07-28	1,299,962	1,033,889	266,073	7,497,885	6,197,923	0	15	225.91	222.53	227.16	223.78	0.03225	0.013	7.09	226.48	222.88	235.52	234.49	0.68	0.9	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	1,447,556	1,033,889	413,667	7,910,192	6,462,636	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	3.87	223.07	220.06	234.49	232.26	1.21	1.19	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	1,540,596	1,033,889	506,707	13,565,858	12,025,262	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	5.79	220.06	214.95	232.26	223.14	1.19	1.35	282.1	4153.3	4435.4
20	3410	J07-89-J07-90	J07-89	J07-90	1,541,127	1,033,889	507,238	10,436,597	8,895,470	PVC	12	214.55	208.61	215.55	209.61	0.05136	0.013	7.36	215.01	209.17	223.14	216	0.54	0.44	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	1,541,610	1,033,889	507,721	10,468,942	8,927,332	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	4.82	209.17	206.16	216	215.87	1.19	1.19	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	1,567,119	1,033,889	533,230	12,098,686	10,531,567	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	5.37	206.16	200.06	215.87	208.82	1.19	1.19	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	1,571,222	1,033,889	537,333	11,807,931	10,236,709	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	5.28	200.06	194.01	208.82	204.07	1.19	1.32	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	1,574,335	1,033,889	540,446	11,904,542	10,330,207	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	4.07	194.12	192.99	204.07	200.58	1.46	1.45	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	1,706,347	1,033,889	672,458	25,483,412	23,777,065	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	5.64	192.99	182.79	200.58	197	1.7	1.62	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	1,833,302	1,033,889	799,413	10,620,231	8,786,929	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	3.09	182.79	182.04	197	198.97	1.62	1.63	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	1,836,249	1,033,889	802,360	10,925,568	9,089,319	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	3.16	182.04	180.86	198.97	192.83	1.63	1.61	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	1,844,011	1,033,889	810,122	10,554,288	8,710,277	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	3.09	180.86	180.07	192.83	190	1.61	1.61	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	1,844,011	1,033,889	810,122	10,350,223	8,506,212	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	3.04	180.07	178.79	190	186.72	1.61	1.58	489.9	7477.1	7967
30	3003	J09-22-J09-24	J09-22	J09-24	1,852,191	1,033,889	818,302	9,083,654	7,231,463	PVC	27	178.12	178.07	180.37	180.32	0.00206	0.013	2.78	178.79	178.71	186.72	187.21	1.58	1.61	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	1,858,733	1,033,889	824,844	13,091,690	11,232,957	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	2.92	178.71	177.86	187.21	188.86	1.86	1.85	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	1,914,033	1,033,889	880,144	12,945,046	11,031,013	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	2.92	177.86	177.17	188.86	192.02	1.85	1.75	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	1,916,523	1,033,889	882,634	2,097,941	181,418	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	4.69	177.17	175.94	192.02	190.18	0.25	0.26	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	1,918,631	1,033,889	884,742	14,804,664	12,886,033	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	3.22	175.81	175.17	190.18	193.17	1.89	1.86	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	2,010,353	1,033,889	976,464	13,885,589	11,875,236	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	3.12	175.17	174.87	193.17	190	1.86	1.22	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	2,886,473	1,033,889	1,852,584	3,242,470	355,997	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	1.15	174.87	174.21	190	184	1.22	1.8	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	2,892,519	1,033,889	1,858,630	30,316,999	27,424,480	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	6.03	174.21	169.32	184	177.94	1.8	0.25	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	2,897,258	1,033,889	1,863,369	16,547,967	13,650,709	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	0.91	169.32	168.93	177.94	178.87	0.25	1.8	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	2,915,423	1,033,889	1,881,534	31,703,658	28,788,235	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	6.23	168.93	162.1	178.87	173.01	1.8	1.8	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	2,916,871	1,033,889	1,882,982	16,871,263	13,954,392	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	3.98	162.1	160.73	173.01	172.44	1.8	1.77	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	3,149,361	1,033,889	2,115,472	21,975,368	18,826,007	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	4.92	160.73	158.53	172.44	171	1.77	1.77	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	3,150,060	1,033,889	2,116,171	20,565,867	17,415,807	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	4.69	158.53	156.85	171	170.85	1.77	1.56	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	3,189,926	1,033,889	2,156,037	15,002,227	11,812,301	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	2.61	156.85	156.31	170.85	167.67	2.06	2.17	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	3,194,067	1,033,889	2,160,178	19,181,160	15,987,093	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	3.11	156.31	155.66	167.67	169.54	2.17	2.14	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	3,358,777	1,033,889	2,324,888	18,895,751	15,536,974	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	3.12	155.66	155.05	169.54	168.44	2.14	2.29	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	3,362,435	1,033,889	2,328,546	34,641,163	31,278,728	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	4.81	155.05	150.67	168.44	163.03	2.29	2.2	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	4,221,329	1,033,889	3,187,440	27,412,575	23,191,246	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	4.35	150.67	149.1	163.03	157.11	2.2	2.2	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	4,223,438	1,033,889	3,189,549	26,953,521	22,730,083	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	4.3	149.1	147.62	157.11	157	2.2	2.13	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	4,925,023	1,033,889	3,891,134	35,454,075	30,529,052	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	5.46	147.62	143.58	157	155.42	2.13	2.13	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	4,926,013	1,033,889	3,892,124	29,311,144	24,385,131	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	4.77	143.58	140.7	155.42	155.66	2.13	1.96	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	4,926,013	1,033,889	3,892,124	19,102,000	14,175,987	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	3.51	140.7	139.99	155.66	151	1.96	2.02	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	4,926,013	1,033,889	3,892,124	21,549,863	16,623,850	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	3.82	139.99	138.42	151	144.74	2.02	1.98	644.2	16163.9	16808.1
53	3447	I13-10-I13-11	I13-10	I13-11	4,926,013	1,033,889	3,892,124	19,647,126	14,721,113	PVC	21	137.4	133.13	139.15	134.88	0.03681	0.013	10.51	138.42	134.64	144.74	139.73	0.73	0.24	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	4,929,113	1,033,889	3,895,224	6,124,076	1,194,963	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	1.49	134.64	133.89	139.73	142.95	1.49	2.13	550.6	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	4,932,213	1,033,889	3,898,324	30,407,121	25,474,908	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	4.9	133.89	131.2	142.95	138	2.13	2.18	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	4,932,213	1,033,889	3,898,324	42,793,558	37,861,345	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	6.24	131.25	127.54	138	138	2.13	0.65	526.6	17999.7	18526.3
57	3436	I14-3-I14-5	I14-3	I14-5	4,932,213	1,033,889	3,898,324	21,484,290	16,552,077	PVC	36	125.19	124.9	128.19	127.9	0.00248	0.013	3.82	127.54	127.53	138	138	0.65	0.37	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	4,933,356	1,033,889	3,899,467	26,071,121	21,137,765	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	2.47	127.53	127.5	138	138	1.37	0.76	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	4,934,499	1,033,889	3,900,610	60,681,535	55,747,036	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	0.61	127.5	127.37	138	131.44	0.76	2.74	433	19454.5	19887.5
60	2975	I15-5-I15-7	I15-5	I15-7	4,934,499	1,033,889	3,900,610	33,047,844	28,113,345	PVC	48	126.11	126.09	130.11	130.09	0.00127	0.013	2.92	127.37	127.36	131.44	131.37	2.74	2.73	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	9,246,359	1,033,889	8,212,470	33,686,043	24,439,684	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	9.06	127.36	126.91	131.37	131.41	1.23	1.46	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	9,246,359	1,033,889	8,212,470	38,080,441	28,834,082	0	30	125.87	125	128.37	127.5	0.02064	0.013	9.9	127.14	127.08	131.41	131.36	1.23	0.42	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	12,416,137	1,033,889	11,382,248	2,608,858	-9,807,279	0	30	125	124.99	127.5	127.49	0.0001	0.013	3.91	127.08	126.48	131.36	131	0.42	1.01	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	12,425,283	1,033,889	11,391,394	30,788,053	18,362,770	0	36	124.99	124	127.99	127	0.0051	0.013	6.38	126.4	125.33	131	131	1.59	1.67	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 9 (City_PWWF_2015 CP_2025_Likely)

					Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
Link	ID	Link Name	US Node	DS Node	Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	J05-7-J05-8	_J05-7	J05-8	2,602,833	2,602,833	0	811,300	-1,791,533	0	8	273	271.78	273.67	272.45	0.01079	0.013	11.54	285.14	272.58	276	274.78	-11.47	-0.13	113.1	0	113.1
2	3353	J05-8-POLY VAULT	J05-8	PolyVault	2,631,295	2,602,833	28,462	3,430,204	798,909	0	10	271.78	265.55	272.61	266.38	0.05868	0.013	10.72	272.58	267.65	274.78	271.46	0.03	-1.27	106.2	113.1	219.3
3	3045	POLY VAULT-J06-2	PolyVault	J06-2	2,659,757	2,602,833	56,924	805,159	-1,854,598	0	10	265.55	265.45	266.38	266.28	0.00323	0.013	7.55	267.65	266.56	271.46	270.98	-1.27	-0.28	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	2,775,684	2,602,833	172,851	2,566,826	-208,858	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	3.5	266.56	265.5	270.98	269.39	0.14	0.4	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	2,838,595	2,602,833	235,762	4,834,667	1,996,072	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	6.34	265.5	259.94	269.39	268.74	0.4	0.39	415.3	461.8	877.1
6	3012	J06-14-J06-16	J06-14	J06-16	2,901,506	2,602,833	298,673	8,688,008	5,786,502	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	9.86	259.94	258.71	268.74	268.74	0.39	0.39	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	2,931,297	2,602,833	328,464	3,996,050	1,064,753	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	5.5	258.71	257.19	268.74	263.77	0.39	0.38	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	2,962,247	2,602,833	359,414	4,717,610	1,755,363	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	6.28	257.19	253.32	263.77	260.51	0.38	0.38	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	2,993,753	2,602,833	390,920	4,079,514	1,085,761	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	5.62	253.32	249.88	260.51	254.58	0.38	0.26	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	3,026,201	2,602,833	423,368	3,118,540	92,339	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	4.48	249.88	249.08	254.58	253.74	0.26	0.23	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	3,866,695	2,602,833	1,263,862	3,888,589	21,894	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	5.59	249.08	247.61	253.74	254.51	0.23	0.26	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	3,896,920	2,602,833	1,294,087	7,526,611	3,629,691	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	9.57	247.61	238.22	254.51	243	0.26	-2.34	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	3,926,989	2,602,833	1,324,156	6,405,009	2,478,020	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	4.95	238.22	235.99	243	243	-2.34	-6.05	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	4,235,091	2,602,833	1,632,258	1,501,102	-2,733,989	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	5.34	235.99	233.13	243	242	-6.05	-3.55	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	4,263,553	2,602,833	1,660,720	3,345,571	-917,982	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	5.38	233.13	230.2	242	241.27	-3.55	-2.42	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	4,292,015	2,602,833	1,689,182	1,905,990	-2,386,025	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	5.41	230.2	226.95	241.27	235.52	-2.42	0.21	297.5	3243.2	3540.7
17	3391	K07-69-K07-28	K07-69	K07-28	4,320,478	2,602,833	1,717,645	7,497,885	3,177,407	0	15	225.91	222.53	227.16	223.78	0.03225	0.013	9.79	226.95	223.63	235.52	234.49	0.21	0.15	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	5,651,935	2,602,833	3,049,102	7,910,192	2,258,257	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	5.53	223.63	220.7	234.49	232.26	0.65	0.55	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	6,687,316	2,602,833	4,084,483	13,565,858	6,878,542	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	8.69	220.7	215.42	232.26	223.14	0.55	0.88	282.1	4153.3	4435.4
20	3410	J07-89-J07-90	J07-89	J07-90	6,716,310	2,602,833	4,113,477	10,436,597	3,720,287	PVC	12	214.55	208.61	215.55	209.61	0.05136	0.013	10.92	215.48	209.81	223.14	216	0.07	-0.2	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	6,745,256	2,602,833	4,142,423	10,468,942	3,723,686	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	7.15	209.81	206.83	216	215.87	0.55	0.52	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	7,024,898	2,602,833	4,422,065	12,098,686	5,073,788	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	8.07	206.83	200.73	215.87	208.82	0.52	0.52	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	7,035,180	2,602,833	4,432,347	11,807,931	4,772,751	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	7.93	200.73	194.55	208.82	204.07	0.52	0.78	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	7,044,472	2,602,833	4,441,639	11,904,542	4,860,070	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	6.11	194.76	193.63	204.07	200.58	0.82	0.81	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	7,618,859	2,602,833	5,016,026	25,483,412	17,864,553	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	8.66	193.63	189.24	200.58	197	1.06	-4.83	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	8,343,057	2,602,833	5,740,224	10,620,231	2,277,174	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	3.25	189.24	188.78	197	198.97	-4.83	-5.11	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	8,358,362	2,602,833	5,755,529	10,925,568	2,567,206	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	3.25	188.78	188.08	198.97	192.83	-5.11	-5.61	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	8,387,750	2,602,833	5,784,917	10,554,288	2,166,538	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	3.26	188.08	187.58	192.83	190	-5.61	-5.9	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	8,393,930	2,602,833	5,791,097	10,350,223	1,956,293	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	3.27	187.58	186.72	190	186.72	-5.9	-6.35	489.9	7477.1	7967
30	3003	J09-22-J09-24	J09-22	J09-24	8,414,468	2,602,833	5,811,635	9,083,654	669,186	PVC	27	178.12	178.07	180.37	180.32	0.00206	0.013	3.27	187.25	187.21	186.72	187.21	-6.88	-6.89	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	10,594,283	2,602,833	7,991,450	13,091,690	2,497,407	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	3.34	189.42	188.86	187.21	188.86	-8.85	-9.15	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	11,185,550	2,602,833	8,582,717	12,945,046	1,759,496	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	3.53	192.61	192.02	188.86	192.02	-12.9	-13.1	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	11,218,936	2,602,833	8,616,103	2,097,941	-9,120,995	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	22.1	213.52	178.63	192.02	190.18	-36.1	-2.43	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	11,227,224	2,602,833	8,624,391	14,804,664	3,577,440	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	3.54	178.63	178.25	190.18	193.17	-0.93	-1.22	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	11,473,160	2,602,833	8,870,327	13,885,589	2,412,429	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	3.62	178.25	177.61	193.17	190	-1.22	-1.52	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	16,366,539	2,602,833	13,763,706	3,242,470	-13,124,069	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	5.16	177.61	175.23	190	184	-1.52	0.78	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	16,378,764	2,602,833	13,775,931	30,316,999	13,938,235	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	9.74	175.23	171.45	184	177.94	0.78	-1.88	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	16,389,682	2,602,833	13,786,849	16,547,967	158,285	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	5.17	171.45	169.95	177.94	178.87	-1.88	0.78	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	16,444,921	2,602,833	13,842,088	31,703,658	15,258,737	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	10.09	169.95	165.2	178.87	173.01	0.78	-1.3	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	16,452,548	2,602,833	13,849,715	16,871,263	418,715	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	5.19	165.2	163.87	173.01	172.44	-1.3	-1.37	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	16,989,211	2,602,833	14,386,378	21,975,368	4,986,157	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	5.35	163.87	162.55	172.44	171	-1.37	-2.25	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	16,996,088	2,602,833	14,393,255	20,565,867	3,569,779	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	5.36	162.55	161.26	171	170.85	-2.25	-2.85	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	17,726,974	2,602,833	15,124,141	15,002,227	-2,724,747	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	3.88	161.26	160.66	170.85	167.67	-2.35	-2.18	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	17,749,652	2,602,833	15,146,819	19,181,160	1,431,508	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	3.89	160.66	160.08	167.67	169.54	-2.18	-2.28	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	21,588,121	2,602,833	18,985,288	18,895,751	-2,692,370	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	4.73	160.08	159.48	169.54	168.44	-2.28	-2.14	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	21,610,316	2,602,833	19,007,483	34,641,163	13,030,847	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	4.73	159.48	157.74	168.44	163.03	-2.14	-4.87	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	26,385,273	2,602,833	23,782,440	27,412,575	1,027,302	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	5.78	157.74	156.29	163.03	157.11	-4.87	-4.99	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	26,393,559	2,602,833	23,790,726	26,953,521	559,962	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	5.78	156.29	154.8	157.11	157	-4.99	-5.05	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	28,921,403	2,602,833	26,318,570	35,454,075	6,532,672	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	6.33	154.8	152.11	157	155.42	-5.05	-6.4	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	28,928,573	2,602,833	26,325,740	29,311,144	382,571	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	6.33	152.11	149.14	155.42	155.66	-6.4	-6.48	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	28,934,754	2,602,833	26,331,921	19,102,000	-9,832,754	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	6.33	149.14	147.65	155.66	151	-6.48	-5.64	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	28,940,932	2,602,833	26,338,099	21,549,863	-7,391,069	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	6.33	147.65	144.74	151	144.74	-5.64	-4.34	644.2	16163.9	16808.1
53	3447	I13-10-I13-11	I13-10	I13-11	28,947,111	2,602,833	26,344,278	19,647,126	-9,299,985	PVC	21	137.4	133.13	139.15	134.88	0.03681	0.013	18.62	149	139.73	144.74	139.73	-9.85	-4.85	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	28,956,388	2,602,833	26,353,555	6,124,076	-22,832,312	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	6.34	140.36	137.9	139.73	142.95	-4.23	-1.88	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	28,965,669	2,602,833	26,362,836	30,407,121	1,441,452	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	6.34	137.9	135.5	142.95	138	-1.88	-2.12	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	28,971,847	2,602,833	26,369,014	42,793,558	13,821,711	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	6.34	135.5	133.12	138	138	-2.12	-4.93	526.6	17999.7	18526.3
57	3436	I14-3-I14-5	I14-3	I14-5	28,978,026	2,602,833	26,375,193	21,484,290	-7,493,736	PVC	36	125.19	124.9	128.19	127.9	0.00248	0.013	6.34	133.12	132.6	138	138	-4.93	-4.7	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	28,985,348	2,602,833	26,382,515	26,071,121	-2,914,227	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	3.57	132.6	131.81	138	138	-3.7	-3.55	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	28,992,671	2,602,833	26,389,838	60,681,535	31,688,864	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	3.57	131.81	131.38	138	131.44	-3.55	-1.27	433	19454.5	19887.5
60	2975	I15-5-I15-7	I15-5	I15-7	28,998,849	2,602,833	26,396,016	33,047,844	4,048,995	PVC	48	126.11	126.09	130.11	130.09	0.00127	0.013	3.57	131.38	131.37	131.44	131.37	-1.27	-1.28	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	35,365,590	2,602,833	32,762,757	33,686,043	-1,679,547	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	11.15	131.44	131.2	131.37	131.41	-2.85	-2.83	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	35,371,771	2,602,833	32,768,938	38,080,441	2,708,670	0	30	125.87	125	128.37	127.5	0.02064	0.013	11.15	131.2	130.44	131.41	131.36	-2.83	-2.94	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	38,541,547	2,602,833	35,938,714	2,608,858	-35,932,689	0	30	125	124.99	127.5	127.49	0.0001	0.013	12.15	130.44	128.26	131.36	131	-2.94	-0.77	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	38,575,411	2,602,833	35,972,578	30,788,053	-7,787,358	0	36	124.99	124	127.99	127	0.0051	0.013	8.44	128.26	126.5	131	131	-0.27	0.5	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 10 (City_ADWF_2015 CP_2025_Worst)

					Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
Link	ID	Link Name	US Node	DS Node	Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	J05-7-J05-8	_J05-7	J05-8	462,889	462,889	0	811,300	348,411	0	8	273	271.78	273.67	272.45	0.01079	0.013	3.71	273.4	272.14	276	274.78	0.27	0.31	113.1	0	113.1
2	3353	J05-8-POLY VAULT	J05-8	PolyVault	462,889	462,889	0	3,430,204	2,967,315	0	10	271.78	265.55	272.61	266.38	0.05868	0.013	6.79	272.15	266	274.78	271.46	0.46	0.38	106.2	113.1	219.3
3	3045	POLY VAULT-J06-2	PolyVault	J06-2	462,889	462,889	0	805,159	342,270	0	10	265.55	265.45	266.38	266.28	0.00323	0.013	2.36	266	265.82	271.46	270.98	0.38	0.46	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	464,020	462,889	1,131	2,566,826	2,102,806	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	2.45	265.81	264.99	270.98	269.39	0.89	0.91	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	482,779	462,889	19,890	4,834,667	4,351,888	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	3.9	264.99	259.42	269.39	268.74	0.91	0.91	415.3	461.8	877.1
6	3012	J06-14-J06-16	J06-14	J06-16	501,538	462,889	38,649	8,688,008	8,186,470	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	5.96	259.42	258.2	268.74	268.74	0.91	0.9	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	502,262	462,889	39,373	3,996,050	3,493,788	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	3.44	258.2	256.67	268.74	263.77	0.9	0.9	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	503,617	462,889	40,728	4,717,610	4,213,993	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	3.88	256.67	252.8	263.77	260.51	0.9	0.9	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	505,274	462,889	42,385	4,079,514	3,574,240	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	3.5	252.8	249.24	260.51	254.58	0.9	0.9	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	507,445	462,889	44,556	3,118,540	2,611,095	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	2.89	249.24	248.42	254.58	253.74	0.9	0.89	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	546,660	462,889	83,771	3,888,589	3,341,929	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	3.46	248.42	246.98	253.74	254.51	0.89	0.89	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	547,620	462,889	84,731	7,526,611	6,978,991	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	5.53	246.98	234.99	254.51	243	0.89	0.89	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	548,495	462,889	85,606	6,405,009	5,856,514	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	4.93	234.99	229.24	243	243	0.89	0.7	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	607,778	462,889	144,889	1,501,102	893,324	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	1.79	229.24	228.71	243	242	0.7	0.87	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	607,778	462,889	144,889	3,345,571	2,737,793	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	3.2	228.71	227.02	242	241.27	0.87	0.76	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	607,778	462,889	144,889	1,905,990	1,298,212	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	2.14	227.02	226.29	241.27	235.52	0.76	0.87	297.5	3243.2	3540.7
17	3391	K07-69-K07-28	K07-69	K07-28	607,778	462,889	144,889	7,497,885	6,890,107	0	15	225.91	222.53	227.16	223.78	0.03225	0.013	5.68	226.29	222.77	235.52	234.49	0.87	1.01	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	684,919	462,889	222,030	7,910,192	7,225,273	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	3.12	222.9	219.88	234.49	232.26	1.38	1.37	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	735,694	462,889	272,805	13,565,858	12,830,164	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	4.66	219.88	214.83	232.26	223.14	1.37	1.47	282.1	4153.3	4435.4
20	3410	J07-89-J07-90	J07-89	J07-90	735,984	462,889	273,095	10,436,597	9,700,613	PVC	12	214.55	208.61	215.55	209.61	0.05136	0.013	5.93	214.86	208.99	223.14	216	0.69	0.62	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	736,247	462,889	273,358	10,468,942	9,732,695	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	3.88	208.99	205.99	216	215.87	1.37	1.36	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	749,520	462,889	286,631	12,098,686	11,349,166	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	4.33	205.99	199.89	215.87	208.82	1.36	1.36	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	751,645	462,889	288,756	11,807,931	11,056,286	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	4.25	199.89	193.88	208.82	204.07	1.36	1.45	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	753,256	462,889	290,367	11,904,542	11,151,286	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	3.28	193.95	192.82	204.07	200.58	1.63	1.62	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	821,563	462,889	358,674	25,483,412	24,661,849	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	4.53	192.82	182.6	200.58	197	1.87	1.81	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	892,614	462,889	429,725	10,620,231	9,727,617	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	2.51	182.6	181.86	197	198.97	1.81	1.81	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	894,140	462,889	431,251	10,925,568	10,031,428	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	2.56	181.86	180.66	198.97	192.83	1.81	1.81	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	898,158	462,889	435,269	10,554,288	9,656,130	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	2.5	180.66	179.88	192.83	190	1.81	1.8	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	898,158	462,889	435,269	10,350,223	9,452,065	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	2.47	179.88	178.59	190	186.72	1.8	1.78	489.9	7477.1	7967
30	3003	J09-22-J09-24	J09-22	J09-24	902,394	462,889	439,505	9,083,654	8,181,260	PVC	27	178.12	178.07	180.37	180.32	0.00206	0.013	2.26	178.59	178.52	186.72	187.21	1.78	1.8	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	905,782	462,889	442,893	13,091,690	12,185,908	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	2.37	178.52	177.66	187.21	188.86	2.05	2.05	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	934,111	462,889	471,222	12,945,046	12,010,935	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	2.37	177.66	176.93	188.86	192.02	2.05	1.99	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	935,400	462,889	472,511	2,097,941	1,162,541	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	4.01	176.93	175.67	192.02	190.18	0.49	0.53	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	936,492	462,889	473,603	14,804,664	13,868,172	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	2.61	175.63	174.98	190.18	193.17	2.07	2.05	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	983,409	462,889	520,520	13,885,589	12,902,180	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	2.53	174.98	174.52	193.17	190	2.05	1.57	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	1,456,759	462,889	993,870	3,242,470	1,785,711	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	0.99	174.52	174	190	184	1.57	2.01	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	1,459,890	462,889	997,001	30,316,999	28,857,109	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	4.92	174	169	184	177.94	2.01	0.57	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	1,462,344	462,889	999,455	16,547,967	15,085,623	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	0.46	169	168.72	177.94	178.87	0.57	2.01	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	1,471,749	462,889	1,008,860	31,703,658	30,231,909	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	5.09	168.72	161.9	178.87	173.01	2.01	2	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	1,472,499	462,889	1,009,610	16,871,263	15,398,764	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	3.27	161.9	160.51	173.01	172.44	2	1.99	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	1,586,888	462,889	1,123,999	21,975,368	20,388,480	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	4.03	160.51	158.31	172.44	171	1.99	1.99	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	1,587,250	462,889	1,124,361	20,565,867	18,978,617	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	3.84	158.31	156.57	171	170.85	1.99	1.84	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	1,607,917	462,889	1,145,028	15,002,227	13,394,310	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	2.14	156.57	156.07	170.85	167.67	2.34	2.41	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	1,610,061	462,889	1,147,172	19,181,160	17,571,099	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	2.55	156.07	155.41	167.67	169.54	2.41	2.39	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	1,701,528	462,889	1,238,639	18,895,751	17,194,223	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	2.56	155.41	154.84	169.54	168.44	2.39	2.5	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	1,703,422	462,889	1,240,533	34,641,163	32,937,741	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	3.93	154.84	150.44	168.44	163.03	2.5	2.43	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	2,170,925	462,889	1,708,036	27,412,575	25,241,650	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	3.58	150.44	148.88	163.03	157.11	2.43	2.42	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	2,172,016	462,889	1,709,127	26,953,521	24,781,505	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	3.54	148.88	147.39	157.11	157	2.42	2.36	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	2,731,268	462,889	2,268,379	35,454,075	32,722,807	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	4.6	147.39	143.35	157	155.42	2.36	2.36	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	2,731,781	462,889	2,268,892	29,311,144	26,579,363	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	4.02	143.35	140.43	155.42	155.66	2.36	2.23	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	2,731,781	462,889	2,268,892	19,102,000	16,370,219	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	2.97	140.43	139.73	155.66	151	2.23	2.28	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	2,731,781	462,889	2,268,892	21,549,863	18,818,082	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	3.23	139.73	138.15	151	144.74	2.28	2.25	644.2	16163.9	16808.1
53	3447	I13-10-I13-11	I13-10	I13-11	2,731,781	462,889	2,268,892	19,647,126	16,915,345	PVC	21	137.4	133.13	139.15	134.88	0.03681	0.013	8.89	138.15	134.28	144.74	139.73	1	0.6	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	2,733,386	462,889	2,270,497	6,124,076	3,390,690	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	1.3	134.28	133.66	139.73	142.95	1.85	2.36	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	2,734,991	462,889	2,272,102	30,407,121	27,672,130	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	4.13	133.66	130.99	142.95	138	2.36	2.39	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	2,734,991	462,889	2,272,102	42,793,558	40,058,567	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	5.25	131.02	127.26	138	138	2.36	0.93	526.6	17999.7	18526.3
57	3436	I14-3-I14-5	I14-3	I14-5	2,734,991	462,889	2,272,102	21,484,290	18,749,299	PVC	36	125.19	124.9	128.19	127.9	0.00248	0.013	3.23	127.26	127.26	138	138	0.93	0.64	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	2,735,583	462,889	2,272,694	26,071,121	23,335,538	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	2.08	127.26	127.25	138	138	1.64	1.01	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	2,736,175	462,889	2,273,286	60,681,535	57,945,360	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	0.34	127.25	127.18	138	131.44	1.01	2.93	433	19454.5	19887.5
60	2975	I15-5-I15-7	I15-5	I15-7	2,736,175	462,889	2,273,286	33,047,844	30,311,669	PVC	48	126.11	126.09	130.11	130.09	0.00127	0.013	2.46	127.18	127.18	131.44	131.37	2.93	2.91	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	6,846,384	462,889	6,383,495	33,686,043	26,839,659	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	8.33	127.18	126.75	131.37	131.41	1.41	1.62	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	6,846,384	462,889	6,383,495	38,080,441	31,234,057	0	30	125.87	125	128.37	127.5	0.02064	0.013	9.09	126.96	126.86	131.41	131.36	1.41	0.64	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	10,016,162	462,889	9,553,273	2,608,858	-7,407,304	0	30	125	124.99	127.5	127.49	0.0001	0.013	3.16	126.86	126.32	131.36	131	0.64	1.17	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	10,020,897	462,889	9,558,008	30,788,053	20,767,156	0	36	124.99	124	127.99	127	0.0051	0.013	6.02	126.25	125.18	131	131	1.74	1.82	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 11 (City_PDWF_2015 CP_2025_Worst)

					Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
Link	ID	Link Name	US Node	DS Node	Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	J05-7-J05-8	_J05-7	J05-8	1,203,510	1,203,510	0	811,300	-392,210	0	8	273	271.78	273.67	272.45	0.01079	0.013	5.33	275.11	272.4	276	274.78	-1.44	0.05	113.1	0	113.1
2	3353	J05-8-POLY VAULT	J05-8	PolyVault	1,203,510	1,203,510	0	3,430,204	2,226,694	0	10	271.78	265.55	272.61	266.38	0.05868	0.013	8.87	272.39	266.38	274.78	271.46	0.22	0	106.2	113.1	219.3
3	3045	POLY VAULT-J06-2	PolyVault	J06-2	1,203,510	1,203,510	0	805,159	-398,351	0	10	265.55	265.45	266.38	266.28	0.00323	0.013	3.41	266.38	266.06	271.46	270.98	0	0.22	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	1,205,588	1,203,510	2,078	2,566,826	1,361,238	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	3.19	266.05	265.2	270.98	269.39	0.65	0.7	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	1,240,036	1,203,510	36,526	4,834,667	3,594,631	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	5.1	265.2	259.64	269.39	268.74	0.7	0.69	415.3	461.8	877.1
6	3012	J06-14-J06-16	J06-14	J06-16	1,274,485	1,203,510	70,975	8,688,008	7,413,523	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	7.83	259.64	258.41	268.74	268.74	0.69	0.69	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	1,275,814	1,203,510	72,304	3,996,050	2,720,236	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	4.48	258.41	256.88	268.74	263.77	0.69	0.69	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	1,278,302	1,203,510	74,792	4,717,610	3,439,308	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	5.06	256.88	253.01	263.77	260.51	0.69	0.69	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	1,281,346	1,203,510	77,836	4,079,514	2,798,168	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	4.55	253.01	249.45	260.51	254.58	0.69	0.69	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	1,285,332	1,203,510	81,822	3,118,540	1,833,208	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	3.74	249.45	248.64	254.58	253.74	0.69	0.67	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	1,357,346	1,203,510	153,836	3,888,589	2,531,243	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	4.46	248.64	247.2	253.74	254.51	0.67	0.67	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	1,359,109	1,203,510	155,599	7,526,611	6,167,502	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	7.2	247.2	235.21	254.51	243	0.67	0.67	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	1,360,716	1,203,510	157,206	6,405,009	5,044,293	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	6.41	235.21	229.63	243	243	0.67	0.31	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	1,469,582	1,203,510	266,072	1,501,102	31,520	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	2.16	229.63	228.93	243	242	0.31	0.65	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	1,469,582	1,203,510	266,072	3,345,571	1,875,989	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	4.08	228.93	227.35	242	241.27	0.65	0.43	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	1,469,582	1,203,510	266,072	1,905,990	436,408	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	2.65	227.35	226.51	241.27	235.52	0.43	0.65	297.5	3243.2	3540.7
17	3391	K07-69-K07-28	K07-69	K07-28	1,469,582	1,203,510	266,072	7,497,885	6,028,303	0	15	225.91	222.53	227.16	223.78	0.03225	0.013	7.34	226.51	222.91	235.52	234.49	0.65	0.87	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	1,617,177	1,203,510	413,667	7,910,192	6,293,015	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	4	223.1	220.09	234.49	232.26	1.18	1.16	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	1,710,217	1,203,510	506,707	13,565,858	11,855,641	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	5.97	220.09	214.97	232.26	223.14	1.16	1.33	282.1	4153.3	4435.4
20	3410	J07-89-J07-90	J07-89	J07-90	1,710,748	1,203,510	507,238	10,436,597	8,725,849	PVC	12	214.55	208.61	215.55	209.61	0.05136	0.013	7.58	215.04	209.2	223.14	216	0.51	0.41	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	1,711,231	1,203,510	507,721	10,468,942	8,757,711	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	4.96	209.2	206.19	216	215.87	1.16	1.16	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	1,736,740	1,203,510	533,230	12,098,686	10,361,946	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	5.53	206.19	200.09	215.87	208.82	1.16	1.16	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	1,740,843	1,203,510	537,333	11,807,931	10,067,088	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	5.44	200.09	194.03	208.82	204.07	1.16	1.3	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	1,743,956	1,203,510	540,446	11,904,542	10,160,586	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	4.19	194.15	193.01	204.07	200.58	1.43	1.43	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	1,875,968	1,203,510	672,458	25,483,412	23,607,444	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	5.8	193.01	182.82	200.58	197	1.68	1.59	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	2,002,923	1,203,510	799,413	10,620,231	8,617,308	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	3.17	182.82	182.07	197	198.97	1.59	1.6	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	2,005,870	1,203,510	802,360	10,925,568	8,919,698	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	3.24	182.07	180.89	198.97	192.83	1.6	1.58	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	2,013,632	1,203,510	810,122	10,554,288	8,540,656	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	3.16	180.89	180.1	192.83	190	1.58	1.58	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	2,013,632	1,203,510	810,122	10,350,223	8,336,591	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	3.12	180.1	178.82	190	186.72	1.58	1.55	489.9	7477.1	7967
30	3003	J09-22-J09-24	J09-22	J09-24	2,021,812	1,203,510	818,302	9,083,654	7,061,842	PVC	27	178.12	178.07	180.37	180.32	0.00206	0.013	2.84	178.82	178.74	186.72	187.21	1.55	1.58	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	2,028,354	1,203,510	824,844	13,091,690	11,063,336	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	3	178.74	177.89	187.21	188.86	1.83	1.82	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	2,083,654	1,203,510	880,144	12,945,046	10,861,392	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	2.99	177.89	177.23	188.86	192.02	1.82	1.69	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	2,086,143	1,203,510	882,633	2,097,941	11,798	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	4.71	177.23	175.97	192.02	190.18	0.19	0.23	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	2,088,252	1,203,510	884,742	14,804,664	12,716,412	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	3.3	175.83	175.2	190.18	193.17	1.87	1.83	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	2,179,974	1,203,510	976,464	13,885,589	11,705,615	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	3.19	175.2	174.91	193.17	190	1.83	1.18	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	3,056,094	1,203,510	1,852,584	3,242,470	186,376	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	1.16	174.91	174.23	190	184	1.18	1.78	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	3,062,140	1,203,510	1,858,630	30,316,999	27,254,859	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	6.13	174.23	169.35	184	177.94	1.78	0.22	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	3,066,879	1,203,510	1,863,369	16,547,967	13,481,088	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	0.97	169.35	168.95	177.94	178.87	0.22	1.78	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	3,085,044	1,203,510	1,881,534	31,703,658	28,618,614	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	6.34	168.95	162.12	178.87	173.01	1.78	1.78	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	3,086,492	1,203,510	1,882,982	16,871,263	13,784,771	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	4.05	162.12	160.75	173.01	172.44	1.78	1.75	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	3,318,982	1,203,510	2,115,472	21,975,368	18,656,386	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	4.99	160.75	158.55	172.44	171	1.75	1.75	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	3,319,680	1,203,510	2,116,170	20,565,867	17,246,187	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	4.76	158.55	156.87	171	170.85	1.75	1.54	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	3,359,547	1,203,510	2,156,037	15,002,227	11,642,680	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	2.65	156.87	156.33	170.85	167.67	2.04	2.15	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	3,363,688	1,203,510	2,160,178	19,181,160	15,817,472	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	3.16	156.33	155.68	167.67	169.54	2.15	2.12	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	3,528,398	1,203,510	2,324,888	18,895,751	15,367,353	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	3.17	155.68	155.07	169.54	168.44	2.12	2.27	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	3,532,056	1,203,510	2,328,546	34,641,163	31,109,107	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	4.88	155.07	150.69	168.44	163.03	2.27	2.18	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	4,390,950	1,203,510	3,187,440	27,412,575	23,021,625	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	4.4	150.69	149.12	163.03	157.11	2.18	2.18	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	4,393,059	1,203,510	3,189,549	26,953,521	22,560,462	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	4.35	149.12	147.63	157.11	157	2.18	2.12	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	5,094,644	1,203,510	3,891,134	35,454,075	30,359,431	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	5.51	147.63	143.59	157	155.42	2.12	2.12	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	5,095,635	1,203,510	3,892,125	29,311,144	24,215,509	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	4.81	143.59	140.72	155.42	155.66	2.12	1.94	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	5,095,635	1,203,510	3,892,125	19,102,000	14,006,365	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	3.54	140.72	140	155.66	151	1.94	2.01	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	5,095,635	1,203,510	3,892,125	21,549,863	16,454,228	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	3.86	140	138.44	151	144.74	2.01	1.96	644.2	16163.9	16808.1
53	3447	I13-10-I13-11	I13-10	I13-11	5,095,635	1,203,510	3,892,125	19,647,126	14,551,491	PVC	21	137.4	133.13	139.15	134.88	0.03681	0.013	10.61	138.44	134.67	144.74	139.73	0.71	0.21	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	5,098,734	1,203,510	3,895,224	6,124,076	1,025,342	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	1.5	134.67	133.91	139.73	142.95	1.46	2.11	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	5,101,833	1,203,510	3,898,323	30,407,121	25,305,288	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	4.94	133.91	131.21	142.95	138	2.11	2.17	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	5,101,833	1,203,510	3,898,323	42,793,558	37,691,725	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	6.3	131.27	127.56	138	138	2.11	0.63	526.6	17999.7	18526.3
57	3436	I14-3-I14-5	I14-3	I14-5	5,101,833	1,203,510	3,898,323	21,484,290	16,382,457	PVC	36	125.19	124.9	128.19	127.9	0.00248	0.013	3.85	127.56	127.55	138	138	0.63	0.35	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	5,102,977	1,203,510	3,899,467	26,071,121	20,968,144	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	2.49	127.55	127.52	138	138	1.35	0.74	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	5,104,120	1,203,510	3,900,610	60,681,535	55,577,415	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	0.63	127.52	127.38	138	131.44	0.74	2.73	433	19454.5	19887.5
60	2975	I15-5-I15-7	I15-5	I15-7	5,104,120	1,203,510	3,900,610	33,047,844	27,943,724	PVC	48	126.11	126.09	130.11	130.09	0.00127	0.013	2.95	127.38	127.38	131.44	131.37	2.73	2.71	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	9,415,980	1,203,510	8,212,470	33,686,043	24,270,063	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	9.1	127.38	126.92	131.37	131.41	1.21	1.45	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	9,415,980	1,203,510	8,212,470	38,080,441	28,664,461	0	30	125.87	125	128.37	127.5	0.02064	0.013	9.95	127.16	127.1	131.41	131.36	1.21	0.4	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	12,585,758	1,203,510	11,382,248	2,608,858	-9,976,900	0	30	125	124.99	127.5	127.49	0.0001	0.013	3.97	127.1	126.49	131.36	131	0.4	1	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	12,594,905	1,203,510	11,391,395	30,788,053	18,193,148	0	36	124.99	124	127.99	127	0.0051	0.013	6.4	126.41	125.34	131	131	1.58	1.66	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 12 (City_PWWF_2015 CP_2025_Worst)

					Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
Link	ID	Link Name	US Node	DS Node	Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	J05-7-J05-8	_J05-7	J05-8	2,772,454	2,772,454	0	811,300	-1,961,154	0	8	273	271.78	273.67	272.45	0.01079	0.013	12.29	286.84	272.59	276	274.78	-13.17	-0.14	113.1	0	113.1
2	3353	J05-8-POLY VAULT	J05-8	PolyVault	2,800,916	2,772,454	28,462	3,430,204	629,288	0	10	271.78	265.55	272.61	266.38	0.05868	0.013	10.85	272.59	267.9	274.78	271.46	0.02	-1.52	106.2	113.1	219.3
3	3045	POLY VAULT-J06-2	PolyVault	J06-2	2,829,379	2,772,454	56,925	805,159	-2,024,220	0	10	265.55	265.45	266.38	266.28	0.00323	0.013	8.03	267.9	266.66	271.46	270.98	-1.52	-0.38	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	2,945,305	2,772,454	172,851	2,566,826	-378,479	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	3.71	266.66	265.52	270.98	269.39	0.04	0.38	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	3,008,216	2,772,454	235,762	4,834,667	1,826,451	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	6.42	265.52	259.96	269.39	268.74	0.38	0.37	415.3	461.8	877.1
6	3012	J06-14-J06-16	J06-14	J06-16	3,071,127	2,772,454	298,673	8,688,008	5,616,881	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	10.01	259.96	258.74	268.74	268.74	0.37	0.36	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	3,100,918	2,772,454	328,464	3,996,050	895,132	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	5.56	258.74	257.21	268.74	263.77	0.36	0.36	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	3,131,868	2,772,454	359,414	4,717,610	1,585,742	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	6.36	257.21	253.35	263.77	260.51	0.36	0.35	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	3,163,374	2,772,454	390,920	4,079,514	916,140	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	5.68	253.35	249.95	260.51	254.58	0.35	0.19	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	3,195,822	2,772,454	423,368	3,118,540	-77,282	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	4.48	249.95	249.13	254.58	253.74	0.19	0.18	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	4,036,316	2,772,454	1,263,862	3,888,589	-147,727	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	5.57	249.13	247.63	253.74	254.51	0.18	0.24	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	4,066,542	2,772,454	1,294,088	7,526,611	3,460,069	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	9.67	247.63	239.16	254.51	243	0.24	-3.28	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	4,096,610	2,772,454	1,324,156	6,405,009	2,308,399	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	5.16	239.16	236.73	243	243	-3.28	-6.79	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	4,404,712	2,772,454	1,632,258	1,501,102	-2,903,610	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	5.55	236.73	233.63	243	242	-6.79	-4.05	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	4,433,174	2,772,454	1,660,720	3,345,571	-1,087,603	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	5.59	233.63	230.47	242	241.27	-4.05	-2.69	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	4,461,637	2,772,454	1,689,183	1,905,990	-2,555,647	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	5.63	230.47	226.97	241.27	235.52	-2.69	0.19	297.5	3243.2	3540.7
17	3391	K07-69-K07-28	K07-69	K07-28	4,490,099	2,772,454	1,717,645	7,497,885	3,007,786	0	15	225.91	222.53	227.16	223.78	0.03225	0.013	9.88	226.97	223.65	235.52	234.49	0.19	0.13	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	5,821,555	2,772,454	3,049,101	7,910,192	2,088,637	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	5.56	223.65	220.71	234.49	232.26	0.63	0.54	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	6,856,937	2,772,454	4,084,483	13,565,858	6,708,921	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	8.75	220.71	215.43	232.26	223.14	0.54	0.87	282.1	4153.3	4435.4
20	3410	J07-89-J07-90	J07-89	J07-90	6,885,931	2,772,454	4,113,477	10,436,597	3,550,666	PVC	12	214.55	208.61	215.55	209.61	0.05136	0.013	10.98	215.48	209.83	223.14	216	0.07	-0.22	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	6,914,877	2,772,454	4,142,423	10,468,942	3,554,065	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	7.19	209.83	206.84	216	215.87	0.53	0.51	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	7,194,520	2,772,454	4,422,066	12,098,686	4,904,166	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	8.12	206.84	200.74	215.87	208.82	0.51	0.51	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	7,204,801	2,772,454	4,432,347	11,807,931	4,603,130	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	7.97	200.74	194.57	208.82	204.07	0.51	0.76	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	7,214,093	2,772,454	4,441,639	11,904,542	4,690,449	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	6.14	194.78	193.64	204.07	200.58	0.8	0.8	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	7,788,480	2,772,454	5,016,026	25,483,412	17,694,932	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	8.71	193.64	189.34	200.58	197	1.05	-4.93	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	8,512,678	2,772,454	5,740,224	10,620,231	2,107,553	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	3.31	189.34	188.86	197	198.97	-4.93	-5.19	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	8,527,983	2,772,454	5,755,529	10,925,568	2,397,585	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	3.32	188.86	188.13	198.97	192.83	-5.19	-5.66	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	8,557,371	2,772,454	5,784,917	10,554,288	1,996,917	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	3.33	188.13	187.61	192.83	190	-5.66	-5.93	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	8,563,550	2,772,454	5,791,096	10,350,223	1,786,673	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	3.33	187.61	186.72	190	186.72	-5.93	-6.35	489.9	7477.1	7967
30	3003	J09-22-J09-24	J09-22	J09-24	8,584,089	2,772,454	5,811,635	9,083,654	499,565	PVC	27	178.12	178.07	180.37	180.32	0.00206	0.013	3.34	187.25	187.21	186.72	187.21	-6.88	-6.89	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	10,763,904	2,772,454	7,991,450	13,091,690	2,327,786	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	3.39	189.44	188.86	187.21	188.86	-8.87	-9.15	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	11,355,172	2,772,454	8,582,718	12,945,046	1,589,874	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	3.58	192.63	192.02	188.86	192.02	-12.92	-13.1	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	11,388,556	2,772,454	8,616,102	2,097,941	-9,290,615	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	22.44	214.67	178.71	192.02	190.18	-37.25	-2.51	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	11,396,844	2,772,454	8,624,390	14,804,664	3,407,820	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	3.59	178.71	178.32	190.18	193.17	-1.01	-1.29	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	11,642,780	2,772,454	8,870,326	13,885,589	2,242,809	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	3.67	178.32	177.66	193.17	190	-1.29	-1.57	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	16,536,160	2,772,454	13,763,706	3,242,470	-13,293,690	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	5.21	177.66	175.23	190	184	-1.57	0.78	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	16,548,386	2,772,454	13,775,932	30,316,999	13,768,613	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	9.77	175.23	171.48	184	177.94	0.78	-1.91	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	16,559,303	2,772,454	13,786,849	16,547,967	-11,336	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	5.22	171.48	169.96	177.94	178.87	-1.91	0.77	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	16,614,542	2,772,454	13,842,088	31,703,658	15,089,116	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	10.11	169.96	165.49	178.87	173.01	0.77	-1.59	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	16,622,169	2,772,454	13,849,715	16,871,263	249,094	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	5.24	165.49	164.14	173.01	172.44	-1.59	-1.64	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	17,158,831	2,772,454	14,386,377	21,975,368	4,816,537	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	5.41	164.14	162.79	172.44	171	-1.64	-2.49	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	17,165,709	2,772,454	14,393,255	20,565,867	3,400,158	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	5.41	162.79	161.48	171	170.85	-2.49	-3.07	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	17,896,595	2,772,454	15,124,141	15,002,227	-2,894,368	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	3.92	161.48	160.87	170.85	167.67	-2.57	-2.39	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	17,919,274	2,772,454	15,146,820	19,181,160	1,261,886	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	3.92	160.87	160.27	167.67	169.54	-2.39	-2.47	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	21,757,743	2,772,454	18,985,289	18,895,751	-2,861,992	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	4.76	160.27	159.66	169.54	168.44	-2.47	-2.32	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	21,779,937	2,772,454	19,007,483	34,641,163	12,861,226	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	4.77	159.66	157.9	168.44	163.03	-2.32	-5.03	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	26,554,895	2,772,454	23,782,441	27,412,575	857,680	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	5.81	157.9	156.42	163.03	157.11	-5.03	-5.12	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	26,563,181	2,772,454	23,790,727	26,953,521	390,340	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	5.81	156.42	154.92	157.11	157	-5.12	-5.17	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	29,091,025	2,772,454	26,318,571	35,454,075	6,363,050	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	6.37	154.92	152.2	157	155.42	-5.17	-6.49	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	29,098,194	2,772,454	26,325,740	29,311,144	212,950	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	6.37	152.2	149.19	155.42	155.66	-6.49	-6.53	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	29,104,373	2,772,454	26,331,919	19,102,000	-10,002,373	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	6.37	149.19	147.68	155.66	151	-6.53	-5.67	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	29,110,551	2,772,454	26,338,097	21,549,863	-7,560,688	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	6.37	147.68	144.74	151	144.74	-5.67	-4.34	644.2	16163.9	16808.1
53	3447	I13-10-I13-11	I13-10	I13-11	29,116,732	2,772,454	26,344,278	19,647,126	-9,469,606	PVC	21	137.4	133.13	139.15	134.88	0.03681	0.013	18.73	149.11	139.73	144.74	139.73	-9.96	-4.85	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	29,126,010	2,772,454	26,353,556	6,124,076	-23,001,934	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	6.38	140.46	137.97	139.73	142.95	-4.33	-1.95	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	29,135,288	2,772,454	26,362,834	30,407,121	1,271,833	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	6.38	137.97	135.55	142.95	138	-1.95	-2.17	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	29,141,466	2,772,454	26,369,012	42,793,558	13,652,092	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	6.38	135.55	133.14	138	138	-2.17	-4.95	526.6	17999.7	18526.3
57	3436	I14-3-I14-5	I14-3	I14-5	29,147,647	2,772,454	26,375,193	21,484,290	-7,663,357	PVC	36	125.19	124.9	128.19	127.9	0.00248	0.013	6.38	133.14	132.61	138	138	-4.95	-4.71	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	29,154,970	2,772,454	26,382,516	26,071,121	-3,083,849	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	3.59	132.61	131.81	138	138	-3.71	-3.55	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	29,162,290	2,772,454	26,389,836	60,681,535	31,519,245	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	3.59	131.81	131.38	138	131.44	-3.55	-1.27	433	19454.5	19887.5
60	2975	I15-5-I15-7	I15-5	I15-7	29,168,471	2,772,454	26,396,017	33,047,844	3,879,373	PVC	48	126.11	126.09	130.11	130.09	0.00127	0.013	3.59	131.38	131.37	131.44	131.37	-1.27	-1.28	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	35,535,211	2,772,454	32,762,757	33,686,043	-1,849,168	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	11.2	131.49	131.24	131.37	131.41	-2.9	-2.87	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	35,541,390	2,772,454	32,768,936	38,080,441	2,539,051	0	30	125.87	125	128.37	127.5	0.02064	0.013	11.2	131.24	130.48	131.41	131.36	-2.87	-2.98	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	38,711,169	2,772,454	35,938,715	2,608,858	-36,102,311	0	30	125	124.99	127.5	127.49	0.0001	0.013	12.2	130.48	128.28	131.36	131	-2.98	-0.79	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	38,745,030	2,772,454	35,972,576	30,788,053	-7,956,977	0	36	124.99	124	127.99	127	0.0051	0.013	8.48	128.28	126.5	131	131	-0.29	0.5	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 13 (City_ADWF_2015 CP_0.471 MGD)

Link	ID	Link Name	US Node	DS Node	Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
					Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	J05-7-J05-8	_J05-7	J05-8	471,000	471,000	0	811,300	340,300	0	8	273	271.78	273.67	272.45	0.01079	0.013	3.73	273.4	272.14	276	274.78	0.27	0.31	113.1	0	113.1
2	3353	J05-8-POLY VAULT	J05-8	PolyVault	471,000	471,000	0	3,430,204	2,959,204	0	10	271.78	265.55	272.61	266.38	0.05868	0.013	6.82	272.16	266	274.78	271.46	0.45	0.38	106.2	113.1	219.3
3	3045	POLY VAULT-J06-2	PolyVault	J06-2	471,000	471,000	0	805,159	334,159	0	10	265.55	265.45	266.38	266.28	0.00323	0.013	2.37	266	265.83	271.46	270.98	0.38	0.45	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	472,131	471,000	1,131	2,566,826	2,094,695	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	2.47	265.81	264.99	270.98	269.39	0.89	0.91	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	490,890	471,000	19,890	4,834,667	4,343,777	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	3.92	264.99	259.43	269.39	268.74	0.91	0.9	415.3	461.8	877.1
6	3012	J06-14-J06-16	J06-14	J06-16	509,649	471,000	38,649	8,688,008	8,178,359	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	5.98	259.43	258.2	268.74	268.74	0.9	0.9	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	510,373	471,000	39,373	3,996,050	3,485,677	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	3.46	258.2	256.67	268.74	263.77	0.9	0.9	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	511,728	471,000	40,728	4,717,610	4,205,882	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	3.9	256.67	252.8	263.77	260.51	0.9	0.9	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	513,385	471,000	42,385	4,079,514	3,566,129	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	3.52	252.8	249.24	260.51	254.58	0.9	0.9	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	515,556	471,000	44,556	3,118,540	2,602,984	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	2.91	249.24	248.42	254.58	253.74	0.9	0.89	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	554,771	471,000	83,771	3,888,589	3,333,818	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	3.48	248.42	246.98	253.74	254.51	0.89	0.89	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	555,731	471,000	84,731	7,526,611	6,970,880	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	5.55	246.98	234.99	254.51	243	0.89	0.89	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	556,606	471,000	85,606	6,405,009	5,848,403	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	4.96	234.99	229.25	243	243	0.89	0.69	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	615,889	471,000	144,889	1,501,102	885,213	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	1.8	229.25	228.71	243	242	0.69	0.87	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	615,889	471,000	144,889	3,345,571	2,729,682	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	3.22	228.71	227.02	242	241.27	0.87	0.76	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	615,889	471,000	144,889	1,905,990	1,290,101	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	2.14	227.02	226.29	241.27	235.52	0.76	0.87	297.5	3243.2	3540.7
17	3391	K07-69-K07-28	K07-69	K07-28	615,889	471,000	144,889	7,497,885	6,881,996	0	15	225.91	222.53	227.16	223.78	0.03225	0.013	5.71	226.29	222.77	235.52	234.49	0.87	1.01	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	693,030	471,000	222,030	7,910,192	7,217,162	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	3.13	222.9	219.88	234.49	232.26	1.38	1.37	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	743,805	471,000	272,805	13,565,858	12,822,053	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	4.67	219.88	214.83	232.26	223.14	1.37	1.47	282.1	4153.3	4435.4
20	3410	J07-89-J07-90	J07-89	J07-90	744,095	471,000	273,095	10,436,597	9,692,502	PVC	12	214.55	208.61	215.55	209.61	0.05136	0.013	5.95	214.87	208.99	223.14	216	0.68	0.62	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	744,358	471,000	273,358	10,468,942	9,724,584	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	3.9	208.99	205.99	216	215.87	1.37	1.36	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	757,631	471,000	286,631	12,098,686	11,341,055	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	4.34	205.99	199.89	215.87	208.82	1.36	1.36	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	759,756	471,000	288,756	11,807,931	11,048,175	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	4.27	199.89	193.88	208.82	204.07	1.36	1.45	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	761,367	471,000	290,367	11,904,542	11,143,175	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	3.29	193.95	192.82	204.07	200.58	1.63	1.62	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	829,674	471,000	358,674	25,483,412	24,653,738	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	4.54	192.82	182.6	200.58	197	1.87	1.81	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	900,725	471,000	429,725	10,620,231	9,719,506	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	2.52	182.6	181.86	197	198.97	1.81	1.81	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	902,251	471,000	431,251	10,925,568	10,023,317	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	2.57	181.86	180.67	198.97	192.83	1.81	1.8	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	906,269	471,000	435,269	10,554,288	9,648,019	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	2.51	180.67	179.88	192.83	190	1.8	1.8	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	906,269	471,000	435,269	10,350,223	9,443,954	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	2.48	179.88	178.59	190	186.72	1.8	1.78	489.9	7477.1	7967
30	3003	J09-22-J09-24	J09-22	J09-24	910,505	471,000	439,505	9,083,654	8,173,149	PVC	27	178.12	178.07	180.37	180.32	0.00206	0.013	2.26	178.59	178.52	186.72	187.21	1.78	1.8	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	913,893	471,000	442,893	13,091,690	12,177,797	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	2.37	178.52	177.67	187.21	188.86	2.05	2.04	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	942,222	471,000	471,222	12,945,046	12,002,824	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	2.38	177.67	176.93	188.86	192.02	2.04	1.99	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	943,511	471,000	472,511	2,097,941	1,154,430	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	4.02	176.93	175.67	192.02	190.18	0.49	0.53	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	944,603	471,000	473,603	14,804,664	13,860,061	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	2.62	175.63	174.98	190.18	193.17	2.07	2.05	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	991,520	471,000	520,520	13,885,589	12,894,069	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	2.54	174.98	174.52	193.17	190	2.05	1.57	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	1,464,870	471,000	993,870	3,242,470	1,777,600	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	1	174.52	174	190	184	1.57	2.01	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	1,468,001	471,000	997,001	30,316,999	28,848,998	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	4.93	174	169	184	177.94	2.01	0.57	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	1,470,454	471,000	999,454	16,547,967	15,077,513	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	0.46	169	168.72	177.94	178.87	0.57	2.01	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	1,479,860	471,000	1,008,860	31,703,658	30,223,798	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	5.1	168.72	161.9	178.87	173.01	2.01	2	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	1,480,610	471,000	1,009,610	16,871,263	15,390,653	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	3.27	161.9	160.51	173.01	172.44	2	1.99	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	1,595,000	471,000	1,124,000	21,975,368	20,380,368	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	4.03	160.51	158.31	172.44	171	1.99	1.99	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	1,595,361	471,000	1,124,361	20,565,867	18,970,506	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	3.85	158.31	156.57	171	170.85	1.99	1.84	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	1,616,028	471,000	1,145,028	15,002,227	13,386,199	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	2.15	156.57	156.07	170.85	167.67	2.34	2.41	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	1,618,172	471,000	1,147,172	19,181,160	17,562,988	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	2.55	156.07	155.41	167.67	169.54	2.41	2.39	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	1,709,639	471,000	1,238,639	18,895,751	17,186,112	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	2.57	155.41	154.85	169.54	168.44	2.39	2.49	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	1,711,533	471,000	1,240,533	34,641,163	32,929,630	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	3.94	154.85	150.44	168.44	163.03	2.49	2.43	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	2,179,036	471,000	1,708,036	27,412,575	25,233,539	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	3.59	150.44	148.88	163.03	157.11	2.43	2.42	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	2,180,127	471,000	1,709,127	26,953,521	24,773,394	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	3.54	148.88	147.39	157.11	157	2.42	2.36	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	2,739,379	471,000	2,268,379	35,454,075	32,714,696	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	4.6	147.39	143.35	157	155.42	2.36	2.36	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	2,739,892	471,000	2,268,892	29,311,144	26,571,252	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	4.02	143.35	140.43	155.42	155.66	2.36	2.23	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	2,739,892	471,000	2,268,892	19,102,000	16,362,108	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	2.97	140.43	139.73	155.66	151	2.23	2.28	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	2,739,892	471,000	2,268,892	21,549,863	18,809,971	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	3.23	139.73	138.15	151	144.74	2.28	2.25	644.2	16163.9	16808.1
53	3447	I13-10-I13-11	I13-10	I13-11	2,739,892	471,000	2,268,892	19,647,126	16,907,234	PVC	21	137.4	133.13	139.15	134.88	0.03681	0.013	8.9	138.15	134.28	144.74	139.73	1	0.6	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	2,741,497	471,000	2,270,497	6,124,076	3,382,579	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	1.3	134.28	133.66	139.73	142.95	1.85	2.36	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	2,743,102	471,000	2,272,102	30,407,121	27,664,019	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	4.13	133.66	130.99	142.95	138	2.36	2.39	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	2,743,102	471,000	2,272,102	42,793,558	40,050,456	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	5.26	131.02	127.26	138	138	2.36	0.93	526.6	17999.7	18526.3
57	3436	I14-3-I14-5	I14-3	I14-5	2,743,102	471,000	2,272,102	21,484,290	18,741,188	PVC	36	125.19	124.9	128.19	127.9	0.00248	0.013	3.23	127.26	127.26	138	138	0.93	0.64	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	2,743,694	471,000	2,272,694	26,071,121	23,327,427	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	2.08	127.26	127.25	138	138	1.64	1.01	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	2,744,286	471,000	2,273,286	60,681,535	57,937,249	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	0.34	127.25	127.18	138	131.44	1.01	2.93	433	19454.5	19887.5
60	2975	I15-5-I15-7	I15-5	I15-7	2,744,286	471,000	2,273,286	33,047,844	30,303,558	PVC	48	126.11	126.09	130.11	130.09	0.00127	0.013	2.46	127.18	127.18	131.44	157	2.93	2.91	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	6,854,495	471,000	6,383,495	33,686,043	26,831,548	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	8.33	127.18	126.75	131.37	131.41	1.41	1.62	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	6,854,495	471,000	6,383,495	38,080,441	31,225,946	0	30	125.87	125	128.37	127.5	0.02064	0.013	9.1	126.96	126.86	131.41	131.36	1.41	0.64	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	10,024,273	471,000	9,553,273	2,608,858	-7,415,415	0	30	125	124.99	127.5	127.49	0.0001	0.013	3.16	126.86	126.32	131.36	131	0.64	1.17	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	10,029,008	471,000	9,558,008	30,788,053	20,759,045	0	36	124.99	124	127.99	127	0.0051	0.013	6.02	126.25	125.18	131	131	1.74	1.82	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 14 (City_PDWF_2015 CP_1.2 MGD)

					Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
Link	ID	Link Name	US Node	DS Node	Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	J05-7-J05-8	_J05-7	J05-8	1,200,000	1,200,000	0	811,300	-388,700	0	8	273	271.78	273.67	272.45	0.01079	0.013	5.32	275.09	272.4	276	274.78	-1.42	0.05	113.1	0	113.1
2	3353	J05-8-POLY VAULT	J05-8	PolyVault	1,200,000	1,200,000	0	3,430,204	2,230,204	0	10	271.78	265.55	272.61	266.38	0.05868	0.013	8.86	272.39	266.38	274.78	271.46	0.22	0	106.2	113.1	219.3
3	3045	POLY VAULT-J06-2	PolyVault	J06-2	1,200,000	1,200,000	0	805,159	-394,841	0	10	265.55	265.45	266.38	266.28	0.00323	0.013	3.4	266.38	266.06	271.46	270.98	0	0.22	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	1,202,078	1,200,000	2,078	2,566,826	1,364,748	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	3.18	266.05	265.2	270.98	269.39	0.65	0.7	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	1,236,526	1,200,000	36,526	4,834,667	3,598,141	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	5.1	265.2	259.64	269.39	268.74	0.7	0.69	415.3	461.8	877.1
6	3012	J06-14-J06-16	J06-14	J06-16	1,270,975	1,200,000	70,975	8,688,008	7,417,033	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	7.82	259.64	258.41	268.74	268.74	0.69	0.69	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	1,272,304	1,200,000	72,304	3,996,050	2,723,746	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	4.47	258.41	256.88	268.74	263.77	0.69	0.69	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	1,274,792	1,200,000	74,792	4,717,610	3,442,818	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	5.05	256.88	253.01	263.77	260.51	0.69	0.69	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	1,277,836	1,200,000	77,836	4,079,514	2,801,678	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	4.55	253.01	249.45	260.51	254.58	0.69	0.69	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	1,281,822	1,200,000	81,822	3,118,540	1,836,718	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	3.74	249.45	248.64	254.58	253.74	0.69	0.67	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	1,353,836	1,200,000	153,836	3,888,589	2,534,753	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	4.46	248.64	247.2	253.74	254.51	0.67	0.67	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	1,355,599	1,200,000	155,599	7,526,611	6,171,012	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	7.19	247.2	235.21	254.51	243	0.67	0.67	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	1,357,206	1,200,000	157,206	6,405,009	5,047,803	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	6.41	235.21	229.63	243	243	0.67	0.31	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	1,466,072	1,200,000	266,072	1,501,102	35,030	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	2.16	229.63	228.93	243	242	0.31	0.65	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	1,466,072	1,200,000	266,072	3,345,571	1,879,499	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	4.08	228.93	227.35	242	241.27	0.65	0.43	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	1,466,072	1,200,000	266,072	1,905,990	439,918	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	2.65	227.35	226.51	241.27	235.52	0.43	0.65	297.5	3243.2	3540.7
17	3391	K07-69-K07-28	K07-69	K07-28	1,466,072	1,200,000	266,072	7,497,885	6,031,813	0	15	225.91	222.53	227.16	223.78	0.03225	0.013	7.33	226.51	222.9	235.52	234.49	0.65	0.88	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	1,613,667	1,200,000	413,667	7,910,192	6,296,525	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	4	223.1	220.09	234.49	232.26	1.18	1.16	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	1,706,707	1,200,000	506,707	13,565,858	11,859,151	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	5.97	220.09	214.97	232.26	223.14	1.16	1.33	282.1	4153.3	4435.4
20	3410	J07-89-J07-90	J07-89	J07-90	1,707,238	1,200,000	507,238	10,436,597	8,729,359	PVC	12	214.55	208.61	215.55	209.61	0.05136	0.013	7.58	215.04	209.2	223.14	216	0.51	0.41	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	1,707,721	1,200,000	507,721	10,468,942	8,761,221	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	4.96	209.2	206.19	216	215.87	1.16	1.16	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	1,733,230	1,200,000	533,230	12,098,686	10,365,456	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	5.52	206.19	200.09	215.87	208.82	1.16	1.16	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	1,737,333	1,200,000	537,333	11,807,931	10,070,598	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	5.43	200.09	194.03	208.82	204.07	1.16	1.3	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	1,740,446	1,200,000	540,446	11,904,542	10,164,096	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	4.19	194.15	193.01	204.07	200.58	1.43	1.43	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	1,872,458	1,200,000	672,458	25,483,412	23,610,954	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	5.79	193.01	182.82	200.58	197	1.68	1.59	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	1,999,413	1,200,000	799,413	10,620,231	8,620,818	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	3.17	182.82	182.07	197	198.97	1.59	1.6	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	2,002,360	1,200,000	802,360	10,925,568	8,923,208	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	3.24	182.07	180.89	198.97	192.83	1.6	1.58	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	2,010,122	1,200,000	810,122	10,554,288	8,544,166	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	3.16	180.89	180.1	192.83	190	1.58	1.58	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	2,010,122	1,200,000	810,122	10,350,223	8,340,101	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	3.12	180.1	178.81	190	186.72	1.58	1.56	489.9	7477.1	7967
30	3003	J09-22-J09-24	J09-22	J09-24	2,018,302	1,200,000	818,302	9,083,654	7,065,352	PVC	27	178.12	178.07	180.37	180.32	0.00206	0.013	2.84	178.81	178.73	186.72	187.21	1.56	1.59	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	2,024,844	1,200,000	824,844	13,091,690	11,066,846	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	2.99	178.73	177.89	187.21	188.86	1.84	1.82	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	2,080,144	1,200,000	880,144	12,945,046	10,864,902	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	2.99	177.89	177.23	188.86	192.02	1.82	1.69	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	2,082,634	1,200,000	882,634	2,097,941	15,307	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	4.71	177.23	175.97	192.02	190.18	0.19	0.23	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	2,084,742	1,200,000	884,742	14,804,664	12,719,922	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	3.3	175.83	175.2	190.18	193.17	1.87	1.83	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	2,176,464	1,200,000	976,464	13,885,589	11,709,125	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	3.19	175.2	174.91	193.17	190	1.83	1.18	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	3,052,584	1,200,000	1,852,584	3,242,470	189,886	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	1.16	174.91	174.23	190	184	1.18	1.78	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	3,058,630	1,200,000	1,858,630	30,316,999	27,258,369	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	6.13	174.23	169.35	184	177.94	1.78	0.22	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	3,063,369	1,200,000	1,863,369	16,547,967	13,484,598	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	0.97	169.35	168.95	177.94	178.87	0.22	1.78	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	3,081,534	1,200,000	1,881,534	31,703,658	28,622,124	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	6.34	168.95	162.12	178.87	173.01	1.78	1.78	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	3,082,982	1,200,000	1,882,982	16,871,263	13,788,281	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	4.05	162.12	160.75	173.01	172.44	1.78	1.75	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	3,315,472	1,200,000	2,115,472	21,975,368	18,659,896	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	4.99	160.75	158.55	172.44	171	1.75	1.75	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	3,316,171	1,200,000	2,116,171	20,565,867	17,249,696	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	4.76	158.55	156.87	171	170.85	1.75	1.54	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	3,356,037	1,200,000	2,156,037	15,002,227	11,646,190	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	2.65	156.87	156.33	170.85	167.67	2.04	2.15	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	3,360,178	1,200,000	2,160,178	19,181,160	15,820,982	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	3.16	156.33	155.68	167.67	169.54	2.15	2.12	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	3,524,888	1,200,000	2,324,888	18,895,751	15,370,863	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	3.17	155.68	155.07	169.54	168.44	2.12	2.27	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	3,528,546	1,200,000	2,328,546	34,641,163	31,112,617	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	4.88	155.07	150.69	168.44	163.03	2.27	2.18	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	4,387,440	1,200,000	3,187,440	27,412,575	23,025,135	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	4.4	150.69	149.12	163.03	157.11	2.18	2.18	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	4,389,549	1,200,000	3,189,549	26,953,521	22,563,972	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	4.34	149.12	147.63	157.11	157	2.18	2.12	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	5,091,134	1,200,000	3,891,134	35,454,075	30,362,941	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	5.51	147.63	143.59	157	155.42	2.12	2.12	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	5,092,125	1,200,000	3,892,125	29,311,144	24,219,019	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	4.81	143.59	140.72	155.42	155.66	2.12	1.94	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	5,092,125	1,200,000	3,892,125	19,102,000	14,009,875	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	3.54	140.72	140	155.66	151	1.94	2.01	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	5,092,125	1,200,000	3,892,125	21,549,863	16,457,738	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	3.86	140	138.44	151	144.74	2.01	1.96	644.2	16163.9	16808.1
53	3447	I13-10-I13-11	I13-10	I13-11	5,092,125	1,200,000	3,892,125	19,647,126	14,555,001	PVC	21	137.4	133.13	139.15	134.88	0.03681	0.013	10.61	138.44	134.67	144.74	139.73	0.71	0.21	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	5,095,224	1,200,000	3,895,224	6,124,076	1,028,852	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	1.5	134.67	133.91	139.73	142.95	1.46	2.11	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	5,098,323	1,200,000	3,898,323	30,407,121	25,308,798	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	4.94	133.91	131.21	142.95	138	2.11	2.17	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	5,098,323	1,200,000	3,898,323	42,793,558	37,695,235	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	6.3	131.27	127.56	138	138	2.11	0.63	526.6	17999.7	18526.3
57	3436	I14-3-I14-5	I14-3	I14-5	5,098,323	1,200,000	3,898,323	21,484,290	16,385,967	PVC	36	125.19	124.9	128.19	127.9	0.00248	0.013	3.85	127.56	127.55	138	138	0.63	0.35	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	5,099,467	1,200,000	3,899,467	26,071,121	20,971,654	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	2.49	127.55	127.52	138	138	1.35	0.74	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	5,100,610	1,200,000	3,900,610	60,681,535	55,580,925	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	0.63	127.52	127.38	138	131.44	0.74	2.73	433	19454.5	19887.5
60	2975	I15-5-I15-7	I15-5	I15-7	5,100,610	1,200,000	3,900,610	33,047,844	27,947,234	PVC	48	126.11	126.09	130.11	130.09	0.00127	0.013	2.95	127.38	127.38	131.44	131.37	2.73	2.71	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	9,412,470	1,200,000	8,212,470	33,686,043	24,273,573	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	9.1	127.38	126.92	131.37	131.41	1.21	1.45	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	9,412,470	1,200,000	8,212,470	38,080,441	28,667,971	0	30	125.87	125	128.37	127.5	0.02064	0.013	9.95	127.16	127.1	131.41	131.36	1.21	0.4	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	12,582,248	1,200,000	11,382,248	2,608,858	-9,973,390	0	30	125	124.99	127.5	127.49	0.0001	0.013	3.97	127.1	126.49	131.36	131	0.4	1	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	12,591,394	1,200,000	11,391,394	30,788,053	18,196,659	0	36	124.99	124	127.99	127	0.0051	0.013	6.4	126.41	125.34	131	131	1.58	1.66	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 15 (City_PWWF_2015 CP_1.2 MGD)

