
Bay County
Board of County Commissioners
Water / Wastewater Strategic Plan



HMM Project No. 282004

November 9, 2012

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Bay County
Utility Services Dept

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1.0 Introduction

1.1 Objectives

The purpose of this Water and Wastewater Strategic Plan is to develop a plan which evaluates the existing systems and determines a strategy to address current and up to year 2030 future needs regarding safety, regulatory compliance, capacity, reliability, redundancy, operations and maintenance, and asset management. The needs identified are discussed in Section 4 for the water system and Section 5.0 for the wastewater system, and both are summarized in Section 6.0. The needs summary in Section 6.0 identifies the estimated improvement cost and the timeframe in which the needs should be accomplished. The plan focuses on the treatment facilities and the major water transmission and wastewater collection/transmission facilities.

1.2 Water System

1.2.1 Location

The water source for the Bay County Potable Water System is Deer Point Reservoir (surface water) which is located in mid Bay County. At the southern end of the reservoir, the Williams Bayou Raw Water Pumping Station pumps the water through large diameter raw water mains to the Water Treatment Facility (WTF) located near US Hwy. 231 at 3410 Transmitter Road approximately 1 mile north of the City of Springfield, Florida (See Figure 1.1). There are 3 storage tanks at the WTF and also wholesale water transmission lines and retail water distribution lines from the Facility to various areas of the County.

1.2.2 Background

Deer Point Reservoir is the primary source of potable water for the majority of the residents within Bay County. Water is withdrawn from the reservoir and pumped primarily through 48" and 54" raw water transmission mains. The water in the 48" raw water main goes directly to the Bay County WTF and the water in the 54" main, which eventually reduces to a 48" main, goes to the Arizona Chemical facility and the

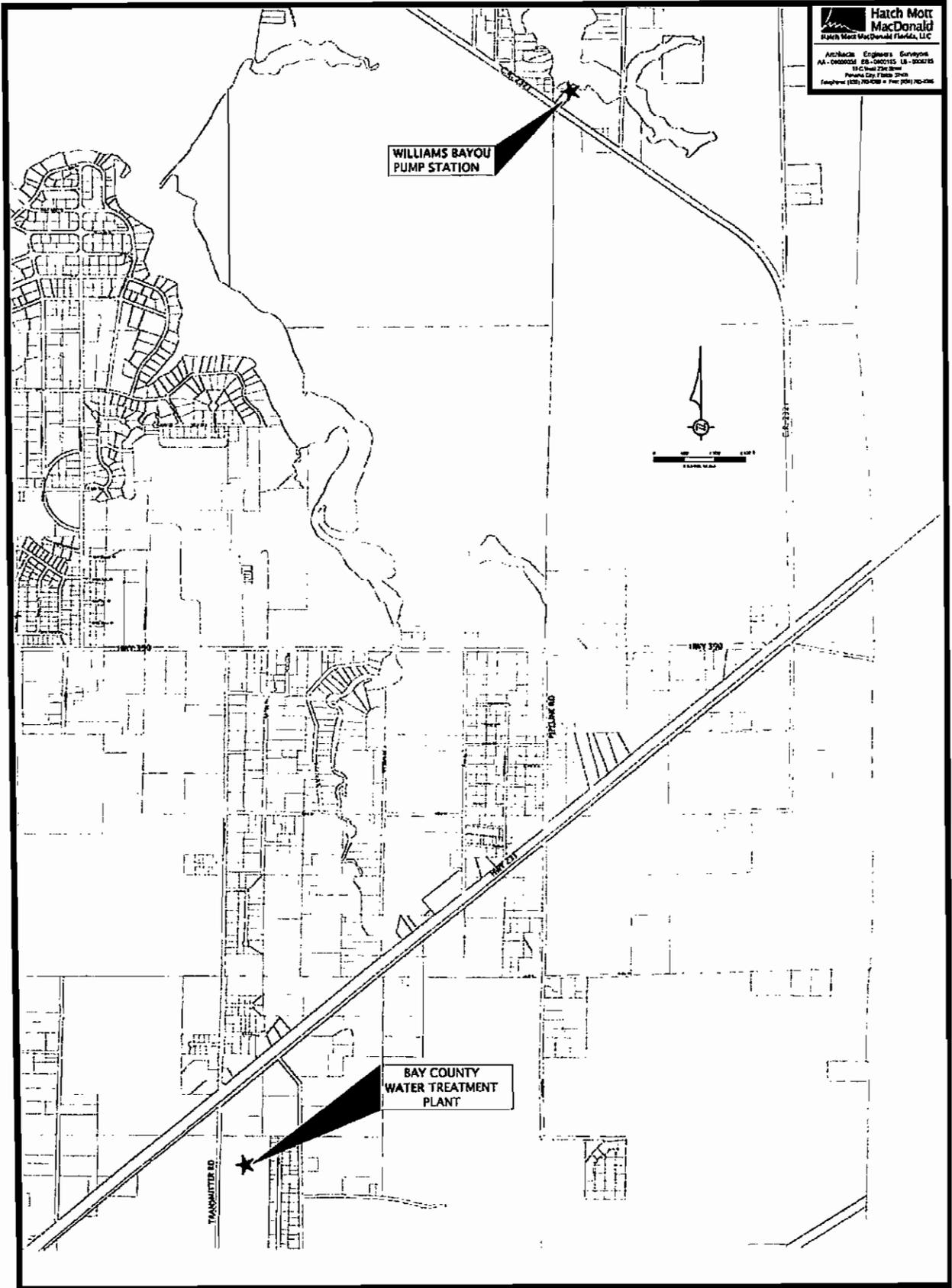


Figure 1.1

RockTenn Paper Mill. The 54” line bypasses the WTF and includes a 48” tee and valve which can be opened in emergencies and during maintenance to provide water to the WTF.

The Bay County WTF began operations in the summer of 1967 with a daily water production of approximately 6-8 million gallons per day (MGD). In 2004 construction began to upgrade and modernize the Facility. In 2006, as a result of the Maximum Day Demand exceeding 43 MGD, additional construction was authorized by the County Commission to increase facility production capacity to 60 MGD. A construction permit for the upgrade to 60 MGD maximum day operating capacity was issued on August 9, 2007. This construction has been completed and County staff reports that the upgraded filtration and pumping facilities are designed to accommodate future phased expansions to 78 MGD and 96 MGD.

There are three (3) storage tanks at the WTF with capacities of 2 million gallons (MG), 5 MG, and 5 MG for a total capacity of 12 MG. There are eight (8) high service pumps for pumping the water into the transmission system which includes pipelines varying in size. Through the transmission system, the County provides wholesale water service to incorporated areas and a retail water service to unincorporated areas. The water service areas are identified in Table 1.1 and shown on Figure 1.2.

Table 1.1

Bay County Water Service Areas

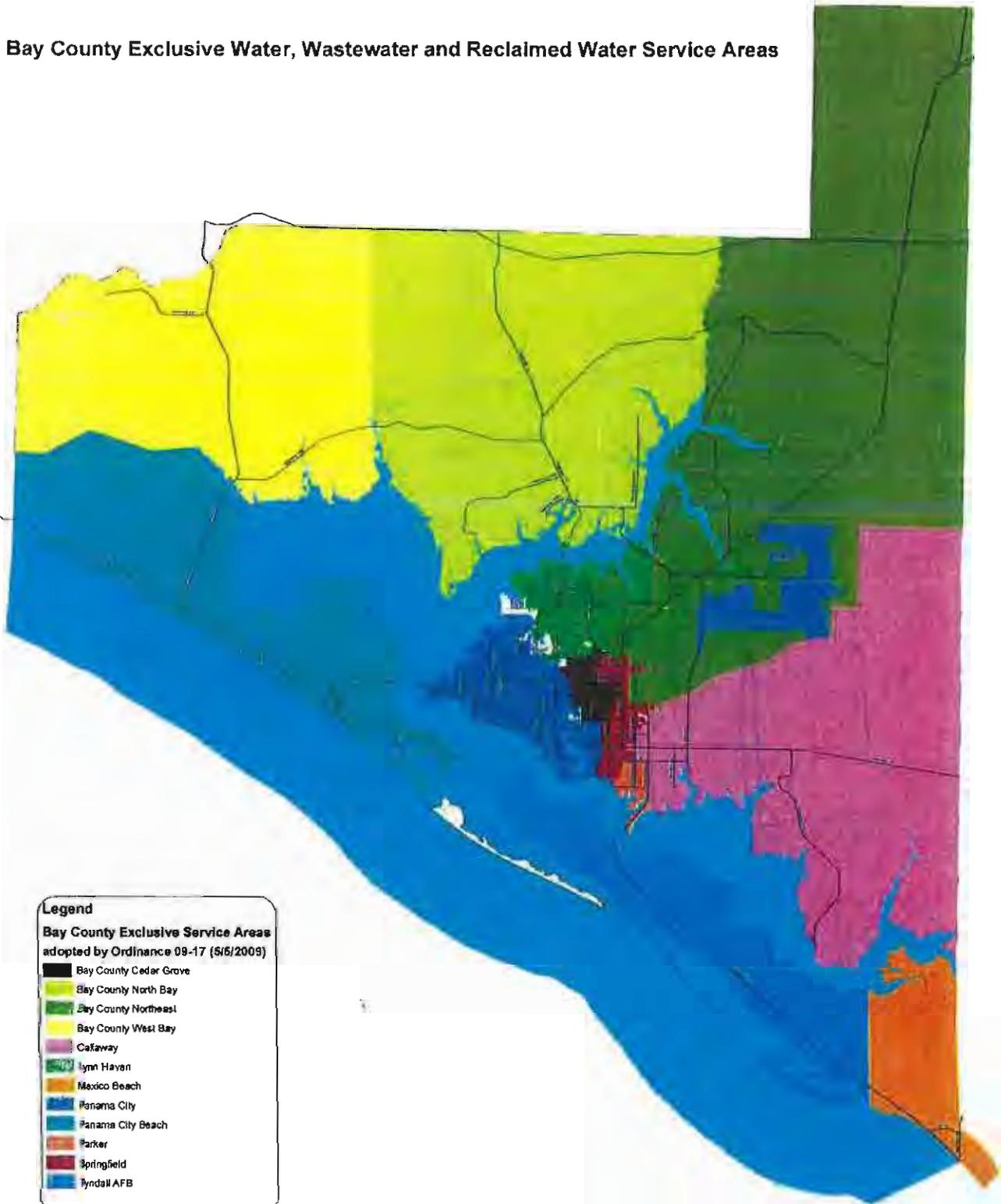
Wholesale Water Service Area

Callaway
Lynn Haven
Mexico Beach
Panama City
Panama City Beach
Parker
Springfield
Tyndall Air Force Base

Retail Water Service Area

Bay County Cedar Grove
Bay County North Bay
Bay County Northeast
Bay County West Bay

Bay County Exclusive Water, Wastewater and Reclaimed Water Service Areas



- Legend**
Bay County Exclusive Service Areas
 adopted by Ordinance 09-17 (5/6/2009)
- Bay County Cedar Grove
 - Bay County North Bay
 - Bay County Northeast
 - Bay County West Bay
 - Calaway
 - Lynn Haven
 - Mexico Beach
 - Panama City
 - Panama City Beach
 - Parker
 - Springfield
 - Tyndal AFB

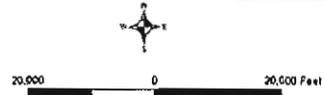


Figure 1.2

The GIS data is not a legal representation of the service areas. The only authoritative legal record of the service areas is the Bay County GIS Register. Bay County, Panama, Florida. 12/2008

1.3 Wastewater System

1.3.1 Location

There are currently three wastewater systems that the Bay County Utility Services Department uses to provide service to their customers. The County owns the RiverCamps and North Bay wastewater treatment plants (WWTP) and is a joint owner of the Military Point Advanced WTP. The RiverCamps WWTP is located on Titi Road in the vicinity of State Road 79 and State Road 388 near the Northwest Florida Beaches International Airport. The North Bay WWTP is located on Edwards Road in the north Southport area. The Military Point Advanced WTP is located at Tyndall Air Force Base.

The AWT owns several master pump stations, that the County operates, for providing service to their wholesale customers which are located in various areas of the County. The County also provides retail wastewater service in areas that include Cedar Grove, Derby Woods Subdivision, RiverCamps, Hwy 231 between Transmitted Road and Bay Line Drive, and Lake Merial. The general locations of the Bay County Wastewater Facilities are shown on Figure 1.3.

1.3.2 Background

During the early 1980s, Bay County constructed a sanitary sewer collection and transmission system in the Cities of Cedar Grove, Springfield, Callaway, and Parker, along with the Cherry Street Wastewater Treatment Facility which was located in the City of Springfield. The WWTP effluent was pumped to the Military Point Lagoon located at Tyndall Air Force Base. Shortly thereafter, the Derby Woods Association abandoned their wastewater treatment facility and constructed a transmission system for pumping the Derby Woods wastewater to the County's facilities.

The next period of substantial growth to the system occurred during the late 1980s when a 10" force main was constructed along State Road 231 from Transmitter Road to Bay Line Drive at the Bay Industrial Park. This force main not only served the Industrial Park but also provided the areas adjacent to State Road 231 with the capability of connecting to the wastewater system. Throughout the years various existing and new developments have connected to the force main.

In 1997 Bay County received a FDEP permit to construct a seven million gallons per day Advanced Wastewater Treatment Facility located near the Military Point lagoon at Tyndall Air Force Base. This Plant was permitted with joint owners which included Bay County, Callaway, Cedar Grove, Springfield, and Parker. The Military Point Advanced Wastewater Treatment

Facility (MPAWTP) was constructed and placed in operation during July 1999 and is further discussed in Section 5.3 “Wastewater Treatment Facilities” of this report.

During the construction period of the MPAWTP, there was also construction in progress on the sewer collection/transmission system. The construction included the addition or modification of piping and pump stations to create independent systems for each of the joint owners. Prior to this construction, there was one common system that serviced all the joint owners. The Cities accepted ownership and maintenance of their individual collection/transmission systems while Bay County maintained ownership of the master pump stations and force mains for conveyance of the wastewater to the MPAWTP.

The Bay County RiverCamps WWTP was constructed and placed in operation in the early 2000s. Their facility provides service to West Bay County and, in particular the RiverCamps Development, the Northwest Florida Beaches International Airport, and airport supporting facilities. The RiverCamps WWTP was permitted with a capacity of 0.072 million gallons per day.

Bay County purchased the North Bay WWTP from Gulf Coast Electric Co-op and began accepting wastewater in April 2011. This facility has a permitted capacity of 1.5 million gallons per day and provides service to the northern middle section of the County from Southport to Lake Merial.

2.0 Data Collected

2.1 Water System

The following data was collected for use in preparing the Water System portions of this Plan. The primary source for the data was Bay County.

- GIS water system shapefiles showing the location of all master meters and the diameter of the lines.
- GIS parcel and land use shapefiles.
- Location, size, and elevation of water storage facilities.
- Countywide topographic and planimetric shapefiles.
- Service area boundaries for the retail and wholesale customers.
- Total retail and wholesale water billed for 3 years.
- Pump curves for the major high service pump stations in the water system.
- Summaries of agreements with Wholesale Customers.
- Existing water model.
- Daily water treatment plant flow data for the most recent 12-month period.
- FDEP permits and most recent permit applications.
- Consumptive Use permit applications and permit.
- Bay County Evaluation and Appraisal Report.
- Potable water quality data.
- Operation and maintenance records.
- List of known repair and replacement (R&R) needs.
- Bay County Water Distribution Facility Potable Water Audit 2011
- Population projections from several sources, including 2010 Census, construction unit cost from R.W. Means consumer price index and recent unit price bids.

2.2 Wastewater System

The following data was collected for use in preparing the wastewater system sections of this report. The primary source for the data was Bay County.

- GIS wastewater system shape file showing the location of all pump stations and force mains.
- Existing sewer model.
- Service area boundaries for wholesale and retail customers.
- Total wholesale and retail sewer billing for three years.
- Wastewater flow records.
- Capacity Analysis Report.
- FDEP Permit and most recent WWTP permit applications.
- Wastewater daily monitoring reports for the last three years.
- List of known repair and replacement needs.
- Pump curve for master lift stations.
- Summaries of agreements with Wholesale Customers.
- Operation and maintenance records for wastewater treatment facilities and collection/transmission system.
- Areas of anticipated growth.

3.0 Population Projections

3.1 Introduction

This section presents the proposed population projections for use in developing demand for the water system and flow for the wastewater system portions of the Strategic Plan. Included in this section are:

- 2010 Population Data
- Population Projections for years 2015 – 2030 (5-year increments)
- Narratives detailing the methodology and analyses used for estimating the projections

3.2 Population Projection

The 2006 Bay County Evaluation and Appraisal Report (EAR) served as the basis for the population projections in this Strategic Plan. The referenced report utilized the 2004 population data to project the population for future planning periods through 2030. Due to the passage of time and changed economic environment, it was deemed appropriate to update the population projections, setting 2010 as the base year.

HMM initially completed the population projections for the 12 planning zones that were established by the Bay County Planning Department and used in the 2006 Water and Wastewater Strategic Plan by PBS&J. The Bay County Utilities Department requested that the analysis be revised to reflect the projections based on the Exclusive Service Areas Map (Figure 1.2) as adopted by Ordinance 09-17. The Exclusive Service Areas Map also includes 12 areas; however, it is noted that they are not the same areas as the 12 planning zones. HMM distributed the 2010 Bay County population to each Service Area using the boundaries on the U.S. Census Tract Map. The population of the areas indicated in white on the Bay County Exclusive Service Areas Map was evenly distributed between Panama City and Lynn Haven due to its proximity.

It was determined that the 2006 Bay County EAR's projected annual percent population growth rates were in need of adjustment since the rates were projected during a flourishing economic time. The Bay County building official was contacted to discuss the possibility of using building permit data to establish growth patterns or to identify growth trends in the individual Service Areas. The Official indicated that, in his opinion, no significant information could be generated from such an effort due to the impact of economic conditions, as most of the recent permits were associated with renovation, as opposed to new construction.

After comparing Bay County’s previous five years’ actual growth rates with the 2006 EAR projected growth rates, HMM developed an estimated annual percent growth for each of Bay County’s Service Areas. The geometric growth formula was then used to project the population for each Service Area through the year 2030 in five year increments. The population projections are presented in Table 3.1.

**Table 3.1
Bay County Population Projections**

Service Area	2010 Population	Projected Annual % Growth	2015 Projected Population	2020 Projected Population	2025 Projected Population	2030 Projected Population
Bay County Cedar Grove	3,269	0.50%	3,352	3,436	3,523	3,612
Bay County North Bay	8,341	3.00%	9,670	11,210	12,995	15,065
Bay County Northeast	22,340	0.50%	22,904	23,482	24,075	24,683
Bay County West Bay	522	8.00%	767	1,127	1,656	2,433
Callaway	21,736	0.75%	22,563	23,422	24,314	25,239
Lynn Haven	19,538	1.00%	20,535	21,582	22,683	23,840
Mexico Beach	1,075	0.50%	1,102	1,130	1,159	1,188
Panama City	39,573	0.25%	40,070	40,574	41,083	41,599
Panama City Beach	36,243	2.00%	40,015	44,180	48,778	53,855
Parker	4,317	0.25%	4,371	4,426	4,482	4,538
Springfield	8,903	0.25%	9,015	9,128	9,243	9,359
TAFB	2,995	0.50%	3,071	3,148	3,228	3,309
Total	168,852		177,435	186,845	197,222	208,720

Table 3.2 contains a comparison of population projections by various entities. HMM's Projected Annual Growth Rates produced similar projections as the 2011 Bureau of Economic and Business Research (BEBR) which were developed after the swing in the economy.

**Table 3.2
Comparison of Bay County Population Projections**

	2010	2015	2020	2025	2030
EAR ¹	176,742	196,920	218,934	250,125	284,634
EDR ²	171,200	180,900	191,800	202,400	212,400
WORK PLAN ³	177,400	190,600	202,900	214,000	224,200
BEBR ⁴		177,800	187,900	197,800	207,200
HMM ⁵	168,852 ⁶	177,434	186,846	197,218	208,721

Notes:

1. 2006 Bay County Evaluation and Appraisal Report
2. 2009 State of Florida Economic and Demographic Research Department
3. 2006 Bay County Water Supply Facilities Work Plan
4. 2011 Bureau of Economic and Business Research, University of Florida (Medium Range Projections)
5. 2012 Hatch Mott MacDonald Bay County Water Strategic Plan
6. Actual 2010 Census population

4.0 Water System

4.1 Water Demand Projection

4.1.1 Methodology

Retail and wholesale water demand projections for years 2015-2030 were established using the following data provided by the County:

1. 2006 Bay County Evaluation and Appraisal Report.
2. 2006 Water and Wastewater Strategic Plan Final Report by PBS&J.
3. 2010 WTF Flow Data.
4. 2010 Data from the Bay County Utility Service Department spreadsheets for wholesale and retail water billing.

The water consumption per capita for the service areas varied based on the characteristics of the area. In order to account for the water demand for the growing seasonal population, and for the varied water use in each service area, HMM developed a weighted population for each service area. The weighted population represents an equivalent number of users based on the average daily water demand divided by the average gallons per capita per day (GPCD). By utilizing a weighted population, a single GPCD was established as a multiplier in all areas of the County.

4.1.2 Gallons Per Capita Per Day Demand

The average gallons per capita per day (GPCD) was calculated by dividing the 2010 Water Treatment Facility (WTF) Annual Average Daily Flow (AADF) by the 2010 population served. The WTF 2010 AADF was calculated by summing the monthly 2010 finished water production at the water treatment facility and dividing the sum by 365 days (Table 4.1). The monthly finished water production volumes were provided by the Bay County Utility Service Department which totaled a 2010 production of 9,499 MG. This equates to an AADF of 26.02 MGD.

**Table 4.1
2010 WTF Production**

Month	MG
January	603.07
February	497.65
March	616.51
April	779.15
May	915.45
June	955.77
July	1,162.75
August	1,016.07
September	811.88
October	810.95
November	684.63
December	644.78
Total (MG)	9,498.66
AADF (MGD)	26.02

The population served was estimated using the 12 planning zones (from Bay County Planning Department) and the data presented in the 2006 Water and Wastewater Strategic Plan Final Report by PBS&J. Table 4.2 below identifies that the population served in 2010 was approximately 147,000. Based on the 2010 population of 168,852 identified in Section 3.0, approximately 87% of the Bay County population was served in 2010.

**Table 4.2
Projected Water Service Population**

Planning Zones	% Population Served Year 2010**	Service Population Year 2010
1	70%	10,411
2	*	*
3	100%	3,889
4	91%	39,748
5	94%	6,614
6	*	*
7	20%	139
8	2%	61
9	100%	5,310
10	100%	12,450
11	100%	16,029
12	88%	52,305
Total		146,956

* Area not served

** Percentages from PBS&J Water and Wastewater Strategic Final report

Using the 2010 WTF AADF (26.02 MGD) and the estimated population served of 147,000, HMM calculated 177 GPCD as the average annual daily demand. The Bay County Water Supply Facilities Work Plan reported the 2005 historical per capita demand of 184.08 and projected the average per capita use in 2010 to be 171.28, which is generally consistent with our estimate.

4.1.3 Service Area Average Daily Flow

The 2010 AADF for each service area and its associated meters was determined using the Bay County 2010 monthly meter reading data. The total of all meter readings is the “revenue water” which does not equal the flow leaving the WTF as it does not account for all the water use. The “Bay County Water Distribution Facility Potable Water Audit 2011” completed by Gortemoller Engineering, Inc. identified that approximately 8 percent of the County’s wholesale water and approximately 16 percent of the retail water is nonrevenue. The report identifies that the majority of the nonrevenue water is used for

flushing and maintenance and that the real system loss is less than the preferred industry standard of 5 percent maximum.

To project the total water demands for the system, all water must be accounted for. This Report distributes the nonrevenue water proportionally throughout the distribution system. A multiplication factor of 1.157 was used to distribute the flow which was calculated by dividing the 2010 WTF AADF (26.02 MGD) by the 2010 AADF (22.48 MGD) of the distribution system meter readings.

Tables that provide identification and location of the meters in each service area along with the monthly meter reading provided by the County are included in Appendix A. These tables also include the nonrevenue multiplication factor and reflect the adjusted 2010 flow for each meter and total service area.

4.1.4 Weighted Population/Water Demand Projections

The 2010 weighted population represents an equivalent number of users and was calculated by dividing each service area's 2010 AADF by the 2010 average GPCD. The tables in Appendix A include the 2010 AADF which is divided by the GPCD (177) to establish the weighted population for the individual meters and for the total of each service area. A summary of the weighted population for the service areas is included in Table 4.3.

**Table 4.3
Weighted Population Served per Service Area**

2010 Average Daily Flow:	26.02	MGD
2010 Bay County Population Served:	147,000	Capita
Gallons Per Capita Demand:	177.03	GPCD

Service Area	Average Daily Flow (MGD) Year 2010	GPCD	Weighted Population served
Bay County Cedar Grove	0.48	177.03	2692
Bay County North Bay	0.53	177.03	2982
Bay County Northeast	1.01	177.03	5730
Bay County West Bay	0.05	177.03	269
Callaway	1.58	177.03	8946
Lynn Haven	0.73	177.03	4133
Mexico Beach	0.26	177.03	1479
Panama City	6.39	177.03	36101
Panama City Beach	12.45	177.03	70339
Parker	0.47	177.03	2659
Springfield	0.99	177.03	5587
TAFB	1.08	177.03	6083
Total	26.02		147000

The 2010 weighted population was projected forward using HMM’s Projected Annual Growth Rates identified in Section 3.0, Population Projections. The geometric growth formula was used to project the population for each Service Area through the year 2030 in five year increments and the results are shown in Table 4.4.

**Table 4.4
Weighted Population Served Projection**

Service Area	2010 Population Served	Projected % Growth	2015 Projected Population Served	2020 Projected Population Served	2025 Projected Population Served	2030 Projected Population Served
Bay County Cedar Grove	2692	0.50%	2,760	2,830	2,901	2,974
Bay County North Bay	2982	3.00%	3,456	4,007	4,645	5,385
Bay County Northeast	5730	0.50%	5,874	6,023	6,175	6,331
Bay County West Bay	269	8.00%	395	580	852	1,253
Callaway	8946	0.75%	9,287	9,640	10,007	10,388
Lynn Haven	4133	1.00%	4,344	4,565	4,798	5,043
Mexico Beach	1479	0.50%	1,516	1,555	1,594	1,634
Panama City	36101	0.25%	36,555	37,014	37,479	37,950
Panama City Beach	70339	2.00%	77,660	85,743	94,667	104,520
Parker	2659	0.25%	2,693	2,727	2,761	2,796
Springfield	5587	0.25%	5,657	5,728	5,800	5,873
TAFB	6083	0.50%	6,236	6,394	6,555	6,721
Total	147,000		156,433	166,806	178,234	190,868

The projected AADF for each service area was then calculated by multiplying the weighted population by the GPCD. The results are shown in Table 4.5 for the overall system, in Table 4.6 for the retail service areas and Table 4.7 for the wholesale service areas. The projected AADF for each meter location is shown in the Appendix A tables.

Table 4.5
Annual Average Daily Flow Projections for Overall System

Service Area	Average Daily Flow (MGD) Year 2010	Projected Average Daily Flow (MGD) Year 2015	Projected Average Daily Flow (MGD) Year 2020	Projected Average Daily Flow (MGD) Year 2025	Projected Average Daily Flow (MGD) Year 2030
Bay County Cedar Grove	0.48	0.49	0.50	0.51	0.53
Bay County North Bay	0.53	0.61	0.71	0.82	0.95
Bay County Northeast	1.01	1.04	1.07	1.09	1.12
Bay County West Bay	0.05	0.07	0.10	0.15	0.22
Callaway	1.58	1.64	1.71	1.77	1.84
Lynn Haven	0.73	0.77	0.81	0.85	0.89
Mexico Beach	0.26	0.27	0.28	0.28	0.29
Panama City	6.39	6.47	6.55	6.63	6.72
Panama City Beach	12.45	13.75	15.18	16.76	18.50
Parker	0.47	0.48	0.48	0.49	0.49
Springfield	0.99	1.00	1.01	1.03	1.04
TAFB	1.08	1.10	1.13	1.16	1.19
Total	26.02	27.69	29.53	31.54	33.78

**Table 4.6
Annual Average Daily Flow Projections for Retail Service Areas**

Service Area	Average Daily Flow (MGD) Year 2010	Projected Average Daily Flow (MGD) Year 2015	Projected Average Daily Flow (MGD) Year 2020	Projected Average Daily Flow (MGD) Year 2025	Projected Average Daily Flow (MGD) Year 2030
Bay County Cedar Grove	0.48	0.49	0.50	0.51	0.53
Bay County North Bay	0.53	0.61	0.71	0.82	0.95
Bay County Northeast	1.01	1.04	1.07	1.09	1.12
Bay County West Bay	0.05	0.07	0.10	0.15	0.22
Total	2.07	2.21	2.38	2.57	2.82

**Table 4.7
Annual Average Daily Flow Projections for Wholesale Service Areas**

Service Area	Average Daily Flow (MGD) Year 2010	Projected Average Daily Flow (MGD) Year 2015	Projected Average Daily Flow (MGD) Year 2020	Projected Average Daily Flow (MGD) Year 2025	Projected Average Daily Flow (MGD) Year 2030
Callaway	1.58	1.64	1.71	1.77	1.84
Lynn Haven	0.73	0.77	0.81	0.85	0.89
Mexico Beach	0.26	0.27	0.28	0.28	0.29
Panama City	6.39	6.47	6.55	6.63	6.72
Panama City Beach	12.45	13.75	15.18	16.76	18.50
Parker	0.47	0.48	0.48	0.49	0.49
Springfield	0.99	1.00	1.01	1.03	1.04
TAFB	1.08	1.10	1.13	1.16	1.19
Total	23.95	25.48	27.15	28.97	30.96

4.2 Water Transmission and Distribution System

4.2.1 Introduction

The Bay County water transmission and distribution system includes approximately 560,000 LF of water lines ranging from 2” – 48” in diameter. The County provides wholesale water service to incorporated areas and retail water service to unincorporated areas of the County. The wholesale system consists of transmission water mains, metered connections and includes Tyndall AFB and the surrounding Cities as shown in Table 1.1 and Figure 1.2. The retail system consists of transmission and distribution water mains, metered connections and includes Cedar Grove and North Bay, West Bay and Northeast Bay areas as shown in Table 1.1 and Figure 1.2.

4.2.2 Hydraulic Modeling and Set-up

The purpose of the model is to provide a tool to help analyze the major transmission lines and the pumping and storage needs of the water system. HMM was provided a copy of an existing hydraulic model for the Bay County Water System in Haestad WaterCAD format which was set-up as a simplified steady-state model for the water transmission mains. Through various meetings and discussions with Bay County staff, line sizes were revised and meter locations were revised and added to accurately reflect the current Bay County Water System.

The model includes the booster stations, high service pump curves, demand nodes to represent the wholesale customers meter locations and demand nodes at sub-areas for the existing and proposed retail customers. The model was set-up so that each service pump and booster station could be turned on or off which allowed the system to be evaluated with various pumping scenarios.

The hydraulic design standards used in the model follow good engineering practice and are based on experience, FDEP regulatory requirements, American Water Works Association standards and the Bay County standards as applicable. The following standards were reviewed with the County and approved:

Max water main velocity	5 fps
Minimum water main pressure	20 psi or per Customer Agreement
Maximum water main pressure	100 psi
Roughness Coefficient (Hazen-Williams)	Existing 100, Proposed 120
Factor for peak hourly flow	2.0 (times the AADF/24)
Factor for Maximum Daily Demand	1.5 (times the AADF)

The demand nodes were populated to include the existing and projected demands for both the maximum daily demand (MDD) and peak hourly flow (PHF), based on the average annual daily flow (AADF). Also each node included an elevation value that was verified and updated based on the Bay County GIS data and other sources.

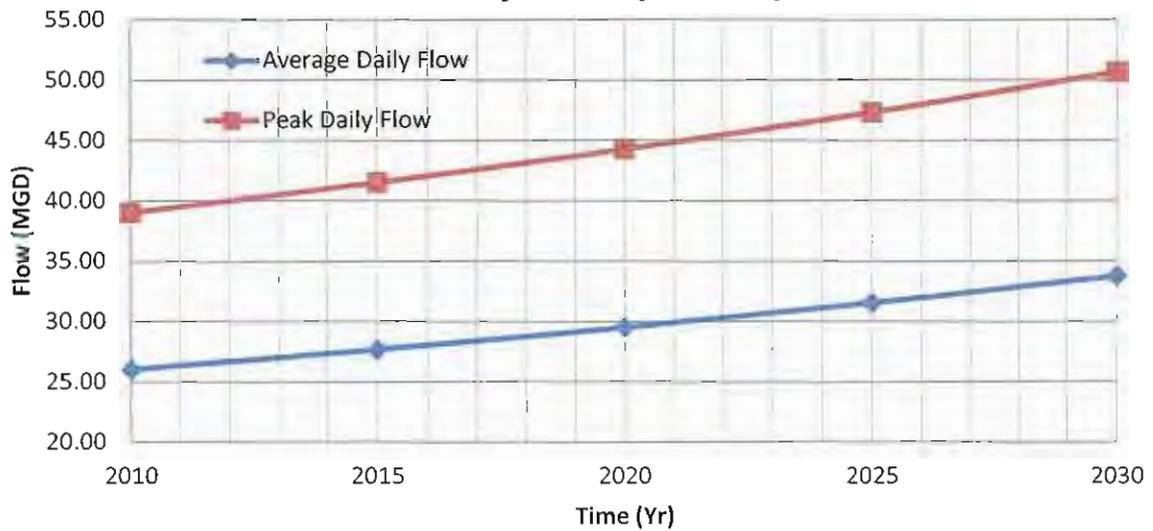
The PDF was calculated by multiplying the ADF by a peaking factor. Water consumption changes with the seasons, day of the week, and with the hours of the day. A normal range for MDD peaking factors is from 1.2 to 2.0. Typically, smaller communities have greater peaking factors. A peaking factor of 1.5 is the average (Fair-Geyer) and appears reasonable for Bay County. The PDFs are shown in Table 4.8 for the overall system, in Table 4.9 for the retail service areas and in Table 4.10 for the wholesale service areas.

The PHF was calculated by dividing the AADF by 24 hours to get average hourly flow, which was then multiplied by the peaking factor. As stated above, the water consumption changes with the seasons, day of the week, and with the hours of the day and varies between systems. A normal range for PHF peaking factors is from 2.0 to 3.0. A peaking factor of 2.0 was used as the lower value would be more applicable to a system with a high percent of wholesale customers and it appears reasonable for Bay County. The PHFs are shown in Table 4.11 for the overall system, in Table 4.12 for the retail service areas and in Table 4.13 for the wholesale service areas.

**Table 4.8
Maximum Daily Demand Projections for Overall System**

Service Area	Peak Daily Flow (MGD) Year 2010	Projected Peak Daily Flow (MGD) Year 2015	Projected Peak Daily Flow (MGD) Year 2020	Projected Peak Daily Flow (MGD) Year 2025	Projected Peak Daily Flow (MGD) Year 2030
Bay County Cedar Grove	0.71	0.73	0.75	0.77	0.79
Bay County North Bay	0.79	0.92	1.06	1.23	1.43
Bay County Northeast	1.52	1.56	1.60	1.64	1.68
Bay County West Bay	0.07	0.10	0.15	0.23	0.33
Callaway	2.38	2.47	2.56	2.66	2.76
Lynn Haven	1.10	1.15	1.21	1.27	1.34
Mexico Beach	0.39	0.40	0.41	0.42	0.43
Panama City	9.59	9.71	9.83	9.95	10.08
Panama City Beach	18.68	20.62	22.77	25.14	27.76
Parker	0.71	0.72	0.72	0.73	0.74
Springfield	1.48	1.50	1.52	1.54	1.56
TAFB	1.62	1.66	1.70	1.74	1.78
Total	39.04	41.54	44.28	47.32	50.68

**Graph 4.1
Flow Projection (Overall)**



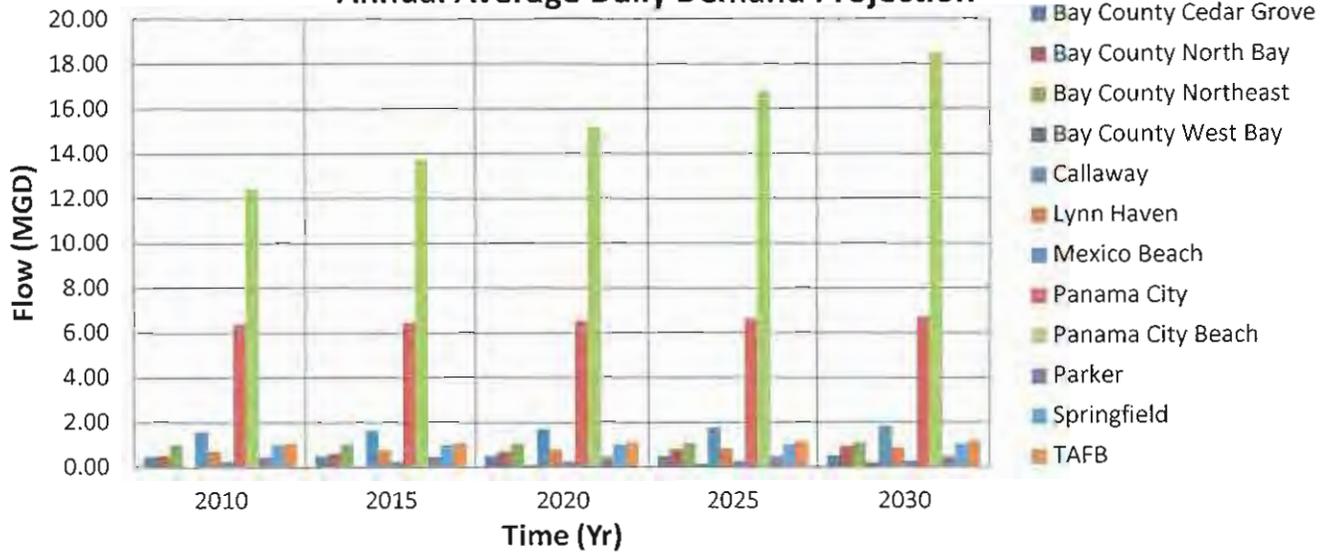
**Table 4.9
Maximum Daily Demand Projections for Retail Service Areas**

Service Area	Peak Daily Flow (MGD) Year 2010	Projected Peak Daily Flow (MGD) Year 2015	Projected Peak Daily Flow (MGD) Year 2020	Projected Peak Daily Flow (MGD) Year 2025	Projected Peak Daily Flow (MGD) Year 2030
Bay County Cedar Grove	0.71	0.73	0.75	0.77	0.79
Bay County North Bay	0.79	0.92	1.06	1.23	1.43
Bay County Northeast	1.52	1.56	1.60	1.64	1.68
Bay County West Bay	0.07	0.10	0.15	0.23	0.33
Total	3.09	3.31	3.56	3.87	4.23

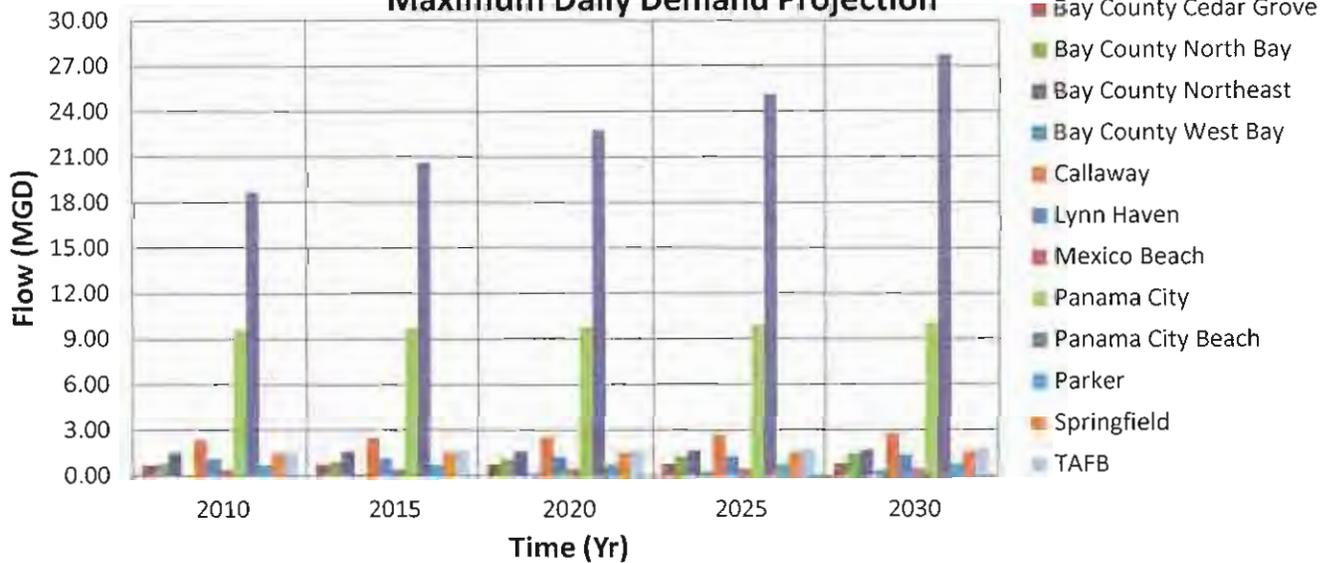
Table 4.10
Maximum Daily Demand Projections for
Wholesale Service Areas

Service Area	Peak Daily Flow (MGD) Year 2010	Projected Peak Daily Flow (MGD) Year 2015	Projected Peak Daily Flow (MGD) Year 2020	Projected Peak Daily Flow (MGD) Year 2025	Projected Peak Daily Flow (MGD) Year 2030
Callaway	2.38	2.47	2.56	2.66	2.76
Lynn Haven	1.10	1.15	1.21	1.27	1.34
Mexico Beach	0.39	0.40	0.41	0.42	0.43
Panama City	9.59	9.71	9.83	9.95	10.08
Panama City Beach	18.68	20.62	22.77	25.14	27.76
Parker	0.71	0.72	0.72	0.73	0.74
Springfield	1.48	1.50	1.52	1.54	1.56
TAFB	1.62	1.66	1.70	1.74	1.78
Total	35.95	38.23	40.72	43.45	46.45

Graph 4.2
Annual Average Daily Demand Projection



Graph 4.3
Maximum Daily Demand Projection



**Table 4.11
Peak Hourly Flow Projections for Overall System**

Service Area	Peak Hourly Flow (GPM) Year 2010	Projected Peak Hourly Flow (GPM) Year 2015	Projected Peak Hourly Flow (GPM) Year 2020	Projected Peak Hourly Flow (GPM) Year 2025	Projected Peak Hourly Flow (GPM) Year 2030
Bay County Cedar Grove	662	679	696	713	731
Bay County North Bay	733	850	985	1,142	1,324
Bay County Northeast	1,409	1,444	1,481	1,518	1,557
Bay County West Bay	66	97	143	210	308
Callaway	2,200	2,283	2,370	2,461	2,554
Lynn Haven	1,016	1,068	1,123	1,180	1,240
Mexico Beach	364	373	382	392	402
Panama City	8,876	8,988	9,101	9,215	9,331
Panama City Beach	17,295	19,095	21,082	23,277	25,699
Parker	654	662	670	679	687
Springfield	1,374	1,391	1,409	1,426	1,444
TAFB	1,496	1,533	1,572	1,612	1,652
Total	36,145	38,463	41,014	43,825	46,929

**Table 4.12
Peak Hourly Flow Projections for Retail Service Areas**

Service Area	Peak Daily Flow (GPM) Year 2010	Projected Peak Hourly Flow (GPM) Year 2015	Projected Peak Hourly Flow (GPM) Year 2020	Projected Peak Hourly Flow (GPM) Year 2025	Projected Peak Hourly Flow (GPM) Year 2030
Bay County Cedar Grove	662	679	696	713	731
Bay County North Bay	733	850	985	1,142	1,324
Bay County Northeast	1,409	1,444	1,481	1,518	1,557
Bay County West Bay	66	97	143	210	308
Total	2,870	3,070	3,305	3,583	3,920

**Table 4.13
Peak Hourly Flow Projections for Wholesale Service Areas**

Service Area	Peak Daily Flow (GPM) Year 2010	Projected Peak Hourly Flow (GPM) Year 2015	Projected Peak Hourly Flow (GPM) Year 2020	Projected Peak Hourly Flow (GPM) Year 2025	Projected Peak Hourly Flow (GPM) Year 2030
Callaway	2,200	2,283	2,370	2,461	2,554
Lynn Haven	1,016	1,068	1,123	1,180	1,240
Mexico Beach	364	373	382	392	402
Panama City	8,876	8,988	9,101	9,215	9,331
Panama City Beach	17,295	19,095	21,082	23,277	25,699
Parker	654	662	670	679	687
Springfield	1,374	1,391	1,409	1,426	1,444
TAFB	1,496	1,533	1,572	1,612	1,652
Total	33,275	35,393	37,709	40,242	43,009

4.2.3 Model Simulations

The simulations modeled began with the 2010 flow and progressed to 2030 in 5 year increments. For each year, both the maximum daily demand and the peak hourly flow were modeled. The model results were then analyzed to determine if the design standards were achieved at each node. Typically, the controlling standard was the minimum pressure.

The initial modeling for year 2010 ADF was based on 4 high service pumps running and booster pumps “off” which resulted in satisfactory conditions. The initial modeling for year 2010 PHF was based on 6 high service pumps running and booster pumps “off” which also resulted in satisfactory conditions. During the 2015 and future simulations for PDF, the model identified areas with low pressures so additional high service pumps (up to a total of 6 high service pumps) were turned “on.” It was also necessary to turn “on” the various booster stations for some of the PHF simulations. If the pressure remained below the design standard with 6 high service pumps and the booster pumps running, then improvements were identified which would alleviate the low pressure. Improvements were included in the model and then carried forward to future simulations.

The scenario for each plan year’s MDD was evaluated to determine whether the Bay County Water System could meet contractual flow and pressure obligations. Also, the PHF scenario for each plan year was reviewed to assure minimum system pressures were adequate during PHF conditions.

4.2.4 Modeling Results

- 2010 PDF - satisfies all contractual obligations.
- 2020 PDF - McElvey Tank meter does not meet contract pressure.

- 2020 PDF with improvements - installation of 30" waterline from Frankford Avenue and 23rd Street to Gulf Coast State College allows system to meet contract pressure requirements.
- 2020 PDF - all points meet contractual obligations.
- 2025 PDF -
 - McElvey Tank meter does not meet contract pressure requirements.
 - Pressure in Lake Merial dropped to 11 psi.
- 2025 PDF with improvements –
 - Replace 24" water main from Gulf Coast State College to McElvey meter with 36" water main to meet pressure requirements.
 - New North Bay booster pump station
- 2030 PDF – all points meet contractual obligations.

Modeling results are contained in Appendix B.

4.2.5 Recommended Improvements

The recommended water transmission and distribution system improvements are based on the modeling results, asset management and future growth areas. The recommendations are separated below for the wholesale and retail systems.

4.2.5.1 Wholesale Water System

There are two recommendations for the wholesale water system that are based on capacity deficiencies identified in the hydraulic modeling analysis. HMM recommends that the following transmission mains be constructed in order to maintain compliance with current wholesale agreements as growth continues.

1. Install 30" water transmission main from Frankford and 23rd Street to Gulf Coast State College by year 2015, see Figure 4.1.
2. Replace 24" water main from Gulf Coast State College to McElvey meter with 36" or with a parallel 24" water main by year 2025, see Figure

4.2. It is anticipated that construction will include directional drilling under St. Andrews Bay.

There is only one recommendation for the wholesale water system regarding operations. This recommendation is based on the Bay County Water Distribution System Potable Water Audit 2011 and comments provided by Bay County.

1. Replace larger source meters to allow the ability to continuously monitor the demands throughout the system using Supervising Control and Data Acquisition (SCADA).

4.2.5.2 Retail Water System

The hydraulic modeling did not indicate any capacity deficiencies in the retail system; therefore, no improvements are required for that purpose. The model did indicate that the pressure in the North Bay Area (Lake Merial) dropped to 11 psi; therefore, a North Bay booster pump station is proposed. HMM recommends that the following transmission mains be constructed to provide new capacity to areas that are not currently served but have been identified as having potential for growth.

1. Construct North Bay booster station in year 2020.
2. Hwy 2301 – New 12” water main from Hwy 231 to the north. See Figure 4.3.
3. Hwy 2311 – New 12” water main from Co. Road 2321 to the north. See Figure 4.4.

There are three other recommendations for the retail water system that are based on asset management needs and operational flexibility. These recommendations are based on the Bay County Water Distribution System Potable Water Audit 2011 and comments provided by Bay County.

1. Implement a plan for water service meter replacement. The meters in the various areas should be tested and at least 95% should be within the accuracy limits of industry standards. Meters in areas not achieving the accuracy level should be replaced, and it is also customary to evaluate and consider meter replacement at least once every 15 years. It is surmised that the meters in the Bay County Cedar Grove service area need to be replaced with meters that are technologically current.

2. Install a new meter billing system. This improvement is technology driven.
3. Implement a Leak Detection / Leak Repair program as recommended in the Bay County Water Distribution System Potable Water Audit for reducing real water losses.