Link	ID	Link Name	US Node	DS Node	Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
					Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	J05-7-J05-8	_J05-7	J05-8	2,768,944	2,768,944	0	811,300	-1,957,644	0	8	273	271.78	273.67	272.45	0.01079	0.013	12.27	286.8	272.59	276	274.78	-13.13	-0.14	113.1	0	113.1
2	3353	J05-8-POLY VAULT	J05-8	PolyVault	2,797,406	2,768,944	28,462	3,430,204	632,798	0	10	271.78	265.55	272.61	266.38	0.05868	0.013	10.85	272.59	267.89	274.78	271.46	0.02	-1.51	106.2	113.1	219.3
3	3045	POLY VAULT-J06-2	PolyVault	J06-2	2,825,869	2,768,944	56,925	805,159	-2,020,710	0	10	265.55	265.45	266.38	266.28	0.00323	0.013	8.02	267.89	266.66	271.46	270.98	-1.51	-0.38	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	2,941,795	2,768,944	172,851	2,566,826	-374,969	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	3.71	266.66	265.52	270.98	269.39	0.04	0.38	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	3,004,706	2,768,944	235,762	4,834,667	1,829,961	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	6.42	265.52	259.96	269.39	268.74	0.38	0.37	415.3	461.8	877.1
6	3012	J06-14-J06-16	J06-14	J06-16	3,067,617	2,768,944	298,673	8,688,008	5,620,391	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	10	259.96	258.74	268.74	268.74	0.37	0.36	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	3,097,408	2,768,944	328,464	3,996,050	898,642	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	5.56	258.74	257.21	268.74	263.77	0.36	0.36	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	3,128,358	2,768,944	359,414	4,717,610	1,589,252	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	6.36	257.21	253.35	263.77	260.51	0.36	0.35	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	3,159,864	2,768,944	390,920	4,079,514	919,650	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	5.68	253.35	249.94	260.51	254.58	0.35	0.2	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	3,192,312	2,768,944	423,368	3,118,540	-73,772	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	4.48	249.94	249.13	254.58	253.74	0.2	0.18	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	4,032,806	2,768,944	1,263,862	3,888,589	-144,217	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	5.57	249.13	247.63	253.74	254.51	0.18	0.24	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	4,063,032	2,768,944	1,294,088	7,526,611	3,463,579	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	9.67	247.63	239.14	254.51	243	0.24	-3.26	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	4,093,100	2,768,944	1,324,156	6,405,009	2,311,909	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	5.16	239.14	236.71	243	243	-3.26	-6.77	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	4,401,202	2,768,944	1,632,258	1,501,102	-2,900,100	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	5.55	236.71	233.62	243	242	-6.77	-4.04	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	4,429,664	2,768,944	1,660,720	3,345,571	-1,084,093	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	5.58	233.62	230.46	242	241.27	-4.04	-2.68	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	4,458,127	2,768,944	1,689,183	1,905,990	-2,552,137	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	5.62	230.46	226.97	241.27	235.52	-2.68	0.19	297.5	3243.2	3540.7
17	3391	K07-69-K07-28	K07-69	K07-28	4,486,589	2,768,944	1,717,645	7,497,885	3,011,296	0	15	225.91	222.53	227.16	223.78	0.03225	0.013	9.87	226.97	223.65	235.52	234.49	0.19	0.13	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	5,818,046	2,768,944	3,049,102	7,910,192	2,092,146	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	5.56	223.65	220.71	234.49	232.26	0.63	0.54	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	6,853,428	2,768,944	4,084,484	13,565,858	6,712,430	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	8.75	220.71	215.43	232.26	223.14	0.54	0.87	282.1	4153.3	4435.4
20	3410	J07-89-J07-90	J07-89	J07-90	6,882,421	2,768,944	4,113,477	10,436,597	3,554,176	PVC	12	214.55	208.61	215.55	209.61	0.05136	0.013	10.98	215.48	209.83	223.14	216	0.07	-0.22	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	6,911,366	2,768,944	4,142,422	10,468,942	3,557,576	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	7.19	209.83	206.84	216	215.87	0.53	0.51	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	7,191,009	2,768,944	4,422,065	12,098,686	4,907,677	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	8.12	206.84	200.74	215.87	208.82	0.51	0.51	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	7,201,292	2,768,944	4,432,348	11,807,931	4,606,639	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	7.97	200.74	194.57	208.82	204.07	0.51	0.76	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	7,210,583	2,768,944	4,441,639	11,904,542	4,693,959	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	6.14	194.78	193.64	204.07	200.58	0.8	0.8	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	7,784,970	2,768,944	5,016,026	25,483,412	17,698,442	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	8.71	193.64	189.34	200.58	197	1.05	-4.93	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	8,509,168	2,768,944	5,740,224	10,620,231	2,111,063	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	3.31	189.34	188.86	197	198.97	-4.93	-5.19	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	8,524,473	2,768,944	5,755,529	10,925,568	2,401,095	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	3.32	188.86	188.13	198.97	192.83	-5.19	-5.66	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	8,553,861	2,768,944	5,784,917	10,554,288	2,000,427	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	3.33	188.13	187.61	192.83	190	-5.66	-5.93	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	8,560,040	2,768,944	5,791,096	10,350,223	1,790,183	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	3.33	187.61	186.72	190	186.72	-5.93	-6.35	489.9	7477.1	7967
30	3003	J09-22-J09-24	J09-22	J09-24	8,580,579	2,768,944	5,811,635	9,083,654	503,075	PVC	27	178.12	178.07	180.37	180.32	0.00206	0.013	3.34	187.25	187.21	186.72	187.21	-6.88	-6.89	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	10,760,394	2,768,944	7,991,450	13,091,690	2,331,296	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	3.39	189.44	188.86	187.21	188.86	-8.87	-9.15	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	11,351,662	2,768,944	8,582,718	12,945,046	1,593,384	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	3.58	192.63	192.02	188.86	192.02	-12.92	-13.1	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	11,385,047	2,768,944	8,616,103	2,097,941	-9,287,106	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	22.43	214.64	178.71	192.02	190.18	-37.22	-2.51	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	11,393,334	2,768,944	8,624,390	14,804,664	3,411,330	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	3.59	178.71	178.32	190.18	193.17	-1.01	-1.29	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	11,639,271	2,768,944	8,870,327	13,885,589	2,246,318	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	3.67	178.32	177.66	193.17	190	-1.29	-1.57	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	16,532,650	2,768,944	13,763,706	3,242,470	-13,290,180	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	5.21	177.66	175.23	190	184	-1.57	0.78	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	16,544,875	2,768,944	13,775,931	30,316,999	13,772,124	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	9.77	175.23	171.48	184	177.94	0.78	-1.91	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	16,555,792	2,768,944	13,786,848	16,547,967	-7,825	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	5.22	171.48	169.96	177.94	178.87	-1.91	0.77	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	16,611,032	2,768,944	13,842,088	31,703,658	15,092,626	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	10.11	169.96	165.49	178.87	173.01	0.77	-1.59	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	16,618,659	2,768,944	13,849,715	16,871,263	252,604	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	5.24	165.49	164.13	173.01	172.44	-1.59	-1.63	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	17,155,321	2,768,944	14,386,377	21,975,368	4,820,047	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	5.41	164.13	162.79	172.44	171	-1.63	-2.49	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	17,162,199	2,768,944	14,393,255	20,565,867	3,403,668	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	5.41	162.79	161.47	171	170.85	-2.49	-3.06	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	17,893,085	2,768,944	15,124,141	15,002,227	-2,890,858	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	3.92	161.47	160.86	170.85	167.67	-2.56	-2.38	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	17,915,763	2,768,944	15,146,819	19,181,160	1,265,397	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	3.92	160.86	160.27	167.67	169.54	-2.38	-2.47	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	21,754,232	2,768,944	18,985,288	18,895,751	-2,858,481	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	4.76	160.27	159.66	169.54	168.44	-2.47	-2.32	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	21,776,426	2,768,944	19,007,482	34,641,163	12,864,737	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	4.77	159.66	157.89	168.44	163.03	-2.32	-5.02	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	26,551,384	2,768,944	23,782,440	27,412,575	861,191	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	5.81	157.89	156.42	163.03	157.11	-5.02	-5.12	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	26,559,670	2,768,944	23,790,726	26,953,521	393,851	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	5.81	156.42	154.91	157.11	157	-5.12	-5.16	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	29,087,514	2,768,944	26,318,570	35,454,075	6,366,561	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	6.37	154.91	152.2	157	155.42	-5.16	-6.49	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	29,094,683	2,768,944	26,325,739	29,311,144	216,461	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	6.37	152.2	149.19	155.42	155.66	-6.49	-6.53	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	29,100,864	2,768,944	26,331,920	19,102,000	-9,998,864	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	6.37	149.19	147.68	155.66	151	-6.53	-5.67	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	29,107,043	2,768,944	26,338,099	21,549,863	-7,557,180	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	6.37	147.68	144.74	151	144.74	-5.67	-4.34	644.2	16163.9	16808.1
53	3447	I13-10-I13-11	I13-10	I13-11	29,113,222	2,768,944	26,344,278	19,647,126	-9,466,096	PVC	21	137.4	133.13	139.15	134.88	0.03681	0.013	18.73	149.11	139.73	144.74	139.73	-9.96	-4.85	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	29,122,499	2,768,944	26,353,555	6,124,076	-22,998,423	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	6.37	140.46	137.97	139.73	142.95	-4.33	-1.95	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	29,131,779	2,768,944	26,362,835	30,407,121	1,275,342	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	6.38	137.97	135.55	142.95	138	-1.95	-2.17	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	29,137,958	2,768,944	26,369,014	42,793,558	13,655,600	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	6.38	135.55	133.14	138	138	-2.17	-4.95	526.6	17999.7	18526.3
57	3436	I14-3-I14-5	I14-3	I14-5	29,144,136	2,768,944	26,375,192	21,484,290	-7,659,846	PVC	36	125.19	124.9	128.19	127.9	0.00248	0.013	6.38	133.14	132.61	138	138	-4.95	-4.71	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	29,151,459	2,768,944	26,382,515	26,071,121	-3,080,338	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	3.59	132.61	131.81	138	138	-3.71	-3.55	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	29,158,782	2,768,944	26,389,838	60,681,535	31,522,753	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	3.59	131.81	131.38	138	131.44	-3.55	-1.27	433	19454.5	19887.5
60	2975	I15-5-I15-7	I15-5	I15-7	29,164,960	2,768,944	26,396,016	33,047,844	3,882,884	PVC	48	126.11	126.09	130.11	130.09	0.00127	0.013	3.59	131.38	131.37	131.44	131.37	-1.27	-1.28	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	35,531,703	2,768,944	32,762,759	33,686,043	-1,845,660	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	11.2	131.48	131.24	131.37	131.41	-2.89	-2.87	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	35,537,882	2,768,944	32,768,938	38,080,441	2,542,559	0	30	125.87	125	128.37	127.5	0.02064	0.013	11.2	131.24	130.48	131.41	131.36	-2.87	-2.98	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	38,707,658	2,768,944	35,938,714	2,608,858	-36,098,800	0	30	125	124.99	127.5	127.49	0.0001	0.013	12.2	130.48	128.28	131.36	131	-2.98	-0.79	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	38,741,522	2,768,944	35,972,578	30,788,053	-7,953,469	0	36	124.99	124	127.99	127	0.0051	0.013	8.48	128.28	126.5	131	131	-0.29	0.5	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 16 (City_ADWF_2035 CP_2025_Likely)

Link	ID	Link Name	US Node	DS Node	Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
					Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	J05-7-J05-8	_J05-7	J05-8	293,268	293,268	0	811,300	518,032	0	8	273	271.78	273.67	272.45	0.01079	0.013	3.31	273.31	272.1	276	274.78	0.36	0.35	113.1	0	113.1
2	3353	J05-8-POLY VAULT	J05-8	PolyVault	348,268	293,268	55,000	3,430,204	3,081,936	0	10	271.78	265.55	272.61	266.38	0.05868	0.013	6.25	272.1	265.93	274.78	271.46	0.51	0.45	106.2	113.1	219.3
3	3045	POLY VAULT-J06-2	PolyVault	J06-2	348,268	293,268	55,000	805,159	456,891	0	10	265.55	265.45	266.38	266.28	0.00323	0.013	2.2	265.93	265.77	271.46	270.98	0.45	0.51	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	350,443	293,268	57,175	2,566,826	2,216,383	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	2.27	265.76	264.94	270.98	269.39	0.94	0.96	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	369,215	293,268	75,947	4,834,667	4,465,452	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	3.6	264.94	259.38	269.39	268.74	0.96	0.95	415.3	461.8	877.1
6	3012	J06-14-J06-16	J06-14	J06-16	387,987	293,268	94,719	8,688,008	8,300,021	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	5.52	259.38	258.15	268.74	268.74	0.95	0.95	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	388,711	293,268	95,443	3,996,050	3,607,339	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	3.2	258.15	256.62	268.74	263.77	0.95	0.95	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	390,066	293,268	96,798	4,717,610	4,327,544	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	3.6	256.62	252.75	263.77	260.51	0.95	0.95	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	391,723	293,268	98,455	4,079,514	3,687,791	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	3.25	252.75	249.19	260.51	254.58	0.95	0.95	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	393,894	293,268	100,626	3,118,540	2,724,646	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	2.69	249.19	248.38	254.58	253.74	0.95	0.93	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	434,234	293,268	140,966	3,888,589	3,454,355	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	3.24	248.38	246.94	253.74	254.51	0.93	0.93	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	435,680	293,268	142,412	7,526,611	7,090,931	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	5.16	246.94	234.95	254.51	243	0.93	0.93	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	437,041	293,268	143,773	6,405,009	5,967,968	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	4.62	234.95	229.18	243	243	0.93	0.76	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	496,324	293,268	203,056	1,501,102	1,004,778	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	1.7	229.18	228.67	243	242	0.76	0.91	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	496,324	293,268	203,056	3,345,571	2,849,247	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	3.02	228.67	226.97	242	241.27	0.91	0.81	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	496,324	293,268	203,056	1,905,990	1,409,666	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	2.02	226.97	226.25	241.27	235.52	0.81	0.91	297.5	3243.2	3540.7
17	3391	K07-69-K07-28	K07-69	K07-28	496,324	293,268	203,056	7,497,885	7,001,561	0	15	225.91	222.53	227.16	223.78	0.03225	0.013	5.36	226.25	222.75	235.52	234.49	0.91	1.03	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	575,635	293,268	282,367	7,910,192	7,334,557	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	2.96	222.87	219.85	234.49	232.26	1.41	1.4	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	629,159	293,268	335,891	13,565,858	12,936,699	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	4.45	219.85	214.81	232.26	223.14	1.4	1.49	282.1	4153.3	4435.4
20	3410	J07-89-J07-90	J07-89	J07-90	629,524	293,268	336,256	10,436,597	9,807,073	PVC	12	214.55	208.61	215.55	209.61	0.05136	0.013	5.67	214.84	208.96	223.14	216	0.71	0.65	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	629,787	293,268	336,519	10,468,942	9,839,155	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	3.71	208.96	205.96	216	215.87	1.4	1.39	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	643,168	293,268	349,900	12,098,686	11,455,518	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	4.13	205.96	199.86	215.87	208.82	1.39	1.39	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	645,292	293,268	352,024	11,807,931	11,162,639	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	4.06	199.86	193.86	208.82	204.07	1.39	1.47	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	646,904	293,268	353,636	11,904,542	11,257,638	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	3.13	193.92	192.79	204.07	200.58	1.66	1.65	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	719,241	293,268	425,973	25,483,412	24,764,171	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	4.35	192.79	182.58	200.58	197	1.9	1.83	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	792,020	293,268	498,752	10,620,231	9,828,211	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	2.42	182.58	181.83	197	198.97	1.83	1.84	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	793,546	293,268	500,278	10,925,568	10,132,022	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	2.48	181.83	180.64	198.97	192.83	1.84	1.83	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	797,757	293,268	504,489	10,554,288	9,756,531	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	2.42	180.64	179.85	192.83	190	1.83	1.83	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	797,992	293,268	504,724	10,350,223	9,552,231	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	2.39	179.85	178.56	190	186.72	1.83	1.81	489.9	7477.1	7967
30	3003	J09-22-J09-24	J09-22	J09-24	803,252	293,268	509,984	9,083,654	8,280,402	PVC	27	178.12	178.07	180.37	180.32	0.00206	0.013	2.18	178.56	178.49	186.72	187.21	1.81	1.83	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	806,819	293,268	513,551	13,091,690	12,284,871	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	2.29	178.49	177.64	187.21	188.86	2.08	2.07	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	842,952	293,268	549,684	12,945,046	12,102,094	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	2.3	177.64	176.9	188.86	192.02	2.07	2.02	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	847,683	293,268	554,415	2,097,941	1,250,258	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	3.91	176.9	175.64	192.02	190.18	0.52	0.56	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	849,058	293,268	555,790	14,804,664	13,955,606	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	2.53	175.61	174.96	190.18	193.17	2.09	2.07	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	901,247	293,268	607,979	13,885,589	12,984,342	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	2.47	174.96	174.52	193.17	190	2.07	1.57	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	1,465,792	293,268	1,172,524	3,242,470	1,776,678	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	1	174.52	174	190	184	1.57	2.01	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	1,468,944	293,268	1,175,676	30,316,999	28,848,055	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	4.93	174	169	184	177.94	2.01	0.57	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	1,471,397	293,268	1,178,129	16,547,967	15,076,570	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	0.46	169	168.72	177.94	178.87	0.57	2.01	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	1,480,977	293,268	1,187,709	31,703,658	30,222,681	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	5.1	168.72	161.9	178.87	173.01	2.01	2	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	1,481,727	293,268	1,188,459	16,871,263	15,389,536	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	3.27	161.9	160.52	173.01	172.44	2	1.98	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	1,618,636	293,268	1,325,368	21,975,368	20,356,732	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	4.05	160.52	158.32	172.44	171	1.98	1.98	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	1,619,923	293,268	1,326,655	20,565,867	18,945,944	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	3.86	158.32	156.58	171	170.85	1.98	1.83	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	1,642,705	293,268	1,349,437	15,002,227	13,359,522	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	2.16	156.58	156.07	170.85	167.67	2.33	2.41	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	1,644,849	293,268	1,351,581	19,181,160	17,536,311	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	2.57	156.07	155.42	167.67	169.54	2.41	2.38	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	1,745,058	293,268	1,451,790	18,895,751	17,150,693	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	2.58	155.42	154.85	169.54	168.44	2.38	2.49	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	1,751,219	293,268	1,457,951	34,641,163	32,889,944	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	3.96	154.85	150.47	168.44	163.03	2.49	2.4	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	2,359,965	293,268	2,066,697	27,412,575	25,052,610	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	3.67	150.47	148.9	163.03	157.11	2.4	2.4	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	2,362,570	293,268	2,069,302	26,953,521	24,590,951	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	3.63	148.9	147.42	157.11	157	2.4	2.33	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	2,954,309	293,268	2,661,041	35,454,075	32,499,766	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	4.7	147.42	143.38	157	155.42	2.33	2.33	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	2,955,253	293,268	2,661,985	29,311,144	26,355,891	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	4.11	143.38	140.46	155.42	155.66	2.33	2.2	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	2,955,683	293,268	2,662,415	19,102,000	16,146,317	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	3.03	140.46	139.76	155.66	151	2.2	2.25	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	2,955,683	293,268	2,662,415	21,549,863	18,594,180	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	3.31	139.76	138.18	151	144.74	2.25	2.22	644.2	16163.9	16808.1
53	3447	I13-10-I13-11	I13-10	I13-11	2,955,683	293,268	2,662,415	19,647,126	16,691,443	PVC	21	137.4	133.13	139.15	134.88	0.03681	0.013	9.1	138.18	134.32	144.74	139.73	0.97	0.56	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	2,957,289	293,268	2,664,021	6,124,076	3,166,787	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	1.33	134.32	133.69	139.73	142.95	1.81	2.33	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	2,963,603	293,268	2,670,335	30,407,121	27,443,518	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	4.22	133.69	131.05	142.95	138	2.33	2.33	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	2,970,548	293,268	2,677,280	42,793,558	39,823,010	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	5.38	131.05	127.3	138	138	2.33	0.89	526.6	17999.7	18526.3
57	3436	I14-3-I14-5	I14-3	I14-5	2,972,785	293,268	2,679,517	21,484,290	18,511,505	PVC	36	125.19	124.9	128.19	127.9	0.00248	0.013	3.3	127.3	127.29	138	138	0.89	0.61	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	2,973,377	293,268	2,680,109	26,071,121	23,097,744	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	2.13	127.29	127.28	138	138	1.61	0.98	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	2,973,969	293,268	2,680,701	60,681,535	57,707,566	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	0.37	127.28	127.21	138	131.44	0.98	2.9	433	19454.5	19887.5
60	2975	I15-5-I15-7	I15-5	I15-7	2,973,969	293,268	2,680,701	33,047,844	30,073,875	PVC	48	126.11	126.09	130.11	130.09	0.00127	0.013	2.52	127.21	127.21	131.44	131.37	2.9	2.89	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	7,136,115	293,268	6,842,847	33,686,043	26,549,928	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	8.43	127.2	126.77	131.37	131.41	1.39	1.6	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	7,136,115	293,268	6,842,847	38,080,441	30,944,326	0	30	125.87	125	128.37	127.5	0.02064	0.013	9.2	126.98	126.89	131.41	131.36	1.39	0.61	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	10,305,893	293,268	10,012,625	2,608,858	-7,697,035	0	30	125	124.99	127.5	127.49	0.0001	0.013	3.25	126.89	126.34	131.36	131	0.61	1.15	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	10,310,629	293,268	10,017,361	30,788,053	20,477,424	0	36	124.99	124	127.99	127	0.0051	0.013	6.07	126.27	125.2	131	131	1.72	1.8	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 17 (City_PDWF_2035 CP_2025_Likely)

Link	ID	Link Name	US Node	DS Node	Flows (gpd) Total Flow	Cal Poly	City SLO	Capacity (gpd) Total Capacity	Available Capacity	Pipe Data Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	Elevations (ft) US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	J05-7-J05-8	_J05-7	J05-8	1,033,889	1,033,889	0	811,300	-222,589	0	8	273	271.78	273.67	272.45	0.01079	0.013	4.58	274.39	272.38	276	274.78	-0.72	0.07	113.1	0	113.1
2	3353	J05-8-POLY VAULT	J05-8	PolyVault	1,140,094	1,033,889	106,205	3,430,204	2,290,110	0	10	271.78	265.55	272.61	266.38	0.05868	0.013	8.74	272.38	266.34	274.78	271.46	0.23	0.04	106.2	113.1	219.3
3	3045	POLY VAULT-J06-2	PolyVault	J06-2	1,140,094	1,033,889	106,205	805,159	-334,935	0	10	265.55	265.45	266.38	266.28	0.00323	0.013	3.23	266.34	266.05	271.46	270.98	0.04	0.23	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	1,144,187	1,033,889	110,298	2,566,826	1,422,639	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	3.14	266.03	265.19	270.98	269.39	0.67	0.71	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	1,178,661	1,033,889	144,772	4,834,667	3,656,006	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	5.03	265.19	259.63	269.39	268.74	0.71	0.7	415.3	461.8	877.1
6	3012	J06-14-J06-16	J06-14	J06-16	1,213,135	1,033,889	179,246	8,688,008	7,474,873	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	7.72	259.63	258.4	268.74	268.74	0.7	0.7	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	1,214,464	1,033,889	180,575	3,996,050	2,781,586	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	4.42	258.4	256.87	268.74	263.77	0.7	0.7	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	1,216,952	1,033,889	183,063	4,717,610	3,500,658	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	4.99	256.87	253	263.77	260.51	0.7	0.7	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	1,219,996	1,033,889	186,107	4,079,514	2,859,518	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	4.49	253	249.44	260.51	254.58	0.7	0.7	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	1,223,982	1,033,889	190,093	3,118,540	1,894,558	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	3.69	249.44	248.62	254.58	253.74	0.7	0.69	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	1,298,169	1,033,889	264,280	3,888,589	2,590,420	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	4.41	248.62	247.19	253.74	254.51	0.69	0.68	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	1,300,871	1,033,889	266,982	7,526,611	6,225,740	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	7.11	247.19	235.2	254.51	243	0.68	0.68	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	1,303,416	1,033,889	269,527	6,405,009	5,101,593	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	6.34	235.2	229.6	243	243	0.68	0.34	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	1,412,282	1,033,889	378,393	1,501,102	88,820	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	2.15	229.6	228.92	243	242	0.34	0.66	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	1,412,282	1,033,889	378,393	3,345,571	1,933,289	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	4.04	228.92	227.33	242	241.27	0.66	0.45	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	1,412,282	1,033,889	378,393	1,905,990	493,708	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	2.63	227.33	226.5	241.27	235.52	0.45	0.66	297.5	3243.2	3540.7
17	3391	K07-69-K07-28	K07-69	K07-28	1,412,282	1,033,889	378,393	7,497,885	6,085,603	0	15	225.91	222.53	227.16	223.78	0.03225	0.013	7.26	226.5	222.9	235.52	234.49	0.66	0.88	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	1,564,066	1,033,889	530,177	7,910,192	6,346,126	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	3.96	223.09	220.08	234.49	232.26	1.19	1.17	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	1,662,415	1,033,889	628,526	13,565,858	11,903,443	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	5.92	220.08	214.96	232.26	223.14	1.17	1.34	282.1	4153.3	4435.4
20	3410	J07-89-J07-90	J07-89	J07-90	1,663,091	1,033,889	629,202	10,436,597	8,773,506	PVC	12	214.55	208.61	215.55	209.61	0.05136	0.013	7.52	215.03	209.19	223.14	216	0.52	0.42	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	1,663,575	1,033,889	629,686	10,468,942	8,805,367	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	4.92	209.19	206.19	216	215.87	1.17	1.16	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	1,689,291	1,033,889	655,402	12,098,686	10,409,395	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	5.48	206.19	200.09	215.87	208.82	1.16	1.16	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	1,693,394	1,033,889	659,505	11,807,931	10,114,537	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	5.39	200.09	194.03	208.82	204.07	1.16	1.3	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	1,696,507	1,033,889	662,618	11,904,542	10,208,035	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	4.16	194.14	193.01	204.07	200.58	1.44	1.43	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	1,836,300	1,033,889	802,411	25,483,412	23,647,112	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	5.76	193.01	182.82	200.58	197	1.68	1.59	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	1,966,594	1,033,889	932,705	10,620,231	8,653,637	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	3.16	182.82	182.07	197	198.97	1.59	1.6	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	1,969,541	1,033,889	935,652	10,925,568	8,956,027	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	3.22	182.07	180.88	198.97	192.83	1.6	1.59	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	1,977,674	1,033,889	943,785	10,554,288	8,576,614	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	3.15	180.88	180.1	192.83	190	1.59	1.58	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	1,978,128	1,033,889	944,239	10,350,223	8,372,095	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	3.1	180.1	178.81	190	186.72	1.58	1.56	489.9	7477.1	7967
30	3003	J09-22-J09-24	J09-22	J09-24	1,988,286	1,033,889	954,397	9,083,654	7,095,368	PVC	27	178.12	178.07	180.37	180.32	0.00206	0.013	2.83	178.81	178.73	186.72	187.21	1.56	1.59	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	1,995,175	1,033,889	961,286	13,091,690	11,096,515	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	2.98	178.73	177.89	187.21	188.86	1.84	1.82	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	2,065,544	1,033,889	1,031,655	12,945,046	10,879,502	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	2.99	177.89	177.23	188.86	192.02	1.82	1.69	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	2,074,678	1,033,889	1,040,789	2,097,941	23,263	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	4.71	177.23	175.97	192.02	190.18	0.19	0.23	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	2,077,334	1,033,889	1,043,445	14,804,664	12,727,330	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	3.29	175.83	175.2	190.18	193.17	1.87	1.83	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	2,179,236	1,033,889	1,145,347	13,885,589	11,706,353	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	3.19	175.2	174.94	193.17	190	1.83	1.15	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	3,231,453	1,033,889	2,197,564	3,242,470	11,017	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	1.17	174.94	174.25	190	184	1.15	1.76	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	3,237,540	1,033,889	2,203,651	30,316,999	27,079,459	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	6.23	174.25	169.38	184	177.94	1.76	0.19	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	3,242,278	1,033,889	2,208,389	16,547,967	13,305,689	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	1.02	169.38	168.97	177.94	178.87	0.19	1.76	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	3,260,780	1,033,889	2,226,891	31,703,658	28,442,878	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	6.44	168.97	162.15	178.87	173.01	1.76	1.75	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	3,262,228	1,033,889	2,228,339	16,871,263	13,609,035	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	4.11	162.15	160.77	173.01	172.44	1.75	1.73	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	3,538,204	1,033,889	2,504,315	21,975,368	18,437,164	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	5.08	160.77	158.57	172.44	171	1.73	1.73	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	3,540,689	1,033,889	2,506,800	20,565,867	17,025,178	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	4.85	158.57	156.9	171	170.85	1.73	1.51	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	3,584,639	1,033,889	2,550,750	15,002,227	11,417,588	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	2.7	156.9	156.36	170.85	167.67	2.01	2.12	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	3,588,781	1,033,889	2,554,892	19,181,160	15,592,379	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	3.22	156.36	155.71	167.67	169.54	2.12	2.09	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	3,770,372	1,033,889	2,736,483	18,895,751	15,125,379	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	3.23	155.71	155.1	169.54	168.44	2.09	2.24	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	3,782,269	1,033,889	2,748,380	34,641,163	30,858,894	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	4.98	155.1	150.74	168.44	163.03	2.24	2.13	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	4,913,905	1,033,889	3,880,016	27,412,575	22,498,670	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	4.54	150.74	149.17	163.03	157.11	2.13	2.13	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	4,918,936	1,033,889	3,885,047	26,953,521	22,034,585	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	4.49	149.17	147.69	157.11	157	2.13	2.06	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	5,683,252	1,033,889	4,649,363	35,454,075	29,770,823	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	5.69	147.69	143.65	157	155.42	2.06	2.06	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	5,685,075	1,033,889	4,651,186	29,311,144	23,626,069	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	4.97	143.65	140.78	155.42	155.66	2.06	1.88	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	5,685,907	1,033,889	4,652,018	19,102,000	13,416,093	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	3.65	140.78	140.06	155.66	151	1.88	1.95	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	5,685,907	1,033,889	4,652,018	21,549,863	15,863,956	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	3.98	140.06	138.5	151	144.74	1.95	1.9	644.2	16163.9	16808.1
53	3447	I13-10-I13-11	I13-10	I13-11	5,685,907	1,033,889	4,652,018	19,647,126	13,961,219	PVC	21	137.4	133.13	139.15	134.88	0.03681	0.013	10.94	138.5	134.75	144.74	139.73	0.65	0.13	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	5,689,006	1,033,889	4,655,117	6,124,076	435,070	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	1.52	134.75	133.96	139.73	142.95	1.38	2.06	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	5,701,199	1,033,889	4,667,310	30,407,121	24,705,922	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	5.1	133.96	131.32	142.95	138	2.06	2.06	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	5,714,612	1,033,889	4,680,723	42,793,558	37,078,946	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	6.52	131.32	127.63	138	138	2.06	0.56	526.6	17999.7	18526.3
57	3436	I14-3-I14-5	I14-3	I14-5	5,718,930	1,033,889	4,685,041	21,484,290	15,765,360	PVC	36	125.19	124.9	128.19	127.9	0.00248	0.013	3.98	127.63	127.62	138	138	0.56	0.28	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	5,720,073	1,033,889	4,686,184	26,071,121	20,351,048	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	2.57	127.62	127.59	138	138	1.28	0.67	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	5,721,217	1,033,889	4,687,328	60,681,535	54,960,318	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	0.7	127.59	127.44	138	131.44	0.67	2.67	433	19454.5	19887.5
60	2975	I15-5-I15-7	I15-5	I15-7	5,721,217	1,033,889	4,687,328	33,047,844	27,326,627	PVC	48	126.11	126.09	130.11	130.09	0.00127	0.013	3.05	127.44	127.43	131.44	131.37	2.67	2.66	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	10,133,370	1,033,889	9,099,481	33,686,043	23,552,673	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	9.29	127.43	126.96	131.37	131.41	1.16	1.41	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	10,133,370	1,033,889	9,099,481	38,080,441	27,947,071	0	30	125.87	125	128.37	127.5	0.02064	0.013	10.15	127.21	127.16	131.41	131.36	1.16	0.34	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	13,303,148	1,033,889	12,269,259	2,608,858	-10,694,290	0	30	125	124.99	127.5	127.49	0.0001	0.013	4.19	127.16	126.53	131.36	131	0.34	0.96	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	13,312,293	1,033,889	12,278,404	30,788,053	17,475,760	0	36	124.99	124	127.99	127	0.0051	0.013	6.49	126.45	125.38	131	131	1.54	1.62	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 18 (City_PWWF_2035 CP_2025_Likely)

					Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
Link	ID	Link Name	US Node	DS Node	Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	J05-7-J05-8	_J05-7	J05-8	2,602,833	2,602,833	0	811,300	-1,791,533	0	8	273	271.78	273.67	272.45	0.01079	0.013	11.54	285.15	272.59	276	274.78	-11.48	-0.14	113.1	0	113.1
2	3353	J05-8-POLY VAULT	J05-8	PolyVault	2,737,500	2,602,833	134,667	3,430,204	692,704	0	10	271.78	265.55	272.61	266.38	0.05868	0.013	10.81	272.59	267.8	274.78	271.46	0.02	-1.42	106.2	113.1	219.3
3	3045	POLY VAULT-J06-2	PolyVault	J06-2	2,765,962	2,602,833	163,129	805,159	-1,960,803	0	10	265.55	265.45	266.38	266.28	0.00323	0.013	7.85	267.8	266.62	271.46	270.98	-1.42	-0.34	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	2,883,904	2,602,833	281,071	2,566,826	-317,078	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	3.64	266.62	265.52	270.98	269.39	0.08	0.38	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	2,946,841	2,602,833	344,008	4,834,667	1,887,826	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	6.39	265.52	259.95	269.39	268.74	0.38	0.38	415.3	461.8	877.1
6	3012	J06-14-J06-16	J06-14	J06-16	3,009,777	2,602,833	406,944	8,688,008	5,678,231	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	9.95	259.95	258.73	268.74	268.74	0.38	0.37	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	3,039,568	2,602,833	436,735	3,996,050	956,482	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	5.54	258.73	257.2	268.74	263.77	0.37	0.37	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	3,070,518	2,602,833	467,685	4,717,610	1,647,092	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	6.33	257.2	253.34	263.77	260.51	0.37	0.36	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	3,102,024	2,602,833	499,191	4,079,514	977,490	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	5.66	253.34	249.92	260.51	254.58	0.36	0.22	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	3,134,473	2,602,833	531,640	3,118,540	-15,933	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	4.48	249.92	249.11	254.58	253.74	0.22	0.2	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	3,977,139	2,602,833	1,374,306	3,888,589	-88,550	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	5.58	249.11	247.63	253.74	254.51	0.2	0.24	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	4,008,303	2,602,833	1,405,470	7,526,611	3,518,308	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	9.64	247.63	238.84	254.51	243	0.24	-2.96	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	4,039,310	2,602,833	1,436,477	6,405,009	2,365,699	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	5.09	238.84	236.47	243	243	-2.96	-6.53	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	4,347,412	2,602,833	1,744,579	1,501,102	-2,846,310	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	5.48	236.47	233.46	243	242	-6.53	-3.88	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	4,375,874	2,602,833	1,773,041	3,345,571	-1,030,303	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	5.52	233.46	230.38	242	241.27	-3.88	-2.6	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	4,404,336	2,602,833	1,801,503	1,905,990	-2,498,346	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	5.55	230.38	226.96	241.27	235.52	-2.6	0.2	297.5	3243.2	3540.7
17	3391	K07-69-K07-28	K07-69	K07-28	4,432,798	2,602,833	1,829,965	7,497,885	3,065,087	0	15	225.91	222.53	227.16	223.78	0.03225	0.013	9.85	226.96	223.64	235.52	234.49	0.2	0.14	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	5,768,445	2,602,833	3,165,612	7,910,192	2,141,747	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	5.55	223.64	220.71	234.49	232.26	0.64	0.54	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	6,809,136	2,602,833	4,206,303	13,565,858	6,756,722	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	8.74	220.71	215.43	232.26	223.14	0.54	0.87	282.1	4153.3	4435.4
20	3410	J07-89-J07-90	J07-89	J07-90	6,838,275	2,602,833	4,235,442	10,436,597	3,598,322	PVC	12	214.55	208.61	215.55	209.61	0.05136	0.013	10.96	215.48	209.82	223.14	216	0.07	-0.21	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	6,867,220	2,602,833	4,264,387	10,468,942	3,601,722	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	7.18	209.82	206.84	216	215.87	0.54	0.51	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	7,147,070	2,602,833	4,544,237	12,098,686	4,951,616	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	8.11	206.84	200.74	215.87	208.82	0.51	0.51	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	7,157,353	2,602,833	4,554,520	11,807,931	4,650,578	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	7.96	200.74	194.56	208.82	204.07	0.51	0.77	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	7,166,644	2,602,833	4,563,811	11,904,542	4,737,898	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	6.13	194.77	193.64	204.07	200.58	0.81	0.8	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	7,748,813	2,602,833	5,145,980	25,483,412	17,734,599	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	8.7	193.64	189.32	200.58	197	1.05	-4.91	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	8,476,349	2,602,833	5,873,516	10,620,231	2,143,882	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	3.3	189.32	188.85	197	198.97	-4.91	-5.18	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	8,491,654	2,602,833	5,888,821	10,925,568	2,433,914	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	3.3	188.85	188.12	198.97	192.83	-5.18	-5.65	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	8,521,413	2,602,833	5,918,580	10,554,288	2,032,875	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	3.32	188.12	187.61	192.83	190	-5.65	-5.93	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	8,528,047	2,602,833	5,925,214	10,350,223	1,822,176	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	3.32	187.61	186.72	190	186.72	-5.93	-6.35	489.9	7477.1	7967
30	3003	J09-22-J09-24	J09-22	J09-24	8,550,562	2,602,833	5,947,729	9,083,654	533,092	PVC	27	178.12	178.07	180.37	180.32	0.00206	0.013	3.33	187.25	187.21	186.72	187.21	-6.88	-6.89	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	10,778,998	2,602,833	8,176,165	13,091,690	2,312,692	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	3.4	189.44	188.86	187.21	188.86	-8.87	-9.15	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	11,385,792	2,602,833	8,782,959	12,945,046	1,559,254	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	3.59	192.63	192.02	188.86	192.02	-12.92	-13.1	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	11,425,822	2,602,833	8,822,989	2,097,941	-9,327,881	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	22.51	214.97	178.79	192.02	190.18	-37.55	-2.59	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	11,434,656	2,602,833	8,831,823	14,804,664	3,370,008	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	3.6	178.79	178.39	190.18	193.17	-1.09	-1.36	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	11,690,773	2,602,833	9,087,940	13,885,589	2,194,816	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	3.68	178.39	177.72	193.17	190	-1.36	-1.63	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	16,760,249	2,602,833	14,157,416	3,242,470	-13,517,779	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	5.28	177.72	175.25	190	184	-1.63	0.76	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	16,772,515	2,602,833	14,169,682	30,316,999	13,544,484	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	9.8	175.25	171.52	184	177.94	0.76	-1.95	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	16,783,432	2,602,833	14,180,599	16,547,967	-235,465	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	5.29	171.52	169.97	177.94	178.87	-1.95	0.76	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	16,839,008	2,602,833	14,236,175	31,703,658	14,864,650	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	10.14	169.97	166.27	178.87	173.01	0.76	-2.37	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	16,846,635	2,602,833	14,243,802	16,871,263	24,628	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	5.31	166.27	164.87	173.01	172.44	-2.37	-2.37	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	17,384,729	2,602,833	14,781,896	21,975,368	4,590,639	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	5.48	164.87	163.5	172.44	171	-2.37	-3.2	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	17,393,394	2,602,833	14,790,561	20,565,867	3,172,473	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	5.48	163.5	162.14	171	170.85	-3.2	-3.73	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	18,170,418	2,602,833	15,567,585	15,002,227	-3,168,191	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	3.98	162.14	161.51	170.85	167.67	-3.23	-3.03	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	18,193,096	2,602,833	15,590,263	19,181,160	988,064	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	3.98	161.51	160.9	167.67	169.54	-3.03	-3.1	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	22,048,448	2,602,833	19,445,615	18,895,751	-3,152,697	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	4.83	160.9	160.28	169.54	168.44	-3.1	-2.94	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	22,078,880	2,602,833	19,476,047	34,641,163	12,562,283	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	4.83	160.28	158.46	168.44	163.03	-2.94	-5.59	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	27,126,578	2,602,833	24,523,745	27,412,575	285,997	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	5.94	158.46	156.92	163.03	157.11	-5.59	-5.62	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	27,137,789	2,602,833	24,534,956	26,953,521	-184,268	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	5.94	156.92	155.35	157.11	157	-5.62	-5.6	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	29,703,998	2,602,833	27,101,165	35,454,075	5,750,077	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	6.5	155.35	152.51	157	155.42	-5.6	-6.8	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	29,712,001	2,602,833	27,109,168	29,311,144	-400,857	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	6.5	152.51	149.38	155.42	155.66	-6.8	-6.72	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	29,719,010	2,602,833	27,116,177	19,102,000	-10,617,010	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	6.51	149.38	147.81	155.66	151	-6.72	-5.8	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	29,725,189	2,602,833	27,122,356	21,549,863	-8,175,326	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	6.51	147.81	144.74	151	144.74	-5.8	-4.34	644.2	16163.9	16808.1
53	3447	I13-10-I13-11	I13-10	I13-11	29,731,370	2,602,833	27,128,537	19,647,126	-10,084,244	PVC	21	137.4	133.13	139.15	134.88	0.03681	0.013	19.13	149.51	139.73	144.74	139.73	-10.36	-4.85	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	29,740,648	2,602,833	27,137,815	6,124,076	-23,616,572	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	6.51	140.86	138.27	139.73	142.95	-4.73	-2.25	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	29,759,021	2,602,833	27,156,188	30,407,121	648,100	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	6.51	138.27	135.74	142.95	138	-2.25	-2.36	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	29,778,612	2,602,833	27,175,779	42,793,558	13,014,946	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	6.52	135.74	133.22	138	138	-2.36	-5.03	526.6	17999.7	18526.3
57	3436	I14-3-I14-5	I14-3	I14-5	29,789,107	2,602,833	27,186,274	21,484,290	-8,304,817	PVC	36	125.19	124.9	128.19	127.9	0.00248	0.013	6.52	133.22	132.67	138	138	-5.03	-4.77	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	29,796,430	2,602,833	27,193,597	26,071,121	-3,725,309	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	3.67	132.67	131.83	138	138	-3.77	-3.57	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	29,803,752	2,602,833	27,200,919	60,681,535	30,877,783	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	3.67	131.83	131.38	138	131.44	-3.57	-1.27	433	19454.5	19887.5
60	2975	I15-5-I15-7	I15-5	I15-7	29,809,931	2,602,833	27,207,098	33,047,844	3,237,913	PVC	48	126.11	126.09	130.11	130.09	0.00127	0.013	3.67	131.38	131.37	131.44	131.37	-1.27	-1.28	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	36,252,601	2,602,833	33,649,768	33,686,043	-2,566,558	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	11.43	131.67	131.41	131.37	131.41	-3.08	-3.04	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	36,258,780	2,602,833	33,655,947	38,080,441	1,821,661	0	30	125.87	125	128.37	127.5	0.02064	0.013	11.43	131.43	130.64	131.41	131.36	-3.06	-3.14	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	39,428,559	2,602,833	36,825,726	2,608,858	-36,819,701	0	30	125	124.99	127.5	127.49	0.0001	0.013	12.43	130.64	128.36	131.36	131	-3.14	-0.87	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	39,462,420	2,602,833	36,859,587	30,788,053	-8,674,367	0	36	124.99	124	127.99	127	0.0051	0.013	8.64	128.36	126.52	131	131	-0.37	0.48	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 19 (City_ADWF_2035 CP_2025_Worst)

					Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
Link	ID	Link Name	US Node	DS Node	Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	L13-7-L13-5	_J05-7	J05-8	462,889	462,889	0	811,300	348,411	0	8	273	271.78	273.67	272.45	0.01079	0.013	3.71	273.4	272.14	276	274.78	0.27	0.31	113.1	0	113.1
2	3353	M12-26-M12-21	J05-8	PolyVault	517,889	462,889	55,000	878,463	360,574	0	6	271.78	265.55	272.28	266.05	0.05868	0.013	7.01	272.18	266.03	274.78	271.46	0.1	0.02	106.2	113.1	219.3
3	3045	K08-33-K08-37	PolyVault	J06-2	517,889	462,889	55,000	577,296	59,407	PVC	8	265.55	265.45	266.22	266.12	0.00323	0.01	2.43	266.03	265.85	271.46	270.98	0.19	0.27	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	520,064	462,889	57,175	2,566,826	2,046,762	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	2.54	265.83	265.01	270.98	269.39	0.87	0.89	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	538,836	462,889	75,947	4,834,667	4,295,831	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	4.02	265.01	259.44	269.39	268.74	0.89	0.89	415.3	461.8	877.1
6	3012	H15-1-H15-3	J06-14	J06-16	557,608	462,889	94,719	8,688,008	8,130,400	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	6.15	259.44	258.21	268.74	268.74	0.89	0.89	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	558,332	462,889	95,443	3,996,050	3,437,718	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	3.55	258.21	256.68	268.74	263.77	0.89	0.89	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	559,687	462,889	96,798	4,717,610	4,157,923	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	4	256.68	252.82	263.77	260.51	0.89	0.88	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	561,344	462,889	98,455	4,079,514	3,518,170	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	3.61	252.82	249.26	260.51	254.58	0.88	0.88	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	563,515	462,889	100,626	3,118,540	2,555,025	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	2.98	249.26	248.44	254.58	253.74	0.88	0.87	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	603,855	462,889	140,966	3,888,589	3,284,734	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	3.56	248.44	247	253.74	254.51	0.87	0.87	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	605,301	462,889	142,412	7,526,611	6,921,310	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	5.69	247	235.01	254.51	243	0.87	0.87	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	606,662	462,889	143,773	6,405,009	5,798,347	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	5.08	235.01	229.27	243	243	0.87	0.67	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	665,945	462,889	203,056	1,501,102	835,157	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	1.84	229.27	228.73	243	242	0.67	0.85	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	665,945	462,889	203,056	3,345,571	2,679,626	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	3.29	228.73	227.04	242	241.27	0.85	0.74	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	665,945	462,889	203,056	1,905,990	1,240,045	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	2.19	227.04	226.31	241.27	235.52	0.74	0.85	297.5	3243.2	3540.7
17	3391	M06-7-M06-6	K07-69	K07-28	665,945	462,889	203,056	651,277	-14,668	0	6	225.91	222.53	226.41	223.03	0.03225	0.013	5.84	226.31	222.78	235.52	234.49	0.1	0.25	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	745,256	462,889	282,367	7,910,192	7,164,936	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	3.2	222.91	219.9	234.49	232.26	1.37	1.35	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	798,780	462,889	335,891	13,565,858	12,767,078	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	4.77	219.9	214.84	232.26	223.14	1.35	1.46	282.1	4153.3	4435.4
20	3410	H04-20-H04-22	J07-89	J07-90	799,145	462,889	336,256	1,643,661	844,516	PVC	6	214.55	208.61	215.05	209.11	0.05136	0.013	6.08	214.88	209.01	223.14	216	0.17	0.1	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	799,408	462,889	336,519	10,468,942	9,669,534	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	3.98	209.01	206	216	215.87	1.35	1.35	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	812,789	462,889	349,900	12,098,686	11,285,897	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	4.43	206	199.9	215.87	208.82	1.35	1.35	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	814,913	462,889	352,024	11,807,931	10,993,018	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	4.36	199.9	193.89	208.82	204.07	1.35	1.44	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	816,525	462,889	353,636	11,904,542	11,088,017	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	3.36	193.97	192.83	204.07	200.58	1.61	1.61	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	888,862	462,889	425,973	25,483,412	24,594,550	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	4.65	192.83	182.62	200.58	197	1.86	1.79	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	961,641	462,889	498,752	10,620,231	9,658,590	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	2.57	182.62	181.87	197	198.97	1.79	1.8	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	963,167	462,889	500,278	10,925,568	9,962,401	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	2.62	181.87	180.68	198.97	192.83	1.8	1.79	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	967,378	462,889	504,489	10,554,288	9,586,910	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	2.56	180.68	179.89	192.83	190	1.79	1.79	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	967,613	462,889	504,724	10,350,223	9,382,610	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	2.53	179.89	178.6	190	186.72	1.79	1.77	489.9	7477.1	7967
30	3003	K10-46-K10-44	J09-22	J09-24	972,873	462,889	509,984	164,574	-808,299	PVC	6	178.12	178.07	178.62	178.57	0.00206	0.013	2.31	178.6	178.53	186.72	187.21	0.02	0.04	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	976,440	462,889	513,551	13,091,690	12,115,250	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	2.42	178.53	177.68	187.21	188.86	2.04	2.03	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	1,012,573	462,889	549,684	12,945,046	11,932,473	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	2.43	177.68	176.95	188.86	192.02	2.03	1.97	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	1,017,304	462,889	554,415	2,097,941	1,080,637	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	4.1	176.95	175.69	192.02	190.18	0.47	0.51	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	1,018,679	462,889	555,790	14,804,664	13,785,985	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	2.67	175.64	175	190.18	193.17	2.06	2.03	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	1,070,868	462,889	607,979	13,885,589	12,814,721	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	2.59	175	174.57	193.17	190	2.03	1.52	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	1,635,413	462,889	1,172,524	3,242,470	1,607,057	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	1.02	174.57	174.03	190	184	1.52	1.98	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	1,638,565	462,889	1,175,676	30,316,999	28,678,434	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	5.1	174.03	169.06	184	177.94	1.98	0.51	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	1,641,018	462,889	1,178,129	16,547,967	14,906,949	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	0.52	169.06	168.75	177.94	178.87	0.51	1.98	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	1,650,598	462,889	1,187,709	31,703,658	30,053,060	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	5.27	168.75	161.93	178.87	173.01	1.98	1.97	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	1,651,348	462,889	1,188,459	16,871,263	15,219,915	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	3.38	161.93	160.54	173.01	172.44	1.97	1.96	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	1,788,257	462,889	1,325,368	21,975,368	20,187,111	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	4.17	160.54	158.34	172.44	171	1.96	1.96	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	1,789,544	462,889	1,326,655	20,565,867	18,776,323	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	3.98	158.34	156.61	171	170.85	1.96	1.8	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	1,812,326	462,889	1,349,437	15,002,227	13,189,901	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	2.22	156.61	156.1	170.85	167.67	2.3	2.38	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	1,814,470	462,889	1,351,581	19,181,160	17,366,690	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	2.64	156.1	155.44	167.67	169.54	2.38	2.36	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	1,914,679	462,889	1,451,790	18,895,751	16,981,072	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	2.66	155.44	154.88	169.54	168.44	2.36	2.46	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	1,920,840	462,889	1,457,951	34,641,163	32,720,323	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	4.07	154.88	150.49	168.44	163.03	2.46	2.38	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	2,529,586	462,889	2,066,697	27,412,575	24,882,989	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	3.75	150.49	148.92	163.03	157.11	2.38	2.38	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	2,532,191	462,889	2,069,302	26,953,521	24,421,330	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	3.7	148.92	147.44	157.11	157	2.38	2.31	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	3,123,930	462,889	2,661,041	35,454,075	32,330,145	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	4.78	147.44	143.4	157	155.42	2.31	2.31	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	3,124,874	462,889	2,661,985	29,311,144	26,186,270	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	4.18	143.4	140.48	155.42	155.66	2.31	2.18	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	3,125,305	462,889	2,662,416	19,102,000	15,976,695	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	3.08	140.48	139.78	155.66	151	2.18	2.23	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	3,125,305	462,889	2,662,416	21,549,863	18,424,558	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	3.36	139.78	138.21	151	144.74	2.23	2.19	644.2	16163.9	16808.1
53	3447	I07-33-I07-31	I13-10	I13-11	3,125,305	462,889	2,662,416	695,746	-2,429,559	PVC	6	137.4	133.13	137.9	133.63	0.03681	0.013	9.25	138.21	134.35	144.74	139.73	-0.31	-0.72	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	3,126,910	462,889	2,664,021	6,124,076	2,997,166	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	1.35	134.35	133.71	139.73	142.95	1.78	2.31	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	3,133,224	462,889	2,670,335	30,407,121	27,273,897	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	4.29	133.71	131.07	142.95	138	2.31	2.31	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	3,140,169	462,889	2,677,280	42,793,558	39,653,389	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	5.47	131.07	127.32	138	138	2.31	0.87	526.6	17999.7	18526.3
57	3436	M07-25-M07-8	I14-3	I14-5	3,142,406	462,889	2,679,517	180,739	-2,961,667	PVC	6	125.19	124.9	125.69	125.4	0.00248	0.013	3.36	127.32	127.31	138	138	-1.63	-1.91	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	3,142,998	462,889	2,680,109	26,071,121	22,928,123	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	2.17	127.31	127.3	138	138	1.59	0.96	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	3,143,590	462,889	2,680,701	60,681,535	57,537,945	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	0.39	127.3	127.22	138	131.44	0.96	2.89	433	19454.5	19887.5
60	2975	K10-7-K10-10	I15-5	I15-7	3,143,590	462,889	2,680,701	361,424	-2,782,166	PVC	8	126.11	126.09	126.78	126.76	0.00127	0.01	2.56	127.22	127.22	131.44	131.37	-0.44	-0.46	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	7,305,737	462,889	6,842,848	33,686,043	26,380,306	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	8.48	127.22	126.78	131.37	131.41	1.37	1.59	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	7,305,737	462,889	6,842,848	38,080,441	30,774,704	0	30	125.87	125	128.37	127.5	0.02064	0.013	9.26	127	126.9	131.41	131.36	1.37	0.6	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	10,475,514	462,889	10,012,625	2,608,858	-7,866,656	0	30	125	124.99	127.5	127.49	0.0001	0.013	3.3	126.9	126.35	131.36	131	0.6	1.14	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	10,480,250	462,889	10,017,361	30,788,053	20,307,803	0	36	124.99	124	127.99	127	0.0051	0.013	6.1	126.28	125.21	131	131	1.71	1.79	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 20 (City_PDWF_2035 CP_2025_Worst)

					Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
Link	ID	Link Name	US Node	DS Node	Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	L13-7-L13-5	_J05-7	J05-8	1,203,510	1,203,510	0	811,300	-392,210	0	8	273	271.78	273.67	272.45	0.01079	0.013	5.33	275.11	272.42	276	274.78	-1.44	0.03	113.1	0	113.1
2	3353	M12-26-M12-21	J05-8	PolyVault	1,309,715	1,203,510	106,205	878,463	-431,252	0	6	271.78	265.55	272.28	266.05	0.05868	0.013	9.08	272.42	266.44	274.78	271.46	-0.14	-0.39	106.2	113.1	219.3
3	3045	K08-33-K08-37	PolyVault	J06-2	1,309,715	1,203,510	106,205	577,296	-732,419	PVC	8	265.55	265.45	266.22	266.12	0.00323	0.01	3.72	266.44	266.09	271.46	270.98	-0.22	0.03	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	1,313,808	1,203,510	110,298	2,566,826	1,253,018	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	3.26	266.08	265.23	270.98	269.39	0.62	0.67	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	1,348,282	1,203,510	144,772	4,834,667	3,486,385	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	5.22	265.23	259.66	269.39	268.74	0.67	0.67	415.3	461.8	877.1
6	3012	H15-1-H15-3	J06-14	J06-16	1,382,756	1,203,510	179,246	8,688,008	7,305,252	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	8.01	259.66	258.43	268.74	268.74	0.67	0.67	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	1,384,085	1,203,510	180,575	3,996,050	2,611,965	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	4.58	258.43	256.9	268.74	263.77	0.67	0.67	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	1,386,573	1,203,510	183,063	4,717,610	3,331,037	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	5.17	256.9	253.04	263.77	260.51	0.67	0.66	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	1,389,617	1,203,510	186,107	4,079,514	2,689,897	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	4.65	253.04	249.48	260.51	254.58	0.66	0.66	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	1,393,603	1,203,510	190,093	3,118,540	1,724,937	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	3.82	249.48	248.66	254.58	253.74	0.66	0.65	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	1,467,790	1,203,510	264,280	3,888,589	2,420,799	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	4.56	248.66	247.22	253.74	254.51	0.65	0.65	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	1,470,492	1,203,510	266,982	7,526,611	6,056,119	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	7.36	247.22	235.23	254.51	243	0.65	0.65	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	1,473,037	1,203,510	269,527	6,405,009	4,931,972	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	6.56	235.23	229.68	243	243	0.65	0.26	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	1,581,903	1,203,510	378,393	1,501,102	-80,801	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	2.14	229.68	228.96	243	242	0.26	0.62	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	1,581,903	1,203,510	378,393	3,345,571	1,763,668	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	4.16	228.96	227.4	242	241.27	0.62	0.38	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	1,581,903	1,203,510	378,393	1,905,990	324,087	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	2.69	227.4	226.54	241.27	235.52	0.38	0.62	297.5	3243.2	3540.7
17	3391	M06-7-M06-6	K07-69	K07-28	1,581,903	1,203,510	378,393	651,277	-930,626	0	6	225.91	222.53	226.41	223.03	0.03225	0.013	7.49	226.54	222.92	235.52	234.49	-0.13	0.11	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	1,733,687	1,203,510	530,177	7,910,192	6,176,505	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	4.08	223.12	220.11	234.49	232.26	1.16	1.14	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	1,832,036	1,203,510	628,526	13,565,858	11,733,822	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	6.09	220.11	214.98	232.26	223.14	1.14	1.32	282.1	4153.3	4435.4
20	3410	H04-20-H04-22	J07-89	J07-90	1,832,713	1,203,510	629,203	1,643,661	-189,052	PVC	6	214.55	208.61	215.05	209.11	0.05136	0.013	7.74	215.05	209.22	223.14	216	0	-0.11	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	1,833,196	1,203,510	629,686	10,468,942	8,635,746	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	5.07	209.22	206.22	216	215.87	1.14	1.13	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	1,858,912	1,203,510	655,402	12,098,686	10,239,774	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	5.64	206.22	200.12	215.87	208.82	1.13	1.13	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	1,863,015	1,203,510	659,505	11,807,931	9,944,916	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	5.54	200.12	194.05	208.82	204.07	1.13	1.28	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	1,866,128	1,203,510	662,618	11,904,542	10,038,414	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	4.27	194.17	193.03	204.07	200.58	1.41	1.41	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	2,005,921	1,203,510	802,411	25,483,412	23,477,491	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	5.91	193.03	182.84	200.58	197	1.66	1.57	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	2,136,215	1,203,510	932,705	10,620,231	8,484,016	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	3.23	182.84	182.09	197	198.97	1.57	1.58	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	2,139,162	1,203,510	935,652	10,925,568	8,786,406	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	3.3	182.09	180.91	198.97	192.83	1.58	1.56	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	2,147,295	1,203,510	943,785	10,554,288	8,406,993	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	3.22	180.91	180.13	192.83	190	1.56	1.55	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	2,147,749	1,203,510	944,239	10,350,223	8,202,474	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	3.18	180.13	178.84	190	186.72	1.55	1.53	489.9	7477.1	7967
30	3003	K10-46-K10-44	J09-22	J09-24	2,157,907	1,203,510	954,397	164,574	-1,993,333	PVC	6	178.12	178.07	178.62	178.57	0.00206	0.013	2.9	178.84	178.76	186.72	187.21	-0.22	-0.19	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	2,164,796	1,203,510	961,286	13,091,690	10,926,894	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	3.05	178.76	177.91	187.21	188.86	1.81	1.8	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	2,235,165	1,203,510	1,031,655	12,945,046	10,709,881	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	3.06	177.91	177.33	188.86	192.02	1.8	1.59	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	2,244,299	1,203,510	1,040,789	2,097,941	-146,358	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	4.63	177.33	176	192.02	190.18	0.09	0.2	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	2,246,955	1,203,510	1,043,445	14,804,664	12,557,709	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	3.37	175.86	175.23	190.18	193.17	1.84	1.8	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	2,348,857	1,203,510	1,145,347	13,885,589	11,536,732	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	3.26	175.23	174.98	193.17	190	1.8	1.11	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	3,401,074	1,203,510	2,197,564	3,242,470	-158,604	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	1.16	174.98	174.27	190	184	1.11	1.74	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	3,407,161	1,203,510	2,203,651	30,316,999	26,909,838	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	6.32	174.27	169.41	184	177.94	1.74	0.16	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	3,411,899	1,203,510	2,208,389	16,547,967	13,136,068	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	1.08	169.41	168.99	177.94	178.87	0.16	1.74	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	3,430,401	1,203,510	2,226,891	31,703,658	28,273,257	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	6.54	168.99	162.16	178.87	173.01	1.74	1.74	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	3,431,849	1,203,510	2,228,339	16,871,263	13,439,414	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	4.17	162.16	160.79	173.01	172.44	1.74	1.71	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	3,707,824	1,203,510	2,504,314	21,975,368	18,267,544	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	5.15	160.79	158.59	172.44	171	1.71	1.71	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	3,710,310	1,203,510	2,506,800	20,565,867	16,855,557	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	4.92	158.59	156.93	171	170.85	1.71	1.48	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	3,754,261	1,203,510	2,550,751	15,002,227	11,247,966	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	2.73	156.93	156.38	170.85	167.67	1.98	2.1	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	3,758,402	1,203,510	2,554,892	19,181,160	15,422,758	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	3.26	156.38	155.73	167.67	169.54	2.1	2.07	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	3,939,993	1,203,510	2,736,483	18,895,751	14,955,758	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	3.27	155.73	155.12	169.54	168.44	2.07	2.22	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	3,951,890	1,203,510	2,748,380	34,641,163	30,689,273	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	5.04	155.12	150.75	168.44	163.03	2.22	2.12	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	5,083,526	1,203,510	3,880,016	27,412,575	22,329,049	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	4.59	150.75	149.18	163.03	157.11	2.12	2.12	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	5,088,557	1,203,510	3,885,047	26,953,521	21,864,964	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	4.53	149.18	147.7	157.11	157	2.12	2.05	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	5,852,873	1,203,510	4,649,363	35,454,075	29,601,202	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	5.74	147.7	143.66	157	155.42	2.05	2.05	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	5,854,696	1,203,510	4,651,186	29,311,144	23,456,448	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	5.01	143.66	140.8	155.42	155.66	2.05	1.86	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	5,855,528	1,203,510	4,652,018	19,102,000	13,246,472	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	3.68	140.8	140.08	155.66	151	1.86	1.93	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	5,855,528	1,203,510	4,652,018	21,549,863	15,694,335	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	4.01	140.08	138.52	151	144.74	1.93	1.88	644.2	16163.9	16808.1
53	3447	I07-33-I07-31	I13-10	I13-11	5,855,528	1,203,510	4,652,018	695,746	-5,159,782	PVC	6	137.4	133.13	137.9	133.63	0.03681	0.013	11.03	138.52	134.78	144.74	139.73	-0.62	-1.15	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	5,858,627	1,203,510	4,655,117	6,124,076	265,449	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	1.53	134.78	133.97	139.73	142.95	1.35	2.05	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	5,870,820	1,203,510	4,667,310	30,407,121	24,536,301	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	5.15	133.97	131.33	142.95	138	2.05	2.05	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	5,884,233	1,203,510	4,680,723	42,793,558	36,909,325	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	6.57	131.33	127.65	138	138	2.05	0.54	526.6	17999.7	18526.3
57	3436	M07-25-M07-8	I14-3	I14-5	5,888,551	1,203,510	4,685,041	180,739	-5,707,812	PVC	6	125.19	124.9	125.69	125.4	0.00248	0.013	4.01	127.65	127.64	138	138	-1.96	-2.24	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	5,889,695	1,203,510	4,686,185	26,071,121	20,181,426	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	2.59	127.64	127.6	138	138	1.26	0.66	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	5,890,838	1,203,510	4,687,328	60,681,535	54,790,697	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	0.73	127.6	127.45	138	131.44	0.66	2.66	433	19454.5	19887.5
60	2975	K10-7-K10-10	I15-5	I15-7	5,890,838	1,203,510	4,687,328	361,424	-5,529,414	PVC	8	126.11	126.09	126.78	126.76	0.00127	0.01	3.07	127.45	127.44	131.44	131.37	-0.67	-0.68	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	10,302,991	1,203,510	9,099,481	33,686,043	23,383,052	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	9.33	127.44	126.97	131.37	131.41	1.15	1.4	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	10,302,991	1,203,510	9,099,481	38,080,441	27,777,450	0	30	125.87	125	128.37	127.5	0.02064	0.013	10.2	127.22	127.18	131.41	131.36	1.15	0.32	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	13,472,769	1,203,510	12,269,259	2,608,858	-10,863,911	0	30	125	124.99	127.5	127.49	0.0001	0.013	4.25	127.18	126.54	131.36	131	0.32	0.95	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	13,481,915	1,203,510	12,278,405	30,788,053	17,306,138	0	36	124.99	124	127.99	127	0.0051	0.013	6.51	126.46	125.39	131	131	1.53	1.61	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 21 (City_PWWF_2035 CP_2025_Worst)

					Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
Link	ID	Link Name	US Node	DS Node	Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	L13-7-L13-5	_J05-7	J05-8	2,772,454	2,772,454	0	811,300	-1,961,154	0	8	273	271.78	273.67	272.45	0.01079	0.013	12.29	286.84	272.59	276	274.78	-13.17	-0.14	113.1	0	113.1
2	3353	M12-26-M12-21	J05-8	PolyVault	2,907,121	2,772,454	134,667	878,463	-2,028,658	0	6	271.78	265.55	272.28	266.05	0.05868	0.013	10.92	272.59	268.11	274.78	271.46	-0.31	-2.06	106.2	113.1	219.3
3	3045	K08-33-K08-37	PolyVault	J06-2	2,935,583	2,772,454	163,129	577,296	-2,358,287	PVC	8	265.55	265.45	266.22	266.12	0.00323	0.01	8.33	268.11	266.79	271.46	270.98	-1.89	-0.67	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	3,053,525	2,772,454	281,071	2,566,826	-486,699	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	3.85	266.79	265.54	270.98	269.39	-0.09	0.36	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	3,116,462	2,772,454	344,008	4,834,667	1,718,205	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	6.48	265.54	259.98	269.39	268.74	0.36	0.35	415.3	461.8	877.1
6	3012	H15-1-H15-3	J06-14	J06-16	3,179,398	2,772,454	406,944	8,688,008	5,508,610	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	10.11	259.98	258.75	268.74	268.74	0.35	0.35	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	3,209,189	2,772,454	436,735	3,996,050	786,861	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	5.6	258.75	257.23	268.74	263.77	0.35	0.34	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	3,240,139	2,772,454	467,685	4,717,610	1,477,471	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	6.41	257.23	253.36	263.77	260.51	0.34	0.34	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	3,271,645	2,772,454	499,191	4,079,514	807,869	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	5.72	253.36	250.01	260.51	254.58	0.34	0.13	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	3,304,094	2,772,454	531,640	3,118,540	-185,554	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	4.44	250.01	249.19	254.58	253.74	0.13	0.12	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	4,146,759	2,772,454	1,374,305	3,888,589	-258,170	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	5.51	249.19	247.64	253.74	254.51	0.12	0.23	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	4,177,924	2,772,454	1,405,470	7,526,611	3,348,687	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	9.74	247.64	239.79	254.51	243	0.23	-3.91	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	4,208,931	2,772,454	1,436,477	6,405,009	2,196,078	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	5.31	239.79	237.23	243	243	-3.91	-7.29	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	4,517,033	2,772,454	1,744,579	1,501,102	-3,015,931	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	5.7	237.23	233.97	243	242	-7.29	-4.39	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	4,545,495	2,772,454	1,773,041	3,345,571	-1,199,924	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	5.73	233.97	230.65	242	241.27	-4.39	-2.87	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	4,573,957	2,772,454	1,801,503	1,905,990	-2,667,967	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	5.77	230.65	226.98	241.27	235.52	-2.87	0.18	297.5	3243.2	3540.7
17	3391	M06-7-M06-6	K07-69	K07-28	4,602,419	2,772,454	1,829,965	651,277	-3,951,142	0	6	225.91	222.53	226.41	223.03	0.03225	0.013	9.93	226.98	223.66	235.52	234.49	-0.57	-0.63	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	5,938,066	2,772,454	3,165,612	7,910,192	1,972,126	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	5.58	223.66	220.72	234.49	232.26	0.62	0.53	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	6,978,757	2,772,454	4,206,303	13,565,858	6,587,101	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	8.79	220.72	215.44	232.26	223.14	0.53	0.86	282.1	4153.3	4435.4
20	3410	H04-20-H04-22	J07-89	J07-90	7,007,895	2,772,454	4,235,441	1,643,661	-5,364,234	PVC	6	214.55	208.61	215.05	209.11	0.05136	0.013	11.02	215.49	209.84	223.14	216	-0.44	-0.73	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	7,036,841	2,772,454	4,264,387	10,468,942	3,432,101	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	7.22	209.84	206.85	216	215.87	0.52	0.5	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	7,316,691	2,772,454	4,544,237	12,098,686	4,781,995	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	8.15	206.85	200.76	215.87	208.82	0.5	0.49	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	7,326,974	2,772,454	4,554,520	11,807,931	4,480,957	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	8	200.76	194.58	208.82	204.07	0.49	0.75	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	7,336,264	2,772,454	4,563,810	11,904,542	4,568,278	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	6.17	194.79	193.65	204.07	200.58	0.79	0.79	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	7,918,433	2,772,454	5,145,979	25,483,412	17,564,979	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	8.75	193.65	189.42	200.58	197	1.04	-5.01	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	8,645,971	2,772,454	5,873,517	10,620,231	1,974,260	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	3.36	189.42	188.93	197	198.97	-5.01	-5.26	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	8,661,275	2,772,454	5,888,821	10,925,568	2,264,293	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	3.37	188.93	188.18	198.97	192.83	-5.26	-5.71	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	8,691,034	2,772,454	5,918,580	10,554,288	1,863,254	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	3.38	188.18	187.64	192.83	190	-5.71	-5.96	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	8,697,667	2,772,454	5,925,213	10,350,223	1,652,556	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	3.38	187.64	186.72	190	186.72	-5.96	-6.35	489.9	7477.1	7967
30	3003	K10-46-K10-44	J09-22	J09-24	8,720,183	2,772,454	5,947,729	164,574	-8,555,609	PVC	6	178.12	178.07	178.62	178.57	0.00206	0.013	3.39	187.25	187.21	186.72	187.21	-8.63	-8.64	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	10,948,619	2,772,454	8,176,165	13,091,690	2,143,071	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	3.45	189.46	188.86	187.21	188.86	-8.89	-9.15	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	11,555,413	2,772,454	8,782,959	12,945,046	1,389,633	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	3.64	192.65	192.02	188.86	192.02	-12.94	-13.1	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	11,595,443	2,772,454	8,822,989	2,097,941	-9,497,502	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	22.84	216.14	178.87	192.02	190.18	-38.72	-2.67	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	11,604,278	2,772,454	8,831,824	14,804,664	3,200,386	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	3.66	178.87	178.46	190.18	193.17	-1.17	-1.43	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	11,860,394	2,772,454	9,087,940	13,885,589	2,025,195	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	3.74	178.46	177.77	193.17	190	-1.43	-1.68	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	16,929,870	2,772,454	14,157,416	3,242,470	-13,687,400	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	5.34	177.77	175.26	190	184	-1.68	0.75	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	16,942,137	2,772,454	14,169,683	30,316,999	13,374,862	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	9.82	175.26	171.55	184	177.94	0.75	-1.98	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	16,953,053	2,772,454	14,180,599	16,547,967	-405,086	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	5.34	171.55	169.98	177.94	178.87	-1.98	0.75	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	17,008,630	2,772,454	14,236,176	31,703,658	14,695,028	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	10.17	169.98	166.57	178.87	173.01	0.75	-2.67	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	17,016,257	2,772,454	14,243,803	16,871,263	-144,994	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	5.36	166.57	165.15	173.01	172.44	-2.67	-2.65	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	17,554,350	2,772,454	14,781,896	21,975,368	4,421,018	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	5.53	165.15	163.74	172.44	171	-2.65	-3.44	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	17,563,015	2,772,454	14,790,561	20,565,867	3,002,852	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	5.54	163.74	162.37	171	170.85	-3.44	-3.96	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	18,340,039	2,772,454	15,567,585	15,002,227	-3,337,812	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	4.01	162.37	161.72	170.85	167.67	-3.46	-3.24	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	18,362,717	2,772,454	15,590,263	19,181,160	818,443	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	4.02	161.72	161.1	167.67	169.54	-3.24	-3.3	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	22,218,067	2,772,454	19,445,613	18,895,751	-3,322,316	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	4.86	161.1	160.46	169.54	168.44	-3.3	-3.12	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	22,248,501	2,772,454	19,476,047	34,641,163	12,392,662	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	4.87	160.46	158.62	168.44	163.03	-3.12	-5.75	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	27,296,200	2,772,454	24,523,746	27,412,575	116,375	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	5.97	158.62	157.06	163.03	157.11	-5.75	-5.76	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	27,307,408	2,772,454	24,534,954	26,953,521	-353,887	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	5.98	157.06	155.47	157.11	157	-5.76	-5.72	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	29,873,620	2,772,454	27,101,166	35,454,075	5,580,455	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	6.54	155.47	152.6	157	155.42	-5.72	-6.89	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	29,881,620	2,772,454	27,109,166	29,311,144	-570,476	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	6.54	152.6	149.43	155.42	155.66	-6.89	-6.77	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	29,888,632	2,772,454	27,116,178	19,102,000	-10,786,632	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	6.54	149.43	147.84	155.66	151	-6.77	-5.83	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	29,894,811	2,772,454	27,122,357	21,549,863	-8,344,948	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	6.54	147.84	144.74	151	144.74	-5.83	-4.34	644.2	16163.9	16808.1
53	3447	I07-33-I07-31	I13-10	I13-11	29,900,989	2,772,454	27,128,535	695,746	-29,205,243	PVC	6	137.4	133.13	137.9	133.63	0.03681	0.013	19.23	149.62	139.73	144.74	139.73	-11.72	-6.1	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	29,910,269	2,772,454	27,137,815	6,124,076	-23,786,193	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	6.55	140.97	138.34	139.73	142.95	-4.84	-2.32	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	29,928,640	2,772,454	27,156,186	30,407,121	478,481	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	6.55	138.34	135.79	142.95	138	-2.32	-2.41	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	29,948,231	2,772,454	27,175,777	42,793,558	12,845,327	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	6.56	135.79	133.24	138	138	-2.41	-5.05	526.6	17999.7	18526.3
57	3436	M07-25-M07-8	I14-3	I14-5	29,958,729	2,772,454	27,186,275	180,739	-29,777,990	PVC	6	125.19	124.9	125.69	125.4	0.00248	0.013	6.56	133.24	132.68	138	138	-7.55	-7.28	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	29,966,051	2,772,454	27,193,597	26,071,121	-3,894,930	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	3.69	132.68	131.84	138	138	-3.78	-3.58	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	29,973,374	2,772,454	27,200,920	60,681,535	30,708,161	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	3.69	131.84	131.38	138	131.44	-3.58	-1.27	433	19454.5	19887.5
60	2975	K10-7-K10-10	I15-5	I15-7	29,979,552	2,772,454	27,207,098	361,424	-29,618,128	PVC	8	126.11	126.09	126.78	126.76	0.00127	0.01	3.69	131.38	131.37	131.44	131.37	-4.6	-4.61	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	36,422,223	2,772,454	33,649,769	33,686,043	-2,736,180	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	11.48	131.67	131.41	131.37	131.41	-3.08	-3.04	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	36,428,402	2,772,454	33,655,948	38,080,441	1,652,039	0	30	125.87	125	128.37	127.5	0.02064	0.013	11.48	131.48	130.68	131.41	131.36	-3.11	-3.18	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	39,598,178	2,772,454	36,825,724	2,608,858	-36,989,320	0	30	125	124.99	127.5	127.49	0.0001	0.013	12.48	130.68	128.38	131.36	131	-3.18	-0.89	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	39,632,042	2,772,454	36,859,588	30,788,053	-8,843,989	0	36	124.99	124	127.99	127	0.0051	0.013	8.67	128.38	126.53	131	131	-0.39	0.47	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 22 (City_ADWF_2035 CP_2030)

					Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
Link	ID	Link Name	US Node	DS Node	Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	L13-7-L13-5	_J05-7	J05-8	235,641	235,641	0	811,300	575,659	0	8	273	271.78	273.67	272.45	0.01079	0.013	3.12	273.28	272.07	276	274.78	0.39	0.38	113.1	0	113.1
2	3353	M12-26-M12-21	J05-8	PolyVault	290,641	235,641	55,000	878,463	587,822	0	6	271.78	265.55	272.28	266.05	0.05868	0.013	5.93	272.07	265.9	274.78	271.46	0.21	0.15	106.2	113.1	219.3
3	3045	K08-33-K08-37	PolyVault	J06-2	290,641	235,641	55,000	577,296	286,655	PVC	8	265.55	265.45	266.22	266.12	0.00323	0.01	2.1	265.9	265.74	271.46	270.98	0.32	0.38	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	292,816	235,641	57,175	2,566,826	2,274,010	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	2.15	265.74	264.92	270.98	269.39	0.96	0.98	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	311,588	235,641	75,947	4,834,667	4,523,079	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	3.43	264.92	259.36	269.39	268.74	0.98	0.97	415.3	461.8	877.1
6	3012	H15-1-H15-3	J06-14	J06-16	330,360	235,641	94,719	8,688,008	8,357,648	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	5.26	259.36	258.13	268.74	268.74	0.97	0.97	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	331,084	235,641	95,443	3,996,050	3,664,966	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	3.05	258.13	256.6	268.74	263.77	0.97	0.97	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	332,439	235,641	96,798	4,717,610	4,385,171	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	3.43	256.6	252.73	263.77	260.51	0.97	0.97	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	334,096	235,641	98,455	4,079,514	3,745,418	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	3.1	252.73	249.17	260.51	254.58	0.97	0.97	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	336,267	235,641	100,626	3,118,540	2,782,273	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	2.57	249.17	248.36	254.58	253.74	0.97	0.95	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	376,607	235,641	140,966	3,888,589	3,511,982	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	3.11	248.36	246.92	253.74	254.51	0.95	0.95	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	378,053	235,641	142,412	7,526,611	7,148,558	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	4.95	246.92	234.93	254.51	243	0.95	0.95	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	379,414	235,641	143,773	6,405,009	6,025,595	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	4.43	234.93	229.15	243	243	0.95	0.79	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	438,697	235,641	203,056	1,501,102	1,062,405	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	1.64	229.15	228.65	243	242	0.79	0.93	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	438,697	235,641	203,056	3,345,571	2,906,874	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	2.92	228.65	226.94	242	241.27	0.93	0.84	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	438,697	235,641	203,056	1,905,990	1,467,293	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	1.95	226.94	226.23	241.27	235.52	0.84	0.93	297.5	3243.2	3540.7
17	3391	M06-7-M06-6	K07-69	K07-28	438,697	235,641	203,056	651,277	212,580	0	6	225.91	222.53	226.41	223.03	0.03225	0.013	5.16	226.23	222.74	235.52	234.49	0.18	0.29	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	518,008	235,641	282,367	7,910,192	7,392,184	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	2.87	222.85	219.84	234.49	232.26	1.43	1.41	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	571,532	235,641	335,891	13,565,858	12,994,326	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	4.32	219.84	214.8	232.26	223.14	1.41	1.5	282.1	4153.3	4435.4
20	3410	H04-20-H04-22	J07-89	J07-90	571,897	235,641	336,256	1,643,661	1,071,764	PVC	6	214.55	208.61	215.05	209.11	0.05136	0.013	5.5	214.83	208.95	223.14	216	0.22	0.16	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	572,160	235,641	336,519	10,468,942	9,896,782	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	3.6	208.95	205.94	216	215.87	1.41	1.41	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	585,541	235,641	349,900	12,098,686	11,513,145	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	4.02	205.94	199.84	215.87	208.82	1.41	1.41	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	587,665	235,641	352,024	11,807,931	11,220,266	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	3.95	199.84	193.85	208.82	204.07	1.41	1.48	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	589,277	235,641	353,636	11,904,542	11,315,265	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	3.05	193.91	192.78	204.07	200.58	1.67	1.66	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	661,614	235,641	425,973	25,483,412	24,821,798	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	4.24	192.78	182.56	200.58	197	1.91	1.85	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	734,393	235,641	498,752	10,620,231	9,885,838	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	2.37	182.56	181.82	197	198.97	1.85	1.85	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	735,919	235,641	500,278	10,925,568	10,189,649	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	2.42	181.82	180.62	198.97	192.83	1.85	1.85	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	740,130	235,641	504,489	10,554,288	9,814,158	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	2.37	180.62	179.84	192.83	190	1.85	1.84	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	740,365	235,641	504,724	10,350,223	9,609,858	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	2.33	179.84	178.55	190	186.72	1.84	1.82	489.9	7477.1	7967
30	3003	K10-46-K10-44	J09-22	J09-24	745,625	235,641	509,984	164,574	-581,051	PVC	6	178.12	178.07	178.62	178.57	0.00206	0.013	2.13	178.55	178.48	186.72	187.21	0.07	0.09	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	749,192	235,641	513,551	13,091,690	12,342,498	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	2.24	178.48	177.63	187.21	188.86	2.09	2.08	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	785,325	235,641	549,684	12,945,046	12,159,721	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	2.25	177.63	176.89	188.86	192.02	2.08	2.03	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	790,056	235,641	554,415	2,097,941	1,307,885	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	3.84	176.89	175.63	192.02	190.18	0.53	0.57	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	791,431	235,641	555,790	14,804,664	14,013,233	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	2.48	175.59	174.95	190.18	193.17	2.11	2.08	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	843,620	235,641	607,979	13,885,589	13,041,969	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	2.42	174.95	174.51	193.17	190	2.08	1.58	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	1,408,165	235,641	1,172,524	3,242,470	1,834,305	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	0.99	174.51	173.99	190	184	1.58	2.02	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	1,411,317	235,641	1,175,676	30,316,999	28,905,682	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	4.87	173.99	168.98	184	177.94	2.02	0.59	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	1,413,770	235,641	1,178,129	16,547,967	15,134,197	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	0.45	168.98	168.71	177.94	178.87	0.59	2.02	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	1,423,350	235,641	1,187,709	31,703,658	30,280,308	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	5.04	168.71	161.89	178.87	173.01	2.02	2.01	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	1,424,100	235,641	1,188,459	16,871,263	15,447,163	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	3.24	161.89	160.51	173.01	172.44	2.01	1.99	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	1,561,009	235,641	1,325,368	21,975,368	20,414,359	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	4.01	160.51	158.31	172.44	171	1.99	1.99	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	1,562,296	235,641	1,326,655	20,565,867	19,003,571	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	3.82	158.31	156.57	171	170.85	1.99	1.84	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	1,585,078	235,641	1,349,437	15,002,227	13,417,149	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	2.13	156.57	156.06	170.85	167.67	2.34	2.42	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	1,587,222	235,641	1,351,581	19,181,160	17,593,938	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	2.54	156.06	155.41	167.67	169.54	2.42	2.39	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	1,687,431	235,641	1,451,790	18,895,751	17,208,320	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	2.56	155.41	154.84	169.54	168.44	2.39	2.5	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	1,693,592	235,641	1,457,951	34,641,163	32,947,571	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	3.92	154.84	150.46	168.44	163.03	2.5	2.41	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	2,302,338	235,641	2,066,697	27,412,575	25,110,237	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	3.65	150.46	148.89	163.03	157.11	2.41	2.41	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	2,304,943	235,641	2,069,302	26,953,521	24,648,578	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	3.6	148.89	147.41	157.11	157	2.41	2.34	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	2,896,682	235,641	2,661,041	35,454,075	32,557,393	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	4.68	147.41	143.37	157	155.42	2.34	2.34	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	2,897,625	235,641	2,661,984	29,311,144	26,413,519	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	4.09	143.37	140.45	155.42	155.66	2.34	2.21	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	2,898,057	235,641	2,662,416	19,102,000	16,203,943	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	3.02	140.45	139.75	155.66	151	2.21	2.26	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	2,898,057	235,641	2,662,416	21,549,863	18,651,806	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	3.29	139.75	138.17	151	144.74	2.26	2.23	644.2	16163.9	16808.1
53	3447	I07-33-I07-31	I13-10	I13-11	2,898,057	235,641	2,662,416	695,746	-2,202,311	PVC	6	137.4	133.13	137.9	133.63	0.03681	0.013	9.05	138.17	134.31	144.74	139.73	-0.27	-0.68	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	2,899,661	235,641	2,664,020	6,124,076	3,224,415	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	1.32	134.31	133.68	139.73	142.95	1.82	2.34	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	2,905,976	235,641	2,670,335	30,407,121	27,501,145	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	4.2	133.68	131.04	142.95	138	2.34	2.34	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	2,912,921	235,641	2,677,280	42,793,558	39,880,637	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	5.35	131.04	127.29	138	138	2.34	0.9	526.6	17999.7	18526.3
57	3436	M07-25-M07-8	I14-3	I14-5	2,915,158	235,641	2,679,517	180,739	-2,734,419	PVC	6	125.19	124.9	125.69	125.4	0.00248	0.013	3.29	127.29	127.28	138	138	-1.6	-1.88	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	2,915,750	235,641	2,680,109	26,071,121	23,155,371	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	2.12	127.28	127.27	138	138	1.62	0.99	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	2,916,342	235,641	2,680,701	60,681,535	57,765,193	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	0.36	127.27	127.2	138	131.44	0.99	2.91	433	19454.5	19887.5
60	2975	K10-7-K10-10	I15-5	I15-7	2,916,342	235,641	2,680,701	361,424	-2,554,918	PVC	8	126.11	126.09	126.78	126.76	0.00127	0.01	2.51	127.2	127.2	131.44	131.37	-0.42	-0.44	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	7,078,489	235,641	6,842,848	33,686,043	26,607,554	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	8.41	127.2	126.76	131.37	131.41	1.39	1.61	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	7,078,489	235,641	6,842,848	38,080,441	31,001,952	0	30	125.87	125	128.37	127.5	0.02064	0.013	9.18	126.98	126.88	131.41	131.36	1.39	0.62	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	10,248,267	235,641	10,012,626	2,608,858	-7,639,409	0	30	125	124.99	127.5	127.49	0.0001	0.013	3.23	126.88	126.33	131.36	131	0.62	1.16	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	10,253,002	235,641	10,017,361	30,788,053	20,535,051	0	36	124.99	124	127.99	127	0.0051	0.013	6.06	126.26	125.19	131	131	1.73	1.81	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 23 (City_PDWF_2035 CP_2030)

					Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
Link	ID	Link Name	US Node	DS Node	Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	L13-7-L13-5	_J05-7	J05-8	1,155,454	1,155,454	0	811,300	-344,154	0	8	273	271.78	273.67	272.45	0.01079	0.013	5.12	274.9	272.41	276	274.78	-1.23	0.04	113.1	0	113.1
2	3353	M12-26-M12-21	J05-8	PolyVault	1,261,659	1,155,454	106,205	878,463	-383,196	0	6	271.78	265.55	272.28	266.05	0.05868	0.013	8.99	272.41	266.41	274.78	271.46	-0.13	-0.36	106.2	113.1	219.3
3	3045	K08-33-K08-37	PolyVault	J06-2	1,261,659	1,155,454	106,205	577,296	-684,363	PVC	8	265.55	265.45	266.22	266.12	0.00323	0.01	3.58	266.41	266.08	271.46	270.98	-0.19	0.04	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	1,265,752	1,155,454	110,298	2,566,826	1,301,074	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	3.23	266.07	265.22	270.98	269.39	0.63	0.68	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	1,300,226	1,155,454	144,772	4,834,667	3,534,441	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	5.17	265.22	259.65	269.39	268.74	0.68	0.68	415.3	461.8	877.1
6	3012	H15-1-H15-3	J06-14	J06-16	1,334,700	1,155,454	179,246	8,688,008	7,353,308	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	7.93	259.65	258.42	268.74	268.74	0.68	0.68	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	1,336,029	1,155,454	180,575	3,996,050	2,660,021	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	4.54	258.42	256.89	268.74	263.77	0.68	0.68	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	1,338,517	1,155,454	183,063	4,717,610	3,379,093	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	5.12	256.89	253.02	263.77	260.51	0.68	0.68	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	1,341,561	1,155,454	186,107	4,079,514	2,737,953	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	4.61	253.02	249.47	260.51	254.58	0.68	0.67	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	1,345,547	1,155,454	190,093	3,118,540	1,772,993	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	3.79	249.47	248.65	254.58	253.74	0.67	0.66	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	1,419,734	1,155,454	264,280	3,888,589	2,468,855	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	4.52	248.65	247.21	253.74	254.51	0.66	0.66	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	1,422,436	1,155,454	266,982	7,526,611	6,104,175	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	7.29	247.21	235.22	254.51	243	0.66	0.66	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	1,424,981	1,155,454	269,527	6,405,009	4,980,028	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	6.5	235.22	229.66	243	243	0.66	0.28	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	1,533,847	1,155,454	378,393	1,501,102	-32,745	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	2.15	229.66	228.95	243	242	0.28	0.63	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	1,533,847	1,155,454	378,393	3,345,571	1,811,724	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	4.13	228.95	227.38	242	241.27	0.63	0.4	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	1,533,847	1,155,454	378,393	1,905,990	372,143	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	2.67	227.38	226.53	241.27	235.52	0.4	0.63	297.5	3243.2	3540.7
17	3391	M06-7-M06-6	K07-69	K07-28	1,533,847	1,155,454	378,393	651,277	-882,570	0	6	225.91	222.53	226.41	223.03	0.03225	0.013	7.43	226.53	222.91	235.52	234.49	-0.12	0.12	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	1,685,631	1,155,454	530,177	7,910,192	6,224,561	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	4.04	223.11	220.1	234.49	232.26	1.17	1.15	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	1,783,980	1,155,454	628,526	13,565,858	11,781,878	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	6.04	220.1	214.98	232.26	223.14	1.15	1.32	282.1	4153.3	4435.4
20	3410	H04-20-H04-22	J07-89	J07-90	1,784,656	1,155,454	629,202	1,643,661	-140,995	PVC	6	214.55	208.61	215.05	209.11	0.05136	0.013	7.68	215.05	209.21	223.14	216	0	-0.1	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	1,785,140	1,155,454	629,686	10,468,942	8,683,802	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	5.02	209.21	206.21	216	215.87	1.15	1.14	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	1,810,856	1,155,454	655,402	12,098,686	10,287,830	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	5.59	206.21	200.11	215.87	208.82	1.14	1.14	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	1,814,959	1,155,454	659,505	11,807,931	9,992,972	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	5.5	200.11	194.04	208.82	204.07	1.14	1.29	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	1,818,072	1,155,454	662,618	11,904,542	10,086,470	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	4.24	194.16	193.03	204.07	200.58	1.42	1.41	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	1,957,865	1,155,454	802,411	25,483,412	23,525,547	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	5.87	193.03	182.84	200.58	197	1.66	1.57	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	2,088,159	1,155,454	932,705	10,620,231	8,532,072	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	3.21	182.84	182.09	197	198.97	1.57	1.58	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	2,091,106	1,155,454	935,652	10,925,568	8,834,462	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	3.28	182.09	180.9	198.97	192.83	1.58	1.57	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	2,099,239	1,155,454	943,785	10,554,288	8,455,049	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	3.2	180.9	180.12	192.83	190	1.57	1.56	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	2,099,693	1,155,454	944,239	10,350,223	8,250,530	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	3.16	180.12	178.83	190	186.72	1.56	1.54	489.9	7477.1	7967
30	3003	K10-46-K10-44	J09-22	J09-24	2,109,851	1,155,454	954,397	164,574	-1,945,277	PVC	6	178.12	178.07	178.62	178.57	0.00206	0.013	2.88	178.83	178.75	186.72	187.21	-0.21	-0.18	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	2,116,740	1,155,454	961,286	13,091,690	10,974,950	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	3.03	178.75	177.91	187.21	188.86	1.82	1.8	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	2,187,109	1,155,454	1,031,655	12,945,046	10,757,937	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	3.04	177.91	177.29	188.86	192.02	1.8	1.63	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	2,196,243	1,155,454	1,040,789	2,097,941	-98,302	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	4.69	177.29	175.99	192.02	190.18	0.13	0.21	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	2,198,899	1,155,454	1,043,445	14,804,664	12,605,765	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	3.35	175.85	175.22	190.18	193.17	1.85	1.81	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	2,300,801	1,155,454	1,145,347	13,885,589	11,584,788	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	3.24	175.22	174.97	193.17	190	1.81	1.12	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	3,353,018	1,155,454	2,197,564	3,242,470	-110,548	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	1.16	174.97	174.26	190	184	1.12	1.75	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	3,359,105	1,155,454	2,203,651	30,316,999	26,957,894	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	6.3	174.26	169.4	184	177.94	1.75	0.17	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	3,363,843	1,155,454	2,208,389	16,547,967	13,184,124	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	1.06	169.4	168.99	177.94	178.87	0.17	1.74	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	3,382,345	1,155,454	2,226,891	31,703,658	28,321,313	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	6.51	168.99	162.16	178.87	173.01	1.74	1.74	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	3,383,793	1,155,454	2,228,339	16,871,263	13,487,470	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	4.16	162.16	160.79	173.01	172.44	1.74	1.71	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	3,659,768	1,155,454	2,504,314	21,975,368	18,315,600	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	5.13	160.79	158.59	172.44	171	1.71	1.71	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	3,662,254	1,155,454	2,506,800	20,565,867	16,903,613	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	4.9	158.59	156.92	171	170.85	1.71	1.49	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	3,706,205	1,155,454	2,550,751	15,002,227	11,296,022	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	2.72	156.92	156.37	170.85	167.67	1.99	2.11	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	3,710,346	1,155,454	2,554,892	19,181,160	15,470,814	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	3.25	156.37	155.72	167.67	169.54	2.11	2.08	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	3,891,937	1,155,454	2,736,483	18,895,751	15,003,814	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	3.26	155.72	155.11	169.54	168.44	2.08	2.23	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	3,903,834	1,155,454	2,748,380	34,641,163	30,737,329	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	5.02	155.11	150.75	168.44	163.03	2.23	2.12	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	5,035,470	1,155,454	3,880,016	27,412,575	22,377,105	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	4.57	150.75	149.18	163.03	157.11	2.12	2.12	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	5,040,501	1,155,454	3,885,047	26,953,521	21,913,020	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	4.52	149.18	147.7	157.11	157	2.12	2.05	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	5,804,816	1,155,454	4,649,362	35,454,075	29,649,259	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	5.72	147.7	143.66	157	155.42	2.05	2.05	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	5,806,640	1,155,454	4,651,186	29,311,144	23,504,504	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	5	143.66	140.79	155.42	155.66	2.05	1.87	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	5,807,472	1,155,454	4,652,018	19,102,000	13,294,528	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	3.67	140.79	140.07	155.66	151	1.87	1.94	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	5,807,472	1,155,454	4,652,018	21,549,863	15,742,391	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	4	140.07	138.51	151	144.74	1.94	1.89	644.2	16163.9	16808.1
53	3447	I07-33-I07-31	I13-10	I13-11	5,807,472	1,155,454	4,652,018	695,746	-5,111,726	PVC	6	137.4	133.13	137.9	133.63	0.03681	0.013	11.01	138.51	134.77	144.74	139.73	-0.61	-1.14	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	5,810,572	1,155,454	4,655,118	6,124,076	313,504	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	1.53	134.77	133.97	139.73	142.95	1.36	2.05	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	5,822,765	1,155,454	4,667,311	30,407,121	24,584,356	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	5.13	133.97	131.33	142.95	138	2.05	2.05	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	5,836,176	1,155,454	4,680,722	42,793,558	36,957,382	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	6.55	131.33	127.65	138	138	2.05	0.54	526.6	17999.7	18526.3
57	3436	M07-25-M07-8	I14-3	I14-5	5,840,495	1,155,454	4,685,041	180,739	-5,659,756	PVC	6	125.19	124.9	125.69	125.4	0.00248	0.013	4	127.65	127.63	138	138	-1.96	-2.23	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	5,841,638	1,155,454	4,686,184	26,071,121	20,229,483	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	2.59	127.63	127.6	138	138	1.27	0.66	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	5,842,782	1,155,454	4,687,328	60,681,535	54,838,753	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	0.72	127.6	127.44	138	131.44	0.66	2.67	433	19454.5	19887.5
60	2975	K10-7-K10-10	I15-5	I15-7	5,842,782	1,155,454	4,687,328	361,424	-5,481,358	PVC	8	126.11	126.09	126.78	126.76	0.00127	0.01	3.07	127.44	127.44	131.44	131.37	-0.66	-0.68	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	10,254,935	1,155,454	9,099,481	33,686,043	23,431,108	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	9.32	127.44	126.97	131.37	131.41	1.15	1.4	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	10,254,935	1,155,454	9,099,481	38,080,441	27,825,506	0	30	125.87	125	128.37	127.5	0.02064	0.013	10.19	127.22	127.17	131.41	131.36	1.15	0.33	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	13,424,713	1,155,454	12,269,259	2,608,858	-10,815,855	0	30	125	124.99	127.5	127.49	0.0001	0.013	4.23	127.17	126.54	131.36	131	0.33	0.95	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	13,433,859	1,155,454	12,278,405	30,788,053	17,354,194	0	36	124.99	124	127.99	127	0.0051	0.013	6.51	126.45	125.39	131	131	1.54	1.61	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 24 (City_PWWF_2035 CP_2030)

Link	ID	Link Name	US Node	DS Node	Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)						Length (ft)	Starting Station (ft)	Ending Station (ft)
					Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL			
1	3428	L13-7-L13-5	_J05-7	J05-8	2,724,398	2,724,398	0	811,300	-1,913,098	0	8	273	271.78	273.67	272.45	0.01079	0.013	12.08	286.35	272.59	276	274.78	-12.68	-0.14	113.1	0	113.1
2	3353	M12-26-M12-21	J05-8	PolyVault	2,859,065	2,724,398	134,667	878,463	-1,980,602	0	6	271.78	265.55	272.28	266.05	0.05868	0.013	10.89	272.59	268.02	274.78	271.46	-0.31	-1.97	106.2	113.1	219.3
3	3045	K08-33-K08-37	PolyVault	J06-2	2,887,527	2,724,398	163,129	577,296	-2,310,231	PVC	8	265.55	265.45	266.22	266.12	0.00323	0.01	8.19	268.02	266.74	271.46	270.98	-1.8	-0.62	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	3,005,469	2,724,398	281,071	2,566,826	-438,643	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	3.79	266.74	265.53	270.98	269.39	-0.04	0.37	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	3,068,406	2,724,398	344,008	4,834,667	1,766,261	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	6.45	265.53	259.97	269.39	268.74	0.37	0.36	415.3	461.8	877.1
6	3012	H15-1-H15-3	J06-14	J06-16	3,131,342	2,724,398	406,944	8,688,008	5,556,666	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	10.07	259.97	258.75	268.74	268.74	0.36	0.35	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	3,161,133	2,724,398	436,735	3,996,050	834,917	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	5.59	258.75	257.22	268.74	263.77	0.35	0.35	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	3,192,083	2,724,398	467,685	4,717,610	1,525,527	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	6.39	257.22	253.36	263.77	260.51	0.35	0.34	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	3,223,589	2,724,398	499,191	4,079,514	855,925	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	5.7	253.36	249.98	260.51	254.58	0.34	0.16	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	3,256,038	2,724,398	531,640	3,118,540	-137,498	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	4.46	249.98	249.16	254.58	253.74	0.16	0.15	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	4,098,704	2,724,398	1,374,306	3,888,589	-210,115	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	5.55	249.16	247.64	253.74	254.51	0.15	0.23	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	4,129,868	2,724,398	1,405,470	7,526,611	3,396,743	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	9.71	247.64	239.52	254.51	243	0.23	-3.64	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	4,160,875	2,724,398	1,436,477	6,405,009	2,244,134	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	5.25	239.52	237.01	243	243	-3.64	-7.07	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	4,468,977	2,724,398	1,744,579	1,501,102	-2,967,875	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	5.63	237.01	233.82	243	242	-7.07	-4.24	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	4,497,439	2,724,398	1,773,041	3,345,571	-1,151,868	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	5.67	233.82	230.57	242	241.27	-4.24	-2.79	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	4,525,901	2,724,398	1,801,503	1,905,990	-2,619,911	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	5.71	230.57	226.97	241.27	235.52	-2.79	0.19	297.5	3243.2	3540.7
17	3391	M06-7-M06-6	K07-69	K07-28	4,554,364	2,724,398	1,829,966	651,277	-3,903,087	0	6	225.91	222.53	226.41	223.03	0.03225	0.013	9.91	226.97	223.65	235.52	234.49	-0.56	-0.62	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	5,890,010	2,724,398	3,165,612	7,910,192	2,020,182	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	5.58	223.65	220.72	234.49	232.26	0.63	0.53	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	6,930,701	2,724,398	4,206,303	13,565,858	6,635,157	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	8.78	220.72	215.44	232.26	223.14	0.53	0.86	282.1	4153.3	4435.4
20	3410	H04-20-H04-22	J07-89	J07-90	6,959,839	2,724,398	4,235,441	1,643,661	-5,316,178	PVC	6	214.55	208.61	215.05	209.11	0.05136	0.013	11.01	215.48	209.84	223.14	216	-0.43	-0.73	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	6,988,785	2,724,398	4,264,387	10,468,942	3,480,157	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	7.21	209.84	206.85	216	215.87	0.52	0.5	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	7,268,636	2,724,398	4,544,238	12,098,686	4,830,050	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	8.14	206.85	200.75	215.87	208.82	0.5	0.5	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	7,278,917	2,724,398	4,554,519	11,807,931	4,529,014	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	7.99	200.75	194.57	208.82	204.07	0.5	0.76	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	7,288,209	2,724,398	4,563,811	11,904,542	4,616,333	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	6.16	194.78	193.65	204.07	200.58	0.8	0.79	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	7,870,377	2,724,398	5,145,979	25,483,412	17,613,035	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	8.74	193.65	189.39	200.58	197	1.04	-4.98	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	8,597,914	2,724,398	5,873,516	10,620,231	2,022,317	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	3.35	189.39	188.91	197	198.97	-4.98	-5.24	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	8,613,219	2,724,398	5,888,821	10,925,568	2,312,349	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	3.35	188.91	188.16	198.97	192.83	-5.24	-5.69	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	8,642,979	2,724,398	5,918,581	10,554,288	1,911,309	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	3.36	188.16	187.63	192.83	190	-5.69	-5.95	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	8,649,611	2,724,398	5,925,213	10,350,223	1,700,612	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	3.37	187.63	186.72	190	186.72	-5.95	-6.35	489.9	7477.1	7967
30	3003	K10-46-K10-44	J09-22	J09-24	8,672,127	2,724,398	5,947,729	164,574	-8,507,553	PVC	6	178.12	178.07	178.62	178.57	0.00206	0.013	3.37	187.25	187.21	186.72	187.21	-8.63	-8.64	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	10,900,563	2,724,398	8,176,165	13,091,690	2,191,127	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	3.44	189.46	188.86	187.21	188.86	-8.89	-9.15	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	11,507,357	2,724,398	8,782,959	12,945,046	1,437,689	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	3.63	192.65	192.02	188.86	192.02	-12.94	-13.1	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	11,547,386	2,724,398	8,822,988	2,097,941	-9,449,445	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	22.75	215.81	178.85	192.02	190.18	-38.39	-2.65	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	11,556,222	2,724,398	8,831,824	14,804,664	3,248,442	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	3.64	178.85	178.44	190.18	193.17	-1.15	-1.41	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	11,812,338	2,724,398	9,087,940	13,885,589	2,073,251	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	3.72	178.44	177.76	193.17	190	-1.41	-1.67	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	16,881,815	2,724,398	14,157,417	3,242,470	-13,639,345	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	5.32	177.76	175.25	190	184	-1.67	0.76	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	16,894,080	2,724,398	14,169,682	30,316,999	13,422,919	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	9.82	175.25	171.54	184	177.94	0.76	-1.97	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	16,904,998	2,724,398	14,180,600	16,547,967	-357,031	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	5.33	171.54	169.98	177.94	178.87	-1.97	0.75	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	16,960,574	2,724,398	14,236,176	31,703,658	14,743,084	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	10.16	169.98	166.49	178.87	173.01	0.75	-2.59	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	16,968,201	2,724,398	14,243,803	16,871,263	-96,938	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	5.35	166.49	165.07	173.01	172.44	-2.59	-2.57	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	17,506,294	2,724,398	14,781,896	21,975,368	4,469,074	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	5.52	165.07	163.67	172.44	171	-2.57	-3.37	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	17,514,958	2,724,398	14,790,560	20,565,867	3,050,909	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	5.52	163.67	162.3	171	170.85	-3.37	-3.89	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	18,291,982	2,724,398	15,567,584	15,002,227	-3,289,755	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	4	162.3	161.66	170.85	167.67	-3.39	-3.18	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	18,314,661	2,724,398	15,590,263	19,181,160	866,499	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	4.01	161.66	161.04	167.67	169.54	-3.18	-3.24	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	22,170,012	2,724,398	19,445,614	18,895,751	-3,274,261	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	4.85	161.04	160.41	169.54	168.44	-3.24	-3.07	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	22,200,446	2,724,398	19,476,048	34,641,163	12,440,717	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	4.86	160.41	158.57	168.44	163.03	-3.07	-5.7	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	27,248,142	2,724,398	24,523,744	27,412,575	164,433	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	5.96	158.57	157.02	163.03	157.11	-5.7	-5.72	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	27,259,353	2,724,398	24,534,955	26,953,521	-305,832	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	5.97	157.02	155.44	157.11	157	-5.72	-5.69	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	29,825,562	2,724,398	27,101,164	35,454,075	5,628,513	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	6.53	155.44	152.58	157	155.42	-5.69	-6.87	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	29,833,565	2,724,398	27,109,167	29,311,144	-522,421	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	6.53	152.58	149.42	155.42	155.66	-6.87	-6.76	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	29,840,577	2,724,398	27,116,179	19,102,000	-10,738,577	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	6.53	149.42	147.83	155.66	151	-6.76	-5.82	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	29,846,756	2,724,398	27,122,358	21,549,863	-8,296,893	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	6.53	147.83	144.74	151	144.74	-5.82	-4.34	644.2	16163.9	16808.1
53	3447	I07-33-I07-31	I13-10	I13-11	29,852,934	2,724,398	27,128,536	695,746	-29,157,188	PVC	6	137.4	133.13	137.9	133.63	0.03681	0.013	19.2	149.59	139.73	144.74	139.73	-11.69	-6.1	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	29,862,212	2,724,398	27,137,814	6,124,076	-23,738,136	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	6.54	140.94	138.32	139.73	142.95	-4.81	-2.3	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	29,880,585	2,724,398	27,156,187	30,407,121	526,536	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	6.54	138.32	135.77	142.95	138	-2.3	-2.39	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	29,900,176	2,724,398	27,175,778	42,793,558	12,893,382	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	6.54	135.77	133.24	138	138	-2.39	-5.05	526.6	17999.7	18526.3
57	3436	M07-25-M07-8	I14-3	I14-5	29,910,674	2,724,398	27,186,276	180,739	-29,729,935	PVC	6	125.19	124.9	125.69	125.4	0.00248	0.013	6.55	133.24	132.68	138	138	-7.55	-7.28	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	29,917,996	2,724,398	27,193,598	26,071,121	-3,846,875	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	3.68	132.68	131.83	138	138	-3.78	-3.57	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	29,925,319	2,724,398	27,200,921	60,681,535	30,756,216	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	3.68	131.83	131.38	138	131.44	-3.57	-1.27	433	19454.5	19887.5
60	2975	K10-7-K10-10	I15-5	I15-7	29,931,497	2,724,398	27,207,099	361,424	-29,570,073	PVC	8	126.11	126.09	126.78	126.76	0.00127	0.01	3.69	131.38	131.37	131.44	131.37	-4.6	-4.61	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	36,374,165	2,724,398	33,649,767	33,686,043	-2,688,122	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	11.47	131.67	131.41	131.37	131.41	-3.08	-3.04	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	36,380,346	2,724,398	33,655,948	38,080,441	1,700,095	0	30	125.87	125	128.37	127.5	0.02064	0.013	11.47	131.46	130.67	131.41	131.36	-3.09	-3.17	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	39,550,123	2,724,398	36,825,725	2,608,858	-36,941,265	0	30	125	124.99	127.5	127.49	0.0001	0.013	12.47	130.67	128.37	131.36	131	-3.17	-0.88	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	39,583,984	2,724,398	36,859,586	30,788,053	-8,795,931	0	36	124.99	124	127.99	127	0.0051	0.013	8.66	128.37	126.52	131	131	-0.38	0.48	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 25 (City_ADWF_2035 CP_2035)

					Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
Link	ID	Link Name	US Node	DS Node	Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	L13-7-L13-5	_J05-7	J05-8	375,464	375,464	0	811,300	435,836	0	8	273	271.78	273.67	272.45	0.01079	0.013	3.53	273.36	272.14	276	274.78	0.31	0.31	113.1	0	113.1
2	3353	M12-26-M12-21	J05-8	PolyVault	430,464	375,464	55,000	878,463	447,999	0	6	271.78	265.55	272.28	266.05	0.05868	0.013	6.64	272.14	265.98	274.78	271.46	0.14	0.07	106.2	113.1	219.3
3	3045	K08-33-K08-37	PolyVault	J06-2	430,464	375,464	55,000	577,296	146,832	PVC	8	265.55	265.45	266.22	266.12	0.00323	0.01	2.32	265.98	265.81	271.46	270.98	0.24	0.31	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	432,639	375,464	57,175	2,566,826	2,134,187	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	2.41	265.8	264.98	270.98	269.39	0.9	0.92	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	451,411	375,464	75,947	4,834,667	4,383,256	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	3.82	264.98	259.41	269.39	268.74	0.92	0.92	415.3	461.8	877.1
6	3012	H15-1-H15-3	J06-14	J06-16	470,183	375,464	94,719	8,688,008	8,217,825	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	5.84	259.41	258.18	268.74	268.74	0.92	0.92	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	470,907	375,464	95,443	3,996,050	3,525,143	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	3.38	258.18	256.65	268.74	263.77	0.92	0.92	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	472,262	375,464	96,798	4,717,610	4,245,348	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	3.81	256.65	252.78	263.77	260.51	0.92	0.92	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	473,919	375,464	98,455	4,079,514	3,605,595	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	3.44	252.78	249.23	260.51	254.58	0.92	0.91	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	476,090	375,464	100,626	3,118,540	2,642,450	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	2.84	249.23	248.41	254.58	253.74	0.91	0.9	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	516,430	375,464	140,966	3,888,589	3,372,159	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	3.4	248.41	246.97	253.74	254.51	0.9	0.9	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	517,876	375,464	142,412	7,526,611	7,008,735	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	5.44	246.97	234.98	254.51	243	0.9	0.9	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	519,237	375,464	143,773	6,405,009	5,885,772	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	4.86	234.98	229.23	243	243	0.9	0.71	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	578,520	375,464	203,056	1,501,102	922,582	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	1.77	229.23	228.7	243	242	0.71	0.88	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	578,520	375,464	203,056	3,345,571	2,767,051	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	3.16	228.7	227	242	241.27	0.88	0.78	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	578,520	375,464	203,056	1,905,990	1,327,470	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	2.11	227	226.28	241.27	235.52	0.78	0.88	297.5	3243.2	3540.7
17	3391	M06-7-M06-6	K07-69	K07-28	578,520	375,464	203,056	651,277	72,757	0	6	225.91	222.53	226.41	223.03	0.03225	0.013	5.6	226.28	222.76	235.52	234.49	0.13	0.27	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	657,831	375,464	282,367	7,910,192	7,252,361	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	3.08	222.89	219.88	234.49	232.26	1.39	1.37	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	711,355	375,464	335,891	13,565,858	12,854,503	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	4.61	219.88	214.82	232.26	223.14	1.37	1.48	282.1	4153.3	4435.4
20	3410	H04-20-H04-22	J07-89	J07-90	711,720	375,464	336,256	1,643,661	931,941	PVC	6	214.55	208.61	215.05	209.11	0.05136	0.013	5.88	214.86	208.99	223.14	216	0.19	0.12	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	711,983	375,464	336,519	10,468,942	9,756,959	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	3.85	208.99	205.98	216	215.87	1.37	1.37	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	725,364	375,464	349,900	12,098,686	11,373,322	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	4.28	205.98	199.88	215.87	208.82	1.37	1.37	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	727,488	375,464	352,024	11,807,931	11,080,443	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	4.21	199.88	193.87	208.82	204.07	1.37	1.46	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	729,100	375,464	353,636	11,904,542	11,175,442	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	3.25	193.95	192.81	204.07	200.58	1.63	1.63	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	801,437	375,464	425,973	25,483,412	24,681,975	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	4.5	192.81	182.6	200.58	197	1.88	1.81	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	874,216	375,464	498,752	10,620,231	9,746,015	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	2.5	182.6	181.85	197	198.97	1.81	1.82	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	875,742	375,464	500,278	10,925,568	10,049,826	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	2.55	181.85	180.66	198.97	192.83	1.82	1.81	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	879,953	375,464	504,489	10,554,288	9,674,335	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	2.49	180.66	179.87	192.83	190	1.81	1.81	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	880,188	375,464	504,724	10,350,223	9,470,035	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	2.46	179.87	178.58	190	186.72	1.81	1.79	489.9	7477.1	7967
30	3003	K10-46-K10-44	J09-22	J09-24	885,448	375,464	509,984	164,574	-720,874	PVC	6	178.12	178.07	178.62	178.57	0.00206	0.013	2.24	178.58	178.51	186.72	187.21	0.04	0.06	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	889,015	375,464	513,551	13,091,690	12,202,675	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	2.36	178.51	177.66	187.21	188.86	2.06	2.05	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	925,148	375,464	549,684	12,945,046	12,019,898	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	2.36	177.66	176.93	188.86	192.02	2.05	1.99	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	929,879	375,464	554,415	2,097,941	1,168,062	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	4.01	176.93	175.67	192.02	190.18	0.49	0.53	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	931,254	375,464	555,790	14,804,664	13,873,410	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	2.61	175.62	174.98	190.18	193.17	2.08	2.05	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	983,443	375,464	607,979	13,885,589	12,902,146	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	2.53	174.98	174.55	193.17	190	2.05	1.54	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	1,547,988	375,464	1,172,524	3,242,470	1,694,482	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	1.01	174.55	174.02	190	184	1.54	1.99	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	1,551,140	375,464	1,175,676	30,316,999	28,765,859	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	5.01	174.02	169.04	184	177.94	1.99	0.53	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	1,553,593	375,464	1,178,129	16,547,967	14,994,374	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	0.49	169.04	168.74	177.94	178.87	0.53	1.99	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	1,563,173	375,464	1,187,709	31,703,658	30,140,485	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	5.19	168.74	161.91	178.87	173.01	1.99	1.99	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	1,563,923	375,464	1,188,459	16,871,263	15,307,340	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	3.33	161.91	160.53	173.01	172.44	1.99	1.97	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	1,700,832	375,464	1,325,368	21,975,368	20,274,536	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	4.11	160.53	158.33	172.44	171	1.97	1.97	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	1,702,119	375,464	1,326,655	20,565,867	18,863,748	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	3.92	158.33	156.6	171	170.85	1.97	1.81	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	1,724,901	375,464	1,349,437	15,002,227	13,277,326	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	2.19	156.6	156.09	170.85	167.67	2.31	2.39	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	1,727,045	375,464	1,351,581	19,181,160	17,454,115	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	2.6	156.09	155.43	167.67	169.54	2.39	2.37	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	1,827,254	375,464	1,451,790	18,895,751	17,068,497	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	2.62	155.43	154.86	169.54	168.44	2.37	2.48	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	1,833,415	375,464	1,457,951	34,641,163	32,807,748	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	4.02	154.86	150.48	168.44	163.03	2.48	2.39	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	2,442,161	375,464	2,066,697	27,412,575	24,970,414	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	3.71	150.48	148.91	163.03	157.11	2.39	2.39	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	2,444,766	375,464	2,069,302	26,953,521	24,508,755	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	3.67	148.91	147.43	157.11	157	2.39	2.32	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	3,036,505	375,464	2,661,041	35,454,075	32,417,570	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	4.74	147.43	143.39	157	155.42	2.32	2.32	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	3,037,448	375,464	2,661,984	29,311,144	26,273,696	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	4.15	143.39	140.47	155.42	155.66	2.32	2.19	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	3,037,880	375,464	2,662,416	19,102,000	16,064,120	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	3.06	140.47	139.77	155.66	151	2.19	2.24	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	3,037,880	375,464	2,662,416	21,549,863	18,511,983	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	3.33	139.77	138.19	151	144.74	2.24	2.21	644.2	16163.9	16808.1
53	3447	I07-33-I07-31	I13-10	I13-11	3,037,880	375,464	2,662,416	695,746	-2,342,134	PVC	6	137.4	133.13	137.9	133.63	0.03681	0.013	9.17	138.19	134.33	144.74	139.73	-0.29	-0.7	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	3,039,484	375,464	2,664,020	6,124,076	3,084,592	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	1.34	134.33	133.7	139.73	142.95	1.8	2.32	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	3,045,799	375,464	2,670,335	30,407,121	27,361,322	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	4.26	133.7	131.06	142.95	138	2.32	2.32	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	3,052,744	375,464	2,677,280	42,793,558	39,740,814	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	5.42	131.06	127.31	138	138	2.32	0.88	526.6	17999.7	18526.3
57	3436	M07-25-M07-8	I14-3	I14-5	3,054,981	375,464	2,679,517	180,739	-2,874,242	PVC	6	125.19	124.9	125.69	125.4	0.00248	0.013	3.33	127.31	127.3	138	138	-1.62	-1.9	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	3,055,573	375,464	2,680,109	26,071,121	23,015,548	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	2.15	127.3	127.29	138	138	1.6	0.97	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	3,056,165	375,464	2,680,701	60,681,535	57,625,370	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	0.38	127.29	127.21	138	131.44	0.97	2.9	433	19454.5	19887.5
60	2975	K10-7-K10-10	I15-5	I15-7	3,056,165	375,464	2,680,701	361,424	-2,694,741	PVC	8	126.11	126.09	126.78	126.76	0.00127	0.01	2.54	127.21	127.21	131.44	157	-0.43	-0.45	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	7,218,312	375,464	6,842,848	33,686,043	26,467,731	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	8.45	127.21	126.77	131.37	131.41	1.38	1.6	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	7,218,312	375,464	6,842,848	38,080,441	30,862,129	0	30	125.87	125	128.37	127.5	0.02064	0.013	9.23	126.99	126.89	131.41	131.36	1.38	0.61	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	10,388,090	375,464	10,012,626	2,608,858	-7,779,232	0	30	125	124.99	127.5	127.49	0.0001	0.013	3.27	126.89	126.34	131.36	131	0.61	1.15	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	10,392,825	375,464	10,017,361	30,788,053	20,395,228	0	36	124.99	124	127.99	127	0.0051	0.013	6.08	126.27	125.2	131	131	1.72	1.8	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 26 (City_PDWF_2035 CP_2035)

					Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
Link	ID	Link Name	US Node	DS Node	Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	L13-7-L13-5	_J05-7	J05-8	1,518,994	1,518,994	0	811,300	-707,694	0	8	273	271.78	273.67	272.45	0.01079	0.013	6.73	276.76	272.48	276	274.78	-3.09	-0.03	113.1	0	113.1
2	3353	M12-26-M12-21	J05-8	PolyVault	1,625,199	1,518,994	106,205	878,463	-746,736	0	6	271.78	265.55	272.28	266.05	0.05868	0.013	9.6	272.48	266.63	274.78	271.46	-0.2	-0.58	106.2	113.1	219.3
3	3045	K08-33-K08-37	PolyVault	J06-2	1,625,199	1,518,994	106,205	577,296	-1,047,903	PVC	8	265.55	265.45	266.22	266.12	0.00323	0.01	4.61	266.63	266.17	271.46	270.98	-0.41	-0.05	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	1,629,292	1,518,994	110,298	2,566,826	937,534	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	3.43	266.17	265.29	270.98	269.39	0.53	0.61	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	1,663,766	1,518,994	144,772	4,834,667	3,170,901	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	5.53	265.29	259.73	269.39	268.74	0.61	0.6	415.3	461.8	877.1
6	3012	H15-1-H15-3	J06-14	J06-16	1,698,240	1,518,994	179,246	8,688,008	6,989,768	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	8.5	259.73	258.24	268.74	268.74	0.6	0.86	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	1,699,569	1,518,994	180,575	3,996,050	2,296,481	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	4.83	258.5	256.97	268.74	263.77	0.6	0.6	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	1,702,057	1,518,994	183,063	4,717,610	3,015,553	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	5.47	256.97	253.1	263.77	260.51	0.6	0.6	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	1,705,101	1,518,994	186,107	4,079,514	2,374,413	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	4.91	253.1	249.55	260.51	254.58	0.6	0.59	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	1,709,087	1,518,994	190,093	3,118,540	1,409,453	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	4.02	249.55	248.73	254.58	253.74	0.59	0.58	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	1,783,274	1,518,994	264,280	3,888,589	2,105,315	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	4.8	248.73	247.29	253.74	254.51	0.58	0.58	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	1,785,976	1,518,994	266,982	7,526,611	5,740,635	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	7.78	247.29	235.3	254.51	243	0.58	0.58	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	1,788,521	1,518,994	269,527	6,405,009	4,616,488	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	6.92	235.3	229.83	243	243	0.58	0.11	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	1,897,387	1,518,994	378,393	1,501,102	-396,285	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	2.39	229.83	229.02	243	242	0.11	0.56	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	1,897,387	1,518,994	378,393	3,345,571	1,448,184	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	4.35	229.02	227.53	242	241.27	0.56	0.25	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	1,897,387	1,518,994	378,393	1,905,990	8,603	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	2.74	227.53	226.6	241.27	235.52	0.25	0.56	297.5	3243.2	3540.7
17	3391	M06-7-M06-6	K07-69	K07-28	1,897,387	1,518,994	378,393	651,277	-1,246,110	0	6	225.91	222.53	226.41	223.03	0.03225	0.013	7.88	226.6	222.96	235.52	234.49	-0.19	0.07	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	2,049,171	1,518,994	530,177	7,910,192	5,861,021	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	4.27	223.18	220.16	234.49	232.26	1.1	1.09	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	2,147,520	1,518,994	628,526	13,565,858	11,418,338	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	6.37	220.16	215.02	232.26	223.14	1.09	1.28	282.1	4153.3	4435.4
20	3410	H04-20-H04-22	J07-89	J07-90	2,148,196	1,518,994	629,202	1,643,661	-504,535	PVC	6	214.55	208.61	215.05	209.11	0.05136	0.013	8.09	215.1	209.27	223.14	216	-0.05	-0.16	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	2,148,680	1,518,994	629,686	10,468,942	8,320,262	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	5.3	209.27	206.27	216	215.87	1.09	1.08	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	2,174,396	1,518,994	655,402	12,098,686	9,924,290	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	5.89	206.27	200.17	215.87	208.82	1.08	1.08	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	2,178,499	1,518,994	659,505	11,807,931	9,629,432	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	5.8	200.17	194.09	208.82	204.07	1.08	1.24	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	2,181,612	1,518,994	662,618	11,904,542	9,722,930	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	4.47	194.22	193.02	204.07	200.58	1.36	1.42	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	2,321,405	1,518,994	802,411	25,483,412	23,162,007	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	6.17	193.08	182.9	200.58	197	1.61	1.51	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	2,451,699	1,518,994	932,705	10,620,231	8,168,532	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	3.36	182.9	182.14	197	198.97	1.51	1.53	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	2,454,646	1,518,994	935,652	10,925,568	8,470,922	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	3.43	182.14	180.96	198.97	192.83	1.53	1.51	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	2,462,779	1,518,994	943,785	10,554,288	8,091,509	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	3.35	180.96	180.18	192.83	190	1.51	1.5	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	2,463,233	1,518,994	944,239	10,350,223	7,886,990	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	3.3	180.18	178.89	190	186.72	1.5	1.48	489.9	7477.1	7967
30	3003	K10-46-K10-44	J09-22	J09-24	2,473,391	1,518,994	954,397	164,574	-2,308,817	PVC	6	178.12	178.07	178.62	178.57	0.00206	0.013	3.01	178.89	178.81	186.72	187.21	-0.27	-0.24	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	2,480,280	1,518,994	961,286	13,091,690	10,611,410	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	3.17	178.81	178.05	187.21	188.86	1.76	1.66	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	2,550,649	1,518,994	1,031,655	12,945,046	10,394,397	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	3.17	178.05	177.92	188.86	192.02	1.66	1	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	2,559,783	1,518,994	1,040,789	2,097,941	-461,842	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	5.04	177.92	176.04	192.02	190.18	-0.5	0.16	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	2,562,439	1,518,994	1,043,445	14,804,664	12,242,225	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	3.5	175.9	175.28	190.18	193.17	1.8	1.75	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	2,664,340	1,518,994	1,145,346	13,885,589	11,221,249	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	3.38	175.28	175.07	193.17	190	1.75	1.02	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	3,716,558	1,518,994	2,197,564	3,242,470	-474,088	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	1.17	175.07	174.3	190	184	1.02	1.71	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	3,722,645	1,518,994	2,203,651	30,316,999	26,594,354	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	6.49	174.3	169.47	184	177.94	1.71	0.1	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	3,727,383	1,518,994	2,208,389	16,547,967	12,820,584	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	1.17	169.47	169.03	177.94	178.87	0.1	1.7	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	3,745,885	1,518,994	2,226,891	31,703,658	27,957,773	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	6.71	169.03	162.2	178.87	173.01	1.7	1.7	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	3,747,333	1,518,994	2,228,339	16,871,263	13,123,930	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	4.28	162.2	160.83	173.01	172.44	1.7	1.67	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	4,023,308	1,518,994	2,504,314	21,975,368	17,952,060	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	5.27	160.83	158.63	172.44	171	1.67	1.67	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	4,025,794	1,518,994	2,506,800	20,565,867	16,540,073	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	5.03	158.63	156.97	171	170.85	1.67	1.44	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	4,069,745	1,518,994	2,550,751	15,002,227	10,932,482	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	2.79	156.97	156.42	170.85	167.67	1.94	2.06	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	4,073,886	1,518,994	2,554,892	19,181,160	15,107,274	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	3.33	156.42	155.77	167.67	169.54	2.06	2.03	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	4,255,477	1,518,994	2,736,483	18,895,751	14,640,274	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	3.34	155.77	155.15	169.54	168.44	2.03	2.19	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	4,267,374	1,518,994	2,748,380	34,641,163	30,373,789	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	5.15	155.15	150.78	168.44	163.03	2.19	2.09	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	5,399,010	1,518,994	3,880,016	27,412,575	22,013,565	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	4.66	150.78	149.21	163.03	157.11	2.09	2.09	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	5,404,040	1,518,994	3,885,046	26,953,521	21,549,481	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	4.61	149.21	147.73	157.11	157	2.09	2.02	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	6,168,357	1,518,994	4,649,363	35,454,075	29,285,718	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	5.83	147.73	143.69	157	155.42	2.02	2.02	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	6,170,180	1,518,994	4,651,186	29,311,144	23,140,964	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	5.08	143.69	140.83	155.42	155.66	2.02	1.83	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	6,171,012	1,518,994	4,652,018	19,102,000	12,930,988	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	3.73	140.83	140.11	155.66	151	1.83	1.9	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	6,171,012	1,518,994	4,652,018	21,549,863	15,378,851	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	4.07	140.11	138.55	151	144.74	1.9	1.85	644.2	16163.9	16808.1
53	3447	I07-33-I07-31	I13-10	I13-11	6,171,012	1,518,994	4,652,018	695,746	-5,475,266	PVC	6	137.4	133.13	137.9	133.63	0.03681	0.013	11.19	138.55	134.82	144.74	139.73	-0.65	-1.19	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	6,174,111	1,518,994	4,655,117	6,124,076	-50,035	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	1.53	134.82	134	139.73	142.95	1.31	2.02	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	6,186,304	1,518,994	4,667,310	30,407,121	24,220,817	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	5.22	134	131.36	142.95	138	2.02	2.02	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	6,199,717	1,518,994	4,680,723	42,793,558	36,593,841	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	6.67	131.36	127.69	138	138	2.02	0.5	526.6	17999.7	18526.3
57	3436	M07-25-M07-8	I14-3	I14-5	6,204,035	1,518,994	4,685,041	180,739	-6,023,296	PVC	6	125.19	124.9	125.69	125.4	0.00248	0.013	4.07	127.69	127.67	138	138	-2	-2.27	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	6,205,178	1,518,994	4,686,184	26,071,121	19,865,943	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	2.63	127.67	127.63	138	138	1.23	0.63	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	6,206,322	1,518,994	4,687,328	60,681,535	54,475,213	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	0.76	127.63	127.47	138	131.44	0.63	2.64	433	19454.5	19887.5
60	2975	K10-7-K10-10	I15-5	I15-7	6,206,322	1,518,994	4,687,328	361,424	-5,844,898	PVC	8	126.11	126.09	126.78	126.76	0.00127	0.01	3.12	127.47	127.46	131.44	131.37	-0.69	-0.7	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	10,618,475	1,518,994	9,099,481	33,686,043	23,067,568	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	9.41	127.46	126.99	131.37	131.41	1.13	1.38	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	10,618,475	1,518,994	9,099,481	38,080,441	27,461,966	0	30	125.87	125	128.37	127.5	0.02064	0.013	10.28	127.24	127.21	131.41	131.36	1.13	0.29	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	13,788,253	1,518,994	12,269,259	2,608,858	-11,179,395	0	30	125	124.99	127.5	127.49	0.0001	0.013	4.35	127.21	126.56	131.36	131	0.29	0.93	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	13,797,398	1,518,994	12,278,404	30,788,053	16,990,655	0	36	124.99	124	127.99	127	0.0051	0.013	6.55	126.48	125.41	131	131	1.51	1.59	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 27 (City_PWWF_2035 CP_2035)

					Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
Link	ID	Link Name	US Node	DS Node	Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	L13-7-L13-5	_J05-7	J05-8	3,087,938	3,087,938	0	811,300	-2,276,638	0	8	273	271.78	273.67	272.45	0.01079	0.013	13.69	291.89	274.21	276	274.78	-18.22	-1.76	113.1	0	113.1
2	3353	M12-26-M12-21	J05-8	PolyVault	3,222,605	3,087,938	134,667	878,463	-2,344,142	0	6	271.78	265.55	272.28	266.05	0.05868	0.013	9.14	274.21	268.71	274.78	271.46	-1.93	-2.66	106.2	113.1	219.3
3	3045	K08-33-K08-37	PolyVault	J06-2	3,251,067	3,087,938	163,129	577,296	-2,673,771	PVC	8	265.55	265.45	266.22	266.12	0.00323	0.01	9.22	268.71	267.08	271.46	270.98	-2.49	-0.96	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	3,369,009	3,087,938	281,071	2,566,826	-802,183	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	4.25	267.08	265.58	270.98	269.39	-0.38	0.32	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	3,431,946	3,087,938	344,008	4,834,667	1,402,721	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	6.61	265.58	260.02	269.39	268.74	0.32	0.31	415.3	461.8	877.1
6	3012	H15-1-H15-3	J06-14	J06-16	3,494,882	3,087,938	406,944	8,688,008	5,193,126	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	10.36	260.02	258.8	268.74	268.74	0.31	0.3	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	3,524,673	3,087,938	436,735	3,996,050	471,377	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	5.69	258.8	257.27	268.74	263.77	0.3	0.3	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	3,555,623	3,087,938	467,685	4,717,610	1,161,987	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	6.53	257.27	253.4	263.77	260.51	0.3	0.3	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	3,587,129	3,087,938	499,191	4,079,514	492,385	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	5.8	253.4	250.74	260.51	254.58	0.3	-0.6	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	3,619,578	3,087,938	531,640	3,118,540	-501,038	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	4.56	250.74	249.62	254.58	253.74	-0.6	-0.31	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	4,462,244	3,087,938	1,374,306	3,888,589	-573,655	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	5.63	249.62	247.68	253.74	254.51	-0.31	0.19	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	4,493,408	3,087,938	1,405,470	7,526,611	3,033,203	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	9.91	247.68	241.67	254.51	243	0.19	-5.79	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	4,524,415	3,087,938	1,436,477	6,405,009	1,880,594	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	5.7	241.67	238.7	243	243	-5.79	-8.76	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	4,832,517	3,087,938	1,744,579	1,501,102	-3,331,415	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	6.09	238.7	234.97	243	242	-8.76	-5.39	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	4,860,979	3,087,938	1,773,041	3,345,571	-1,515,408	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	6.13	234.97	231.17	242	241.27	-5.39	-3.39	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	4,889,441	3,087,938	1,801,503	1,905,990	-2,983,451	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	6.16	231.17	227.01	241.27	235.52	-3.39	0.15	297.5	3243.2	3540.7
17	3391	M06-7-M06-6	K07-69	K07-28	4,917,903	3,087,938	1,829,965	651,277	-4,266,626	0	6	225.91	222.53	226.41	223.03	0.03225	0.013	10.08	227.01	223.7	235.52	234.49	-0.6	-0.67	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	6,253,550	3,087,938	3,165,612	7,910,192	1,656,642	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	5.64	223.7	220.75	234.49	232.26	0.58	0.5	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	7,294,241	3,087,938	4,206,303	13,565,858	6,271,617	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	8.89	220.75	215.46	232.26	223.14	0.5	0.84	282.1	4153.3	4435.4
20	3410	H04-20-H04-22	J07-89	J07-90	7,323,380	3,087,938	4,235,442	1,643,661	-5,679,719	PVC	6	214.55	208.61	215.05	209.11	0.05136	0.013	11.13	215.5	209.87	223.14	216	-0.45	-0.76	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	7,352,325	3,087,938	4,264,387	10,468,942	3,116,617	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	7.29	209.87	206.88	216	215.87	0.49	0.47	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	7,632,175	3,087,938	4,544,237	12,098,686	4,466,511	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	8.23	206.88	200.78	215.87	208.82	0.47	0.47	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	7,642,458	3,087,938	4,554,520	11,807,931	4,165,473	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	8.08	200.78	194.61	208.82	204.07	0.47	0.72	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	7,651,749	3,087,938	4,563,811	11,904,542	4,252,793	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	6.23	194.82	193.68	204.07	200.58	0.76	0.76	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	8,233,917	3,087,938	5,145,979	25,483,412	17,249,495	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	8.85	193.68	189.62	200.58	197	1.01	-5.21	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	8,961,454	3,087,938	5,873,516	10,620,231	1,658,777	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	3.49	189.62	189.09	197	198.97	-5.21	-5.42	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	8,976,759	3,087,938	5,888,821	10,925,568	1,948,809	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	3.49	189.09	188.28	198.97	192.83	-5.42	-5.81	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	9,006,518	3,087,938	5,918,580	10,554,288	1,547,770	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	3.5	188.28	187.71	192.83	190	-5.81	-6.03	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	9,013,152	3,087,938	5,925,214	10,350,223	1,337,071	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	3.51	187.71	186.72	190	186.72	-6.03	-6.35	489.9	7477.1	7967
30	3003	K10-46-K10-44	J09-22	J09-24	9,035,667	3,087,938	5,947,729	164,574	-8,871,093	PVC	6	178.12	178.07	178.62	178.57	0.00206	0.013	3.52	187.25	187.21	186.72	187.21	-8.63	-8.64	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	11,264,103	3,087,938	8,176,165	13,091,690	1,827,587	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	3.55	189.5	188.86	187.21	188.86	-8.93	-9.15	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	11,870,897	3,087,938	8,782,959	12,945,046	1,074,149	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	3.74	192.69	192.02	188.86	192.02	-12.98	-13.1	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	11,910,927	3,087,938	8,822,989	2,097,941	-9,812,986	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	23.46	218.35	179.02	192.02	190.18	-40.93	-2.82	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	11,919,761	3,087,938	8,831,823	14,804,664	2,884,903	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	3.76	179.02	178.59	190.18	193.17	-1.32	-1.56	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	12,175,878	3,087,938	9,087,940	13,885,589	1,709,711	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	3.84	178.59	177.87	193.17	190	-1.56	-1.78	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	17,245,354	3,087,938	14,157,416	3,242,470	-14,002,884	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	5.44	177.87	175.27	190	184	-1.78	0.74	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	17,257,620	3,087,938	14,169,682	30,316,999	13,059,379	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	9.87	175.27	171.6	184	177.94	0.74	-2.03	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	17,268,537	3,087,938	14,180,599	16,547,967	-720,570	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	5.44	171.6	170	177.94	178.87	-2.03	0.73	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	17,324,113	3,087,938	14,236,175	31,703,658	14,379,545	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	10.22	170	166.92	178.87	173.01	0.73	-3.02	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	17,331,740	3,087,938	14,243,802	16,871,263	-460,477	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	5.46	166.92	165.44	173.01	172.44	-3.02	-2.94	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	17,869,834	3,087,938	14,781,896	21,975,368	4,105,534	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	5.63	165.44	163.99	172.44	171	-2.94	-3.69	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	17,878,499	3,087,938	14,790,561	20,565,867	2,687,368	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	5.64	163.99	162.56	171	170.85	-3.69	-4.15	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	18,655,523	3,087,938	15,567,585	15,002,227	-3,653,296	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	4.08	162.56	161.9	170.85	167.67	-3.65	-3.42	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	18,678,201	3,087,938	15,590,263	19,181,160	502,959	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	4.09	161.9	161.25	167.67	169.54	-3.42	-3.45	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	22,533,553	3,087,938	19,445,615	18,895,751	-3,637,802	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	4.93	161.25	160.6	169.54	168.44	-3.45	-3.26	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	22,563,985	3,087,938	19,476,047	34,641,163	12,077,178	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	4.94	160.6	158.7	168.44	163.03	-3.26	-5.83	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	27,611,683	3,087,938	24,523,745	27,412,575	-199,108	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	6.04	158.7	157.11	163.03	157.11	-5.83	-5.81	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	27,622,894	3,087,938	24,534,956	26,953,521	-669,373	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	6.05	157.33	155.7	157.11	157	-6.03	-5.95	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	30,189,103	3,087,938	27,101,165	35,454,075	5,264,972	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	6.61	155.7	152.77	157	155.42	-5.95	-7.06	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	30,197,106	3,087,938	27,109,168	29,311,144	-885,962	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	6.61	152.77	149.53	155.42	155.66	-7.06	-6.87	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	30,204,115	3,087,938	27,116,177	19,102,000	-11,102,115	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	6.61	149.53	147.91	155.66	151	-6.87	-5.9	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	30,210,294	3,087,938	27,122,356	21,549,863	-8,660,431	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	6.61	147.91	144.74	151	144.74	-5.9	-4.34	644.2	16163.9	16808.1
53	3447	I07-33-I07-31	I13-10	I13-11	30,216,475	3,087,938	27,128,537	695,746	-29,520,729	PVC	6	137.4	133.13	137.9	133.63	0.03681	0.013	19.44	149.83	139.73	144.74	139.73	-11.93	-6.1	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	30,225,753	3,087,938	27,137,815	6,124,076	-24,101,677	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	6.62	141.17	138.49	139.73	142.95	-5.04	-2.47	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	30,244,126	3,087,938	27,156,188	30,407,121	162,995	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	6.62	138.49	135.88	142.95	138	-2.47	-2.5	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	30,263,717	3,087,938	27,175,779	42,793,558	12,529,841	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	6.62	135.88	133.28	138	138	-2.5	-5.09	526.6	17999.7	18526.3
57	3436	M07-25-M07-8	I14-3	I14-5	30,274,212	3,087,938	27,186,274	180,739	-30,093,473	PVC	6	125.19	124.9	125.69	125.4	0.00248	0.013	6.63	133.28	132.71	138	138	-7.59	-7.31	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	30,281,535	3,087,938	27,193,597	26,071,121	-4,210,414	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	3.73	132.71	131.85	138	138	-3.81	-3.59	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	30,288,857	3,087,938	27,200,919	60,681,535	30,392,678	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	3.73	131.85	131.38	138	131.44	-3.59	-1.27	433	19454.5	19887.5
60	2975	K10-7-K10-10	I15-5	I15-7	30,295,036	3,087,938	27,207,098	361,424	-29,933,612	PVC	8	126.11	126.09	126.78	126.76	0.00127	0.01	3.73	131.38	131.37	131.44	131.37	-4.6	-4.61	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	36,737,706	3,087,938	33,649,768	33,686,043	-3,051,663	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	11.58	131.67	131.41	131.37	131.41	-3.08	-3.04	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	36,743,885	3,087,938	33,655,947	38,080,441	1,336,556	0	30	125.87	125	128.37	127.5	0.02064	0.013	11.58	131.56	130.75	131.41	131.36	-3.19	-3.25	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	39,913,664	3,087,938	36,825,726	2,608,858	-37,304,806	0	30	125	124.99	127.5	127.49	0.0001	0.013	12.58	130.75	128.41	131.36	131	-3.25	-0.92	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	39,947,525	3,087,938	36,859,587	30,788,053	-9,159,472	0	36	124.99	124	127.99	127	0.0051	0.013	8.74	128.41	126.53	131	131	-0.42	0.47	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 28 (City_ADWF_2035 CP_0.471 MGD)

					Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
Link	ID	Link Name	US Node	DS Node	Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	L13-7-L13-5	_J05-7	J05-8	471,000	471,000	0	811,300	340,300	0	8	273	271.78	273.67	272.45	0.01079	0.013	3.73	273.4	272.14	276	274.78	0.27	0.31	113.1	0	113.1
2	3353	M12-26-M12-21	J05-8	PolyVault	526,000	471,000	55,000	878,463	352,463	0	6	271.78	265.55	272.28	266.05	0.05868	0.013	7.04	272.18	266.03	274.78	271.46	0.1	0.02	106.2	113.1	219.3
3	3045	K08-33-K08-37	PolyVault	J06-2	526,000	471,000	55,000	577,296	51,296	PVC	8	265.55	265.45	266.22	266.12	0.00323	0.01	2.43	266.03	265.85	271.46	270.98	0.19	0.27	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	528,175	471,000	57,175	2,566,826	2,038,651	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	2.55	265.83	265.01	270.98	269.39	0.87	0.89	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	546,947	471,000	75,947	4,834,667	4,287,720	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	4.04	265.01	259.45	269.39	268.74	0.89	0.88	415.3	461.8	877.1
6	3012	H15-1-H15-3	J06-14	J06-16	565,719	471,000	94,719	8,688,008	8,122,289	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	6.18	259.45	258.22	268.74	268.74	0.88	0.88	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	566,443	471,000	95,443	3,996,050	3,429,607	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	3.57	258.22	256.69	268.74	263.77	0.88	0.88	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	567,798	471,000	96,798	4,717,610	4,149,812	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	4.02	256.69	252.82	263.77	260.51	0.88	0.88	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	569,455	471,000	98,455	4,079,514	3,510,059	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	3.62	252.82	249.26	260.51	254.58	0.88	0.88	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	571,626	471,000	100,626	3,118,540	2,546,914	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	2.99	249.26	248.44	254.58	253.74	0.88	0.87	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	611,966	471,000	140,966	3,888,589	3,276,623	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	3.58	248.44	247	253.74	254.51	0.87	0.87	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	613,412	471,000	142,412	7,526,611	6,913,199	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	5.71	247	235.01	254.51	243	0.87	0.87	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	614,773	471,000	143,773	6,405,009	5,790,236	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	5.1	235.01	229.28	243	243	0.87	0.66	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	674,056	471,000	203,056	1,501,102	827,046	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	1.84	229.28	228.73	243	242	0.66	0.85	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	674,056	471,000	203,056	3,345,571	2,671,515	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	3.3	228.73	227.04	242	241.27	0.85	0.74	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	674,056	471,000	203,056	1,905,990	1,231,934	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	2.2	227.04	226.31	241.27	235.52	0.74	0.85	297.5	3243.2	3540.7
17	3391	M06-7-M06-6	K07-69	K07-28	674,056	471,000	203,056	651,277	-22,779	0	6	225.91	222.53	226.41	223.03	0.03225	0.013	5.86	226.31	222.78	235.52	234.49	0.1	0.25	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	753,367	471,000	282,367	7,910,192	7,156,825	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	3.21	222.92	219.9	234.49	232.26	1.36	1.35	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	806,891	471,000	335,891	13,565,858	12,758,967	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	4.79	219.9	214.84	232.26	223.14	1.35	1.46	282.1	4153.3	4435.4
20	3410	H04-20-H04-22	J07-89	J07-90	807,256	471,000	336,256	1,643,661	836,405	PVC	6	214.55	208.61	215.05	209.11	0.05136	0.013	6.1	214.88	209.01	223.14	216	0.17	0.1	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	807,519	471,000	336,519	10,468,942	9,661,423	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	3.99	209.01	206	216	215.87	1.35	1.35	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	820,900	471,000	349,900	12,098,686	11,277,786	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	4.44	206	199.9	215.87	208.82	1.35	1.35	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	823,024	471,000	352,024	11,807,931	10,984,907	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	4.37	199.9	193.89	208.82	204.07	1.35	1.44	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	824,636	471,000	353,636	11,904,542	11,079,906	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	3.37	193.97	192.83	204.07	200.58	1.61	1.61	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	896,973	471,000	425,973	25,483,412	24,586,439	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	4.66	192.83	182.62	200.58	197	1.86	1.79	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	969,752	471,000	498,752	10,620,231	9,650,479	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	2.57	182.62	181.87	197	198.97	1.79	1.8	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	971,278	471,000	500,278	10,925,568	9,954,290	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	2.63	181.87	180.68	198.97	192.83	1.8	1.79	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	975,489	471,000	504,489	10,554,288	9,578,799	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	2.57	180.68	179.9	192.83	190	1.79	1.78	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	975,724	471,000	504,724	10,350,223	9,374,499	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	2.53	179.9	178.61	190	186.72	1.78	1.76	489.9	7477.1	7967
30	3003	K10-46-K10-44	J09-22	J09-24	980,984	471,000	509,984	164,574	-816,410	PVC	6	178.12	178.07	178.62	178.57	0.00206	0.013	2.31	178.61	178.53	186.72	187.21	0.01	0.04	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	984,551	471,000	513,551	13,091,690	12,107,139	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	2.43	178.53	177.68	187.21	188.86	2.04	2.03	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	1,020,684	471,000	549,684	12,945,046	11,924,362	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	2.43	177.68	176.95	188.86	192.02	2.03	1.97	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	1,025,415	471,000	554,415	2,097,941	1,072,526	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	4.11	176.95	175.69	192.02	190.18	0.47	0.51	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	1,026,790	471,000	555,790	14,804,664	13,777,874	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	2.68	175.65	175	190.18	193.17	2.05	2.03	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	1,078,979	471,000	607,979	13,885,589	12,806,610	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	2.6	175	174.58	193.17	190	2.03	1.51	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	1,643,524	471,000	1,172,524	3,242,470	1,598,946	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	1.03	174.58	174.03	190	184	1.51	1.98	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	1,646,676	471,000	1,175,676	30,316,999	28,670,323	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	5.1	174.03	169.06	184	177.94	1.98	0.51	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	1,649,129	471,000	1,178,129	16,547,967	14,898,838	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	0.52	169.06	168.75	177.94	178.87	0.51	1.98	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	1,658,710	471,000	1,187,710	31,703,658	30,044,948	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	5.28	168.75	161.93	178.87	173.01	1.98	1.97	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	1,659,459	471,000	1,188,459	16,871,263	15,211,804	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	3.38	161.93	160.55	173.01	172.44	1.97	1.95	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	1,796,368	471,000	1,325,368	21,975,368	20,179,000	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	4.17	160.55	158.35	172.44	171	1.95	1.95	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	1,797,655	471,000	1,326,655	20,565,867	18,768,212	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	3.98	158.35	156.62	171	170.85	1.95	1.79	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	1,820,437	471,000	1,349,437	15,002,227	13,181,790	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	2.22	156.62	156.1	170.85	167.67	2.29	2.38	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	1,822,581	471,000	1,351,581	19,181,160	17,358,579	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	2.64	156.1	155.45	167.67	169.54	2.38	2.35	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	1,922,790	471,000	1,451,790	18,895,751	16,972,961	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	2.66	155.45	154.88	169.54	168.44	2.35	2.46	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	1,928,951	471,000	1,457,951	34,641,163	32,712,212	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	4.08	154.88	150.49	168.44	163.03	2.46	2.38	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	2,537,697	471,000	2,066,697	27,412,575	24,874,878	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	3.75	150.49	148.92	163.03	157.11	2.38	2.38	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	2,540,302	471,000	2,069,302	26,953,521	24,413,219	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	3.71	148.92	147.44	157.11	157	2.38	2.31	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	3,132,041	471,000	2,661,041	35,454,075	32,322,034	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	4.79	147.44	143.4	157	155.42	2.31	2.31	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	3,132,985	471,000	2,661,985	29,311,144	26,178,159	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	4.18	143.4	140.48	155.42	155.66	2.31	2.18	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	3,133,415	471,000	2,662,415	19,102,000	15,968,585	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	3.09	140.48	139.78	155.66	151	2.18	2.23	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	3,133,415	471,000	2,662,415	21,549,863	18,416,448	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	3.36	139.78	138.21	151	144.74	2.23	2.19	644.2	16163.9	16808.1
53	3447	I07-33-I07-31	I13-10	I13-11	3,133,415	471,000	2,662,415	695,746	-2,437,669	PVC	6	137.4	133.13	137.9	133.63	0.03681	0.013	9.25	138.21	134.35	144.74	139.73	-0.31	-0.72	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	3,135,020	471,000	2,664,020	6,124,076	2,989,056	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	1.35	134.35	133.71	139.73	142.95	1.78	2.31	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	3,141,335	471,000	2,670,335	30,407,121	27,265,786	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	4.3	133.71	131.07	142.95	138	2.31	2.31	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	3,148,280	471,000	2,677,280	42,793,558	39,645,278	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	5.47	131.07	127.32	138	138	2.31	0.87	526.6	17999.7	18526.3
57	3436	M07-25-M07-8	I14-3	I14-5	3,150,517	471,000	2,679,517	180,739	-2,969,778	PVC	6	125.19	124.9	125.69	125.4	0.00248	0.013	3.36	127.32	127.31	138	138	-1.63	-1.91	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	3,151,109	471,000	2,680,109	26,071,121	22,920,012	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	2.17	127.31	127.3	138	138	1.59	0.96	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	3,151,701	471,000	2,680,701	60,681,535	57,529,834	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	0.39	127.3	127.22	138	131.44	0.96	2.89	433	19454.5	19887.5
60	2975	K10-7-K10-10	I15-5	I15-7	3,151,701	471,000	2,680,701	361,424	-2,790,277	PVC	8	126.11	126.09	126.78	126.76	0.00127	0.01	2.57	127.22	127.22	131.44	131.37	-0.44	-0.46	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	7,313,847	471,000	6,842,847	33,686,043	26,372,196	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	8.48	127.22	126.78	131.37	131.41	1.37	1.59	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	7,313,847	471,000	6,842,847	38,080,441	30,766,594	0	30	125.87	125	128.37	127.5	0.02064	0.013	9.26	127	126.9	131.41	131.36	1.37	0.6	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	10,483,625	471,000	10,012,625	2,608,858	-7,874,767	0	30	125	124.99	127.5	127.49	0.0001	0.013	3.3	126.9	126.35	131.36	131	0.6	1.14	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	10,488,362	471,000	10,017,362	30,788,053	20,299,691	0	36	124.99	124	127.99	127	0.0051	0.013	6.1	126.28	125.21	131	131	1.71	1.79	194.1	20062.3	20256.4

Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

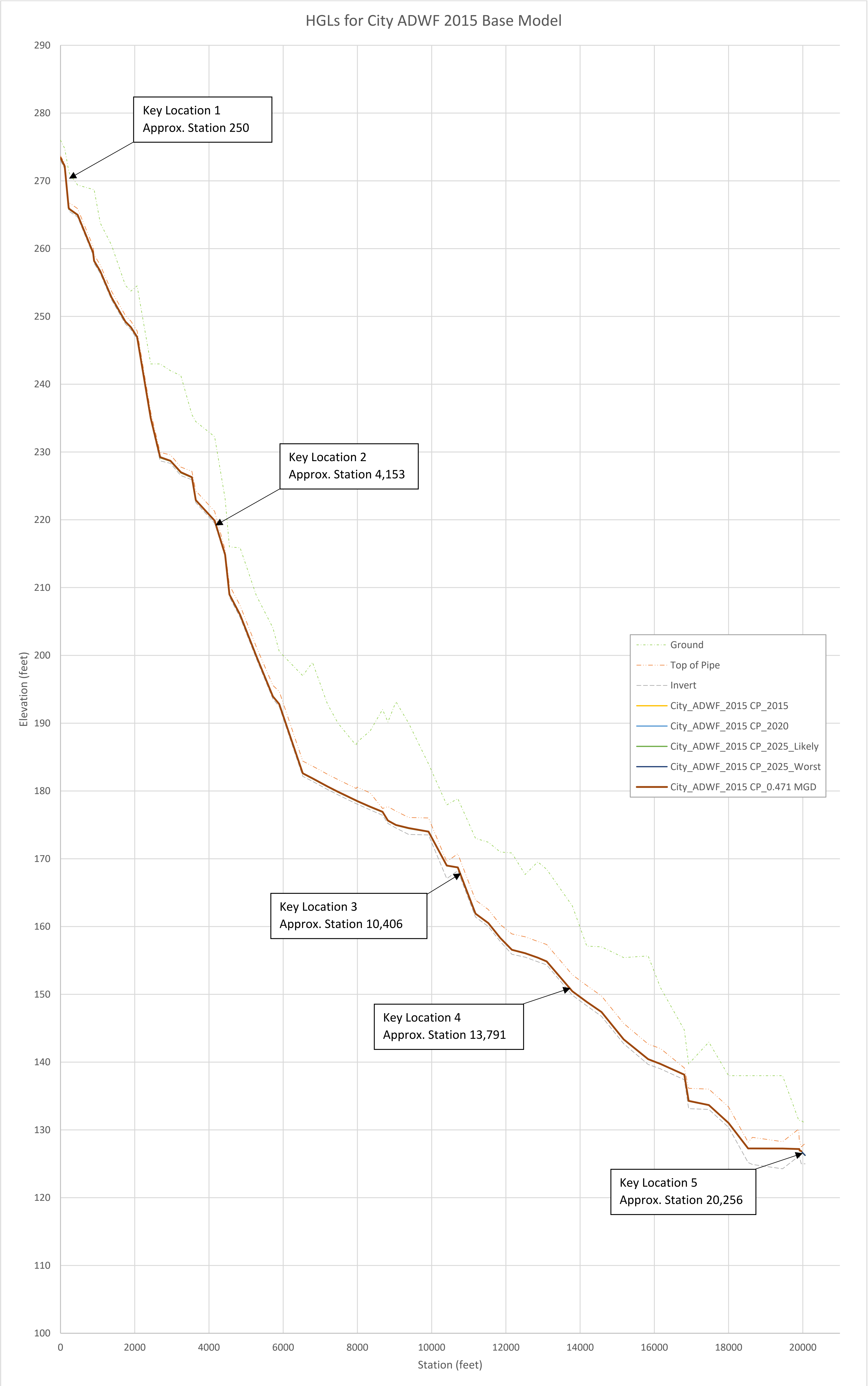
TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 29 (City_PDWF_2035 CP_1.2 MGD)

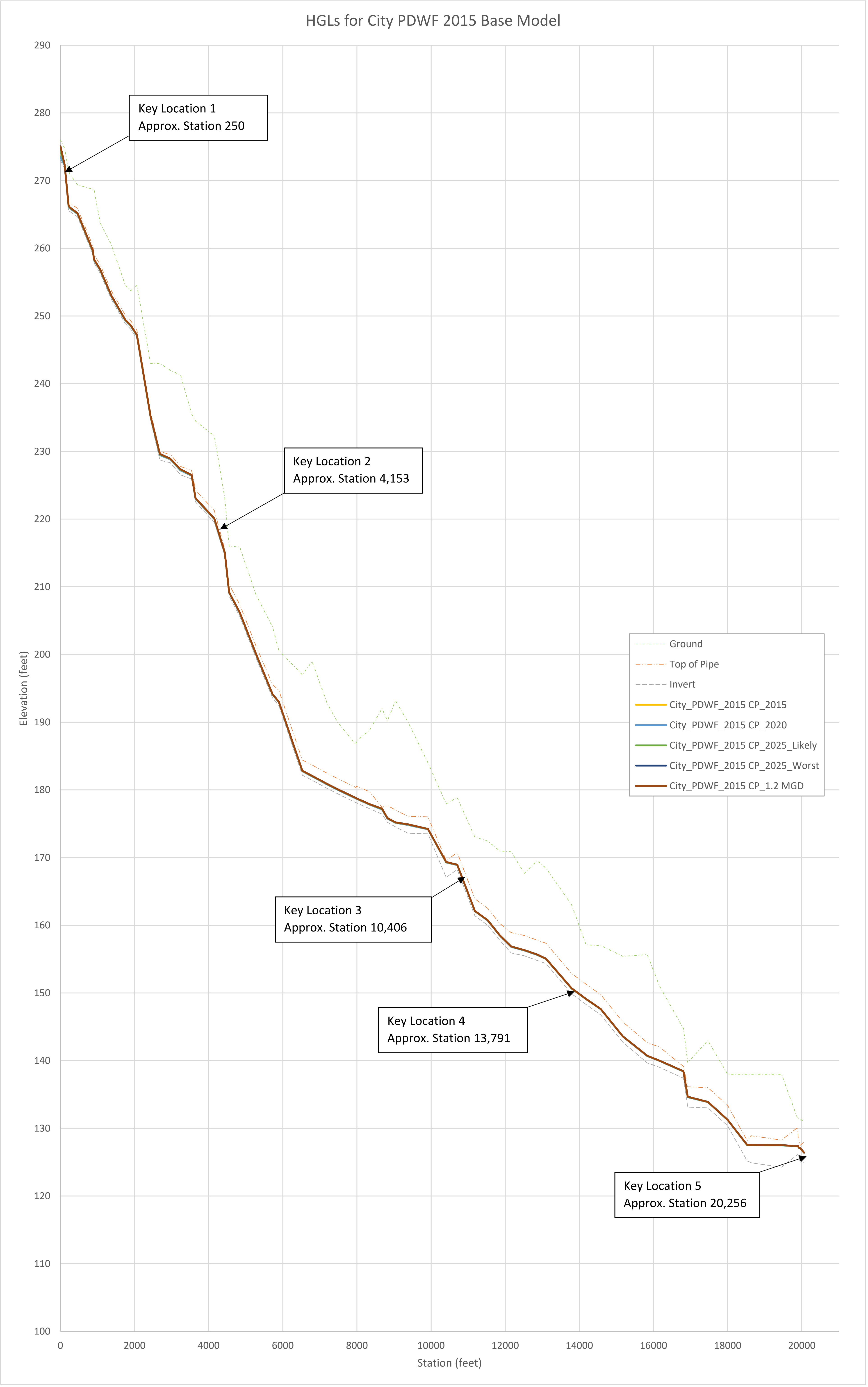
					Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
Link	ID	Link Name	US Node	DS Node	Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	J05-7-J05-8	_J05-7	J05-8	1,200,000	1,200,000	0	811,300	-388,700	0	8	273	271.78	273.67	272.45	0.01079	0.013	5.32	275.1	272.42	276	274.78	-1.43	0.03	113.1	0	113.1
2	3353	J05-8-POLY VAULT	J05-8	PolyVault	1,306,205	1,200,000	106,205	3,430,204	2,123,999	0	10	271.78	265.55	272.61	266.38	0.05868	0.013	9.07	272.42	266.44	274.78	271.46	0.19	-0.06	106.2	113.1	219.3
3	3045	POLY VAULT-J06-2	PolyVault	J06-2	1,306,205	1,200,000	106,205	805,159	-501,046	0	10	265.55	265.45	266.38	266.28	0.00323	0.013	3.71	266.44	266.09	271.46	270.98	-0.06	0.19	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	1,310,298	1,200,000	110,298	2,566,826	1,256,528	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	3.25	266.08	265.23	270.98	269.39	0.62	0.67	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	1,344,772	1,200,000	144,772	4,834,667	3,489,895	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	5.22	265.23	259.66	269.39	268.74	0.67	0.67	415.3	461.8	877.1
6	3012	J06-14-J06-16	J06-14	J06-16	1,379,246	1,200,000	179,246	8,688,008	7,308,762	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	8.01	259.66	258.43	268.74	268.74	0.67	0.67	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	1,380,575	1,200,000	180,575	3,996,050	2,615,475	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	4.58	258.43	256.9	268.74	263.77	0.67	0.67	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	1,383,063	1,200,000	183,063	4,717,610	3,334,547	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	5.17	256.9	253.03	263.77	260.51	0.67	0.67	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	1,386,107	1,200,000	186,107	4,079,514	2,693,407	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	4.65	253.03	249.48	260.51	254.58	0.67	0.66	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	1,390,093	1,200,000	190,093	3,118,540	1,728,447	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	3.82	249.48	248.66	254.58	253.74	0.66	0.65	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	1,464,280	1,200,000	264,280	3,888,589	2,424,309	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	4.56	248.66	247.22	253.74	254.51	0.65	0.65	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	1,466,982	1,200,000	266,982	7,526,611	6,059,629	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	7.36	247.22	235.23	254.51	243	0.65	0.65	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	1,469,527	1,200,000	269,527	6,405,009	4,935,482	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	6.56	235.23	229.68	243	243	0.65	0.26	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	1,578,393	1,200,000	378,393	1,501,102	-77,291	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	2.14	229.68	228.96	243	242	0.26	0.62	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	1,578,393	1,200,000	378,393	3,345,571	1,767,178	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	4.16	228.96	227.4	242	241.27	0.62	0.38	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	1,578,393	1,200,000	378,393	1,905,990	327,597	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	2.69	227.4	226.54	241.27	235.52	0.38	0.62	297.5	3243.2	3540.7
17	3391	K07-69-K07-28	K07-69	K07-28	1,578,393	1,200,000	378,393	7,497,885	5,919,492	0	15	225.91	222.53	227.16	223.78	0.03225	0.013	7.49	226.54	222.92	235.52	234.49	0.62	0.86	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	1,730,177	1,200,000	530,177	7,910,192	6,180,015	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	4.07	223.12	220.11	234.49	232.26	1.16	1.14	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	1,828,526	1,200,000	628,526	13,565,858	11,737,332	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	6.09	220.11	214.98	232.26	223.14	1.14	1.32	282.1	4153.3	4435.4
20	3410	J07-89-J07-90	J07-89	J07-90	1,829,203	1,200,000	629,203	10,436,597	8,607,394	PVC	12	214.55	208.61	215.55	209.61	0.05136	0.013	7.74	215.05	209.22	223.14	216	0.5	0.39	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	1,829,686	1,200,000	629,686	10,468,942	8,639,256	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	5.06	209.22	206.21	216	215.87	1.14	1.14	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	1,855,402	1,200,000	655,402	12,098,686	10,243,284	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	5.63	206.21	200.12	215.87	208.82	1.14	1.13	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	1,859,505	1,200,000	659,505	11,807,931	9,948,426	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	5.54	200.12	194.05	208.82	204.07	1.13	1.28	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	1,862,618	1,200,000	662,618	11,904,542	10,041,924	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	4.27	194.17	193.03	204.07	200.58	1.41	1.41	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	2,002,411	1,200,000	802,411	25,483,412	23,481,001	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	5.91	193.03	182.84	200.58	197	1.66	1.57	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	2,132,705	1,200,000	932,705	10,620,231	8,487,526	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	3.23	182.84	182.09	197	198.97	1.57	1.58	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	2,135,652	1,200,000	935,652	10,925,568	8,789,916	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	3.3	182.09	180.91	198.97	192.83	1.58	1.56	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	2,143,785	1,200,000	943,785	10,554,288	8,410,503	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	3.22	180.91	180.12	192.83	190	1.56	1.56	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	2,144,239	1,200,000	944,239	10,350,223	8,205,984	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	3.18	180.12	178.84	190	186.72	1.56	1.53	489.9	7477.1	7967
30	3003	J09-22-J09-24	J09-22	J09-24	2,154,397	1,200,000	954,397	9,083,654	6,929,257	PVC	27	178.12	178.07	180.37	180.32	0.00206	0.013	2.89	178.84	178.76	186.72	187.21	1.53	1.56	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	2,161,286	1,200,000	961,286	13,091,690	10,930,404	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	3.05	178.76	177.91	187.21	188.86	1.81	1.8	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	2,231,655	1,200,000	1,031,655	12,945,046	10,713,391	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	3.05	177.91	177.32	188.86	192.02	1.8	1.6	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	2,240,789	1,200,000	1,040,789	2,097,941	-142,848	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	4.64	177.32	176	192.02	190.18	0.1	0.2	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	2,243,445	1,200,000	1,043,445	14,804,664	12,561,219	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	3.37	175.86	175.23	190.18	193.17	1.84	1.8	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	2,345,347	1,200,000	1,145,347	13,885,589	11,540,242	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	3.26	175.23	174.98	193.17	190	1.8	1.11	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	3,397,564	1,200,000	2,197,564	3,242,470	-155,094	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	1.16	174.98	174.27	190	184	1.11	1.74	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	3,403,651	1,200,000	2,203,651	30,316,999	26,913,348	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	6.32	174.27	169.41	184	177.94	1.74	0.16	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	3,408,389	1,200,000	2,208,389	16,547,967	13,139,578	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	1.07	169.41	168.99	177.94	178.87	0.16	1.74	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	3,426,891	1,200,000	2,226,891	31,703,658	28,276,767	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	6.54	168.99	162.16	178.87	173.01	1.74	1.74	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	3,428,340	1,200,000	2,228,340	16,871,263	13,442,923	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	4.17	162.16	160.79	173.01	172.44	1.74	1.71	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	3,704,314	1,200,000	2,504,314	21,975,368	18,271,054	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	5.15	160.79	158.59	172.44	171	1.71	1.71	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	3,706,800	1,200,000	2,506,800	20,565,867	16,859,067	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	4.91	158.59	156.93	171	170.85	1.71	1.48	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	3,750,751	1,200,000	2,550,751	15,002,227	11,251,476	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	2.73	156.93	156.38	170.85	167.67	1.98	2.1	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	3,754,892	1,200,000	2,554,892	19,181,160	15,426,268	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	3.26	156.38	155.73	167.67	169.54	2.1	2.07	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	3,936,483	1,200,000	2,736,483	18,895,751	14,959,268	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	3.27	155.73	155.12	169.54	168.44	2.07	2.22	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	3,948,380	1,200,000	2,748,380	34,641,163	30,692,783	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	5.04	155.12	150.75	168.44	163.03	2.22	2.12	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	5,080,016	1,200,000	3,880,016	27,412,575	22,332,559	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	4.58	150.75	149.18	163.03	157.11	2.12	2.12	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	5,085,046	1,200,000	3,885,046	26,953,521	21,868,475	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	4.53	149.18	147.7	157.11	157	2.12	2.05	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	5,849,363	1,200,000	4,649,363	35,454,075	29,604,712	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	5.74	147.7	143.66	157	155.42	2.05	2.05	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	5,851,186	1,200,000	4,651,186	29,311,144	23,459,958	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	5.01	143.66	140.8	155.42	155.66	2.05	1.86	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	5,852,018	1,200,000	4,652,018	19,102,000	13,249,982	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	3.68	140.8	140.08	155.66	151	1.86	1.93	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	5,852,018	1,200,000	4,652,018	21,549,863	15,697,845	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	4.01	140.08	138.52	151	144.74	1.93	1.88	644.2	16163.9	16808.1
53	3447	I13-10-I13-11	I13-10	I13-11	5,852,018	1,200,000	4,652,018	19,647,126	13,795,108	PVC	21	137.4	133.13	139.15	134.88	0.03681	0.013	11.03	138.52	134.78	144.74	139.73	0.63	0.1	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	5,855,118	1,200,000	4,655,118	6,124,076	268,958	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	1.53	134.78	133.97	139.73	142.95	1.35	2.05	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	5,867,311	1,200,000	4,667,311	30,407,121	24,539,810	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	5.14	133.97	131.33	142.95	138	2.05	2.05	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	5,880,723	1,200,000	4,680,723	42,793,558	36,912,835	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	6.57	131.33	127.65	138	138	2.05	0.54	526.6	17999.7	18526.3
57	3436	I14-3-I14-5	I14-3	I14-5	5,885,041	1,200,000	4,685,041	21,484,290	15,599,249	PVC	36	125.19	124.9	128.19	127.9	0.00248	0.013	4.01	127.65	127.64	138	138	0.54	0.26	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	5,886,184	1,200,000	4,686,184	26,071,121	20,184,937	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	2.59	127.64	127.6	138	138	1.26	0.66	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	5,887,328	1,200,000	4,687,328	60,681,535	54,794,207	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	0.72	127.6	127.45	138	131.44	0.66	2.66	433	19454.5	19887.5
60	2975	I15-5-I15-7	I15-5	I15-7	5,887,328	1,200,000	4,687,328	33,047,844	27,160,516	PVC	48	126.11	126.09	130.11	130.09	0.00127	0.013	3.07	127.45	127.44	131.44	131.37	2.66	2.65	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	10,299,481	1,200,000	9,099,481	33,686,043	23,386,562	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	9.33	127.44	126.97	131.37	131.41	1.15	1.4	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	10,299,481	1,200,000	9,099,481	38,080,441	27,780,960	0	30	125.87	125	128.37	127.5	0.02064	0.013	10.2	127.22	127.18	131.41	131.36	1.15	0.32	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	13,469,259	1,200,000	12,269,259	2,608,858	-10,860,401	0	30	125	124.99	127.5	127.49	0.0001	0.013	4.25	127.18	126.54	131.36	131	0.32	0.95	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	13,478,404	1,200,000	12,278,404	30,788,053	17,309,649	0	36	124.99	124	127.99	127	0.0051	0.013	6.51	126.46	125.39	131	131	1.53	1.61	194.1	20062.3	20256.4

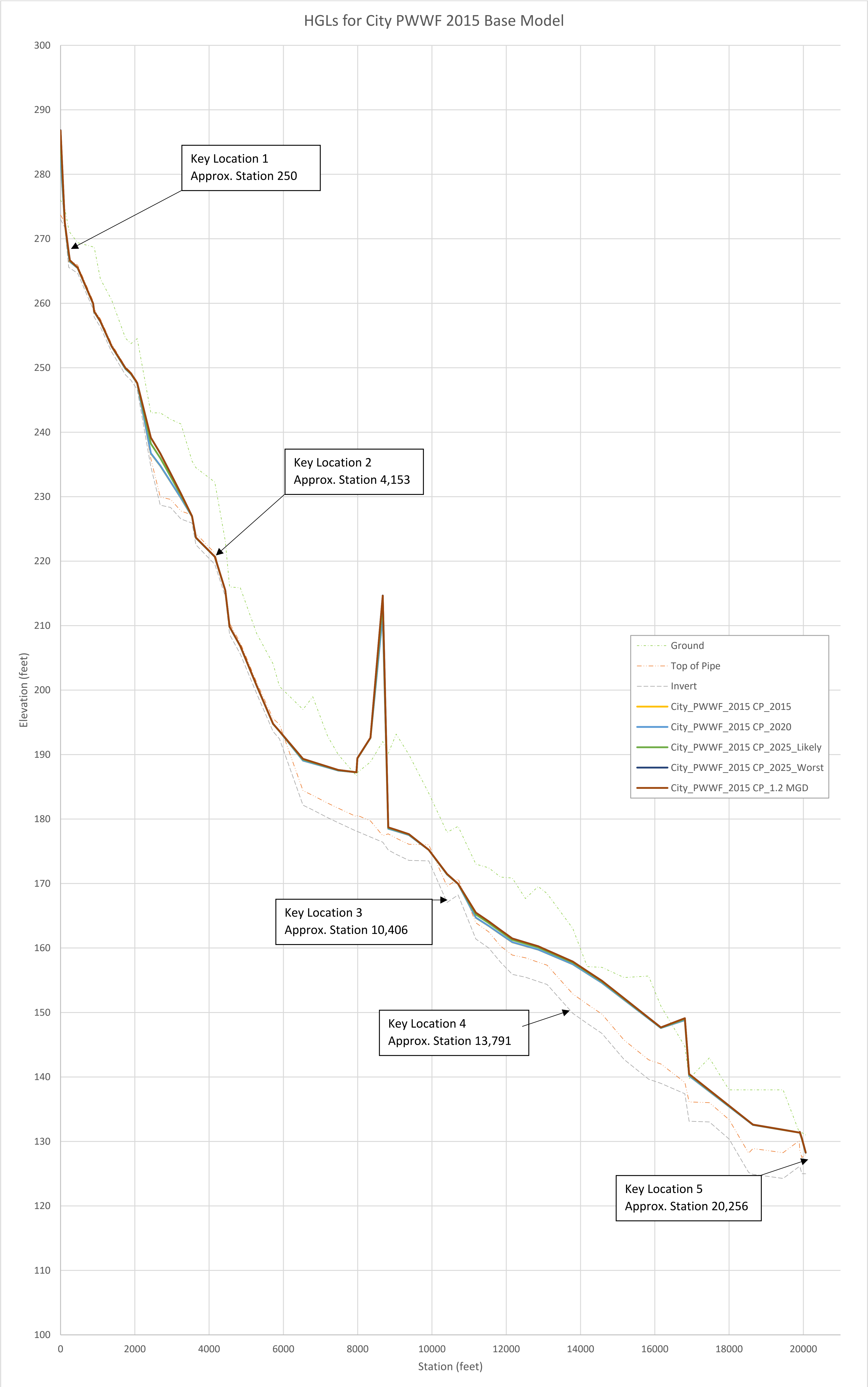
Cal Poly San Luis Obispo Water Supply Assessment and Wastewater Feasibility Modeling
Watearth, Inc.
Job No. 2018.0314.1-CA
4/3/2019