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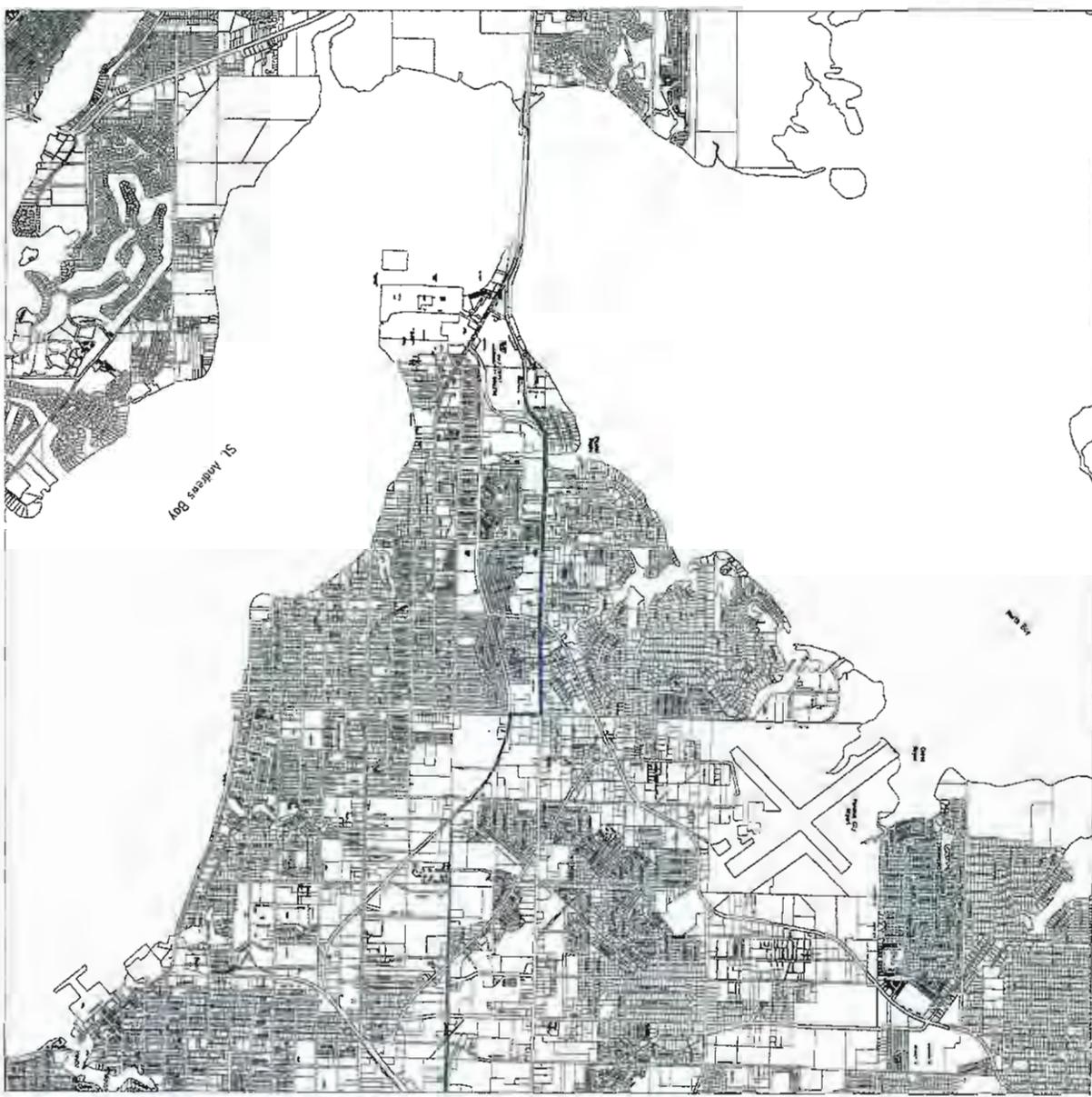


FIGURE 4.1
 SHEET NUMBER
 30' W.L. FROM
 FRANKFORD
 AVE TO
 COLLEGIATE
 DR

CONSTRUCTION DRAWING
THIS DRAWING IS NOT FOR CONSTRUCTION
 FLORIDA
 DATE: 07/15/10

DESIGNED BY: [blank]
 DRAWN BY: [blank]
 CHECKED BY: [blank]
 PROJECT NUMBER: [blank]
 PROJECT NAME: [blank]

DATE	REV	REVISION DESCRIPTION

DATE	REV	REVISION DESCRIPTION

WATER AND WASTEWATER STRATEGIC PLAN
 BAY COUNTY, FLORIDA

Hatch Mott MacDonald
 Hatch Mott MacDonald Florida, LLC
 Architects Engineers Surveyors
 AA-00000205 EP-0000156 LB-0000793
 110 West 23rd Street
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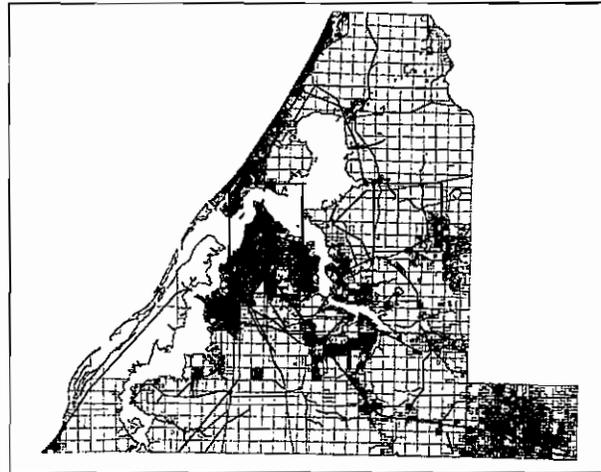
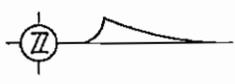
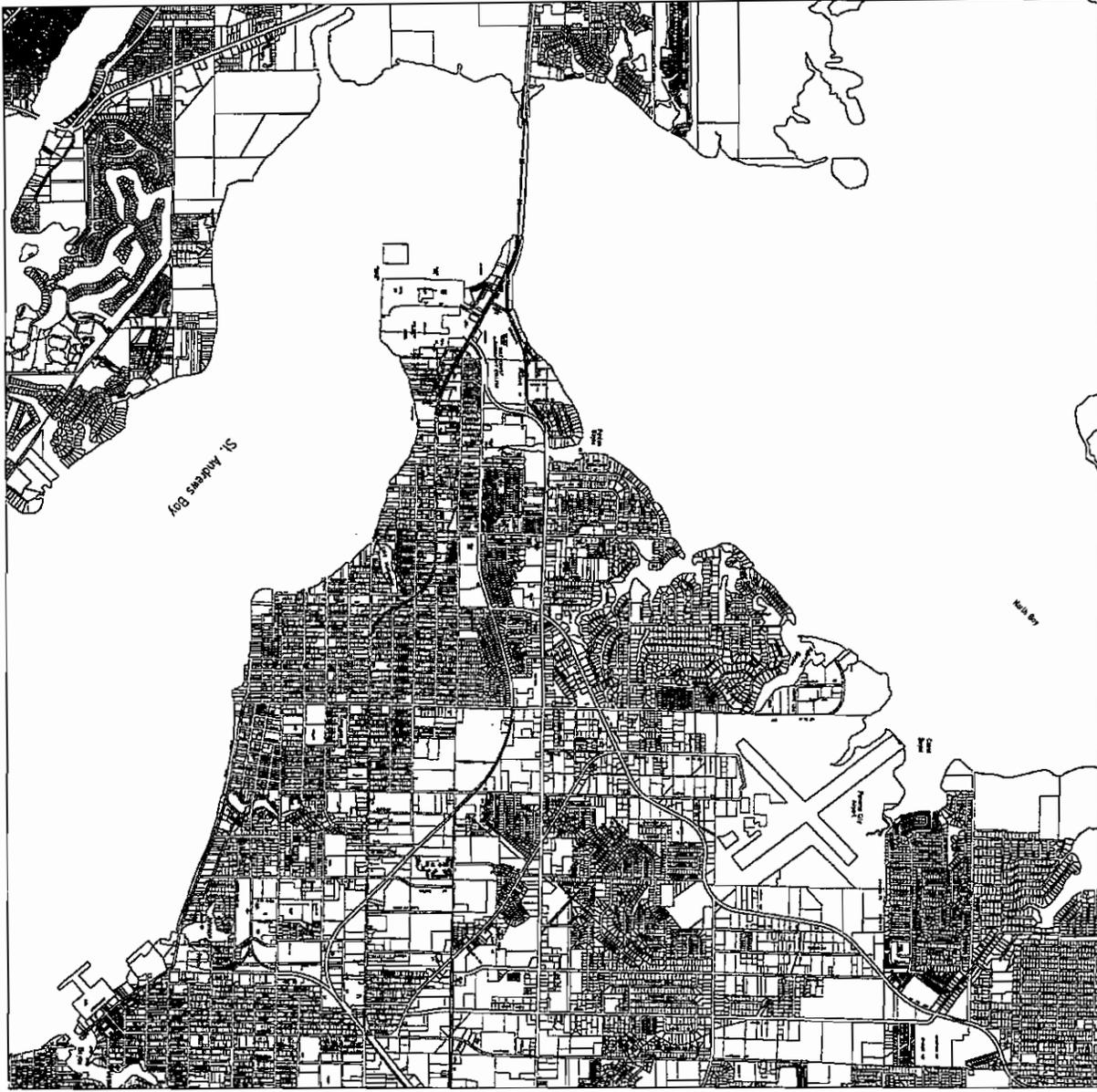


FIGURE 4.2
 38" W/L FROM COLLEGIATE DR TO MCELVEY METER

CONSTRUCTION DRAWING
THIS DRAWING IS FOR CONSTRUCTION
 FLORIDA LICENSE NO. 10007748
 DATE

DATE DESIGNED BY: []
 DRAWN BY: []
 PROJECT MANAGER: []
 IN CHARGE PROJECT MANAGER: []

DATE	REV	REVISION DESCRIPTION

DATE	REV	REVISION DESCRIPTION

WATER AND WASTEWATER STRATEGIC PLAN
BAY COUNTY, FLORIDA

Hatch Mott MacDonald
 Hatch Mott MacDonald Florida, LLC
 Architects Engineers Surveyors
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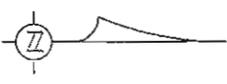


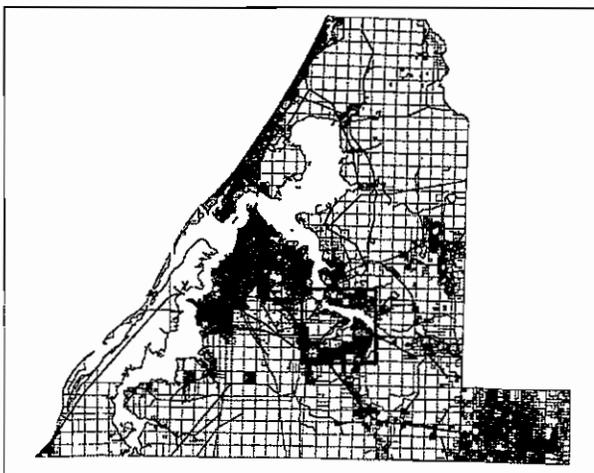
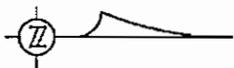
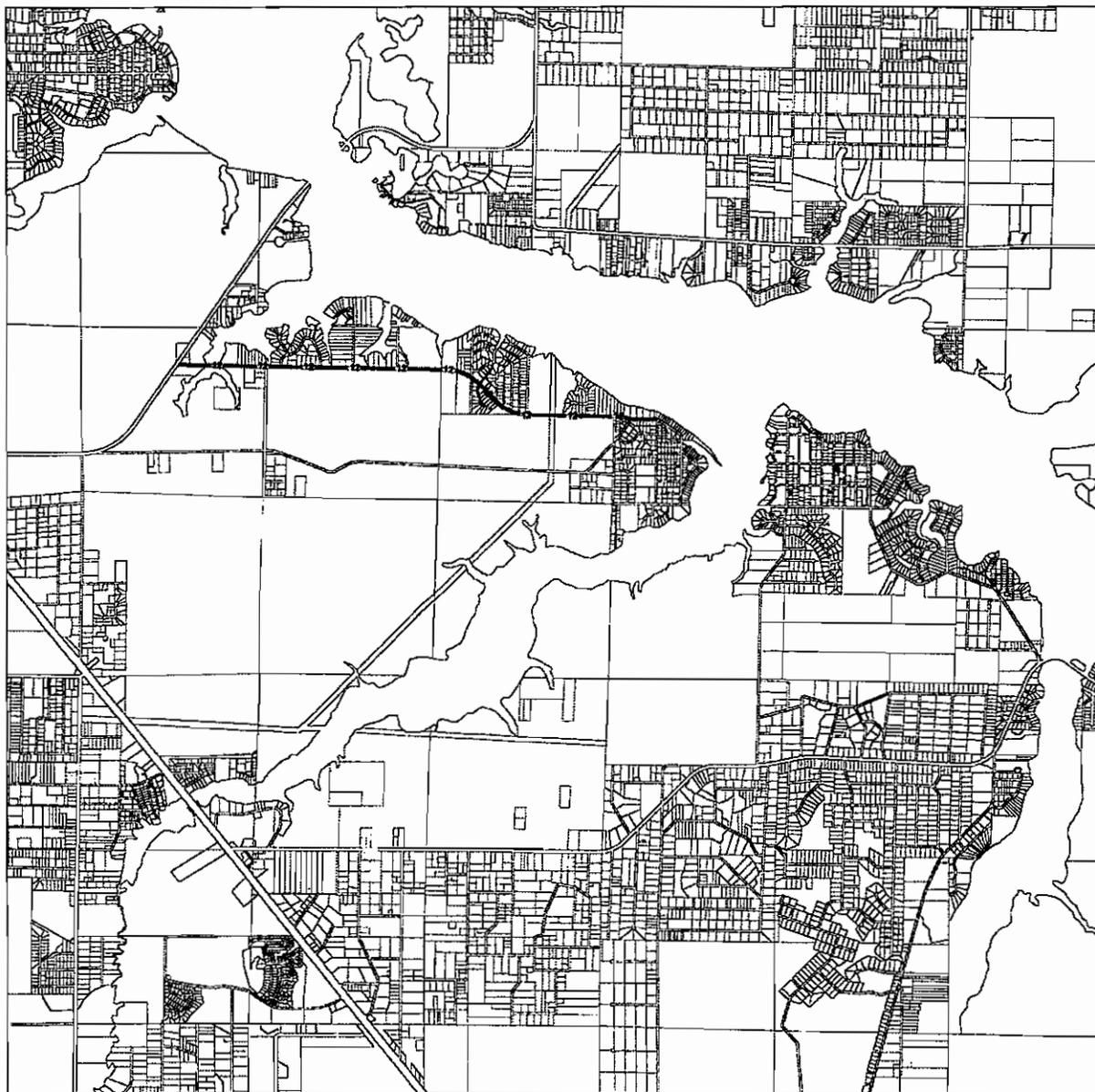
FIGURE 4.3
WATER AND WASTEWATER EXTENSION
 PROJECT NO.: 2301 12P
 W.L.L.

DATE	REV	REVISION DESCR/PROJ

DATE DESIGNED BY	
DRAWN BY	
PROJECT MANAGER	
H. M. M. PROJECT NUMBER	

WATER AND WASTEWATER STRATEGIC PLAN
BAY COUNTY, FLORIDA

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 Panama City, Florida 32401
 Telephone: (904) 750-4800 • Fax: (904) 751-4800



SHEET NO. 2311 12"
 W.L.
 EXTENSION
 FIGURE 4.4

DATE	REV	REVISION DESCRIPTION

DATE	REV	REVISION DESCRIPTION

**WATER AND WASTEWATER
 STRATEGIC PLAN**
BAY COUNTY, FLORIDA

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4.3 Water Treatment Facility and Appurtenances

4.3.1 Introduction

Bay County operates and manages the largest water system in the area and fulfills water needs for the majority of the citizens in Bay County. The main goal of this plan is to provide direction and strategic goals to meet the projected 2030 water demands of the County. Specific content for the Bay County Strategic Water Plan was drawn from population projections, growth patterns, future regulation, a series of meetings with Bay County staff, and an extensive review of current programs and planning documents. The analysis was primarily focused on raw water supply, treatment facility, pumping station, storage facilities, and distribution system needs to accommodate the projected growth for wholesale and retail customers. Results indicate that recommended improvements are primarily capacity driven but also include several asset management upgrades to meet Bay County's current and projected needs.

This Section includes a discussion of the following items:

- Raw Water Supply
- Water Treatment Facility
- Finished Storage and Pumping
- Strategic Needs

4.3.2 Raw Water Supply

Based on the information obtained from the 2006 Bay County Water and Wastewater Strategic Plan by PBS&J and conversations with County staff, the County entered into an agreement in 1991 with the Northwest Florida Water Management District (NFWFMD) relative to permitted water supply. The agreement allows the County to withdraw up to 69.5 million gallons per day (MGD) of raw water from Deer Point Reservoir on an Annual Average Daily Flow (AADF) basis and 82 MGD Maximum Day Demand (MDD) basis. This agreement has provisions to extend the duration and withdrawal capacity up to 98 MGD, AADF and 107 MGD, MDD until the 2040 planning period. The County currently has raw water supply commitments of up to 45 MGD on a MDD basis with the RockTenn and Arizona Chemical facilities. Raw water is pumped from the Deer Point Reservoir through the Williams Bayou Pumping Station (located at the Reservoir). The pump station has a present capacity to pump approximately 112 MGD (with largest unit out of service) of raw water via raw water mains varying in sizes from 36" to 54" in diameter along its route. Details on the Bay County raw water pump station and transmission systems are shown in Tables 4.14 and 4.15. Currently, RockTenn and

Arizona Chemical are contracted with the County to withdraw up to 28 MGD and 7 MGD (based on MDD) of raw water, respectively, with options to increase the capacity to 35 MGD and 10 MGD.

Table 4.14

Williams Bayou Pump Station – Pump Types and Capacity

Pump #	Type	Estimated Capacity (GPM)
1	Vertical Turbine	10,400
2	Vertical Turbine	10,400
3	Vertical Turbine	10,400
4	Vertical Turbine	11,800
5	Vertical Turbine	17,400
6	Vertical Turbine	17,400
7	Vertical Turbine	18,750
	Total	96,550

Table 4.15

Raw Water Main Information

Pipe Diameter	Type	Approximate Length (LF)
36"	PCCP ⁽¹⁾	1,000
48"	PCCP	56,000
54"	PCCP	15,000

⁽¹⁾ Prestressed Concrete Cylinder Pipe

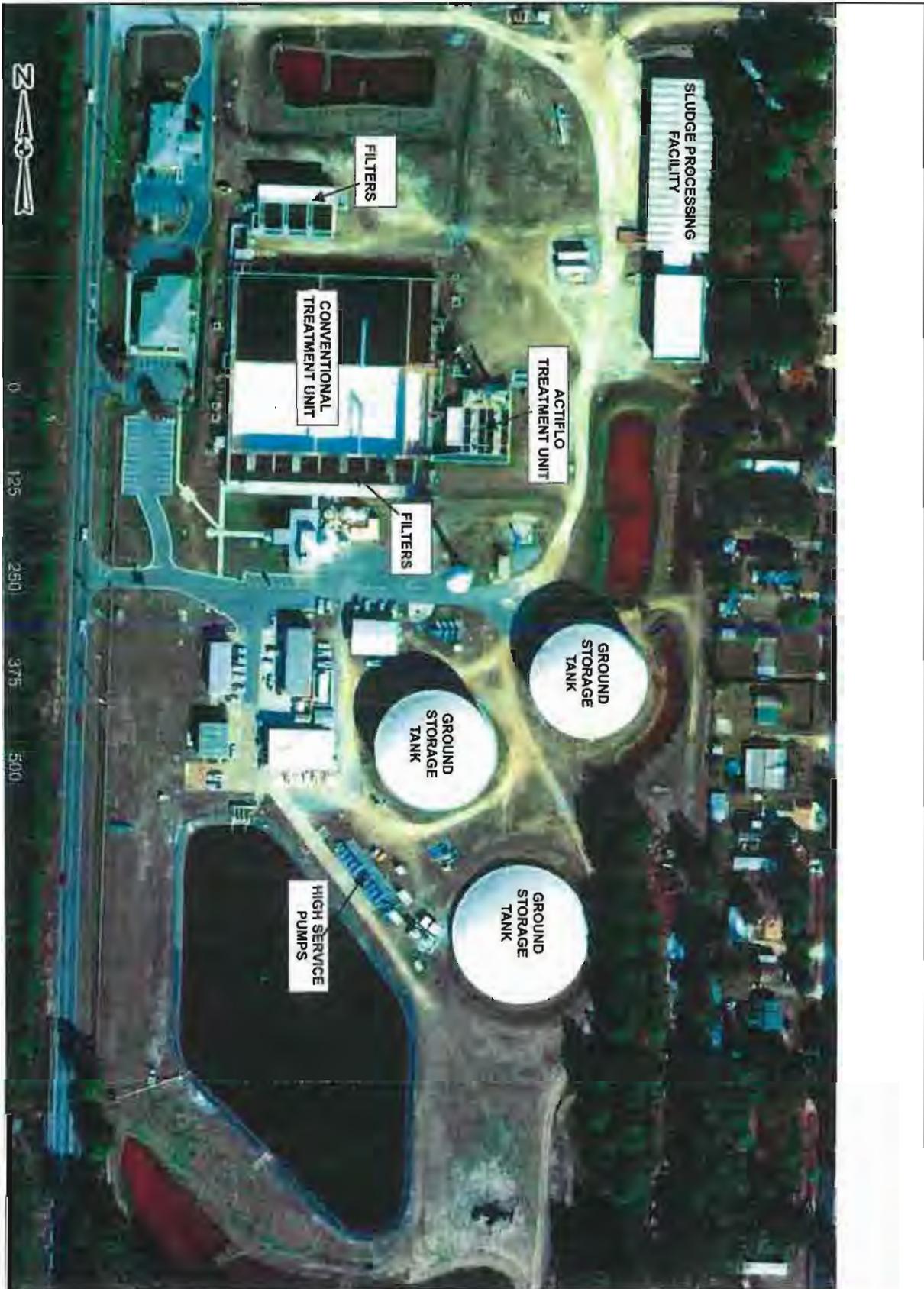
4.3.3 Water Treatment Facility

The Bay County Water Treatment Facility (WTF) began operation in 1967 and was expanded in 1985 to a permitted capacity of 50 MGD. The plant production capacity was increased to 60 MGD in 2007 with future planned phase expansions to 78 MGD. The facility currently has a combination of conventional and high rate (Actiflo) type surface water treatment trains. The conventional treatment process consists of coagulant addition, flocculation and sedimentation, gravity filtration and disinfection to remove color, turbidity, taste, odor, harmful pathogens, and bacteria. The high rate Actiflow treatment process consists of polymer and micro sand injection, flocculation, and sedimentation, gravity filtration, and disinfection. Treated water is stored in three ground storage tanks that have a combined nominal capacity of 12 million gallons. Finished water is pumped to the distribution system via eight high service pumps. Sludge generated in the conventional type treatment train is pumped from the bottom of the sedimentation basins to the sludge process facility for dewatering. Sludge generated from the Actiflo process train is pumped from the bottom of the tube type sedimentation basins to a microsand recovery unit. The unit separates the microsand from the flocculated sludge. The separated microsand is returned to the microsand injection unit and sludge is pumped to the solids handling facility. Dewatering of the solids is accomplished utilizing belt filter presses.

An aerial photo of the existing treatment WTF is shown in Figure 4.5. Corresponding information on the treatment process units, tank volumes, sludge dewatering process, and dimensions are detailed in Table 4.16.

**Table 4.16
Process Units Information**

Process Unit	Details
Coagulant Addition	Two (2) injection points, one (1) for lime and one (1) for ferric sulfate addition
Actiflo® Treatment Train (high)	Two (2) treatment trains, each capable of treating 24 MGD. Each treatment train consists of polymer and microsand injection, flocculation, clarification, and microsand recovery units.
Conventional Treatment Train	Two (2) treatment trains, each capable of treating 25 MGD and consist of polymer additional, rapid mix, flocculation, and sedimentation.
Filters	Eleven (11) filters each with 875 ft ² area. Total area equals 9,625 ft ² rated at 6 MGD/filter.
Disinfection/Post Filter Chemical Addition	Disinfection is provided utilizing sodium hypochlorite with backup chlorination system prior to ground storage tank.
Finished Water Storage	To meet fire flow, diurnal peak water demand, and chlorine contact time, 2-5 million gallon and 1-2 million gallon ground storage tanks are provided.
Finished Water Pumping	Eight (8) vertical turbine-type high service pumps - two (2) variable speed and six (6) single speed pumps.
Solids Handling	Three (3) belt filter presses.



<p>FIG. 4.5</p> <p>BAY CO. WATER TREATMENT PLANT AERIAL</p>	<p>THIS DRAWING IS NOT FOR CONSTRUCTION</p>	<p>DATE: 01/18/2017</p> <p>BY: A ZAFAR</p> <p>CHECKED BY: A ZAFAR</p> <p>SCALE: AS SHOWN</p>	<p>PROJECT NO: 17-000000</p> <p>SHEET NO: 001</p>	<p>WATER AND WASTEWATER STRATEGIC PLAN</p> <p>BAY COUNTY, FLORIDA</p>	<p>Hatch Mott MacDonald 10010 Main Street, Suite 100 Orlando, FL 32837 Tel: 407.241.1000 Fax: 407.241.1001 www.hatchmottmacdonald.com</p>
		<p><small>This drawing is the property of Hatch Mott MacDonald Florida, LLC, and may not be reproduced without permission.</small></p>		<p><small>Architects Engineers Surveyors AA - 02000002 FL - 00000000 LB - 00000000 110 West 24th Street Pensacola, Florida 32502 Telephone: 850.432.8800 • Fax: (850) 463-8386</small></p>	

4.3.4 Finished Water Storage Facility and Pumping Facilities

As indicated previously, the Bay County Potable Water System (BCPWS) primarily supplies wholesale water to several cities and Tyndall AFB. Components of the supply network include several ground and elevated storage tanks which provide reliable potable water and fire protection services. Table 4.17 summarizes the location, type, capacities, and ownership of all active and proposed tanks in the BCPWS. As reflected in Table 4.17, the BCPWS currently includes twelve (12) ground storage tanks and three (3) elevated storage tanks. Based on information provided, the storage capacity for the BCPWS, including all the storage facilities owned by the County and consecutive wholesale customers, is estimated to be approximately 43 million gallons.

**Table 4.17
Water System Storage Capacities**

Tank Locations	Tank Capacities (Gallons)
Bay County Onsite Tanks	
Ground Storage Tank 1	5,000,000
Ground Storage Tank 2	5,000,000
Ground Storage Tank 3	2,000,000
Bay County Offsite Facilities	
Southeast Ground Storage Tank	5,000,000
Frankford Ground Storage Tank	3,000,000
Gainer Bayou Ground Storage Tank	331,000
Northwest Booster Station – Tank 1	400,000
Northwest Booster Station – Tank 2	400,000
Panama City Beach Storage Facilities	
McElvey Ground Storage Tank No. 1	2,000,000
McElvey Ground Storage Tank No. 2	5,000,000
West Bay Ground Storage Tank	7,000,000
Mexico Beach Facilities	
Mexico Beach Ground Storage Tank	1,000,000
Mexico Beach Elevated Storage Tank	100,000
Callaway Ground Storage Tank	5,000,000
Panama City Ground Storage Tank	2,000,000
Panama City Elevated Storage Tank	2,000,000
Total Capacity	45,231,000

Table 4.18 provides details on the locations and design capacities for high service pumps (HSP) currently owned and operated by Bay County

**Table 4.18
High Service Pumps**

Location	Design Capacity (GPM)
Bay Co. Water Treatment Facility	
HSP #1	7000
HSP #2	3500
HSP #3	5400
HSP #4	7000
HSP #5	7000
HSP #6	3500
HSP #7	7000
HSP #8	5400
Frankford Avenue Storage Tank	
HSP #1	5250
HSP #2	5250
HSP #3	5250
Southeast Storage Tank	
HSP #1	1200
HSP #2	1650
HSP #3	1650
HSP #4	1650

4.3.5 Water Treatment and Storage Needs

The existing water treatment and storage system is expected to deliver current peak hourly flows and maximum daily demand within the pressure, velocity, and head conditions that are outlined earlier in this Section. Recommended improvements needed to comply with the projected 2030 MDD of approximately 51 MGD, performance criteria, level of services requirements, and asset management needs are described in the following sections:

4.3.5.1 Raw Water Supply Needs

An evaluation of the current raw water system indicated that the existing pumps and raw water lines are capable of pumping the projected year 2030 MDD. The system capacity is further enhanced with the addition of new pumps at the Williams Bayou pump station. However, several pumps in the Williams Bayou pump station and the raw water mains are approximately 15-20 years old, and are near the end of their expected useful life. To maintain operations, it is anticipated that replacement of the older pumps at Williams Bayou will be required. Moreover, the Deer Point Reservoir Dam is over 40 years old, and may require rehabilitation by the year 2030. The key components of this dam were replaced in 1996 following Hurricane Opal: the dam spillway structure and the drawdown gates, but the superstructures that hold them in place, the bridge (spillway) and the box culvert structures (drawdown gates) are 40 years old and do merit close scrutiny and regular inspections. To meet future demands, it is anticipated that replacement of the older pumps at Williams Bayou will be required. Also, the raw water main from Williams Bayou pump station is over 30 years old and is nearing the end of its useful life in accordance with USEPA guidelines. It is recommended that a condition assessment on the raw water main be conducted in the near future. Additionally, this water main has very limited isolation capabilities and should be modified to require the addition of isolation valves. This would allow the County staff to isolate sections of the water main in the event of a failure, or to effect general repairs. Details on recommended projects to fulfill the raw water supply needs are outlined in Table 4.19.

Table 4.19
Bay County Water Treatment System
Raw Water Supply Needs

No.	Description	Timeline
1	Raw water lines condition assessment	2013-2014
2	Rehabilitation/Replacement of older pumps at Williams Bayou pump station	2020-2030
3	Deer Point Reservoir Dam rehabilitation	2025-2030
4	Raw water main isolation valves	2018-2020

4.3.5.2 Water Treatment Facility Needs

The existing Bay County WTF was expanded in 2007 to its current water production capacity of 60 MGD. Evaluation of the Bay County WTF indicated that the facility is capable of meeting the anticipated projected MDD of 51 MGD. However, to enhance operational reliability and redundancy and support projected growth around the airport, it is recommended a new 20 MGD MDD water treatment facility be constructed in the North Bay area. This would provide multiple barrier protection and growth potential while consistently providing high quality potable water to Bay County residents.

The operations staff has done an excellent job managing the operation of the facility with several aging treatment process equipment and tankage facilities that are more than 30 years old and are nearing the end of their useful life. A condition assessment and upgrade of these facilities are anticipated over the next several years. The evaluation of the Bay County WTF by HMM staff and interviews with the staff yielded several recommendations that include piping upgrades from the filters to the ground storage tank, and new lime silo and new transfer pumps to replace the older units. Technology driven upgrades to the current Supervising Control and Data Acquisition (SCADA) system are anticipated, as well as filter upgrades to meet anticipated future disinfection byproducts rules. Several residual removal, thickening, and dewatering upgrades are also necessary to improve facility operation and enhance solids handling. A summary of the water treatment facilities' future needs and associated timelines are outlined in Table 4.20.

Table 4.20
Bay County Water Treatment System
Water Treatment Facility Needs

No.	Description	Timeline
1	Replacement of lime silo	2013
2	Filter backwash solids handling facilities	2013
3	Water treatment facility structural integrity analysis	2014
4	Clarifier drive mechanism	2014
5	Piping upgrade to alleviate hydraulic concerns	2015
6	Williams bayou Pump Station	2016
7	SCADA upgrade	2018
8	Transfer pump replacement/rehabilitation	2020
9	Filter Upgrades	2023
10	Belt filter press addition	2025
11	New 20 MGD North Bay Facility	2025-2030

4.3.5.3 Finished Water Storage and Pumping Needs

The primary function of water storage facilities is to provide the ability to equalize peak demand periods and to provide emergency storage in the event of a supply disruption or fire. As indicated in Section 4.3.4, BCPWS includes several storage facilities owned by Bay County and consecutive systems. Currently, the system has a storage capacity of approximately 43 million gallons which represents over 165% storage capacity based on approximately 26 MGD annual average water demand. According to FDEP Rule 62-555.320(19)(a), “the total useful finished water storage capacity (excluding any storage capacity for fire protection) connected to a water system shall at least equal 25 percent of the system maximum day demand, excluding any fire-flow demands.”

In regard to fire flow, FDEP Rule 62-555.330, “Engineering References” lists five technical references for water systems and three of these references contain criteria regarding fire-flow demand. These are:

1. Recommended Standards for Water Works, 1997 Edition.
2. Standards of the American Water Works Association (AWWA) in effect on January 1, 2003.
3. Water Distribution Systems Handbook, 1999

Paragraph 7.01(a) of reference 1 above states that the fire flow requirements established by the appropriate State Insurance Services Office (ISO) should be satisfied where fire protection is provided. For reference 2 above, the applicable AWWA standard is AWWA M31, Distribution System Requirements for Fire Protection. This manual includes various methods of calculating Needed Fire Flow (NFF), including the ISO method

referenced above. The ISO classification of a community's water system is based on available rates of flow at representative locations with an NFF of 3,500 gpm or less. Further, AWWA M31 indicates for a required fire flow of 3,000 gpm, the duration is 3 hours. Paragraph 10.6.3.2 of reference 3 above references the AWWA Manual and indicates that for modest-sized fires with a NFF of 3,000 gpm – 3,500 gpm, the duration is 3 hours.

In the absence of specific fire flow demand criteria for all of the consecutive wholesale customers, a NFF of 3,500 gpm with a duration of 3 hours is deemed to be conservative criteria for establishing the fire flow component of finished water storage. As such, the system fire flow demand storage of 630,000 gallons is considered adequate for planning purposes.

Following the FDEP criteria outlined above, Bay County Water System current storage capacity is sufficient to meet future peak daily demand of over 100 MGD, well above the projected water year 2030 MGD MDD. Based on the minimum design criteria results, no additional storage capacity for the County system is recommended at this time. However, for the retail water distribution system, it is recommended that a new one (1) million gallon storage tank and booster station be constructed on Hwy. 231. The location of the tank should be between Hwy. 2321 and Hwy. 2301 to provide water service and fire protection in the area.

The high service and booster pumps within the County's water system were evaluated to assess their ability to reliably provide the projected year 2030 flows. Based on the results outlined in Section 4, the current system of pumps is capable of meeting the future demands. However, due to age, several of the high service pumps and booster pumps at the Southeast Booster Pump Station would require rehabilitation and/or replacement. Moreover, the County retained the services of Jacobs Engineering to evaluate and recommend remedial actions to resolve a cavitation issue at the WTF high service pumps. It is anticipated that several modifications/upgrade will be required in the near future. Details on the recommended improvements for the high service pumps and booster pumps are outlined in Table 4.21.

Table 4.21
Finished Water Storage and Pumping Needs

No.	Description	Timeline
1	High service pumps modification/upgrades	2014-2015
2	High service pumps rehabilitation/replacement	2018-2025
3	Southeast booster pump station	2020-2025

4.3.5.4 Alternative Water Supply

With regard to raw water supply, the primary source of drinking water in Bay County is the Deer Point Reservoir. Currently the County’s consumptive use permit allows the County to withdraw sufficient raw water to fulfill its need through the 2030 planning period. However, the reservoir is vulnerable to storm surge associated with Category 3 or higher hurricanes as was experienced back in 1995 when Hurricane Opal made landfall. The County has recognized the vulnerability of its potable water supply for the past two decades and has explored several ground and surface water alternatives.

The main alternative that is being explored is an alternative raw water pump station and new force main. Based on information provided by County staff, the pumping station will be located in the Econfina Creek basin and will be sited such that raw water supply to the County is either not affected, or minimally affected, in the event of a Williams Bayou Pump Station or Deer Point Reservoir dam failure or intrusion of salt water due to storm surges. For planning purposes, it is anticipated that no additional consumptive use permit will be required, the raw water pump stations will have a capability of a system of raw water pump station capable of pumping 30 MGD and the raw water line will be 36” in diameter and will connect to the existing Bay County raw water main. Table 4.22 shows details on the project, along with the anticipated project completion time line.

Groundwater is another source for water supply which may be a future necessity for Bay County in years to come. The groundwater, especially in the northern area of Bay County should be protected and provisions should be implemented to assure that the groundwater sources in Bay County are not diminished in any way by outside entities.

Table 4.22
Alternative Water Supply Needs

No.	Description	Timeline
1	Alternative Water Supply Force Main and Pumping Station	2014-2016

5.0 Wastewater System

5.1 Wastewater Flow Projections

5.1.1 Current Annual Average Daily Flow

The flow projections for the Bay County Domestic Wastewater System utilized the current Annual Average Daily Flow (AADF) as a base for estimating future flows. The AADF is the average of the daily volumes received for a continuous 12 month period. Bay County provided HMM with three years of flow data for their various customers whose flow generally coincide with the Bay County Utility Service Areas as shown on Figure 1.2. The current AADF identified in this report is based on the data for the 12-month period from September 2011 to August 2012.

The wastewater flow data was provided in a Microsoft Excel format and included the monthly average daily flow for the Callaway, Cedar Grove, Parker, Springfield, Bay Northeast, Tyndall AFB and Mexico Beach Service Areas of which the wastewater from each is treated at the Military Point Advanced WWTP. The wastewater data for the West Bay (RiverCamps WWTP) and North Bay (North Bay WWTP) Service Areas were provided as monthly total flow. A summary of the data and the current AADF is presented in Table 5.1, "Current Annual Average Daily Flow".

5.1.2 Wastewater Annual Average Daily Flow Projections

The volume of residential wastewater generated is typically about 70% of the potable water demand. The remaining 30% is used for watering lawns, washing cars, etc. This ratio can be much different if areas that have water service do not have wastewater collection service. This skewed ratio, of course, occurs in the Service Areas in which the County does not provide wastewater services, but also occurs in the West Bay, North Bay and Northeast Bay Service Areas. In areas where potable water and wastewater services are provided, the wastewater projection can be based on the annual population growth rates identified in Section 3.0, "Population Projection". In areas that have water service and where future wastewater collection systems are anticipated, the increase in wastewater flow is projected by adding equivalent residential connections (ERC) during the 5 year increment of when construction is anticipated.

A spreadsheet was used to generate a table for projecting the wastewater flow. The current AADF was used as the initial base and the geometric growth formula was used, along with the annual population growth rates, to project flow to the next 5 year increment which would

Table 5.1
Current Annual Average Daily Flow

Treatment Facility	RiverCamp WWTF	North Bay WWTF	Military Point Advanced Wastewater Treatment Facility									
	West Bay	North Bay	Northeast (Bay Co Retail)	Tyndall	Mexico Beach	Calliway	Cedar Grove	Parker	Springfield	MPA WWTF		
Service Area	Flow (K gal/Month)	Flow (K gal/Month)	ADF/Month (MGD)	ADF/Month (MGD)	ADF/Month (MGD)	ADF/Month (MGD)	ADF/Month (MGD)	ADF/Month (MGD)	ADF/Month (MGD)	ADF/Month (MGD)	ADF/Month (MGD)	
September 2011	430	783	0.3801	0.8022	0.1689	1.1957	0.2311	0.2593	0.6206	3.6578		
October	320	716	0.4077	0.6925	0.1805	1.3292	0.2596	0.2857	0.5630	3.7181		
November	421	687	0.3796	0.6517	0.1440	1.1631	0.2370	0.2661	0.5965	3.4380		
December	413	521	0.3541	0.8095	0.1492	1.2072	0.2498	0.2805	0.6603	3.7105		
January 2012	365	527	0.3477	0.8164	0.1536	1.1058	0.2384	0.2592	0.6059	3.5270		
February	387	623	0.3515	0.7538	0.1553	1.0487	0.2211	0.2523	0.4239	3.2066		
March	422	704	0.3900	0.8667	0.1329	1.1541	0.2578	0.2997	0.6524	3.7536		
April	411	723	0.3099	0.6026	0.1680	0.8537	0.1790	0.1913	0.4483	2.7527		
May	530	894	0.4705	0.4792	0.2774	1.4102	0.2832	0.3309	0.7394	3.9907		
June	553	803	0.3846	0.6624	0.2529	1.0865	0.2122	0.2306	0.5312	3.3605		
July	608	775	0.4047	0.7930	0.3523	1.2452	0.4974	0.2554	0.6108	4.1587		
August	686	460	0.4837	0.8874	0.3516	1.8357	0.2156	0.2911	0.6931	4.7583		
Flow (K gal/year)	5546	8216										
AAAF (MGD)	0.0152	0.0225	0.3887	0.7348	0.2072	1.2196	0.2569	0.2668	0.5954	3.6694		

become the base for the next 5 year increment. This method allows additional flow (ERCs) to be included within a 5 year increment and to be carried forward to following increments.

HMM met with Bay County staff and discussed possible areas where wastewater collection is being proposed or is probable. Predicting the growth to a service area is based on judgment and knowledge of the characteristic of an area. It is more feasible to provide wastewater collection to density population areas than to rural areas with low density. Also, predicting development around commercial areas such as the new Airport in the West Bay Service Area is logical. The following ERCs were added to the projections as identified below.

**Table 5.2
Potential Wastewater ERCs**

Year	Area	ERC's
2015	West Bay Service Area	1075 ERCs
	North Bay Service Area	200 ERCs
2020	West Bay Service Area	350 ERCs
	North Bay Service Area	500 ERCs
	Northeast Bay Service Area	200 ERCs
2025	Northeast Bay Service Area	200 ERCs

The wastewater AADF projections for each service area are shown in Table 5.4. This Table also includes the AADF for each WWTP which is the sum of the AADF for the service areas that are served by the treatment plant (see Table 5.3).

**Table 5.3
Wastewater Treatment Plant Service Areas**

Facility	Service Area
MPAWTP	Callaway
	Parker
	Springfield
	Cedar Grove
WBWWTP	West Bay
NBWWTP	North Bay

5.1.3 Wastewater Peak Hourly Flow Projections

The peak hourly flow is the largest volume of flow to be received during a one hour period. The peak hourly flow is calculated by multiplying the AADF by a peaking factor which is the ratio of Q_{max}/Q_{avg} (Q = rate of flow). Constant peaking factors such as 2 and 3 times the AADF have been used; however, they do not account for the variation that occurs based on the size or population of the service area. The Q_{max}/Q_{avg} ratio for a small area or small number of people is higher than the ratio for large ones based on probability of sewer use and travel distance. W. G. Harmon developed a formula which identifies the Q_{max}/Q_{avg} ratio based on population. The formula creates a downward curve based as population increases and has a range from 4.2 for a population of 100 to 2 for a population of 100,000. This formula generates a higher peaking factor at the extreme reaches of a sewer collection/transmission system than in the central portions. The Harmon formula is recommended in the “Recommended Standards for Wastewater Facilities”, Great Lake – Upper Mississippi River Board (aka: Ten States Standards) which are referenced for compliance in the Florida Department of Environment Protection (FDEP) regulations. The Harmon formula was used herein for calculating the peaking factor for the various Utility Service Areas. The 2010 population and the projected population as identified in Section 3, “Population Projections” were used in the formula. A summary of the peaking factors is included in Table 5.5.

The peak hourly flow is used for design of the wastewater collection /transmission system and was calculated for evaluation of the pipe sizes and pump station capacities. Table 5.6 includes the current and projected peak hourly flow for each service area and also for the WWTPs.

**Table 5.4
Annual Average Daily Flow Projections**

Service Area	Present AADF (MGD)	Projected % Growth	2015 AADF (MGD)	2020 AADF (MGD)	2025 AADF (MGD)	2030 AADF (MGD)
Callaway	1.22	0.01	1.24	1.29	1.34	1.39
Parker	0.27	0.00	0.27	0.27	0.28	0.28
Springfield	0.60	0.00	0.60	0.61	0.61	0.62
Cedar Grove	0.26	0.01	0.26	0.27	0.27	0.28
Bay County	1.33		1.35	1.43	1.52	1.55
Northeast Bay	0.39	0.01	0.39	0.45 ⁽⁴⁾	0.51 ⁽⁷⁾	0.53
Tyndall AFB	0.73	0.01	0.74	0.76	0.78	0.80
Mexico Beach	0.21	0.01	0.21	0.21	0.22	0.23
West Bay	0.02	0.08	0.07 ⁽¹⁾	0.23 ⁽⁵⁾	0.33	0.49
North Bay	0.02	0.03	0.29 ⁽²⁾	0.43 ⁽⁶⁾	0.49	0.57
Panama City	N/A					
Panama City Beach	N/A					
Lynn Haven	N/A					
Wastewater Treatment Facility	Present AADF (MGD)		2015 AADF (MGD)	2020 AADF (MGD)	2025 AADF (MGD)	2030 AADF (MGD)
Military Point AWWTF	3.67		3.71	3.86	4.01	4.12
North Bay WWTF	0.02		0.36	0.65	0.83	0.57
RiverCamp WWTF	0.02		0.00	0.00	0.00	0.00
Proposed West Bay WWTF						0.49 ⁽⁸⁾
Comments						
(1) Added 200 ERCs for growth in the West Bay Area						
(2) Added 1075 ERCs in the North Bay Area						
(3) RiverCamp WWTF Flow diverted to North Bay WWTF						
(4) Added 200 ERCs for growth in the Northeast Bay Area						
(5) Added 500 ERCs for growth in the West Bay Area						
(6) Added 350 ERCs in the North Bay Area						
(7) Added 200 ERCs for growth in the Northeast Bay Area						
(8) West Bay Flow diverted to the proposed West Bay WWTF						

Table 5.5
Peaking Factors

Service Area	2010 Population	Peaking Factor	Projected % Growth	2015 Projected Population	Peaking Factor	2020 Projected Population	Peaking Factor	2025 Projected Population	Peaking Factor	2030 Projected Population	Peaking Factor
Callaway	21,736	2.6	0.75%	22,563	2.6	23,422	2.6	24,314	2.6	25,239	2.6
Parker	4,317	3.3	0.25%	4,371	3.3	4,426	3.3	4,482	3.3	4,538	3.3
Springfield	8,903	3.0	0.25%	9,015	3.0	9,128	3.0	9,243	3.0	9,359	3.0
Bay County Cedar Grove	3,269	3.4	0.50%	3,352	3.4	3,436	3.4	3,523	3.4	3,612	3.4
Bay County Northeast	22,340	2.6	0.50%	22,904	2.6	23,482	2.6	24,075	2.6	24,683	2.6
TAFB	2,995	3.4	0.50%	3,071	3.4	3,148	3.4	3,228	3.4	3,309	3.4
Mexico Beach	1,075	3.8	0.50%	1,102	3.8	1,130	3.8	1,159	3.8	1,188	3.8
MPAWWTF	64,635	2.2		64,635	2.2	64,635	2.2	64,635	2.2	64,635	2.2
Bay County West Bay	522	4.0	8.00%	1,267	3.7	3,112	3.4	4,572	3.3	6,718	3.1
Bay County North Bay	8,341	3.0	3.00%	12,357	2.9	15,200	2.8	17,620	2.7	20,427	2.6
NBWWTF				13,623	2.8	18,311	2.7	22,192	2.6		

Peaking Factor Formula (GLUMRB, 2004)

$$Q \text{ Peak Hourly/Q design Average} = \frac{18+ \text{square root } P}{4+ \text{square root } P}$$

(P = population in Thousands)

**Table 5.6
Peak Hourly Flow Projections**

Service Area	Present PHF (MGD)	Projected % Growth	2015 PHF (MGD)	2020 PHF (MGD)	2025 PHF (MGD)	2030 PHF (MGD)
Callaway	3.19	0.75%	3.22	3.33	3.43	3.54
Parker	0.88	0.25%	0.89	0.89	0.90	0.91
Springfield	1.79	0.25%	1.80	1.82	1.83	1.85
Cedar Grove	0.88	0.50%	0.88	0.90	0.92	0.94
Bay County	4.33		4.36	4.59	4.82	4.93
Northeast Bay	1.01	0.50%	1.02	1.17 ⁽⁴⁾	1.32 ⁽⁷⁾	1.35
Tyndall AFB	2.53	0.50%	2.55	2.61	2.67	2.73
Mexico Beach	0.78	0.50%	0.79	0.81	0.83	0.85
West Bay	0.06	8.00%	0.25 ⁽¹⁾	0.77 ⁽⁵⁾	1.08	1.52
North Bay	0.07	3.00%	0.84 ⁽²⁾	1.18 ⁽⁶⁾	1.34	1.52
Panama City	N/A					
Panama City Beach	N/A					
Lynn Haven	N/A					
Wastewater Treatment Facility	Present PHF (MGD)		2015 PHF (MGD)	2020 PHF (MGD)	2025 PHF (MGD)	2030 PHF (MGD)
Military Point AWWTF	7.94		8.03	8.35	8.68	8.91
North Bay WWTF	0.07		1.02	1.75	2.15	1.52
RiverCamp WWTF	0.06		0.00	0.00	0.00	0.00
Proposed West Bay WWTF						⁽⁸⁾ 1.52
Comments						
(1) Added 200 ERCs for growth in the West Bay Area						
(2) Added 1075 ERCs in the North Bay Area						
(3) RiverCamp WWTF Flow diverted to North Bay WWTF						
(4) Added 200 ERCs for growth in the Northeast Bay Area						
(5) Added 500 ERCs for growth in the West Bay Area						
(6) Added 350 ERCs in the North Bay Area						
(7) Added 200 ERCs for growth in the Northeast Bay Area						
(8) West Bay Flow diverted to the proposed West Bay WWTF						

5.2 Wastewater System Model

HMM was provided a previous hydraulic model developed for the County using WaterCAD software by Bentley Systems Inc. The model primarily included proposed wastewater expansion east of Callaway which is now part of the Callaway wastewater system. HMM had previously modeled portions of the Bay County wastewater system using SewerCAD software by Bentley Systems Inc. in the northern areas, which is more reflective of the current and proposed expansions to the wastewater system. Therefore, the existing HMM model using SewerCAD was selected to develop a new County wide wastewater model. The new model includes the master pump stations, sewer force mains, and gravity system components necessary to model the Bay County master pumping station's connectivity.

The model operates based on data assigned to components such as pipe lengths regardless of the scaled length on the drawing. HMM created the model using SewerCAD for AutoCAD and prepared the drawing by overlaying the base map provided by Bay County's GIS department. This approach reflects "real world" conditions in lieu of a schematic drawing and allows for greater ease in expanding the model to include the collection system and minor pump stations or to evaluate proposed alternatives. This method also provides a better representation of how the model is set-up and is easier to understand for those not so familiar with setting up models.

Bay County provided HMM with GIS data for the wastewater system that included pump station numbers and locations, gravity or vacuum collection pipe locations and sizes, as well as the force main locations, sizes, and configuration of their connections to the WWTP. Additionally, the County provided pump curves for all the master pumping stations, elevations of the force mains, high water level at the structures where the force mains enter the various plants, and the Bay County Lift Station Manual which identified the diameters and depths of the pump stations.

The model was developed by configuring master pumping station wet wells, pumps, sewer force mains, air-vacuum valves where appropriate, and the connections to the WWTP (outlets). Junction nodes were placed at high and low points along the force main route, at interconnection points networking sewer force mains and at major changes in pipe directions. Pump definitions were created for each pump of the various pumping stations that were included within the model.

Two separate base models were created for the Bay County Sewer System. The Existing Wastewater System model (See Figure 5.1) has a configuration matching the Bay County Sewer system as it exists at the time of this report. The Future Wastewater System model (See Figure 5.2) has a reconfigured pump and piping system in the West Bay and North Bay service areas. The reconfiguration includes the elimination of the RiverCamps WWTP and inclusion of two (2) master pump stations with associated sewer force mains designed to convey wastewater from the West Bay Area to the North Bay WWTP.

The Existing System model includes three WWTPs; therefore, has three separate wastewater systems within the model. The Existing System model contains the Municipal System Area (See Appendix C, Figure E.2) the North Bay System Area (See Appendix C, Figure E.3) and the West Bay System Area (See Appendix C, Figure E.4). The Future System Model contains two WWTP which includes the Municipal System Area (See Appendix C, Figure F.2) and the North Bay System Area (See Appendix C, Figure F.3) which includes flow from the West Bay Area.

The models were run using the appropriate number of pumps on to generate the maximum station capacity which should represent the peak flow condition (i.e. duplex PS has 1 pump on, triplex PS has 2 pumps on, etc.). The pumping rate at each of the master pump stations was compared to the current and projected peak hourly flow to determine if upgrades are currently needed or would be needed in the future. SewerCAD hydraulic modeling software assumes all pipes are full when performing the hydraulic analysis, therefore, all components of the piping system must be examined carefully to determine if any areas exist which require further investigation or reconfiguration. Due to some of the extreme force main distances and high and low points within the systems, sewer force main profiles were examined to assure the hydraulic model was presenting accurate results. There are two locations in the system that required additional analysis due to the location of significant high point and length of down gradient sewer force mains.