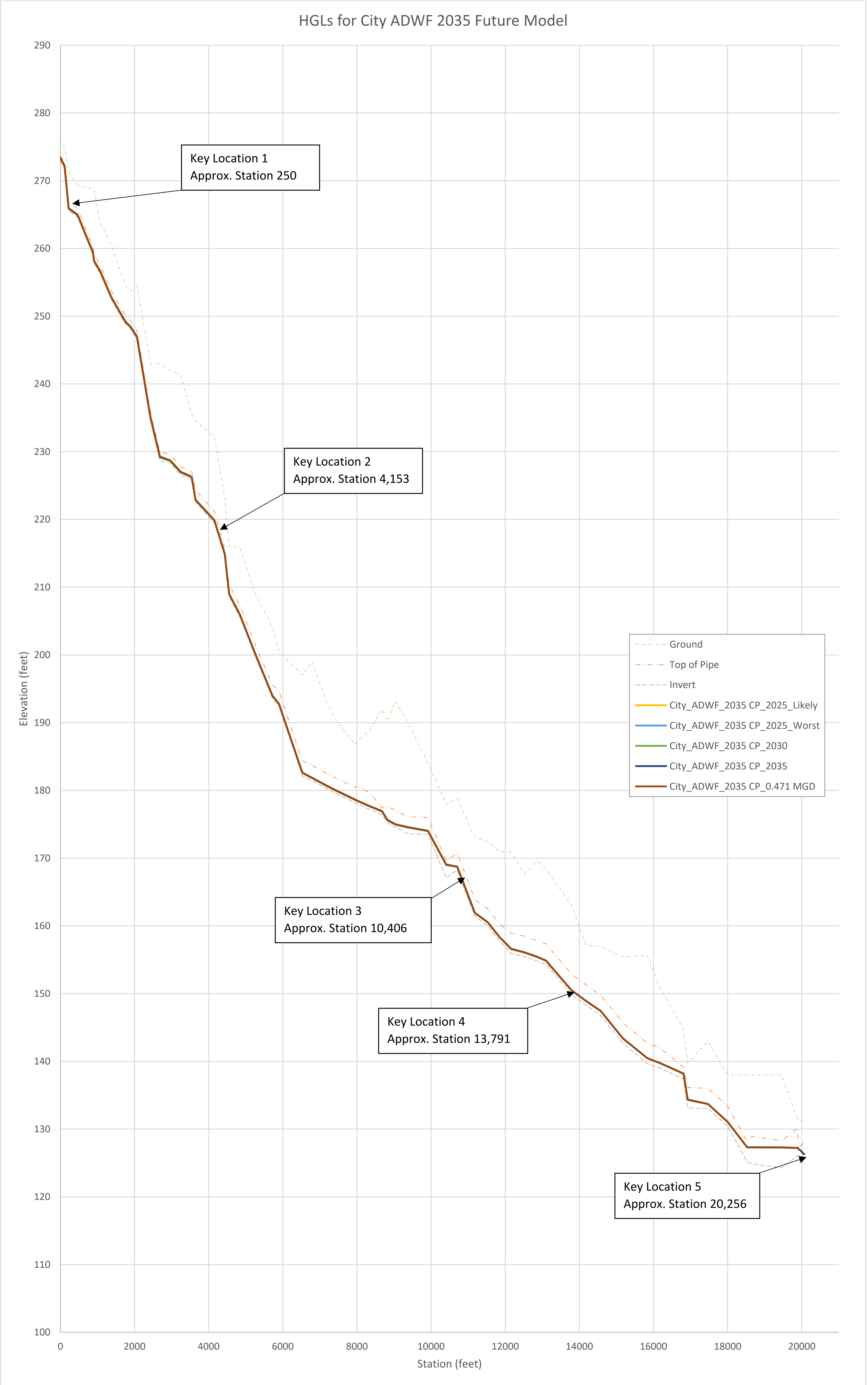
TABLE: DETAILED SEWERCAD MODELING RESULTS MODEL RUN 30 (City_PWWF_2035 CP_1.2 MGD)

Link	ID	Link Name	US Node	DS Node	Flows (gpd)			Capacity (gpd)		Pipe Data									Elevations (ft)								
					Total Flow	Cal Poly	City SLO	Total Capacity	Available Capacity	Material	Diameter (in)	US Invert (ft)	DS Invert (ft)	US Top of Pipe (ft)	DS Top of Pipe (ft)	Slope (ft/ft)	n-Value	Velocity (fps)	US Hydraulic Grade Line	DS Hydraulic Grade Line	US Natural Ground	DS Natural Ground	US Top of Pipe - US HGL	DS Top of Pipe - DS HGL	Length (ft)	Starting Station (ft)	Ending Station (ft)
1	3428	L13-7-L13-5	_J05-7	J05-8	2,768,944	2,768,944	0	811,300	-1,957,644	0	8	273	271.78	273.67	272.45	0.01079	0.013	12.27	286.8	272.59	276	274.78	-13.13	-0.14	113.1	0	113.1
2	3353	M12-26-M12-21	J05-8	PolyVault	2,903,611	2,768,944	134,667	878,463	-2,025,148	0	6	271.78	265.55	272.28	266.05	0.05868	0.013	10.91	272.59	268.11	274.78	271.46	-0.31	-2.06	106.2	113.1	219.3
3	3045	K08-33-K08-37	PolyVault	J06-2	2,932,073	2,768,944	163,129	577,296	-2,354,777	PVC	8	265.55	265.45	266.22	266.12	0.00323	0.01	8.32	268.11	266.78	271.46	270.98	-1.89	-0.66	30.9	219.3	250.2
4	4296	J06-2-J06-6	J06-2	J06-6	3,050,015	2,768,944	281,071	2,566,826	-483,189	0	15	265.45	264.65	266.7	265.9	0.00378	0.013	3.85	266.78	265.54	270.98	269.39	-0.08	0.36	211.6	250.2	461.8
5	5729	J06-6-J06-14	J06-6	J06-14	3,112,951	2,768,944	344,007	4,834,667	1,721,716	0	15	264.65	259.08	265.9	260.33	0.01341	0.013	6.47	265.54	259.98	269.39	268.74	0.36	0.35	415.3	461.8	877.1
6	3012	H15-1-H15-3	J06-14	J06-16	3,175,888	2,768,944	406,944	8,688,008	5,512,120	0	15	259.08	257.85	260.33	259.1	0.04331	0.013	10.1	259.98	258.75	268.74	268.74	0.35	0.35	28.4	877.1	905.5
7	3593	J06-16-J06-22	J06-16	J06-22	3,205,679	2,768,944	436,735	3,996,050	790,371	0	15	257.85	256.32	259.1	257.57	0.00916	0.013	5.6	258.75	257.23	268.74	263.77	0.35	0.34	167	905.5	1072.5
8	5268	J06-22-J06-26	J06-22	J06-26	3,236,629	2,768,944	467,685	4,717,610	1,480,981	0	15	256.32	252.45	257.57	253.7	0.01277	0.013	6.41	257.23	253.36	263.77	260.51	0.34	0.34	303.1	1072.5	1375.6
9	5544	J06-26-J06-48	J06-26	J06-48	3,268,135	2,768,944	499,191	4,079,514	811,379	0	15	252.45	248.89	253.7	250.14	0.00955	0.013	5.72	253.36	250	260.51	254.58	0.34	0.14	372.8	1375.6	1748.4
10	3663	J06-48-J06-55	J06-48	J06-55	3,300,584	2,768,944	531,640	3,118,540	-182,044	0	15	248.89	248.06	250.14	249.31	0.00558	0.013	4.44	250	249.18	254.58	253.74	0.14	0.13	148.7	1748.4	1897.1
11	3832	J06-55-J06-62	J06-55	J06-62	4,143,249	2,768,944	1,374,305	3,888,589	-254,660	PVC	15	248.06	246.62	249.31	247.87	0.00868	0.013	5.51	249.18	247.64	253.74	254.51	0.13	0.23	166	1897.1	2063.1
12	5555	J06-62-J07-4	J06-62	J07-4	4,174,414	2,768,944	1,405,470	7,526,611	3,352,197	PVC	15	246.62	234.63	247.87	235.88	0.0325	0.013	9.74	247.64	239.77	254.51	243	0.23	-3.89	368.9	2063.1	2432
13	4604	J07-4-J07-25	J07-4	J07-25	4,205,421	2,768,944	1,436,477	6,405,009	2,199,588	PVC	15	234.63	228.69	235.88	229.94	0.02354	0.013	5.3	239.77	237.21	243	243	-3.89	-7.27	252.4	2432	2684.4
14	4832	J07-25-J07-46	J07-25	J07-46	4,513,523	2,768,944	1,744,579	1,501,102	-3,012,421	PVC	15	228.69	228.33	229.94	229.58	0.00129	0.013	5.69	237.21	233.96	243	242	-7.27	-4.38	278.5	2684.4	2962.9
15	4877	J07-46-K07-19	J07-46	K07-19	4,541,985	2,768,944	1,773,041	3,345,571	-1,196,414	0	15	228.33	226.53	229.58	227.78	0.00642	0.013	5.73	233.96	230.64	242	241.27	-4.38	-2.86	280.3	2962.9	3243.2
16	4986	K07-19-K07-69	K07-19	K07-69	4,570,447	2,768,944	1,801,503	1,905,990	-2,664,457	0	15	226.53	225.91	227.78	227.16	0.00208	0.013	5.76	230.64	226.98	241.27	235.52	-2.86	0.18	297.5	3243.2	3540.7
17	3391	M06-7-M06-6	K07-69	K07-28	4,598,909	2,768,944	1,829,965	651,277	-3,947,632	0	6	225.91	222.53	226.41	223.03	0.03225	0.013	9.93	226.98	223.66	235.52	234.49	-0.57	-0.63	104.8	3540.7	3645.5
18	5882	K07-28-J07-83	K07-28	J07-83	5,934,556	2,768,944	3,165,612	7,910,192	1,975,636	PVC	21	222.53	219.5	224.28	221.25	0.00597	0.013	5.58	223.66	220.72	234.49	232.26	0.62	0.53	507.8	3645.5	4153.3
19	4869	J07-83-J07-89	J07-83	J07-89	6,975,247	2,768,944	4,206,303	13,565,858	6,590,611	PVC	21	219.5	214.55	221.25	216.3	0.01755	0.013	8.79	220.72	215.44	232.26	223.14	0.53	0.86	282.1	4153.3	4435.4
20	3410	H04-20-H04-22	J07-89	J07-90	7,004,386	2,768,944	4,235,442	1,643,661	-5,360,725	PVC	6	214.55	208.61	215.05	209.11	0.05136	0.013	11.02	215.49	209.84	223.14	216	-0.44	-0.73	115.7	4435.4	4551.1
21	4911	J07-90-J07-91	J07-90	J07-91	7,033,331	2,768,944	4,264,387	10,468,942	3,435,611	PVC	21	208.61	205.6	210.36	207.35	0.01045	0.013	7.22	209.84	206.85	216	215.87	0.52	0.5	288	4551.1	4839.1
22	5796	J07-91-J08-9	J07-91	J08-9	7,313,181	2,768,944	4,544,237	12,098,686	4,785,505	PVC	21	205.6	199.5	207.35	201.25	0.01396	0.013	8.15	206.85	200.76	215.87	208.82	0.5	0.49	437	4839.1	5276.1
23	5816	J08-9-J08-20	J08-9	J08-20	7,323,464	2,768,944	4,554,520	11,807,931	4,484,467	PVC	21	199.5	193.58	201.25	195.33	0.0133	0.013	8	200.76	194.58	208.82	204.07	0.49	0.75	445.3	5276.1	5721.4
24	3858	J08-20-J08-24	J08-20	J08-24	7,332,755	2,768,944	4,563,811	11,904,542	4,571,787	PVC	24	193.58	192.44	195.58	194.44	0.00663	0.013	6.17	194.79	193.65	204.07	200.58	0.79	0.79	171.9	5721.4	5893.3
25	5924	J08-24-J08-42	J08-24	J08-42	7,914,924	2,768,944	5,145,980	25,483,412	17,568,488	PVC	27	192.44	182.16	194.69	184.41	0.01621	0.013	8.75	193.65	189.42	200.58	197	1.04	-5.01	634.2	5893.3	6527.5
26	4684	J08-42-J08-48	J08-42	J08-48	8,642,460	2,768,944	5,873,516	10,620,231	1,977,771	PVC	27	182.16	181.42	184.41	183.67	0.00282	0.013	3.36	189.42	188.93	197	198.97	-5.01	-5.26	262.8	6527.5	6790.3
27	5713	J08-48-J09-5	J08-48	J09-5	8,657,766	2,768,944	5,888,822	10,925,568	2,267,802	0	27	181.42	180.22	183.67	182.47	0.00298	0.013	3.37	188.93	188.18	198.97	192.83	-5.26	-5.71	402.7	6790.3	7193
28	4854	J09-5-J09-9	J09-5	J09-9	8,687,525	2,768,944	5,918,581	10,554,288	1,866,763	PVC	27	180.22	179.43	182.47	181.68	0.00278	0.013	3.38	188.18	187.64	192.83	190	-5.71	-5.96	284.1	7193	7477.1
29	5859	J09-9-J09-22	J09-9	J09-22	8,694,158	2,768,944	5,925,214	10,350,223	1,656,065	PVC	27	179.43	178.12	181.68	180.37	0.00267	0.013	3.38	187.64	186.72	190	186.72	-5.96	-6.35	489.9	7477.1	7967
30	3003	K10-46-K10-44	J09-22	J09-24	8,716,673	2,768,944	5,947,729	164,574	-8,552,099	PVC	6	178.12	178.07	178.62	178.57	0.00206	0.013	3.39	187.25	187.21	186.72	187.21	-8.63	-8.64	24.3	7967	7991.3
31	5419	J09-24-J09-33	J09-24	J09-33	10,945,110	2,768,944	8,176,166	13,091,690	2,146,580	PVC	30	178.07	177.21	180.57	179.71	0.00244	0.013	3.45	189.46	188.86	187.21	188.86	-8.89	-9.15	352.6	7991.3	8343.9
32	5257	J09-33-J09-41	J09-33	J09-41	11,551,903	2,768,944	8,782,959	12,945,046	1,393,143	PVC	30	177.21	176.42	179.71	178.92	0.00238	0.013	3.64	192.65	192.02	188.86	192.02	-12.94	-13.1	331.3	8343.9	8675.2
33	3667	J09-41-J09-45	J09-41	J09-45	11,591,933	2,768,944	8,822,989	2,097,941	-9,493,992	PVC	12	176.42	175.2	177.42	176.2	0.0083	0.013	22.84	216.11	178.87	192.02	190.18	-38.69	-2.67	147	8675.2	8822.2
34	4251	J09-45-J10-2	J09-45	J10-2	11,600,767	2,768,944	8,831,823	14,804,664	3,203,897	PVC	30	175.2	174.53	177.7	177.03	0.00312	0.013	3.66	178.87	178.46	190.18	193.17	-1.17	-1.43	214.8	8822.2	9037
35	5335	J10-2-J10-8	J10-2	J10-8	11,856,884	2,768,944	9,087,940	13,885,589	2,028,705	PVC	30	174.53	173.59	177.03	176.09	0.00274	0.013	3.74	178.46	177.77	193.17	190	-1.43	-1.68	342.6	9037	9379.6
36	5897	J10-8-J10-24	J10-8	J10-24	16,926,360	2,768,944	14,157,416	3,242,470	-13,683,890	PVC	30	173.59	173.51	176.09	176.01	0.00015	0.013	5.34	177.77	175.26	190	184	-1.68	0.75	534.7	9379.6	9914.3
37	5852	J10-24-J10-34	J10-24	J10-34	16,938,626	2,768,944	14,169,682	30,316,999	13,378,373	PVC	30	173.51	167.07	176.01	169.57	0.01308	0.013	9.82	175.26	171.55	184	177.94	0.75	-1.98	492.4	9914.3	10406.7
38	4918	J10-34-J10-44	J10-34	J10-44	16,949,543	2,768,944	14,180,599	16,547,967	-401,576	PVC	30	167.07	168.23	169.57	170.73	-0.0039	0.013	5.34	171.55	169.98	177.94	178.87	-1.98	0.75	297.7	10406.7	10704.4
39	5839	J10-44-J10-53	J10-44	J10-53	17,005,119	2,768,944	14,236,175	31,703,658	14,698,539	PVC	30	168.23	161.4	170.73	163.9	0.0143	0.013	10.17	169.98	166.57	178.87	173.01	0.75	-2.67	477.5	10704.4	11181.9
40	5360	J10-53-J11-4	J10-53	J11-4	17,012,746	2,768,944	14,243,802	16,871,263	-141,483	PVC	30	161.4	160	163.9	162.5	0.00405	0.013	5.36	166.57	165.14	173.01	172.44	-2.67	-2.64	345.6	11181.9	11527.5
41	5171	J11-4-J11-10	J11-4	J11-10	17,550,840	2,768,944	14,781,896	21,975,368	4,424,528	PVC	30	160	157.8	162.5	160.3	0.00687	0.013	5.53	165.14	163.74	172.44	171	-2.64	-3.44	320.1	11527.5	11847.6
42	5096	J11-10-J11-18	J11-10	J11-18	17,559,505	2,768,944	14,790,561	20,565,867	3,006,362	PVC	30	157.8	155.91	160.3	158.41	0.00602	0.013	5.53	163.74	162.36	171	170.85	-3.44	-3.95	314	11847.6	12161.6
43	5438	J11-18-J11-29	J11-18	J11-29	18,336,529	2,768,944	15,567,585	15,002,227	-3,334,302	PVC	36	155.91	155.48	158.91	158.48	0.00121	0.013	4.01	162.36	161.72	170.85	167.67	-3.45	-3.24	355	12161.6	12516.6
44	5342	J11-29-J11-44	J11-29	J11-44	18,359,207	2,768,944	15,590,263	19,181,160	821,953	PVC	36	155.48	154.8	158.48	157.8	0.00198	0.013	4.02	161.72	161.1	167.67	169.54	-3.24	-3.3	343.4	12516.6	12860
45	4455	J11-44-J11-51	J11-44	J11-51	22,214,559	2,768,944	19,445,615	18,895,751	-3,318,808	PVC	36	154.8	154.34	157.8	157.34	0.00192	0.013	4.86	161.1	160.46	169.54	168.44	-3.3	-3.12	239.4	12860	13099.4
46	5929	J11-51-J12-11	J11-51	J12-11	22,244,993	2,768,944	19,476,049	34,641,163	12,396,170	PVC	36	154.34	149.87	157.34	152.87	0.00646	0.013	4.87	160.46	158.62	168.44	163.03	-3.12	-5.75	692.1	13099.4	13791.5
47	5626	J12-11-J12-9	J12-11	J12-9	27,292,689	2,768,944	24,523,745	27,412,575	119,886	PVC	36	149.87	148.3	152.87	151.3	0.00404	0.013	5.97	158.62	157.06	163.03	157.11	-5.75	-5.76	388.2	13791.5	14179.7
48	5642	J12-9-J12-20	J12-9	J12-20	27,303,900	2,768,944	24,534,956	26,953,521	-350,379	PVC	36	148.3	146.75	151.3	149.75	0.00391	0.013	5.98	157.06	155.47	157.11	157	-5.76	-5.72	396.4	14179.7	14576.1
49	5922	J12-20-J12-26	J12-20	J12-26	29,870,109	2,768,944	27,101,165	35,454,075	5,583,966	PVC	36	146.75	142.71	149.75	145.71	0.00676	0.013	6.54	155.47	152.6	157	155.42	-5.72	-6.89	597.2	14576.1	15173.3
50	5927	J12-26-J13-4	J12-26	J13-4	29,878,112	2,768,944	27,109,168	29,311,144	-566,968	PVC	36	142.71	139.66	145.71	142.66	0.00462	0.013	6.54	152.6	149.43	155.42	155.66	-6.89	-6.77	659.6	15173.3	15832.9
51	5256	J13-4-I13-4	J13-4	I13-4	29,885,121	2,768,944	27,116,177	19,102,000	-10,783,121	PVC	36	139.66	139.01	142.66	142.01	0.00196	0.013	6.54	149.43	147.84	155.66	151	-6.77	-5.83	331	15832.9	16163.9
52	5925	I13-4-I13-10	I13-4	I13-10	29,891,300	2,768,944	27,122,356	21,549,863	-8,341,437	PVC	36	139.01	137.4	142.01	140.4	0.0025	0.013	6.54	147.84	144.74	151	144.74	-5.83	-4.34	644.2	16163.9	16808.1
53	3447	I07-33-I07-31	I13-10	I13-11	29,897,481	2,768,944	27,128,537	695,746	-29,201,735	PVC	6	137.4	133.13	137.9	133.63	0.03681	0.013	19.23	149.62	139.73	144.74	139.73	-11.72	-6.1	116	16808.1	16924.1
54	5901	I13-11-I14-1	I13-11	I14-1	29,906,759	2,768,944	27,137,815	6,124,076	-23,782,683	PVC	36	133.13	133.02	136.13	136.02	0.0002	0.013	6.55	140.97	138.34	139.73	142.95	-4.84	-2.32	545	16924.1	17469.1
55	5903	I14-1-I14-2	I14-1	I14-2	29,925,131	2,768,944	27,156,187	30,407,121	481,990	PVC	36	133.02	130.38	136.02	133.38	0.00498	0.013	6.55	138.34	135.79	142.95	138	-2.32	-2.41	530.6	17469.1	17999.7
56	5902	I14-2-I14-3	I14-2	I14-3	29,944,722	2,768,944	27,175,778	42,793,558	12,848,836	PVC	36	130.38	125.19	133.38	128.19	0.00986	0.013	6.55	135.79	133.24	138	138	-2.41	-5.05	526.6	17999.7	18526.3
57	3436	M07-25-M07-8	I14-3	I14-5	29,955,218	2,768,944	27,186,274	180,739	-29,774,479	PVC	6	125.19	124.9	125.69	125.4	0.00248	0.013	6.56	133.24	132.68	138	138	-7.55	-7.28	116.7	18526.3	18643
58	5931	I14-5-I15-1	I14-5	I15-1	29,962,541	2,768,944	27,193,597	26,071,121	-3,891,420	PVC	48	124.9	124.26	128.9	128.26	0.00079	0.013	3.69	132.68	131.84	138	138	-3.78	-3.58	811.5	18643	19454.5
59	5819	I15-1-I15-5	I15-1	I15-5	29,969,863	2,768,944	27,200,919	60,681,535	30,711,672	PVC	48	124.26	126.11	128.26	130.11	-0.00427	0.013	3.69	131.84	131.38	138	131.44	-3.58	-1.27	433	19454.5	19887.5
60	2975	K10-7-K10-10	I15-5	I15-7	29,976,042	2,768,944	27,207,098	361,424	-29,614,618	PVC	8	126.11	126.09	126.78	126.76	0.00127	0.01	3.69	131.38	131.37	131.44	131.37	-4.6	-4.61	15.8	19887.5	19903.3
61	6132	I15-7-I15-8	I15-7	I15-8	36,418,712	2,768,944	33,649,768	33,686,043	-2,732,669	0	30	126.09	125.87	128.59	128.37	0.01615	0.013	11.48	131.67	131.41	131.37	131.41	-3.08	-3.04	13.6	19903.3	19916.9
62	6133	CO-8	I15-8	MH-8	36,424,891	2,768,944	33,655,947	38,080,441	1,655,550	0	30	125.87	125	128.37	127.5	0.02064	0.013	11.48	131.48	130.68	131.41	131.36	-3.11	-3.18	42.2	19916.9	19959.1
63	5981	CO-4	MH-8	I15-9	39,594,670	2,768,944	36,825,726	2,608,858	-36,985,812	0	30	125	124.99	127.5	127.49	0.0001	0.013	12.48	130.68	128.38	131.36	131	-3.18	-0.89	103.2	19959.1	20062.3
64	4022	I15-9-I15-WRF	I15-9	O-1	39,628,531	2,768,944	36,859,587	30,788,053	-8,840,478	0	36	124.99	124	127.99	127	0.0051	0.013	8.67	128.38	126.53	131	131	-0.39	0.47	194.1	20062.3	20256.4

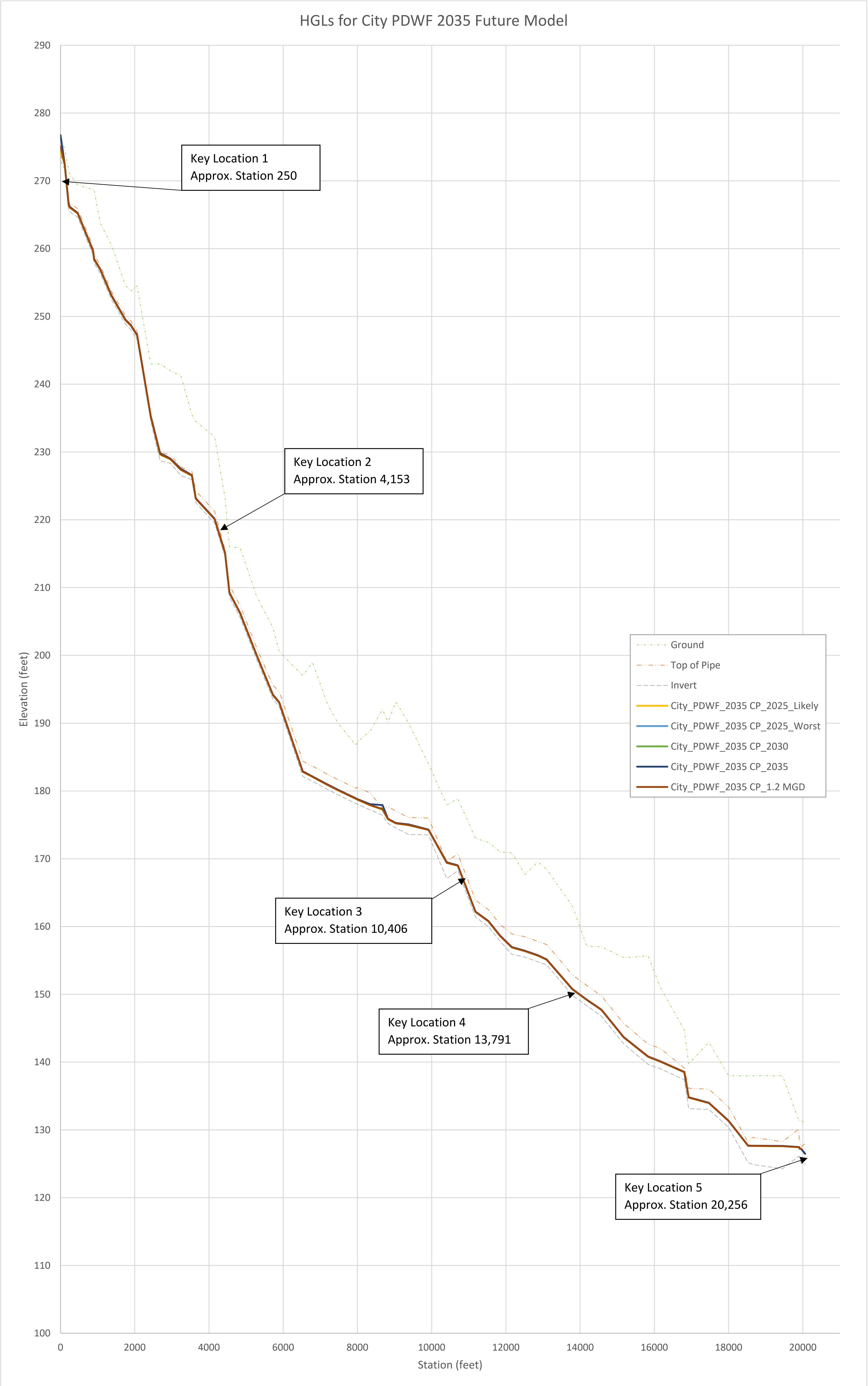

HGLs for City ADWF 2015 Base Model
Elevation (feet)
Station (feet)
290
280
270
260
250
240
230
220
210
200
190
180
170
160
150
140
130
120
110
100
0
2000
4000
6000
8000
10000
12000
14000
16000
18000
20000
Key Location 1
Approx. Station 250
Key Location 2
Approx. Station 4,153
Key Location 3
Approx. Station 10,406
Key Location 4
Approx. Station 13,791
Key Location 5
Approx. Station 20,256
Ground
Top of Pipe
Invert
City_ADWF_2015 CP_2015
City_ADWF_2015 CP_2020
City_ADWF_2015 CP_2025_Likely
City_ADWF_2015 CP_2025_Worst
City_ADWF_2015 CP_0.471 MGD

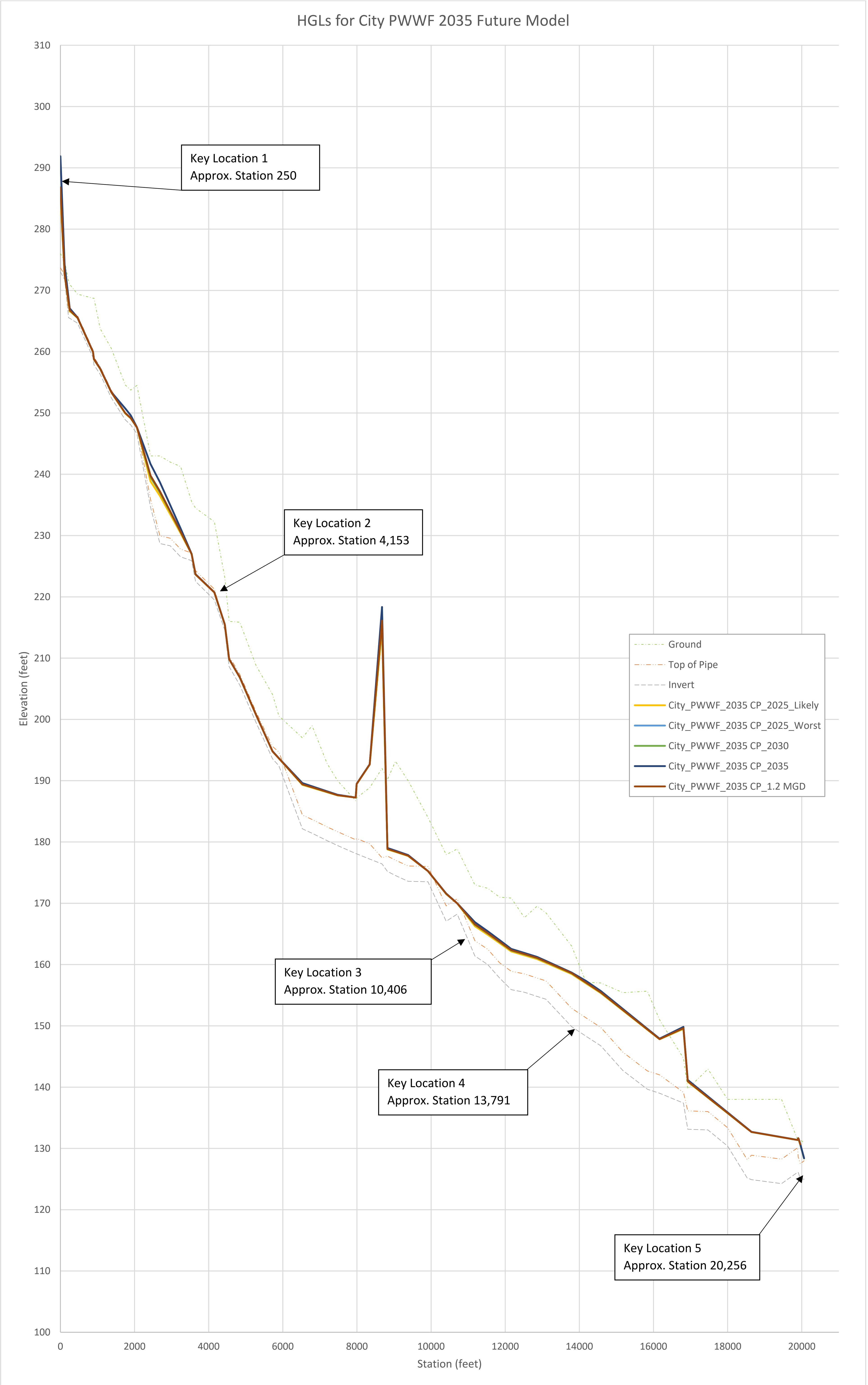

HGLs for City PDWF 2015 Base Model
Elevation (feet)
Station (feet)
Key Location 1
Approx. Station 250
Key Location 2
Approx. Station 4,153
Key Location 3
Approx. Station 10,406
Key Location 4
Approx. Station 13,791
Key Location 5
Approx. Station 20,256
Ground
Top of Pipe
Invert
City_PDWF_2015 CP_2015
City_PDWF_2015 CP_2020
City_PDWF_2015 CP_2025_Likely
City_PDWF_2015 CP_2025_Worst
City_PDWF_2015 CP_1.2 MGD


HGLs for City PWWF 2015 Base Model
Key Location 1
Approx. Station 250
Key Location 2
Approx. Station 4,153
Key Location 3
Approx. Station 10,406
Key Location 4
Approx. Station 13,791
Key Location 5
Approx. Station 20,256
Ground
Top of Pipe
Invert
City_PWWF_2015 CP_2015
City_PWWF_2015 CP_2020
City_PWWF_2015 CP_2025_Likely
City_PWWF_2015 CP_2025_Worst
City_PWWF_2015 CP_1.2 MGD
Elevation (feet)
Station (feet)
300
290
280
270
260
250
240
230
220
210
200
190
180
170
160
150
140
130
120
110
100
0
2000
4000
6000
8000
10000
12000
14000
16000
18000
20000



HGLs for City ADWF 2035 Future Model
Elevation (feet)
Station (feet)
290
280
270
260
250
240
230
220
210
200
190
180
170
160
150
140
130
120
110
100
0
2000
4000
6000
8000
10000
12000
14000
16000
18000
20000
Key Location 1
Approx. Station 250
Key Location 2
Approx. Station 4,153
Key Location 3
Approx. Station 10,406
Key Location 4
Approx. Station 13,791
Key Location 5
Approx. Station 20,256
Ground
Top of Pipe
Invert
City_ADWF_2035 CP_2025_Likely
City_ADWF_2035 CP_2025_Worst
City_ADWF_2035 CP_2030
City_ADWF_2035 CP_2035
City_ADWF_2035 CP_0.471 MGD


HGLs for City PDWF 2035 Future Model
Elevation (feet)
Station (feet)
290
280
270
260
250
240
230
220
210
200
190
180
170
160
150
140
130
120
110
100
0
2000
4000
6000
8000
10000
12000
14000
16000
18000
20000
Key Location 1
Approx. Station 250
Key Location 2
Approx. Station 4,153
Key Location 3
Approx. Station 10,406
Key Location 4
Approx. Station 13,791
Key Location 5
Approx. Station 20,256
Ground
Top of Pipe
Invert
City_PDWF_2035 CP_2025_Likely
City_PDWF_2035 CP_2025_Worst
City_PDWF_2035 CP_2030
City_PDWF_2035 CP_2035
City_PDWF_2035 CP_1.2 MGD



HGLs for City PWWF 2035 Future Model
Key Location 1
Approx. Station 250
Key Location 2
Approx. Station 4,153
Key Location 3
Approx. Station 10,406
Key Location 4
Approx. Station 13,791
Key Location 5
Approx. Station 20,256
Ground
Top of Pipe
Invert
City_PWWF_2035 CP_2025_Likely
City_PWWF_2035 CP_2025_Worst
City_PWWF_2035 CP_2030
City_PWWF_2035 CP_2035
City_PWWF_2035 CP_1.2 MGD
Elevation (feet)
Station (feet)
310
300
290
280
270
260
250
240
230
220
210
200
190
180
170
160
150
140
130
120
110
100
0
2000
4000
6000
8000
10000
12000
14000
16000
18000
20000