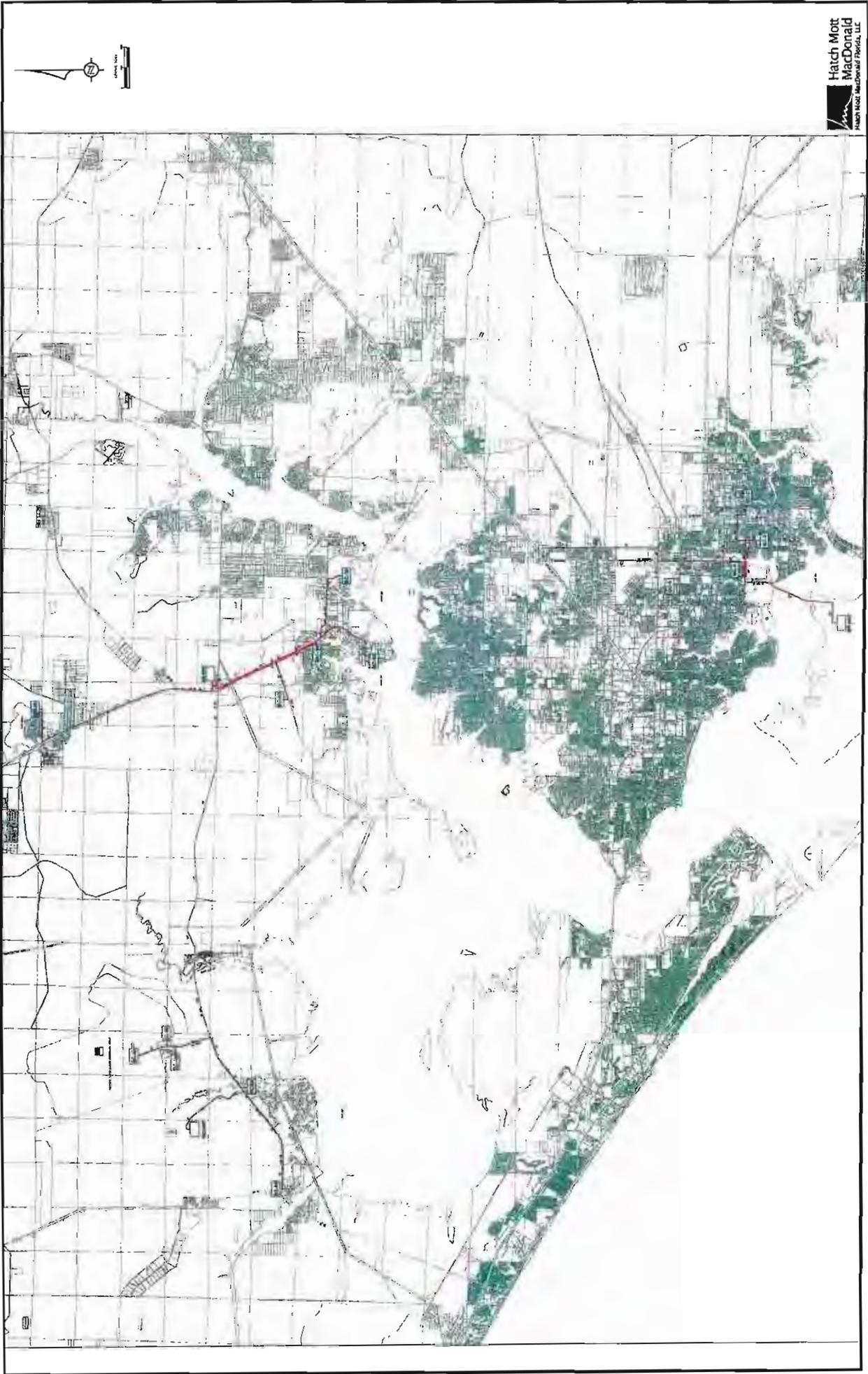
The first location analyzed involved the sewer force main from pump station BC-42 at the Airport (see Figure 5.1). The sewer force main from pump station BC-42 runs up gradient (positive slope) from the pump station for the initial 2,500 feet. The remaining 15,500 feet (with the exception of approximately 700 feet crossing under Crooked Creek) runs down gradient (negative slope) for a vertical drop of approximately 44 feet to the RiverCamps Booster Station (RCBS) where it has an open end discharge into the wetwell. The second location where this occurs is in the force main from pump station BC-37 (Lake Merial, see Figure 5.1). The sewer force main from this pump station is up gradient from the pumping station for the initial 2,600 feet and the remaining 27,500 feet is primarily down gradient for a vertical drop of approximately 22 feet.

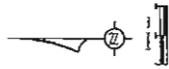
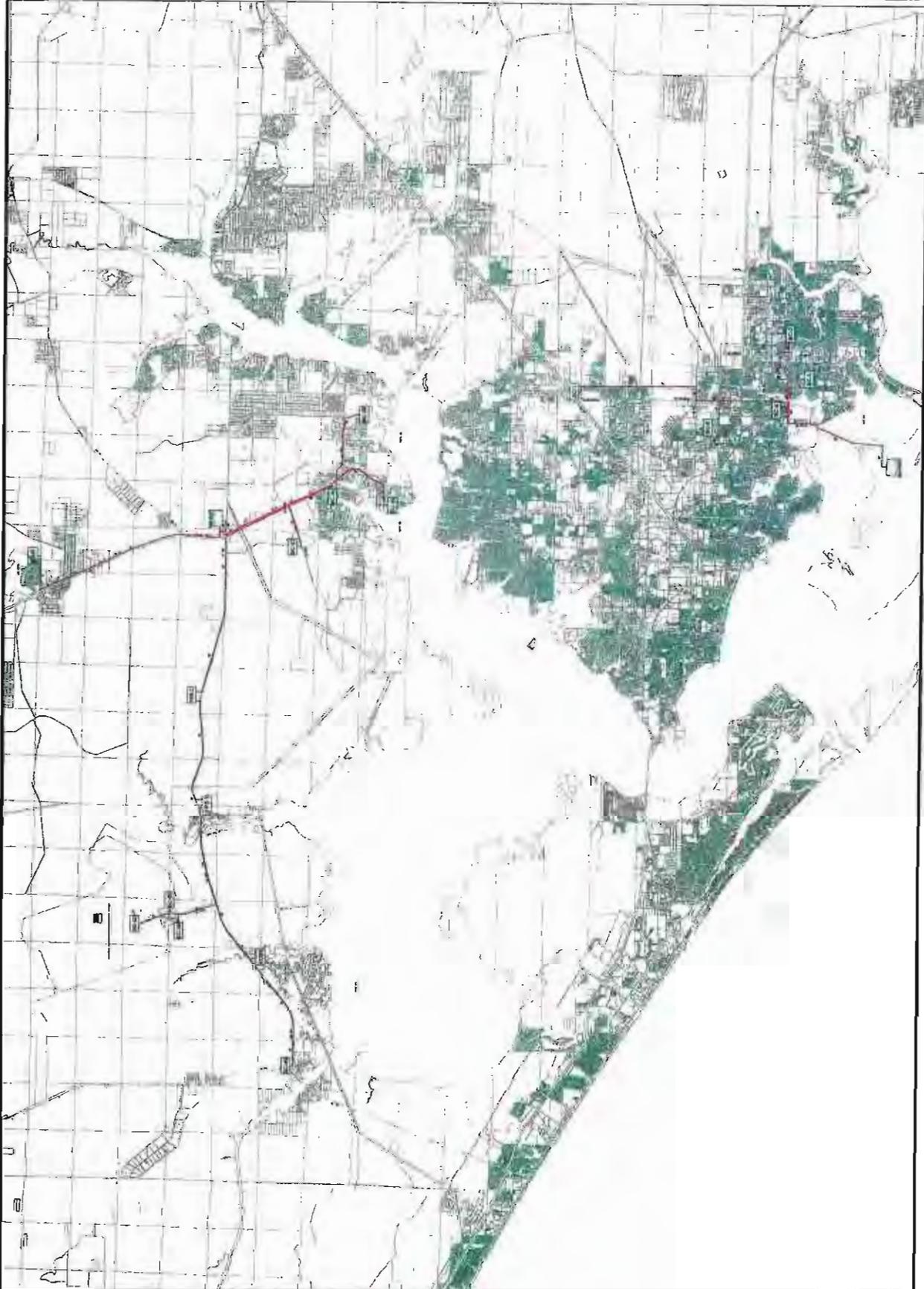
Gravity flow will occur in down gradient force main in lieu of pressure flow when the pump is not running and when the pump is running if the AADF of the pump station is less than the gravity flow rate. The gravity flow rate is influenced by several features such as the hydraulic grade and the air/vacuum valves. When gravity flow is occurring in the force main the only friction loss to generate head against the pump is that which is generated from the pump to the high point of the force main. This will cause the pumps to operate at a much higher rate than designed. This situation is occurring at pump stations BC-42 and BC-37 and will continue to occur until the AADF to the stations equals the gravity flow rate. Should the AADF reach the gravity flow rate, the pumping rate will decrease. An example is BC-42 which is designed to pump 350 gpm against a full force main and is currently pumping at 520 gpm with the gravity flow occurring. Additional flow should not be added to these stations based on current pumping rates.

Based on the modeling results, all existing master pumping stations included in the SewerCAD model have adequate capacity for present and future flows to the year 2030, however, it is anticipated that by 2015, the RiverCamps WWTP will be nearing capacity and flow from that area will be redirected to the North Bay WWTP by construction of two (2) new pumping stations and approximately 42,000 LF of 10” sewer force main along CR 388. The future configuration is modeled in the Future System Model. A copy of the wastewater model results is included in Appendix C.

The hydraulic design standards used in the model follow good engineering practice and are based on experience, FDEP regulatory requirements, Recommended Standards of Wastewater facilities (GLUMRB) standards and the Bay County standards as applicable. The following standards were reviewed with the County and approved.

Max wastewater force main velocity	5 fps
Maximum wastewater force main pressure	100 psi
Roughness Coefficient (Hazen-Williams)	Existing 100, Proposed 120
Factor for peak hourly flow	R. C. Harmon Formula





5.3 Wastewater Treatment Facilities

5.3.1. Introduction

Bay County operates and manages three wastewater treatment systems that provides for the current wastewater treatment and disposal needs for the City of Callaway, City of Springfield, City of Parker, City of Mexico Beach, Tyndall AFB, and unincorporated areas within Bay County. This 2012 Strategic Plan focuses on improvement, expansion, and upgrade needs to meet the projected 2030 wastewater conveyance, treatment, and disposal requirements. Specific contents for this Plan are extracted from population projections, growth patterns, meetings with Bay County staff, feasibility reports, planning documents, future regulation, and an extensive review of current and future programs.

This section includes a discussion of the following items:

- Wastewater collection and transmission
- Wastewater treatment and disposal

5.3.2.1 Wastewater Collection and Transmission System

The Bay County existing collection and transmission system has approximately 13 miles of vacuum pipe, 110 miles of force main, 33 miles of gravity sewer, and 51 pump stations. The pipe sizes range from 2” to 36” in diameter. There are currently nine separate collection systems within the Bay County Sewer System, four systems are owned and maintained by Bay County and five are owned and maintained individually by the City of Callaway, the City of Springfield, City of Parker, City of Mexico Beach, and Tyndall Air Force Base. Wastewater collected from the five individual systems is pumped to the Military Point Advanced Wastewater Treatment Plant (MPAWTP) via five master lift stations. Wastewater collected in the Bay County Cedar Grove and Bay County northeast service areas is also pumped to MPAWTP. The majority of the collection/transmission system in the MPAWTP service area was constructed in the early 1980s. Details on the collection/transmission piping and the pump stations, based on GIS data from the County, are provided in Tables 5.7 and 5.8 and are shown in Figure 5.3.

**Table 5.7
Diameter and Length of Pipe in Military Point AWTP
Service Area**

Diameter (in)	Type	Length (ft)
3	Airvac	349
4	Airvac	31,460
6	Airvac	21,650
8	Airvac	10,842
10	Airvac	3,557
2	Force Main	4,115
3	Force Main	1,071
4	Force Main	22,189
6	Force Main	23,425
8	Force Main	32,093
10	Force Main	101,413
12	Force Main	7,984
14	Force Main	64,592
16	Force Main	52,667
18	Force Main	12,278
20	Force Main	6,836
24	Force Main	3,870
30	Force Main	131
36	Force Main	15,777
4	Gravity Sewer	1,622
6	Gravity Sewer	6,172
8	Gravity Sewer	120,542
10	Gravity Sewer	6,498
12	Gravity Sewer	1,370
unknown	Gravity Sewer	22,384
36	Force Main to Mill	10135

Table 5.8
Master Pump Stations in Military Point AWTP service area

Master Lift Station	Design Capacity (GPM)
BC-2 (Callaway)	4,489
BC-3 (Parker)	1,259
BC-4 (Springfield)	3,263
BC-1 (Bay County NE)	2,841

Wastewater collected in the Bay County North Bay Service Area is pumped to the North Bay Wastewater Treatment Plant (NBWWTP). The majority of the collection/transmission system was constructed in 2007. Details on the collection/transmission system piping and pump stations are outlined in Tables 5.9 and 5.10 and are shown in Figure 5.4.

Table 5.9
Diameter and Length of Pipe in North Bay Service Area

Diameter (in)	Type	Length (ft)
6	Force Main	7,658
8	Force Main	8,924
10	Force Main	5,916
12	Force Main	5,166
14	Force Main	4,733
16	Force Main	93
18	Force Main	1,032
8	Gravity Sewer	12,491

**Table 5.10
NORTH BAY PUMP STATIONS**

Master Pump Station	Design Capacity (GPM)
BC-37 (Lake Merial)	290
BC-39 (CR 2321)	219
BC-40 (W Smith Rd)	421

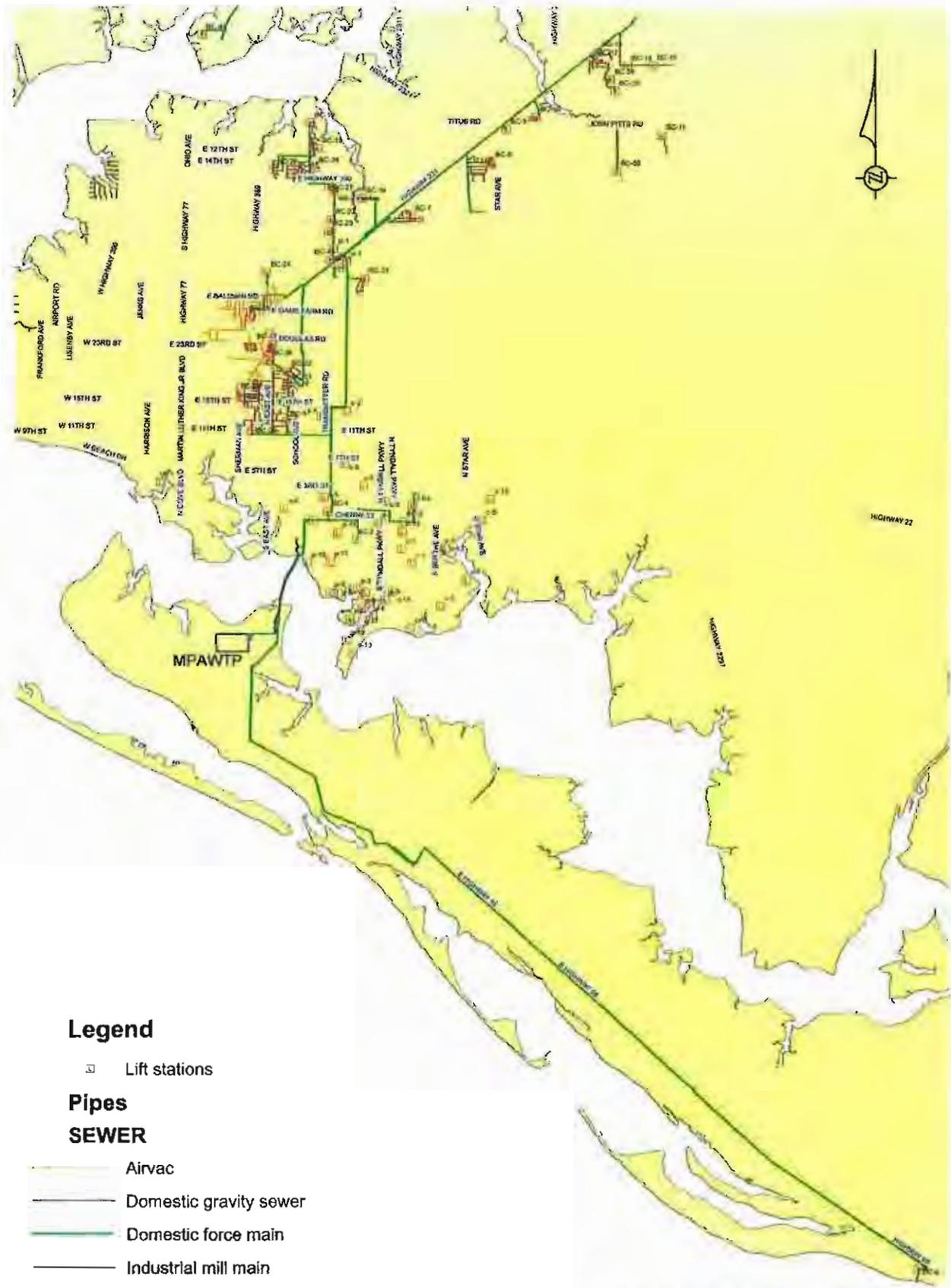
Wastewater collected in the West Bay Service Area, including the Northwest Florida Beaches International Airport, is served by the RiverCamps Wastewater Plant (RCWWTP). The collection/transmission system primarily consists of a low pressure system in the RiverCamps area which was constructed in the early 2000s. Details of the collection system piping pump stations are outlined in Table 5.11 and 5.12 and are shown in Figure 5.5.

**Table 5.11
Diameter and Length of Pipe in West Bay Service Area**

Diameter (in)	Type	Length (ft)
2	Force Main	17,319
2.5	Force Main	2,314
3	Force Main	11,351
4	Force Main	21,632
6	Force Main	24,506
8	Force Main	14,695
8	Gravity Sewer	1,837

**Table 5.12
Master Lift Station in the West Bay Service Area**

Master Pump Station	Design Capacity (GPM)
BC-49	330
BC-42	350
RC-BS	312



Legend

- Lift stations

Pipes

SEWER

- Airvac
- Domestic gravity sewer
- Domestic force main
- Industrial mill main

MPAWTP SERVICE AREA PIPING AND PUMPING STATIONS

FIGURE 5.3



Legend

□ Lift stations

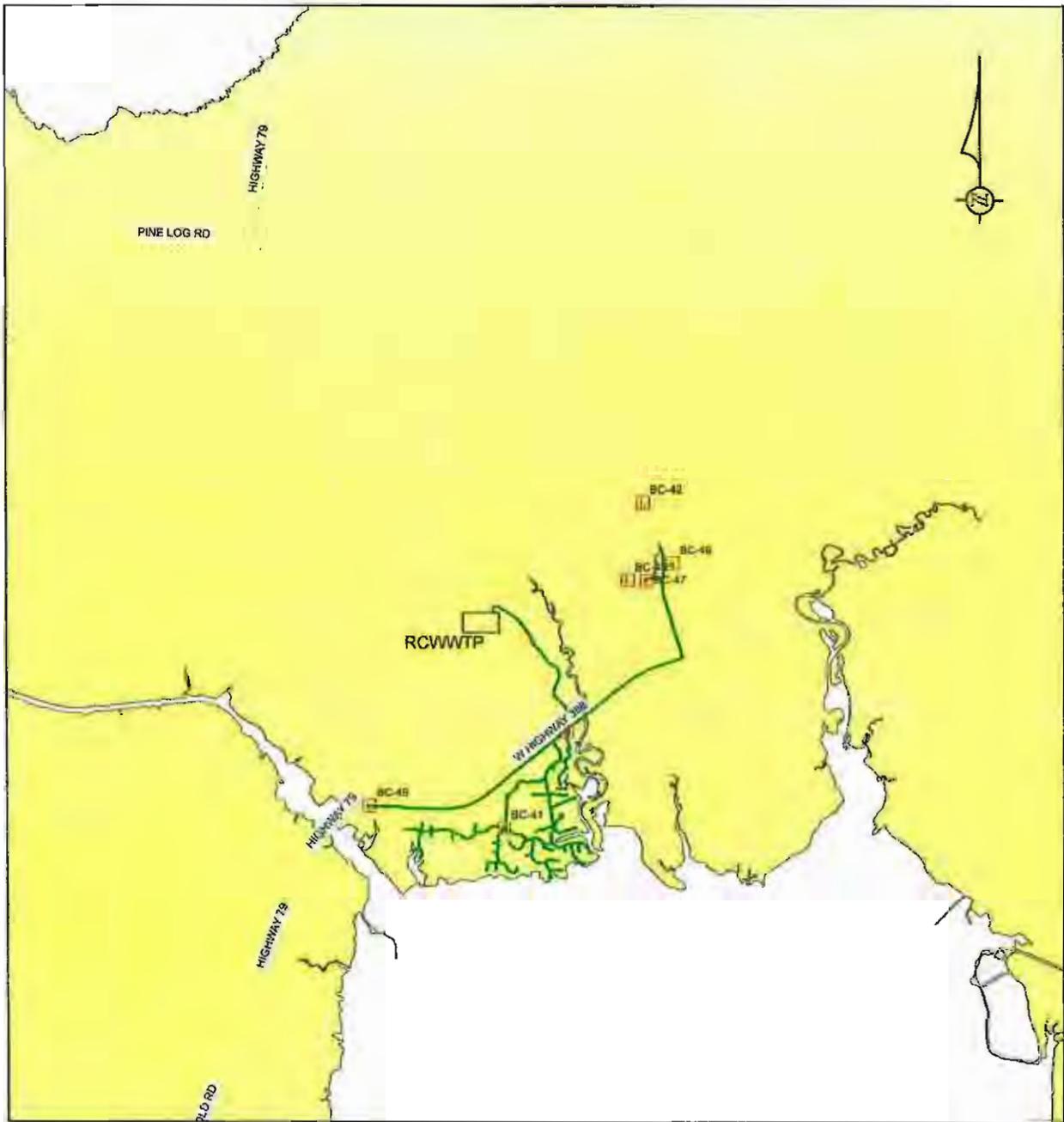
Pipes

SEWER

- Airvac
- Domestic gravity sewer
- Domestic force main

NORTH BAY WWTP SERVICE AREA PIPING AND PUMPING STATIONS

FIGURE 5.4



Legend

 Lift stations

Pipes

SEWER

-  Airvac
-  Domestic gravity sewer
-  Domestic force main

WEST BAY WWTP SERVICE AREA PIPING AND PUMPING STATIONS

FIGURE 5.5

5.3.3 Wastewater Treatment Facility

As previously indicated, there are three separate wastewater treatment plants currently serving Bay County. The largest is Military Point AWTP which is jointly owned by Bay County, City of Callaway, City of Springfield, and the City of Parker through an interlocal agreement. The 7.0 MGD annual average daily flow (AADF) advanced wastewater treatment facility was constructed in 1999 and is currently meeting wastewater treatment and disposal needs of its owners. An aerial photo of the MPAWTP is shown in Figure 5.6. Corresponding information on the treatment process units are detailed in Table 5.13.

**TABLE 5.13
MPAWTP Treatment Process Unit Information**

Process Unit	Military Point AWTP
Headworks	Two (2) screens One (1) grit removal system
Biological Treatment	Two (2) anaerobic tanks Four (4) anoxic tanks Two (2) oxidation ditches Two (2) re-aeration tanks
Clarification	Two (2) circular clarifiers
Filtration	Three (3) effluent sand filters
Disinfection	UV Disinfection
Biosolids Digestion	Four (4) aerobic digesters
Biosolids Dewatering	Two (2) centrifuge
Effluent Disposal	Ocean outfall, One (1) MGD public access reuse, and 0.114 Restricted public access reuse
Biosolids Disposal	Land application
Reject Storage	One (1) reject pond



**AERIAL PHOTOGRAPH
MILITARY POINT ADVANCED WASTEWATER TREATMENT PLANT**

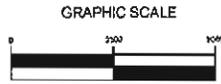
FIGURE 5.6

The North Bay WWTP was permitted for 1.5 MGD AADF and was constructed in 2007. It is owned and operated by Bay County, and provides sewer treatment and disposal services to customers in the Bay County North Bay Service Area which includes Southport and Lake Merial. An aerial photo of the North Bay WWTP is shown in Figure 5.7. Corresponding information on the treatment process units are detailed in Table 5.14.

TABLE 5.14

NBWWTP Treatment Process Unit Information

Process Unit	North Bay WWTP
Headworks	One (1) mechanical screen One (1) manual bar screen One (1) grit separator
Biological Treatment	Two (2) sequencing batch reactors One (1) post equalization tank
Clarification	N/A
Filtration	Two (2) effluent cloth filters
Disinfection	Two (2) chlorine contact tanks with sodium hypochlorite feed system
Biosolids Digestion	One (1) aerobic digester
Biosolids Dewatering	One (1) centrifuge
Effluent Disposal	Twenty-four (24) rapid infiltration basins
Biosolids Disposal	Land application
Reject Storage	One (1) reject pond



AERIAL PHOTOGRAPH
NORTH BAY WASTEWATER TREATMENT PLANT

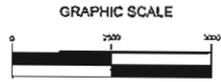
FIGURE 5.7

The RiverCamps WWTP was permitted for 0.072 MGD AADF and was constructed in the early 2000s. It is owned and operated by Bay County and provides service to the customers in the West Bay Service Area which includes the Northwest Florida Beaches International Airport. An aerial photo of the RiverCamps WWTP is shown as Figure 5.8. Corresponding information on the treatment process units are detailed in Table 5.15.

Table 5.15

RCWWTP Treatment Process Unit Information

Process Unit	River Camp WWTP
Headworks	One (1) manual bar screen
Biological Treatment	Two (2) surge tanks Four (4) aeration basins
Clarification	Two (2) rectangular clarifiers
Filtration	N/A
Disinfection	Two (2) chlorine contact basins with sodium hypochlorite feed system
Biosolids Digestion	Two (2) aerobic digesters
Biosolids Dewatering	N/A
Effluent Disposal	Two rapid infiltration basins
Biosolids Disposal	Pump out
Reject Storage	N/A



AERIAL PHOTOGRAPH
RIVERCAMPS WASTEWATER TREATMENT PLANT

FIGURE 5.8



5.4 Wastewater System Needs

5.4.1 Wastewater Collection and Treatment Needs

The existing wastewater collection and treatment system is expected to collect and transport current and future peak hourly flows with pressure, velocity, and head conditions that are outlined earlier in this section. The treatment facilities are expected to treat wastewater to levels outlined in the Operation Permits. Recommended improvements needed to comply with asset management needs, performance criteria, treatment level, and level of service requirements are described in the following sections.

5.4.2 Sewer Collection System Needs

Condition assessment for the existing Bay County retail sewer collection system is not available; however, due to age and for planning purposes it is recommended that funds be allocated for the assessment and rehabilitation of the sewer collection system, especially in the County’s Cedar Grove Service area, in the near future.

In the Northeast Bay Service Area it is projected that wastewater collection will be provided in the Hwy 2301 area, north of Hwy 231 during year 2020 and in the Hwy 231 area, north of the Bay Industrial Park during year 2025. The collection systems would most likely be installed by the developers as these areas are developed; therefore, the construction costs are not included herein.

A summary of the wastewater collection system needs and associated timeline are shown in Table 5.16.

Table 5.16
Bay County Wastewater Collection System
Sewer Collection System Needs

No.	Description	Timeline
1	Condition Assessment and I/I Analysis (Cedar Grove Service Area)	2014-2020

5.4.3 Master Life Station/Transmission Needs

The operational staff for the Bay County sewer collection and transmission system have done an excellent job in managing the aging master lift station that currently pumps wastewater collected in the Military Point AWTP service area. The majority of the pump stations were constructed in the early 1980s, upgraded approximately 13 years ago and will require rehabilitation and/or replacement over the next several years to maintain the required flow capacity.

The flow to the RiverCamps WWTP is not near the Plant's capacity; however, the capacity has been allocated for developments. Future developments outside this allocations map require flow to be diverted from the RiverCamps WWTP to the North Bay WWTP. The development market is currently soft; however, for planning purposes it is anticipated that enough development will occur in the West Bay Service Area by 2015 to warrant the diversion of flow. The initial phase for diverting the flow includes two new triplex master pump stations which would have a capacity of 600-800 gpm and approximately 42,000 LF of new 10" sewer force main. This system will divert flow from RiverCamps development, the Airport, the business center and the West Bay/Hwy 79 area to the North Bay WWTP. The construction plans for this initial phase are complete and ready for construction when the time arrives. The construction plans reflect two future pump stations that are considered the second phase of the flow diversion project which increases the diversion capacity to a range of 800-1200 gpm. Based on when and where development occurs in the West Bay Service Area, a new West Bay WWTP may be constructed in lieu of the second phase of the diversion project. The Hwy 388 force main would continue to provide service to developments along Hwy 388. At the time of the future west Bay WWTP construction, changes to this force main will also be constructed so that the wastewater flow can be directed to either the future West Bay WWTP, the North Bay WWTP or a combination thereof. This arrangement provides Bay County with flexibility during emergencies and during maintenance. The future West Bay WWTP is discussed further in Section 5.4.4.

As indicated in Section 5.4.1. "Sewer Collection System Needs", development is projected in the Hwy 2301 area north of Hwy 231 and in the Hwy 231 area north of the Bay Industrial Park. Should those areas develop as projected and if the developments include a wastewater collection system, master pump stations and 8" and 10" force main, respectively, may be required.

A summary of the need for master pump stations in the future and associated timelines are outlined in Table 5.17.

Table 5.17
Master Pump Station Needs

No.	Description	Timeline
1	Rehabilitation of Military Point AWTP Pump Station 1 ⁽¹⁾	2014
2	Rehabilitation of Military Point AWTP Pump Station 2 ⁽¹⁾	2014
3	Rehabilitation of Bay County NE Pump Station ⁽¹⁾	2014
4	Rehabilitation of Bay County Callaway Pump Station ⁽¹⁾	2014
5	Rehabilitation of Bay County Parker Pump Station ⁽¹⁾	2014
6	Rehabilitation of Bay County Springfield Pump Station ⁽¹⁾	2014-2023
7	Rehabilitation of Bay County Cedar Grove Pump Station ⁽¹⁾	2014
8	Hwy 388 Pump Station and Force Main Phase 1	2015
9	Hwy 2301 Pump Station and Force Main	2020
10	Hwy 388 Pump Station and Force Main Phase 2	2020
9	Generator for 5 Pump Stations (BC #1-BC#5)	2022
10	Hwy 231 Pump Station and Force Main	2025

(1) Information is obtained from Bay County Utility Services Assessment Replacement Plan dated August 2012.

5.4.4 Wastewater Treatment Facilities Need

As previously indicated, Bay County co-owns and operates the Military Point AWTP and will continue to operate and serve the County’s northeast retail operation and the Cities of Callaway, Parker, Springfield, Mexico Beach and Tyndall AFB until the plant reaches its AADF design capacity of 7.0 MGD. In 2012, Bay County retained services of Carollo Engineers, Inc. to assess the asset replacement needs of the Military Point AWTF. The report outlines current asset conditions, estimated replacement cost, and prioritized replacement and upgrade activities through the year 2052. Since the planning period for this report is from present to the year 2030, the asset replacement and upgrade needs until year 2030 are indicated herein as shown in Table 5.18. Tables 5.19 and 5.20 show the current and projected 2030 flows and the remaining capacity for allocation for each co-owner based on the current allocations. Based on the projections outlined, it is anticipated that the upgrade of the Military Point AWTP will not be required prior to 2030. Additionally, to provide sewer to existing residents and to support projected growth along Hwy 231 and the Industrial Park (Northeast Bay Service Area), it is recommended that a new plant with approximately 1.5 MGD AADF capacity be constructed along Hwy. 231 in the 2020 timeframe.

Table 5.18
Military Point AWTP Needs

No.	Description	Timeframe
1	Screen Replacement and Addition	2018
2	Grit System Addition	2020
3	New Magnetic Flow Meter	2015
4	Mixer in the Aeration	2015
5	UV System Replacement	2016
6	Replacement of Centrifuge	2014
7	Filter Replacement	2020
8	Digester Diffuser	2022
9	SCADA Upgrades	2015
10	Building HVAC Replacement	2019
11	Pump Station 1 Replacement	2014
12	Pump Station 2 Replacement	2014
13	Anaerobic Mixers	2022
14	Sluice, Slide, and Weir Gate	2019-2025
15	Effluent Transfer Pumps	2022
16	MCC and PLC Replacement	2019-2027

Table 5.19
MPAWTP Co-Owner's Current Remaining Capacities

Co-Owner	Current Allocation (MGD)	Current Flow (MGD)	Remaining Capacity (MGD)	Remaining to 80% Capacity (MGD)
Callaway	2.14	1.22	0.92	0.49
Parker	0.72	0.27	0.45	0.31
Springfield	1.26	0.60	0.66	0.41
Bay County	2.88	1.33	1.55	0.97

**Table 5.20
MPWWTP Co-Owner's 2030 Remaining Capacities**

Co-Owner	Current Allocation (MGD)	Projected 2030 Flow (MGD)	Remaining Capacity (MGD)	Remaining to 80% Capacity (MGD)
Callaway	2.14	1.39	0.75	0.32
Parker	0.72	0.28	0.44	0.30
Springfield	1.26	0.62	0.64	0.39
Bay County	2.88	1.45	1.43	0.85

Currently, the wastewater flow coming from the North Bay WWTP is being transported by tanker trucks to the Military Point WWTP for treatment and disposal. It is anticipated that the 1.5 MGD North Bay WWTP will be placed into operation within the next 6-12 months upon completion of the rapid infiltration basin (RIB) Phase 1. The rib cells will be constructed in three phases with each phase providing a capacity of 0.50 MGD. It is recommended that a facility condition assessment be conducted prior to placing the plant in operation. Also, the addition of a new grit system to replace the current non-functional system will be required to protect downstream treatment process equipment from sand and grit accumulation.

The West Bay Service Area along Hwy 79 does not have a centralized wastewater treatment facility, although the West Bay Service Area Sector Map identifies potential future development in this area. To capture growth, it is recommended that planning for a new 1.5 MGD WWTP be accomplished in year 2020 followed by the construction of the plant in 2020-2025 timeframe.

**Table 5.21
West Bay and North Bay Area Wastewater Treatment Needs**

No.	Description	Timeframe
1	North Bay WWTP Condition Assessment	2013
2	North Bay WWTP New Grit System	2014
3	North Bay WWTP RIB cells Phase 2	2015
4	New Facility on Hwy 231	2020
5	Future West Bay Treatment Plant	2020-2025
6	North Bay WWTP Rib Cells, Phase 3	2025

6.0 Cost Estimates

6.1 Water Strategic Plan Unit Cost Estimates

The estimated costs for the various improvements are preliminary for planning purpose and are intended to give an order of magnitude. The estimates are based on typical 2012 construction unit prices for the various types of work and include a 35% mark-up for non-construction related items. The unit prices used are shown in Table 6.1 through Table 6.5.

**Table 6.1
Cost for Water Treatment Facilities**

Type of Treatment	Unit Cost (\$) per gpd ⁽¹⁾
Groundwater	\$2.3
Surface Water	\$4.0

(1) Typical treatment facility with storage and high service pumps. Cost was obtained from 2006 Bay county water and wastewater strategic plan, other industry standard, and HMM experience. Cost was multiplied by CPI to obtain 2012 costs

**Table 6.2
Unit Cost for Pumps**

Type of Pump	Unit Cost (\$) per gpm ⁽¹⁾
Raw water pumps	\$237
Raw water pump (R&R)	\$120
High service pumps	\$237
High service pumps (R&R)	\$120
Transfer Pumps	\$120
Transfer Pumps (R&R)	\$60

(1) Cost was obtained from local bids, other industry standard, RS Means, and HMM experience. Cost was multiplied by CPI to obtain 2012 costs

**Table 6.3
Unit Cost for Ground Storage Tank**

Volume (Gallons)	Unit Cost (\$) ⁽¹⁾
500,000	\$709,560
1,000,000	\$1,028,700
2,000,000	\$1,561,032

(1) Cost was obtained from local bids, other industry standard, RS Means, 2006 Bay county water and wastewater strategic plan, and HMM experience. Cost was multiplied by CPI to obtain 2012 costs

**Table 6.4
Unit Cost for Water Main Pipes**

Pipe Diameter	Unit Cost (\$) per linear foot ⁽¹⁾
6"	\$42
8"	\$56
10"	\$67
12"	\$78
14"	\$108
16"	\$122
18"	\$129
20"	\$141
24"	\$160
30"	\$209
36"	\$228
36" HDD	\$891
42"	\$307
48"	\$392

(1) Cost was obtained from local bids, other industry standard, RS Means, and HMM experience. Cost was multiplied by CPI to obtain 2012 costs

6.2 Wastewater Strategic Plan Unit Cost Estimates

The estimated costs for the various improvements are preliminary for planning purpose and are intended to give an order of magnitude. The estimates are based on typical 2012 construction unit prices for the various types of work and include a 35% mark-up for non-construction related items. The unit prices used are shown in Table 6.6 through Table 6.9.

**Table 6.5
Cost for Wastewater Treatment Facilities**

Type of Treatment	Unit Cost ⁽¹⁾
Domestic Wastewater Treatment Facility with Onsite Disposal	\$13.0
North Bay WWTP RIB Cell	\$250,000/cell

(1) Typical treatment facility Cost was obtained from similar facilities, industry standard, and HMM experience.

**Table 6.6
Unit Cost for Sewer Force Main**

Pipe Diameter	Unit Cost (\$) per linear foot ⁽¹⁾
6"	\$42
8"	\$56
10"	\$67
12"	\$78
14"	\$108
16"	\$122
18"	\$129
20"	\$141
24"	\$160
30"	\$209
36"	\$228
42"	\$307
48"	\$392

(1) Cost was obtained from local bids, other industry standard, RS Means, and HMM experience. Cost was multiplied by CPI to obtain 2012 costs

**Table 6.7
Unit Cost for Sewer Pump Station**

Type of Pump	Unit Cost (\$) per gpm ⁽¹⁾
New Lift Station	\$1,016
Rehabilitation of Existing Lift Station	\$508

(1) Cost was obtained from local bids, other industry standard, RS Means, and HMM experience. Cost was multiplied by CPI to obtain 2012 costs

**Table 6.8
Unit Cost for Gravity Main**

Pipe Diameter	Unit Cost (\$) per linear foot ⁽¹⁾
8"	\$186
10"	\$196
12"	\$206

(1) Cost was obtained from local bids, other industry standard, RS Means, and HMM experience. Cost include sewer main, manhole, fill material, gravel foundation and asphalt and was multiplied by CPI to obtain 2012 costs

7.0 Summary

7.1 Summary of Water Strategic Plan

The Water Strategic Plan summarizes the recommended water system improvements through planning year 2030. The improvements are based on capacity, operation and maintenance, and asset management needs. The recommended improvements for the wholesale water transmission system are summarized in Table 7.1, the recommended improvements for the retail water distribution system are summarized in Table 7.2 and the recommended improvements for the water treatment facility and appurtenances are summarized in Table 7.3. The recommendations sorted by date and grouped in five year increments are summarized in Table 7.4. These tables include an estimated cost for each recommendation and a time line for completion of improvements. Greater details for each recommended improvement were included in Chapter 4.2 for the distribution and transmission system and Chapter 4.3 for the water treatment WTF and appurtenances.

**Table 7.1
Wholesale Water Transmission System Needs**

Description	Timeline	Cost
Remote Read Meters	2014	\$750,000
30" Transmission Main- Frankford Ave to Collegiate Dr	2020	\$2,343,308
Southeast Booster Pump Station Rehabilitation	2020-2025	\$400,000
36" Transmission Main- Collegiate Dr to McElvey Meter	2025	\$4,404,972
Total		\$7,898,280

**Table 7.2
Retail Water Distribution System Needs**

Description	Timeline	Cost
Leak Detection/Leak Repair Program	2014	\$200,000
Meter Replacement - Cedar Grove Area	2014–2016	\$350,000
Metering/Billing System	2015	\$200,000
Hwy 2311 - 12" water main	2015	\$1,370,000
Highway 2301 12" water main	2020	\$2,140,000
North Bay water booster pump station	2015	\$1,200,000
Forest and Wildlife Road No. 47 waterline	2020	\$4,000,000
Highway 231 tank booster station	2025	\$1,200,000
Total		\$10,660,000

**Table 7.3
Water Treatment Plant and Pumping Needs**

Description	Timeline	Cost
Filter backwash solids handling facilities	2013	\$3,500,000
Raw Water Lines (Industrial and Potable) Condition Assessment	2013-2014	\$750,000
Clarifier drive mechanism	2014	\$500,000
Alternative water supply (new surface water supply)	2014	\$25,000,000
Water treatment facility structural integrity analysis	2014	\$250,000
High service pumps modification/upgrades	2014-2015	\$1,500,000
Piping upgrade to alleviate hydraulic concerns	2015	\$3,000,000
Replacement of lime silo	2015	\$2,000,000
Pre-Treatment Williams Bayou Pump Station	2016	\$500,000
SCADA upgrade	2018	\$2,000,000
Raw water main isolation valves	2018-2020	\$1,000,000
High service pumps modification/upgrades	2018-2025	\$1,500,000
Transfer pump rehabilitation/replacement	2020	\$1,020,000
Belt filter press addition	2020	\$500,000
Rehabilitation/Replacement of pumps at Williams Bayou PS	2020-2030	\$4,320,000
Filter Upgrades	2023	\$2,500,000
Deer Point Reservoir Dam rehabilitation	2025	\$5,000,000
New 20 MGD North Bay WTF	2025-2030	\$90,460,000
Total		\$145,300,000

**Table 7.4
Water Needs per 5 Year Increment**

Description	Timeline	Cost	Facility
Filter backwash solids handling facilities	2013	\$3,500,000	WTP
Raw Water Lines (Ind and Potable) Condition Assessment	2013-2014	\$750,000	WTP
Leak Detection/Leak Repair Program	2014	\$200,000	Retail
Remote Read Meters	2014	\$750,000	Wholesale
Clarifier drive mechanism	2014	\$500,000	WTP
Alternative water supply	2014	\$25,000,000	WTP
Water treatment facility structural integrity analysis	2014	\$250,000	WTP
High service pumps modification/upgrades	2014-2015	\$1,500,000	WTP
Meter Replacement - Cedar Grove Area	2014-2016	\$350,000	Retail
Metering/Billing System -	2015	\$200,000	Retail
Hwy 2311 - 12" water main	2015	\$1,370,000	Retail
Piping upgrade to alleviate hydraulic concerns	2015	\$3,000,000	WTP
Replacement of lime silo	2015	\$2,000,000	WTP
Total 2012-2015		\$39,370,000	
Pre-Treatment Williams Bayou Pump Station	2016	\$500,000	WTP
SCADA upgrade	2018	\$2,000,000	WTP
Raw water main isolation valves	2018-2020	\$1,000,000	WTP
High service pumps modification/upgrades	2018-2025	\$1,500,000	WTP
30" Transmission Main- Frankford Ave to Collegiate Dr	2020	\$2,343,308	Wholesale
Highway 2301 12" water main	2020	\$2,140,000	Retail
North Bay water booster pump station	2020	\$1,200,000	Retail
Transfer pump rehabilitation/replacement	2020	\$1,020,000	WTP
Belt filter press addition	2020	\$500,000	WTP
Southeast Booster Pump Station Rehabilitation	2020-2025	\$400,000	Wholesale
Rehabilitation/Replacement of pumps at Williams Bayou PS	2020-2030	\$4,320,000	WTP
Total 2016-2020		\$ 20,273,308	
Filter Upgrades	2023	\$2,500,000	WTP
Highway 231 tank booster station	2025	\$1,200,000	Retail
36" Transmission Main- Collegiate Dr to McElvey Meter	2025	\$4,404,972	Wholesale
Deer Point Reservoir Dam rehabilitation	2025	\$5,000,000	WTP
New 20 MGD North Bay WTF	2025-2030	\$90,460,000	WTP
Total 2021-2025		\$103,564,972	

7.2 Water Strategic Plan Improvement Schedule

The timeline for the recommended improvements that are included in Tables 7.1 through 7.4 are based on the period in which the improvement should be completed. The time required for design, permitting and construction should be considered when budgeting

and implementing an improvement. The schedules for the various improvements are generally based on projected capacity, operation and maintenance, or asset management.

7.3 Summary of Wastewater Strategic Needs

The Wastewater Strategic Plan summarizes the recommended wastewater system improvements through planning year 2030. The improvements are based on capacity, operation and maintenance, and asset management needs. The recommended improvements for the wholesale wastewater transmission system are summarized in Table 7.5, the recommended improvements for the retail wastewater collection and transmission system are summarized in Table 7.6 and the recommended improvements for the wastewater treatment Plants and appurtenances are summarized in Table 7.8. The recommendations sorted by date and grouped in five year increments are summarized in Table 7.9. These tables include an estimated cost for each recommendation and a time line of when the improvements are needed. Greater details for each recommended improvement were discussed in Chapter 5.2 for the collection and transmission system and Chapter 5.3 for the wastewater treatment plants and appurtenances.

Table 7.5

Wholesale Wastewater Transmission System		
Description	Timeline	Cost
Rehabilitation of Bay County pump station 1	2014	\$720,000
Rehabilitation of Bay County pump station 2	2014	\$520,000
Rehabilitation of Bay County pump station 3	2014	\$360,000
Rehabilitation of Bay County pump station 5	2014	\$520,000
Rehabilitation of Bay County pump station 4	2014-2023	\$520,000
Generators for PS (BC #1-5)	2022	\$1,120,000
Total		\$3,760,000

(1) Information is obtained from Bay County Utility Services Assessment Replacement Plan dated August 2012.

Table 7.6

Retail Wastewater Collection and Transmission System

Description	Timeline	Cost
Hwy 388 force main and PS, Phase 1	2015	\$4,585,280
Cedar Grove area sewer rehabilitation	2014-2020	\$1,000,000
Hwy 388 force main and PS, Phase 2 ⁽¹⁾	2020	\$2,844,072
Total		\$8,429,352

⁽¹⁾ May be omitted if NBWWTP is constructed within this timeframe.

**Table 7.7
Wastewater Treatment Facility Needs**

Description	Timeline	Cost
Military Point R&R needs		
Replacement of centrifuge	2014	\$2,352,000
Rehabilitation of Pump Station 1	2014	\$153,000
Rehabilitation of Pump Station 2	2014	\$153,000
Centrifuge	2014	\$3,954,000
Anoxic recycle pumps	2015	\$220,000
Other R&R needs	2014-2030	\$2,080,000
SCADA upgrades	2015	\$2,720,000
UV system replacement	2016	\$2,352,000
Screen replacement and addition	2018	\$1,154,000
Building HVAC replacement	2019	\$420,000
RAS and WAS pumps	2019	\$915,000
Sluice gates, slide gates, and weirs	2019-2025	\$1,118,000
Electrical upgrades	2019-2027	\$3,720,000
Grit system addition	2020	\$1,109,000
Filter replacement	2022	\$12,804,000
Digester Diffuser	2022	\$599,000
Anaerobic mixers	2022	\$235,000
Anoxic Basin Mixers	2022	\$353,000
Effluent transfer and reuse pumps	2022	\$670,000
Aerobic basin mixer	2022	\$313,000
Emergency Generators	2022	\$740,000
Sub-Total		\$38,134,000
North Bay R&R Needs		
Facility condition assessment	2013	\$50,000
RIB cells Phase 2	2015	\$2,000,000
New grit system	2018	\$1,000,000
RIB cells Phase 3	2025	\$1,750,000
Sub-Total		\$4,800,000
New WWTP Needs		
New Facility on Hwy 231	2020	\$19,500,000
New West Bay Facility	2020	\$19,500,000
Sub-Total		\$39,000,000
Total		\$819,340,000

**Table 7.8
Wastewater Needs per 5 Year Increment**

Description	Timeline	Cost	Facility
Facility condition assessment	2013	\$50,000	NBWWTP
Replacement of centrifuge	2014	\$2,352,000	MPAWTP
Rehabilitation of Pump Station 1	2014	\$153,000	MPAWTP
Rehabilitation of Pump Station 2	2014	\$153,000	MPAWTP
Centrifuge	2014	\$3,954,000	MPAWTP
Rehabilitation of Bay County PS 1	2014	\$720,000	Wholesale Wastewater
Rehabilitation of Bay County PS 2	2014	\$520,000	Wholesale Wastewater
Rehabilitation of Bay County PS 3	2014	\$360,000	Wholesale Wastewater
Rehabilitation of Bay County PS 5	2014	\$520,000	Wholesale Wastewater
Rehabilitation of Bay County PS 4	2014-2023	\$520,000	Wholesale Wastewater
Other R&R needs	2014-2030	\$2,080,000	MPAWTP
Anoxic recycle pumps	2015	\$220,000	MPAWTP
SCADA upgrades	2015	\$2,720,000	MPAWTP
NBWWTP RIB cells Phase 2	2015	\$2,000,000	NBWWTP
HWY 388 force main and PS, Phase 1	2015	\$4,585,280	Retail Wastewater
Cedar Grove area sewer rehab	2015-2020	\$1,000,000	Retail Wastewater
Total 2012 -2015		\$21,907,280	
UV system replacement	2016	\$2,352,000	MPAWTP
Screen replacement and addition	2018	\$1,154,000	MPAWTP
New grit system	2018	\$1,000,000	NBWWTP
Building HVAC replacement	2019	\$420,000	MPAWTP
RAS and WAS pumps	2019	\$915,000	MPAWTP
Sluice gates, slide gates, and weirs	2019-2025	\$1,118,000	MPAWTP
Electrical upgrades	2019-2027	\$3,720,000	MPAWTP
Total 2016 -2020		\$10,679,000	
New Facility on Hwy 231	2020	\$19,500,000	MISC WWTP
New West Bay Facility	2020	19,500,000	MISC WWTP
Grit system addition	2020	\$1,109,000	MPAWTP
HWY 388 force main and PS, Phase 2	2020	\$2,844,072	Retail Wastewater
Filter replacement	2022	\$12,804,000	MPAWTP
Digester Diffuser	2022	\$599,000	MPAWTP
Anaerobic mixers	2022	\$235,000	MPAWTP
Anoxic Basin Mixers	2022	\$353,000	MPAWTP
Effluent transfer and reuse pumps	2022	\$670,000	MPAWTP
Aerobic basin mixer	2022	\$313,000	MPAWTP
Emergency Generators	2022	\$740,000	MPAWTP
Generators for pump station	2022	\$1,120,000	Wholesale Wastewater
HBWWTP RIB cells Phase 3	2025	\$1,750,000	NBWWTP
Total 2020-2025		\$61,537,072	

7.4 Wastewater Strategic Plan Improvement Schedule

The timeline for the recommended improvements that are included in Tables 7.5 through 7.8 are based on the period in which the improvement should be completed. The time required for design, permitting and construction should be considered when budgeting and implementing an improvement. The schedules for the various improvements are generally based on projected capacity, operation and maintenance, or asset management.

References

APPENDIX A

BAY COUNTY WATER SYSTEM METER LOCATION AND PROJECTED FLOW

APPENDIX B

WATER MODEL RESULTS

APPENDIX C

WASTEWATER MODEL OUTPUT

APPENDIX A

BAY COUNTY WATER SYSTEM METER LOCATION AND PROJECTED FLOW

Bay County Cedar Grove

Water Meters

<u>Meter Identification</u>	<u>Meter Number</u>	<u>Location</u>
M1-1	62505769	19th St / Sherman Ave
M1-2	7902615	Baldwin Rd / Selma Ave
M1-3	63470932	22nd Ct / Sherman Ave
M1-4	9306628	Picadilly Place
M1-5	13251139	Ormond Ave / Hwy 231
M1-6	65008326	24th Plaza / Davis St
M1-7	14121661	A & E St
M1-8	N/A	Pipeline Rd / Country Lake Dr

**Service Area Flow Data
Bay County Cedar Grove**

Distribution of Current Flow at Meter Locations												
Date/Meter ID	Meter Monthly Flow (MG)											
	M1-1	M1-2	M1-3	M1-4	M1-5	M1-6	M1-7	M1-8	Total			
Jan.10	5.616	2.540	1.605	0.050	0.035	0.245	0.080	0.064	10.235			
Feb.10	5.381	2.000	1.253	0.050	0.045	0.105	0.150	0.005	8.989			
Mar.10	5.850	2.080	1.752	0.060	0.040	0.142	0.235	0.033	10.192			
Apr.10	6.661	1.890	2.468	0.110	0.045	0.472	0.440	0.263	12.349			
May.10	7.053	2.130	3.397	0.150	0.045	0.721	0.560	0.214	14.270			
Jun.10	6.917	2.030	4.116	0.180	0.055	0.901	0.480	0.649	15.328			
Jul.10	7.122	1.935	3.972	0.130	0.045	0.482	0.430	0.401	14.517			
Aug.10	6.724	1.975	3.109	0.105	0.055	0.424	0.395	0.201	12.988			
Sep.10	6.876	1.905	3.224	0.135	0.040	0.856	0.440	0.442	13.918			
Oct.10	7.312	1.785	3.174	0.150	0.045	0.629	0.380	0.516	13.991			
Nov.10	6.379	2.080	2.374	0.095	0.030	0.240	0.355	0.271	11.824			
Dec.10	6.487	2.285	2.049	0.070	0.030	0.339	0.265	0.248	11.773			
Total (MG/YR)	78.378	24.635	32.493	1.285	0.510	5.556	4.210	3.307	150.374			
Total (MGD)	0.215	0.067	0.089	0.004	0.001	0.015	0.012	0.009	0.412			
Loss Distribution Factor	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158			
Adjusted 2010 Flow (MGD)	0.249	0.078	0.103	0.004	0.002	0.018	0.013	0.010	0.48			
Percent Flow of Service Area	52.12%	16.38%	21.61%	0.85%	0.34%	3.69%	2.80%	2.20%	100.00%			
Population served (Based on 177 g/c/d)	1404	441	582	23	9	100	75	59	2694			
Distribution of Projected Flow at Meter Locations												
Based on current distribution of flow.												
2015 Flow (MGD)	0.2547	0.0800	0.1056	0.0042	0.0017	0.0181	0.0137	0.0107	0.4886			
2020 Flow (MGD)	0.2611	0.0821	0.1082	0.0043	0.0017	0.0185	0.0140	0.0110	0.5009			
2025 Flow (MGD)	0.2677	0.0841	0.1110	0.0044	0.0017	0.0190	0.0144	0.0113	0.5136			
2030 Flow (MGD)	0.2744	0.0863	0.1138	0.0045	0.0018	0.0195	0.0147	0.0116	0.5265			

**Service Area Flow Data
Bay County - North Bay**

Distribution of Current Flow at Meter Locations						
Date/Meter ID	Meter Monthly Flow (MG)					Total
	M2-1	M2-2	M2-3	M2-4	M2-5	
Jan.10	11.553	0	0.001			11.554
Feb.10	9.743	0	0.001			9.744
Mar.10	5.886	0.000	0			5.886
Apr.10	11.937	0.000	0.002			11.939
May.10	14.474	0.000	0.002			14.476
Jun.10	16.871	0.000	0			16.871
Jul.10	16.605	0.125	0			16.73
Aug.10	14.342	0.103	0.001			14.446
Sep.10	17.859	0.135	0.001			17.995
Oct.10	17.401	0.320	0.002			17.723
Nov.10	14.269	0.365	0	0.083		14.717
Dec.10	13.619	0.135	0.001	0.047	0.0006	13.803
Total (MG/YR)	164.559	1.183	0.011	0.13	0.0006	165.8836
Total (MGD)	0.451	0.003	0.000	0.002	0.000	0.456
Loss Distribution Factor	1.16	1.16	1.16	1.16	1.16	1.16
Adjusted 2010 Flow (MGD)	0.522	0.004	0.00003	0.0025	0.000023	0.528
Percent Flow of Service Area	99.20%	0.71%	0.01%	0.08%	0.00%	100.00%
Population served (Based on 177 g/c/d)	2948	21	0	14	0	2984
Distribution of Projected Flow at Meter Locations						
Based on identified distribution of flow						
Distribution of increased Flow	40%	40%	19%	1%	0%	100%
2015 Flow	0.5554	0.0372	0.0335	0.0360	0.0335	0.6119
2020 Flow	0.5943	0.0762	0.0725	0.0750	0.0725	0.7094
2025 Flow	0.6395	0.1214	0.0940	0.0761	0.0725	0.8223
2030 Flow	0.6919	0.1738	0.1189	0.0774	0.0725	0.9533

Bay County Northeast Water Meters

<u>Meter Identification</u>	<u>Meter Number</u>			<u>Location</u>
M3-1	N/A			Commercial Meters
M3-2	6841			Derby Woods Hwy. 390
M3-3	5458			Sweet Water N. Hwy. 231
M3-4	N/A			John Pitts Star Ave.
M3-5	N/A			Cherokee Heights
M3-6	6760			Cato Rd.
M3-7	6369			Lagoon
N/A	6367			AWTF
M3-8	5315/5320	5328/5445	5451	Leisure Services
M3-9	5480			IRA Hutch.
M3-10	6789			Everitt Ave. Dog Park
M3-11	5190	5199		Bay Co. Lab
N/A	5322			Williams Bayou Pump Station
M3-12	5475			Solid Waste (Incinerator)
M3-13	6795			WTE Maintenance Bldg.
M3-14	5439			Mosquito Control
M3-15	5442			Roads and Bridges
M3-16	5437			Sign Shop
M3-17	6832			Britton Rd and Hwy. 390
M3-18	5466	5470		Animal Control
M3-19	3115			Bay Co. WTE Facility
M3-20	3010			Bay Co. Jail Annex
M3-21	N/A			Enviro. Security Pest Control

**Service Area Flow Data
Bay County Northeast**

Distribution of Current Flow at Meter Locations																								
Date/Meter ID	Meter Monthly Flow (MG)																						Total	
	M3-1	M3-2	M3-3	M3-4	M3-5	M3-6	M3-7	M3-8	M3-9	M3-10	M3-11	M3-12	M3-13	M3-14	M3-15	M3-16	M3-17	M3-18	M3-19	M3-20	M3-21			
Jan.10	11.522	3.535	1.753				0.582	0.156	0.126	0.000		0.007	0.001	0.002		0.005	0.036	0.002		0.044		0.001	17.772	
Feb.10	5.927	3.035	3.102				0.509	0.145	0.035	0.000		0.005	0.000	0.002		0.002	0.010	0.001		0.038	2.443	3.054	0	18.308
Mar.10	3.545	2.132	1.934				0.101	0.144	0.103	0.000		0.006	0.000	0.002		0.005	0.020	0.002		0.041	2.286	3.415	0.001	13.737
Apr.10	6.308	7.242	4.867				0.001	0.092	0.235	0.009		0.005	0.000	0.003		0.006	0.015	0.002		0.046	2.198	2.799	0.001	23.829
May.10	1.163	5.839	4.503				0.001	0.061	0.336	0.005		0.005	0.000	0.006		0.007	0.016	0.002		0.051	2.529	2.472	0.001	16.997
Jun.10	6.291	8.672					0.001	0.073	0.631	0.005		0.005	0.000	0.004		0.007	0.015	0.002		0.052	2.200	3.040	0.001	20.999
Jul.10	7.442	5.932	4.060			1.110	0.199	0.128	0.174	0.012		0.005	0.000	0.002		0.007	0.015	0.065		0.054	2.687	3.238	0.001	25.129
Aug.10	9.215	6.650	5.001			0.860	0.650	0.562	0.313	0.018	0.001	0.005	0.001	0.004	0.004	0.008	0.015	0.018		0.057	2.200	3.046	0.001	28.629
Sep.10	8.357	5.254	3.922			1.220	0.201	0.567	0.218	0.002	0.001	0.008	0.000	0.000	0.004	0.006	0.011	0.018		0.051	2.321	3.324	0.001	25.486
Oct.10	7.966	7.151	1.015	0.628	1.816	1.125	0.153	0.562	0.264	0.000	0.001	0.006	0	0.002	0.005	0.004	0.009	0.019		0.046	2.130	3.478	0.001	26.381
Nov.10	9.627	6.631	1.180	0.513	1.816	0.725	0.000	0.348	0.290	0.001	0.002	0.004	0.000	0.000	0.006	0.003	0.017	0.027		0.044	1.849	3.538	0.001	26.622
Dec.10	7.055	5.853	0.796	0.297	1.112	0.440	0.342	0.338	0.234	0.001	0.001	0.006	0.000	0.000	0.009	0.003	0.008	0.001	2.004	0.046	2.155	2.985	0.001	23.687
Total (MG/YR)	84.418	67.926	32.133	1.438	4.744	5.480	2.740	3.174	2.959	0.053	0.006	0.067	0.002	0.027	0.028	0.063	0.187	0.159	2.004	0.570	24.998	34.389	0.011	267.576
Total (MGD)	0.231	0.186	0.088	0.016	0.053	0.015	0.008	0.009	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.067	0.002	0.075	0.103	0.000	0.861	
Loss Distribution Factor	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158
Adjusted 2010 Flow (MGD)	0.268	0.215	0.102	0.018	0.061	0.017	0.009	0.010	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.077	0.002	0.086	0.119	0.000	0.996	
Percent Flow of Service Area	31.55%	25.39%	12.01%	0.54%	1.77%	2.05%	1.02%	1.19%	1.11%	0.02%	0.00%	0.03%	0.00%	0.01%	0.01%	0.02%	0.07%	0.06%	0.75%	0.21%	9.34%	12.85%	0.00%	100.00%
Population served (Based on 177 g/c/d)	1513	1217	576	104	345	98	49	57	53	1	0	1	0	0	1	1	3	3	437	10	488	671	0	5630
Distribution of Projected Flow at Meter Locations																								
Based on identified distribution of flow																								
Distribution of increased Flow	25%	5%	25%	15%	20%	5%	0%	5%	0%	0%	0%	0%	100%											
2015 Flow	0.2786	0.2176	0.1128	0.0250	0.0697	0.0196	0.0087	0.0101	0.0094	0.0002	0.0000	0.0002	0.0000	0.0001	0.0002	0.0002	0.0006	0.0005	0.0795	0.0018	0.0864	0.1188	0.0000	1.0400
2020 Flow	0.2852	0.2189	0.1193	0.0290	0.0750	0.0209	0.0087	0.0101	0.0094	0.0002	0.0000	0.0002	0.0000	0.0001	0.0002	0.0002	0.0006	0.0005	0.0808	0.0018	0.0864	0.1188	0.0000	1.0662
2025 Flow	0.2919	0.2202	0.1261	0.0330	0.0804	0.0222	0.0087	0.0101	0.0094	0.0002	0.0000	0.0002	0.0000	0.0001	0.0002	0.0002	0.0006	0.0005	0.0822	0.0018	0.0864	0.1188	0.0000	1.0931
2030 Flow	0.2988	0.2216	0.1330	0.0371	0.0859	0.0236	0.0087	0.0101	0.0094	0.0002	0.0000	0.0002	0.0000	0.0001	0.0002	0.0002	0.0006	0.0005	0.0835	0.0018	0.0864	0.1188	0.0000	1.1207

Bay County West Bay

Water Meters

<u>Meter Identification</u>	<u>Meter Number</u>	<u>Location</u>
M4-1	N/A	River Camps
M4-2	N/A	Airport
M4-3	N/A	Hwy 388/79

Service Area Flow Data

Bay County West Bay

Distribution of Current Flow at Meter Locations

Date/Meter ID	Meter Monthly Flow (MG)			Total
	M4-1	M4-2		
Jan.10	0.351	0	0	0.351
Feb.10	0	0	0	0
Mar.10	0	0.07	0	0.07
Apr.10	0.336	0.367	0	0.703
May.10	0.286	0.376	0	0.662
Jun.10	0.345	0.614	0	0.959
Jul.10	0.572	0.849	0	1.421
Aug.10	0.218	1.57	0	1.788
Sep.10	0.161	2.278	0	2.439
Oct.10	0.154	1.875	0	2.029
Nov.10	0.208	2.275	0	2.483
Dec.10	0.38	1.727	0	2.107
Total (MG/YR)	3.011	12.001	0.000	15.012
Total (MGD)	0.008	0.033	0.000	0.041
Loss Distribution Factor	1.158	1.158	1.158	1.158
Adjusted 2010 Flow (MGD)	0.010	0.038	0.000	0.048
Percent Flow of Service Area	20.057%	79.943%	0.000%	100.000%
Population served (Based on 177 g/c/d)	54	215	0	269

Distribution of Projected Flow at Meter Locations

Based on identified distribution of flow

Distribution of increased Flow	15%	60%	25%	100%
2015 Flow	0.0129	0.0514	0.0056	0.0699
2020 Flow	0.0178	0.0711	0.0138	0.1027
2025 Flow	0.0250	0.1000	0.0258	0.1509
2030 Flow	0.0357	0.1425	0.0435	0.2217

Bay County Callaway

Water Meters

<u>Meter Identification</u>	<u>Meter Number</u>	<u>Location</u>
M5-1	55606918	Hwy 22 and Seneca Ave.
M5-2	12951207	IVY RD.
M5-3	49030140	Ponderosa Trailer Park
M5-4	08817096 62505767	Good Shepard Church
M5-5	6951741	Lake Dr. and Tyndall Pkwy
M5-6	13526690	Cherry St. and Tyndall Pkwy
M5-7	62501621	7th St. and Seneca Ave.

**Service Area Flow Data
Callaway**

Distribution of Current Flow at Meter Locations												
Date/Meter ID	Meter Monthly Flow (MG)											
	M5-1	M5-2	M5-3	M5-4	M5-5	M5-6	M5-7	M5-8	M5-9	M5-10	M5-11	Total
Jan.10	2.710	2.910	0.087	0.023	3.715	3.305	21.762					34.512
Feb.10	2.138	2.680	0.136	0.014	3.050	3.365	20.053					31.436
Mar.10	1.960	2.815	0.076	0.021	3.130	1.650	26.553					36.205
Apr.10	2.227	2.930	0.070	0.013	3.640	1.810	28.784					39.474
May.10	2.924	3.315	0.073	0.016	4.665	2.200	35.238					48.431
Jun.10	3.554	3.515	0.063	0.012	5.105	3.320	33.709					49.278
Jul.10	4.076	3.895	0.090	0.007	5.660	4.405	30.246					48.379
Aug.10	3.649	3.145	0.082	0.013	4.680	4.000	28.850					44.419
Sep.10	2.915	3.315	0.088	0.031	4.730	2.150	31.201					44.430
Oct.10	2.713	3.305	0.096	0.015	4.465	1.765	31.855					44.214
Nov.10	2.657	3.355	0.077	0.013	4.145	2.35	28.372					40.969
Dec.10	0.468	0.385	0.097	0.022	0.665	0.365	36.004					38.006
Total (MG/YR)	31.991	35.565	1.035	0.200	47.650	30.685	352.627					499.753
Total (MGD)	0.088	0.097	0.003	0.001	0.131	0.084	0.966					1.369
Loss Distribution Factor	1.158	1.158	1.158	1.158	1.158	1.158	1.158					1.158
Adjusted 2010 Flow (MGD)	0.101	0.113	0.003	0.001	0.151	0.097	1.118					1.585
Percent Flow of Service Area	6.40%	7.12%	0.21%	0.04%	9.53%	6.14%	70.56%					100.00%
Population served (Based on 177 g/c/d)	573	637	19	4	854	550	6318					8954

Distribution of Projected Flow at Meter Locations
Based on current distribution of flow unless shown otherwise.

2015 Flow	0.1052	0.1170	0.0034	0.0007	0.1568	0.1009	1.1601					1.6441
2020 Flow	0.1093	0.1215	0.0035	0.0007	0.1627	0.1048	1.2042					1.7067
2025 Flow	0.1134	0.1261	0.0037	0.0007	0.1689	0.1088	1.2501					1.7716
2030 Flow	0.1177	0.1309	0.0038	0.0007	0.1754	0.1129	1.2977					1.8391

**Bay County Lynn Haven
Water Meters**

<u>Meter Identification</u>	<u>Meter Number</u>	<u>Location</u>
M6-1	14121085	Ormond Ave. and Hwy. 231 HIGH
M6-2	65102264	Ormond Ave. and Hwy. 231 LOW
M6-3	62501618	Hwy. 77 and Baldwin Rd. (NW Corner)
M6-4	14123486	Transmitter Rd and Hwy 390
M6-5	68812265	Kirkwell and Alamo
M6-6	49001189	Grants Mill Subdivision (hwy 390) High Flow
M6-7	14189929	Grants Mill Subdivision (hwy 390) Low Flow
M6-8	10590604	Sarasota Ave.
M6-9	N/A	Hwy 390 and Pipeline Rd. High Flow
M6-10	N/A	Hwy 390 and Pipeline Rd. Low Flow

Service Area Flow Data

Bay County Lynn Haven

Distribution of Current Flow at Meter Locations												
Date/Meter ID	Meter Monthly Flow (MG)											
	M6-1	M6-2	M6-3	M6-4	M6-5	M6-6	M6-7	M6-8	M6-9	M6-10	Total	
Jan.10	1.040	1.664	3.786	0.625	1.665	0.002	0.258	0.140	0.232	1.156	10.568	
Feb.10	1.554	0.730	3.546	0.605	1.361	0.000	0.258	0.150	0.258	1.058	9.520	
Mar.10	1.495	1.854	3.771	0.810	1.907	0.025	0.363	0.245	0.289	1.345	12.104	
Apr.10	3.175	1.895	4.834	1.065	2.774	0.501	0.693	0.385	0.293	1.856	17.471	
May.10	4.675	2.150	7.408	1.175	2.959	0.905	0.747	0.480	0.364	3.996	24.859	
Jun.10	5.965	2.094	9.559	1.030	2.238	0.852	0.629	0.455	0.634	5.016	28.472	
Jul.10	5.595	2.209	7.773	1.075	2.067	0.772	0.675	0.375	0.816	4.466	25.823	
Aug.10	3.740	2.047	8.152	0.890	1.818	0.444	0.495	0.295	0.742	4.041	22.664	
Sep.10	4.710	2.078	8.335	1.120	2.417	0.927	0.678	0.435	0.612	2.894	24.206	
Oct.10	4.735	2.162	7.985	1.250	2.515	0.891	0.000	0.440	0.597	3.444	24.019	
Nov.10	2.685	2.107	5.490	0.750	1.860	0.283	0.495	0.270	0.606	2.695	17.241	
Dec.10	1.830	2.110	4.023	0.775	1.461	0.052	0.394	0.170	0.634	2.473	13.922	
Total (MG/YR)	41.199	23.100	74.662	11.170	25.042	5.654	5.685	3.840	6.077	34.440	230.869	
Total (MGD)	0.113	0.063	0.205	0.031	0.069	0.015	0.016	0.011	0.017	0.094	0.633	
Loss Distribution Factor	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	
Adjusted 2010 Flow (MGD)	0.131	0.073	0.237	0.035	0.079	0.018	0.018	0.012	0.019	0.109	0.732	
Percent Flow of Service Area	17.85%	10.01%	32.34%	4.84%	10.85%	2.45%	2.46%	1.66%	2.63%	14.92%	100.00%	
Population served (Based on 177 g/c/d)	738	414	1338	200	449	101	102	69	109	617	4136	

Distribution of Projected Flow at Meter Locations												
Based on current distribution of flow unless shown otherwise.												
2015 Flow	0.1372	0.0769	0.2487	0.0372	0.0834	0.0188	0.0189	0.0128	0.0202	0.1147	0.7690	
2020 Flow	0.1442	0.0809	0.2614	0.0391	0.0877	0.0198	0.0199	0.0134	0.0213	0.1206	0.8082	
2025 Flow	0.1516	0.0850	0.2747	0.0411	0.0921	0.0208	0.0209	0.0141	0.0224	0.1267	0.8494	
2030 Flow	0.1593	0.0893	0.2887	0.0432	0.0968	0.0219	0.0220	0.0148	0.0235	0.1332	0.8928	

Bay County Mexico Beach

Water Meters

Meter Identification

Meter Number

Location

M7-1

14121086

Hwy 98 East

Service Flow Data
Bay County Mexico Beach

Distribution of Current Flow at Meter Locations	
Date/Meter ID	Meter Monthly Flow (MG)
	M7-1
Jan.10	3.680
Feb.10	3.380
Mar.10	4.845
Apr.10	5.685
May.10	7.525
Jun.10	10.965
Jul.10	13.660
Aug.10	8.725
Sep.10	7.740
Oct. 10	6.625
Nov. 10	5.375
Dec.10	4.415
Total (MG/YR)	82.620
Total (MGD)	0.226
Loss Distribution Factor	1.158
Adjusted 2010 Flow (MGD)	0.262
Percent Flow of Service Area	100%
Population served (Based on 177 g/c/d)	1480
Distribution of Projected Flow at Meter Locations	
Based on current distribution of flow unless shown otherwise.	
2015 Flow	0.268
2020 Flow	0.275
2025 Flow	0.282
2030 Flow	0.289

Bay County Panama City

Water Meters

<u>Meter Identification</u>	<u>Meter Number</u>	<u>Location</u>
M8-1	14188838 64953079	23RD ST. HWY 231
M8-2	08752982 65537244	17th St. Cove Blvd.
M8-3	8550781	Baldwin Rd.
M8-4	58910731 62505773	Moody Ave. Hathaway Bridge
M8-5	9909084	Frankford Ave.
M8-6	13522693	Florida State Campus
M8-7	5457211	Baldwin Rd. Hwy. 77
M8-8	62501103	J. Pitts and Yukon

Service Area Flow Data

Bay County Panama City

Distribution of Current Flow at Meter Locations

Date/Meter ID	Meter Monthly Flow (MG)										Total
	M8-1	M8-2	M8-3	M8-4	M8-5	M8-6	M8-7	M8-8			
Jan.10	29.865	50.435	21.295	5.636	29.945	1.010	1.045	0.060			139.291
Feb.10	28.887	43.726	19.310	5.181	23.340	1.055	0.970	0.067			122.536
Mar.10	32.049	51.175	24.555	4.239	21.910	1.285	1.590	0.097			136.900
Apr.10	39.707	55.268	27.475	4.137	26.510	1.470	1.200	0.217			155.984
May.10	49.969	67.558	33.820	3.795	30.410	2.025	1.345	0.247			189.169
Jun.10	55.553	71.268	36.855	2.118	29.530	2.255	1.245	0.216			199.040
Jul.10	55.238	72.453	38.030	2.088	24.980	2.395	1.935	0.191			197.310
Aug.10	46.589	63.666	30.935	3.728	25.780	2.145	1.270	0.146			174.259
Sep.10	48.798	67.156	32.910	4.134	32.495	2.395	1.050	0.215			189.153
Oct.10	47.987	66.574	32.265	3.967	33.333	1.965	1.175	0.203			187.469
Nov.10	41.060	61.275	29.395	2.359	27.565	1.845	1.375	0.322			165.196
Dec.10	39.209	62.967	29.165	4.422	21.340	1.455	1.305	0.479			160.342
Total (MG/YR)	514.911	733.521	356.010	45.804	327.138	21.300	15.505	2.460			2016.649
Total (MGD)	1.411	2.010	0.975	0.125	0.896	0.058	0.042	0.007			5.525
Loss Distribution Factor	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158			1.158
Adjusted 2010 Flow (MGD)	1.633	2.326	1.129	0.145	1.037	0.068	0.049	0.008			6.395
Percent Flow of Service Area	25.53%	36.37%	17.65%	2.27%	16.22%	1.06%	0.77%	0.12%			100.00%
Population served (Based on 177 g/c/d)	9226	13142	6379	821	5861	382	278	44			36132

Distribution of Projected Flow at Meter Locations

Based on current distribution of flow unless shown otherwise.

2015 Flow	1.6523	2.3538	1.1424	0.1470	1.0498	0.0684	0.0498	0.0079			6.4714
2020 Flow	1.6731	2.3834	1.1568	0.1488	1.0630	0.0692	0.0504	0.0080			6.5527
2025 Flow	1.6941	2.4134	1.1713	0.1507	1.0763	0.0701	0.0510	0.0081			6.6350
2030 Flow	1.7154	2.4437	1.1860	0.1526	1.0898	0.0710	0.0517	0.0082			6.7183

Bay County Panama City Beach

Water Meters

<u>Meter Identification</u>	<u>Meter Number</u>	<u>Location</u>
M9-1	1200	Hathaway Bridge
M9-2	12002	West Bay Pumping Station (Hwy. 79 and School Rd.)

Service Area Flow Data
Bay County Panama City Beach

Distribution of Current Flow at Meter Locations			
Date/Meter ID	Meter Monthly Flow (MG)		
	M9-1	M9-2	Total
Jan.10	78.030	141.960	219.990
Feb.10	73.330	131.280	204.610
Mar.10	122.480	176.620	299.100
Apr.10	133.440	185.860	319.300
May.10	156.979	196.330	353.309
Jun.10	257.286	213.700	470.986
Jul.10	198.835	231.770	430.605
Aug.10	172.802	181.140	353.942
Sep.10	170.811	193.460	364.271
Oct.10	168.734	181.830	350.564
Nov.10	183.853	127.420	311.273
Dec.10	124.669	126.600	251.269
Total (MG/YR)	1841.249	2087.970	3929.219
Total (MGD)	5.045	5.720	10.765
Loss Distribution Factor	1.158	1.158	1.158
Adjusted 2010 Flow (MGD)	5.839	6.622	12.461
Percent Flow of Service Area	46.86%	53.14%	100.00%
Population served (Based on 177 g/c/d)	32990	37410	70400
Distribution of Projected Flow at Meter Locations			
Based on identified distribution of flow			
	40%	60%	100%
2015 Flow	6.3542	7.3942	13.7484
2020 Flow	6.9266	8.2527	15.1793
2025 Flow	7.5585	9.2006	16.7592
2030 Flow	8.2562	10.2472	18.5035

**Bay County Parker
Water Meters**

<u>Meter Identification</u>	<u>Meter Number</u>	<u>Location</u>
M10-1	62501615	Cherry St. and Tyndall Pkwy
M10-2	14117168	Lake Dr. and Tyndall Pkwy
M10-3	3801369	East Cooper Dr.
M10-4	4380316	Under the Oaks Park
M10-5	N/A	Parker City Meters
M10-6	63494784	Tyndall Pkwy
M10-7	63494784	Sun Bay Condos
M10-8	58864445	Donna and Ivy
M10-9	N/A	6039 Hwy 98
M10-10	N/A	6001 Hwy 98
M10-11	N/A	6043 Hwy 98
M10-12	N/A	6127 Hwy 98
M10-13	N/A	6129 Hwy 98
M10-14	N/A	6135 Hwy 98
M10-15	N/A	6141 Hwy 98
M10-16	N/A	6209 Hwy 98
M10-17	N/A	6147 Tyndall Pkwy
M10-18	63468811	Tyndall and Ivy

**Service Area Flow Data
Bay County Parker**

Distribution of Current Flow at Meter Locations

Date/Meter ID	Meter Monthly Flow (MG)																		
	M10-1	M10-2	M10-3	M10-4	M10-5	M10-6	M10-7	M10-8	M10-9	M10-10	M10-11	M10-12	M10-13	M10-14	M10-15	M10-16	M10-17	M10-18	Total
Jan.10	8.027	0.515	0.257	1.135	0.191	0.009	0.091	0.089										0.010	10.324
Feb.10	7.904	0.450	0.204	1.055	0.282	0.010	0.088	0.078										0.008	10.079
Mar.10	8.963	0.600	0.307	1.205	0.186	0.011	0.085	0.093										0.015	11.465
Apr.10	8.826	0.775	0.314	1.325	0.218	0.009	0.080	0.127										0.017	11.691
May.10	10.136	1.090	0.426	1.440	0.173	0.011	0.099	0.175										0.011	13.561
Jun.10	9.994	1.105	0.436	1.235	0.216	0.008	0.103	0.141										0.008	13.246
Jul.10	10.757	0.990	0.547	1.915	0.298	0.009	0.153	0.172									0.014	0.010	14.865
Aug.10	9.969	0.940	0.512	1.325	0.468	0.013	0.192	0.192									0.005	0.009	13.625
Sep.10	9.838	0.895	0.358	1.425	0.154	0.010	0.208	0.126	0.001	0.000	0.000	0.005	0.006	0.006	0.004	0.002	0.006	0.009	13.053
Oct.10	9.732	0.720	0.277	1.370	0.142	0.010	0.242	0.107	0.002	0.014	0.007	0.004	0.003	0.004	0.002	0.001	0.010	0.010	12.657
Nov.10	9.417	0.600	0.237	1.135	0.196	0.010	0.253	0.079	0.001	0.005	0.004	0.004	0.003	0.004	0.003	0.001	0.011	0.011	11.974
Dec.10	9.384	0.440	0.373	1.265	0.114	0.007	0.302	0.074	0.002	0.005	0.004	0.007	0.008	0.006	0.004	0.002	0.010	0.010	12.017
Total (MG/YR)	112.947	9.120	4.248	15.830	2.638	0.117	1.896	1.453	0.006	0.024	0.015	0.020	0.020	0.020	0.013	0.006	0.056	0.128	148.557
Total (MGD)	0.309	0.025	0.012	0.043	0.007	0.000	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.408
Loss Distribution Factor	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158
Adjusted 2010 Flow (MGD)	0.358	0.029	0.013	0.050	0.008	0.000	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.472
Percent Flow of Service Area	76.03%	6.14%	2.86%	10.66%	1.78%	0.08%	1.28%	0.98%	0.00%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.04%	0.09%	100.00%
Population served (Based on 177 g/c/d)	2024	163	76	284	47	2	34	26	0	1	1	1	1	1	1	0	2	2	2667

Distribution of Projected Flow at Meter Locations

Based on current distribution of flow unless shown otherwise.

2015 Flow	0.3624	0.0293	0.0136	0.0508	0.0085	0.0004	0.0061	0.0047	0.0000	0.0001	0.0000	0.0001	0.0001	0.0001	0.0000	0.0000	0.0002	0.0004	0.4767
2020 Flow	0.3670	0.0296	0.0138	0.0514	0.0086	0.0004	0.0062	0.0047	0.0000	0.0001	0.0000	0.0001	0.0001	0.0001	0.0000	0.0000	0.0002	0.0004	0.4827
2025 Flow	0.3716	0.0300	0.0140	0.0521	0.0087	0.0004	0.0062	0.0048	0.0000	0.0001	0.0000	0.0001	0.0001	0.0001	0.0000	0.0000	0.0002	0.0004	0.4888
2030 Flow	0.3763	0.0304	0.0142	0.0527	0.0088	0.0004	0.0063	0.0048	0.0000	0.0001	0.0000	0.0001	0.0001	0.0001	0.0000	0.0000	0.0002	0.0004	0.4949

Bay County Springfield

Water Meters

<u>Meter Identification</u>	<u>Meter Number</u>	<u>Location</u>
M1-1	61597739 62501104	Ammie's Traylor Park and Sherman Ave.
M1-2	7068852	Transmitter Rd and 14th St.
M1-3	6593117	Transmitter Rd and 7th St.
M1-4	61531513	15th St./98 and Lucky
M1-5	49050130	Suncoast Machine and Transmitter Rd
M1-6	14120879	Transmitter Rd and Lane
M1-7	5421557	Transmitter Rd and Orlando
M1-8	49110130 4429571	Bob Little and 12th St. High Flow
M1-9	49120130 4437344	Bob Little and 12th St. Low Flow
M1-10	14122819	Transmitter Rd and Wave Ave
M1-11	62505770	Bob Little Rd and 14th St.

**Service Area Flow Data
Bay County Springfield**

Distribution of Current Flow at Meter Locations

Date/Meter ID	Meter Monthly Flow (MG)											Total
	M11-1	M11-2	M11-3	M11-4	M11-5	M11-6	M11-7	M11-8	M11-9	M11-10	M11-11	
Jan.10	0.021	1.565	15.390	0.085	0.000	5.420	0.325	0.005	0.627	0.025	0.793	24.256
Feb.10	0.016	1.330	14.120	0.063	0.006	4.855	0.520	0.003	0.921	0.020	0.746	22.300
Mar.10	0.014	1.420	14.870	0.068	0.006	5.030	0.890	0.001	0.542	0.025	0.878	23.744
Apr.10	0.018	1.295	14.660	0.062	0.004	5.365	1.100	0.001	0.468	0.045	0.831	23.849
May.10	0.020	1.635	17.415	0.082	0.005	6.485	1.575	0.005	0.000	0.070	0.843	28.135
Jun.10	0.021	1.820	17.760	0.087	0.004	6.675	1.800	0.011	0.012	0.080	0.848	29.118
Jul.10	0.060	1.925	16.190	0.102	0.005	6.605	1.620	0.018	0.018	0.105	0.933	27.581
Aug.10	0.025	2.225	14.290	0.062	0.007	5.590	1.205	0.017	2.637	0.085	0.835	26.978
Sep.10	0.020	1.412	14.925	0.073	0.009	5.855	1.410	0.037	0.783	0.090	0.826	25.440
Oct.10	0.018	1.438	15.780	0.067	0.005	5.940	1.280	0.056	0.878	0.045	0.876	26.383
Nov.10	0.018	1.370	15.525	0.074	0.003	5.845	1.110	0.013	0.743	0.040	0.902	25.643
Dec.10	0.030	1.690	17.740	0.074	0.013	6.235	1.155	0.008	0.794	0.035	0.906	28.680
Total (MG/YR)	0.281	19.125	188.665	0.899	0.067	69.900	13.990	0.175	8.123	0.665	10.217	312.107
Total (MGD)	0.001	0.052	0.517	0.002	0.000	0.192	0.038	0.000	0.022	0.002	0.028	0.855
Loss Distribution Factor	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158
Adjusted 2010 Flow (MGD)	0.001	0.061	0.598	0.003	0.000	0.222	0.044	0.001	0.026	0.002	0.032	0.990
Percent Flow of Service Area	0.09%	6.13%	60.45%	0.29%	0.02%	22.40%	4.48%	0.06%	2.60%	0.21%	3.27%	100.00%
Population served (Based on 177 g/c/d)	5	343	3380	16	1	1252	251	3	146	12	183	5592

Distribution of Projected Flow at Meter Locations

Based on current distribution of flow unless shown otherwise.

2015 Flow	0.0009	0.0614	0.6054	0.0029	0.0002	0.2243	0.0449	0.0006	0.0261	0.0021	0.0328	1.0015
2020 Flow	0.0009	0.0621	0.6130	0.0029	0.0002	0.2271	0.0455	0.0006	0.0264	0.0022	0.0332	1.0141
2025 Flow	0.0009	0.0629	0.6207	0.0030	0.0002	0.2300	0.0460	0.0006	0.0267	0.0022	0.0336	1.0269
2030 Flow	0.0009	0.0637	0.6285	0.0030	0.0002	0.2329	0.0466	0.0006	0.0271	0.0022	0.0340	1.0398

Bay County Tyndall Air Force Base

Water Meters

<u>Meter Identification</u>	<u>Meter Number</u>	<u>Location</u>
M12-1	65008327	TAFB #1 Act # 5381
M12-2	68812268	TAFB #2 Act # 5386
M12-3	14117080	TAFB #3 Act # 5390

Service Area Flow Data
Bay County Tyndall Air Force Base

Distribution of Current Flow at Meter Locations				
Date/Meter ID	Meter Monthly Flow (MG)			
	M12-1	M12-2	M12-3	Total
Jan.10	0.780	15.877	0.805	17.462
Feb.10	0.073	15.066	0.200	15.339
Mar.10	0.018	18.450	0.810	19.278
Apr.10	3.893	19.340	3.085	26.318
May.10	11.783	21.474	3.465	36.722
Jun.10	15.892	21.018	3.740	40.650
Jul.10	7.166	22.791	7.925	37.882
Aug.10	0.026	21.995	12.935	34.956
Sep.10	0.001	21.639	13.610	35.250
Oct.10	0.000	21.557	9.735	31.292
Nov.10	0.001	20.052	3.110	23.163
Dec.10	0.000	20.049	1.425	21.474
Total (MG/YR)	39.633	239.308	60.845	339.786
Total (MGD)	0.109	0.656	0.167	0.931
Loss Distribution Factor	1.158	1.158	1.158	1.158
Adjusted 2010 Flow (MGD)	0.126	0.759	0.193	1.078
Percent Flow of Service Area	11.66%	70.43%	17.91%	100.00%
Population served (Based on 177 g/c/d)	710	4288	1090	6088
Distribution of Projected Flow at Meter Locations				
Based on current distribution of flow unless shown otherwise.				
2015 Flow	0.1288	0.7776	0.1977	1.1040
2020 Flow	0.1320	0.7972	0.2027	1.1319
2025 Flow	0.1354	0.8173	0.2078	1.1605
2030 Flow	0.1388	0.8380	0.2131	1.1898

APPENDIX B

WATER MODEL RESULTS

Bay County Water System Strategic Plan Modeling Summary

Year/Flow Condition	Booster Station	Results	Pressure Required
2010 PDF	W/0 Frankford booster	All OK	
2010 PHF	W/0 Frankford booster	-13 PSI @ Hathaway	45 PSI
	W/ 1 Frankford booster	31 PSI @ Hathaway	45 PSI
	W /2 Frankford boosters	All OK	
<hr/>			
2015 PDF	W/0 Frankford booster	Hathaway = 48 PSI	45 PSI
2015 PHF	W/0 Frankford booster	Hathaway = -11 PSI Lake Merial = 22 PSI	45 PSI
	W/ 1 Frankford booster	Hathaway = 38 PSI Lake Merial = 36 PSI	45 PSI
	W/ 2 Frankford booster	Hathaway = 58 PSI Lake Merial = 45 PSI	45 PSI
<hr/>			
Replace existing 24" line from Frankford Ave to Collegiate Dr with 13,200 LF of 36" pipe			
Construct North Bay Booster			
2020 PDF	W/0 Frankford booster	Lake Merial = 42 PSI	
2020 PHF	W/0 Frankford booster	Hathaway = 9 PSI Lake Merial = 4 PSI Sand Hills Fire = 0 PSI Tyndall = 35 PSI	45 PSI 60 PSI
	W/ 1 Frankford booster	Lake Merial = 20 PSI Sand Hills Fire = 15 PSI Tyndall = 52 PSI	60 PSI
	W/ 2 Frankford booster	Lake Merial = 30 PSI Sand Hills Fire = 25 PSI	

Bay County Water System Strategic Plan

Modeling Summary

W/ 2 Frankford booster
and North Bay Booster All OK

2025 PDF W/O Frankford booster
and W/O North Bay Booster Lake Merial = 31 PSI
Sand Hills Fire = 27 PSI

2025 PDF W/ North Bay Booster All OK

2025 PHF W/O Frankford booster Hathaway = 3 PSI 45 PSI
Lake Merial = -15 PSI
Sand Hills Fire = -19 PSI
Tyndall = 34 PSI 60 PSI
Many other low pressures

W/ 1 Frankford booster Hathaway = 33 PSI 45 PSI
Lake Merial = 2 PSI
Sand Hills Fire = -3 PSI
Tyndall = 45 PSI 60 PSI

W/ 2 Frankford booster Lake Merial = 13 PSI
Sand Hills Fire = 8 PSI

W/ 2 Frankford booster
and North Bay Booster All OK

Replace existing 24" line from Collegiate Dr to Hathaway Bridge with 13,200 LF of 36" pipe

2025 PHF W/O Frankford booster Hathaway = 3 PSI
Lake Merial = -15 PSI
Sand Hills Fire = -19 PSI
Tyndall = 27 PSI 60 PSI

W/ 1 Frankford booster Lake Merial = 2 PSI
Sand Hills Fire = -3 PSI
Tyndall = 45 PSI 60 PSI

W/ 2 Frankford booster Tyndall = 57 60 PSI

Bay County Water System Strategic Plan

Modeling Summary

**W/ 2 Frankford booster
and North Bay Booster**

Lake Merial = 41 PSI
Sand Hills Fire = 37 PSI

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-1	294.78	J-3	J-5	36	Ductile Iron	100.0	Open		3.15	9,991.32
P-2	232.17	J-5	J-12	36	Ductile Iron	100.0	Open		3.15	9,991.32
P-3	150.03	J-12	AV-1	36	Ductile Iron	100.0	Open		3.15	9,991.32
P-4	242.77	AV-1	J-18	36	Ductile Iron	100.0	Open		3.15	9,991.32
P-5	356.87	J-18	J-795	36	Ductile Iron	100.0	Open		3.15	9,991.32
P-6	252.44	J-795	J-26	36	Ductile Iron	100.0	Open		3.15	9,991.32
P-7	215.29	AV-2	J-33	36	Ductile Iron	100.0	Open		3.15	9,991.32
P-9	253.34	J-37	J-112	36	Ductile Iron	100.0	Open		2.13	6,746.05
P-10	245.31	J-112	J-82	36	Ductile Iron	100.0	Open		2.13	6,746.05
P-11	250.23	J-82	J-14	36	Ductile Iron	100.0	Open		2.13	6,746.05
P-12	250.14	J-14	J-133	36	Ductile Iron	100.0	Open		2.13	6,746.05
P-13	250.00	J-133	J-192	36	Ductile Iron	100.0	Open		2.13	6,746.05
P-14	250.00	J-192	J-56	36	Ductile Iron	100.0	Open		2.13	6,746.05
P-15	250.00	J-56	J-60	36	Ductile Iron	100.0	Open		2.13	6,746.05
P-16	250.00	J-60	AV-3	36	Ductile Iron	100.0	Open		2.13	6,746.05
P-17	132.69	J-26	J-7	36	Ductile Iron	100.0	Open		3.15	9,991.32
P-18	249.98	AV-3	J-62	36	Ductile Iron	100.0	Open		2.13	6,746.05
P-19	249.90	J-62	J-67	36	Ductile Iron	100.0	Open		2.13	6,746.05
P-20	214.11	J-7	AV-2	36	Ductile Iron	100.0	Open		3.15	9,991.32
P-21	249.97	J-67	J-190	36	Ductile Iron	100.0	Open		2.13	6,746.05
P-22	250.00	J-190	J-72	36	Ductile Iron	100.0	Open		2.13	6,746.05
P-23	244.55	J-72	J-73	36	Ductile Iron	100.0	Open		2.13	6,746.05
P-24	258.89	J-73	J-75	36	Ductile Iron	100.0	Open		2.13	6,746.05
P-25	267.95	J-75	M1-8	36	Ductile Iron	100.0	Open		2.13	6,746.05
P-26	298.19	M1-8	J-85	36	Ductile Iron	100.0	Open		2.13	6,746.05
P-27	247.16	J-36	J-41	30	Ductile Iron	100.0	Open		2.12	6,735.13
P-28	102.26	J-41	J-43	30	Ductile Iron	100.0	Open		4.08	8,979.39
P-29	249.99	J-85	J-90	36	Ductile Iron	100.0	Open		4.08	8,979.39
P-30	249.99	J-90	J-93	36	Ductile Iron	100.0	Open		2.12	6,735.13
P-31	262.20	J-43	J-46	30	Ductile Iron	100.0	Open		4.08	8,979.39

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen- Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-32	244.27	J-46	J-49	30	Ductile Iron	100.0	Open		4.08	8,979.39
P-33	249.99	J-93	J-95	36	Ductile Iron	100.0	Open		2.12	6,735.13
P-34	249.99	J-95	J-102	36	Ductile Iron	100.0	Open		2.12	6,735.13
P-35	38.36	J-49	J-53	30	Ductile Iron	100.0	Open		3.27	7,207.16
P-36	249.99	J-102	J-103	36	Ductile Iron	100.0	Open		2.12	6,735.13
P-37	21.15	J-53	J-54	30	Ductile Iron	100.0	Open		3.27	7,207.16
P-38	249.97	J-103	J-110	36	Ductile Iron	100.0	Open		2.12	6,735.13
P-39	249.73	J-110	J-111	36	Ductile Iron	100.0	Open		2.12	6,735.13
P-40	278.96	J-91	J-142	24	Ductile Iron	100.0	Open		1.26	1,772.23
P-41	249.92	J-111	AV-4	36	Ductile Iron	100.0	Open		2.12	6,735.13
P-42	250.00	AV-4	J-118	36	Ductile Iron	100.0	Open		2.12	6,735.13
P-43	250.00	J-118	J-124	36	Ductile Iron	100.0	Open		2.12	6,735.13
P-44	250.00	J-124	J-125	36	Ductile Iron	100.0	Open		2.12	6,735.13
P-45	248.09	J-337	J-635	24	Ductile Iron	100.0	Open		0.49	693.29
P-46	250.00	J-125	J-132	36	Ductile Iron	100.0	Open		2.12	6,735.13
P-47	250.00	J-132	J-134	36	Ductile Iron	100.0	Open		2.12	6,735.13
P-48	249.97	J-134	J-137	36	Ductile Iron	100.0	Open		2.12	6,735.13
P-49	249.96	J-137	J-144	36	Ductile Iron	100.0	Open		2.12	6,735.13
P-50	250.00	J-144	J-147	36	Ductile Iron	100.0	Open		2.12	6,735.13
P-51	250.45	M3-2	J-79	10	Ductile Iron	100.0	Open		0.92	-224.39
P-52	249.64	J-147	J-152	36	Ductile Iron	100.0	Open		2.12	6,735.13
P-53	251.30	J-79	J-81	10	Ductile Iron	100.0	Open		0.92	-224.39
P-54	249.42	J-152	J-153	36	Ductile Iron	100.0	Open		2.12	6,735.13
P-55	267.47	J-81	J-83	10	Ductile Iron	100.0	Open		0.92	-224.39
P-56	250.00	J-153	J-157	36	Ductile Iron	100.0	Open		2.12	6,735.13
P-57	178.39	J-83	J-88	10	Ductile Iron	100.0	Open		0.92	-224.39
P-58	233.73	J-88	J-92	10	Ductile Iron	100.0	Open		0.92	-224.39
P-60	251.84	J-92	J-98	10	Ductile Iron	100.0	Open		0.92	-224.39
P-61	258.90	J-98	J-100	10	Ductile Iron	100.0	Open		0.92	-224.39
P-62	280.75	J-170	J-175	42	Ductile Iron	100.0	Open		1.60	-6,897.47

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-63	242.92	J-100	J-105	10	Ductile Iron	100.0	Open		0.92	-224.39
P-64	205.57	J-175	J-179	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-65	247.11	J-105	J-107	10	Ductile Iron	100.0	Open		0.92	-224.39
P-66	206.67	J-179	J-182	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-67	255.52	J-107	J-114	10	Ductile Iron	100.0	Open		0.92	-224.39
P-68	329.21	J-182	J-185	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-69	242.92	J-114	J-115	10	Ductile Iron	100.0	Open		0.92	-224.39
P-70	225.86	J-185	AV-12	42	HDPE	100.0	Open		1.60	-6,897.47
P-71	243.07	J-115	J-119	10	Ductile Iron	100.0	Open		0.92	-224.39
P-72	234.70	J-119	J-121	10	Ductile Iron	100.0	Open		0.92	-224.39
P-73	177.14	J-171	J-35	42	HDPE	100.0	Open		1.60	-6,897.47
P-74	264.40	J-121	J-128	10	Ductile Iron	100.0	Open		0.92	-224.39
P-75	242.96	J-128	M1-4	10	Ductile Iron	100.0	Open		0.92	-224.39
P-76	239.65	M1-4	J-135	10	Ductile Iron	100.0	Open		0.93	-228.63
P-77	264.00	J-135	J-139	10	Ductile Iron	100.0	Open		0.93	-228.63
P-78	195.78	AV-Intercoastal WaterWay	J-205	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-79	247.43	J-139	J-141	10	Ductile Iron	100.0	Open		0.93	-228.63
P-80	250.68	J-209	J-211	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-81	255.49	J-141	J-146	10	Ductile Iron	100.0	Open		0.93	-228.63
P-82	286.62	J-211	J-212	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-83	242.96	J-146	J-150	10	Ductile Iron	100.0	Open		0.93	-228.63
P-84	172.65	J-212	J-213	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-85	251.44	J-150	J-155	10	Ductile Iron	100.0	Open		0.93	-228.63
P-86	243.71	J-213	Butterfly Isolation Valve	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-87	242.96	J-155	J-159	10	Ductile Iron	100.0	Open		0.93	-228.63

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen- Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-88	147.85	Butterfly Isolation Valve	M4-3	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-89	263.86	J-159	J-162	10	Ductile Iron	100.0	Open		0.93	-228.63
P-90	405.29	M4-3	AV-10	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-91	331.19	J-162	J-797	10	Ductile Iron	100.0	Open		0.93	-228.63
P-92	249.96	AV-10	J-218	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-93	236.21	J-797	J-168	10	Ductile Iron	100.0	Open		0.93	-228.63
P-94	249.95	J-218	J-219	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-95	242.45	J-168	J-172	10	Ductile Iron	100.0	Open		0.93	-228.63
P-96	250.14	J-219	J-220	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-97	272.44	J-172	J-177	10	Ductile Iron	100.0	Open		0.93	-228.63
P-98	251.37	J-220	J-221	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-99	234.58	J-177	J-180	10	Ductile Iron	100.0	Open		0.93	-228.63
P-100	248.62	J-221	J-222	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-101	247.25	J-180	J-187	10	Ductile Iron	100.0	Open		0.93	-228.63
P-102	251.07	J-222	J-223	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-103	259.81	J-187	J-189	10	Ductile Iron	100.0	Open		0.93	-228.63
P-104	246.71	J-223	J-225	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-105	268.18	J-189	J-191	10	Ductile Iron	100.0	Open		0.93	-228.63
P-106	252.12	J-225	J-227	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-107	256.88	J-191	J-195	10	Ductile Iron	100.0	Open		0.93	-228.63
P-108	250.00	J-227	J-229	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-109	251.35	J-195	J-198	10	Ductile Iron	100.0	Open		0.93	-228.63
P-110	249.98	J-229	J-231	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-111	241.34	J-198	J-200	10	Ductile Iron	100.0	Open		0.93	-228.63
P-112	249.95	J-231	J-238	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-113	313.53	J-200	J-203	24	Ductile Iron	100.0	Open		0.16	-228.63
P-114	250.00	J-238	J-240	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-115	405.40	J-203	J-796	24	Ductile Iron	100.0	Open		0.16	-228.63

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen- Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-116	250.00	J-240	J-242	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-117	143.70	J-796	J-210	24	Ductile Iron	100.0	Open		5.07	7,151.28
P-118	250.00	J-242	J-247	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-119	764.91	J-210	J-636	24	Ductile Iron	100.0	Open		5.07	7,151.28
P-120	250.00	J-247	J-248	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-121	250.00	J-248	J-252	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-122	253.37	J-214	M6-6 & 6-7	20	Ductile Iron	100.0	Open		0.12	-117.44
P-123	250.00	J-252	J-258	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-124	252.19	M6-6 & 6-7	J-217	20	Ductile Iron	100.0	Open		0.16	-154.90
P-125	252.08	J-258	J-261	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-126	236.90	J-217	J-196	20	Ductile Iron	100.0	Open		0.16	-154.90
P-127	246.54	J-261	J-263	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-128	252.19	J-196	J-199	20	Ductile Iron	100.0	Open		0.16	-154.90
P-129	251.51	J-263	J-265	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-130	267.63	J-199	J-8	20	Ductile Iron	100.0	Open		0.16	-154.90
P-131	234.90	J-265	J-267	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-132	240.23	J-8	J-10	20	Ductile Iron	100.0	Open		0.16	-154.90
P-133	253.99	J-10	J-109	20	Ductile Iron	100.0	Open		0.16	-154.90
P-134	259.98	J-267	J-269	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-135	249.22	J-269	J-271	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-136	250.47	J-109	J-224	20	Ductile Iron	100.0	Open		0.16	-154.90
P-137	248.97	J-224	J-226	20	Ductile Iron	100.0	Open		0.16	-154.90
P-138	246.57	J-271	J-272	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-139	249.20	J-272	J-273	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-140	240.18	J-226	J-228	20	Ductile Iron	100.0	Open		0.16	-154.90
P-141	241.14	J-273	J-275	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-142	267.62	J-228	J-230	20	Ductile Iron	100.0	Open		0.16	-154.90
P-143	236.77	J-230	J-233	20	Ductile Iron	100.0	Open		0.16	-154.90
P-144	252.76	J-275	J-277	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-145	241.49	J-277	J-279	42	Ductile Iron	100.0	Open		1.60	-6,897.47

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-146	275.44	J-233	J-239	20	Ductile Iron	100.0	Open		0.16	-154.90
P-147	248.81	J-279	J-281	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-148	238.85	J-239	J-241	20	Ductile Iron	100.0	Open		0.16	-154.90
P-149	251.18	J-281	J-284	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-150	258.11	J-241	J-245	20	Ductile Iron	100.0	Open		0.16	-154.90
P-151	246.66	J-284	J-285	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-152	237.99	J-245	M6-9 & M6-10	20	Ductile Iron	100.0	Open		0.16	-154.90
P-153	256.02	J-285	J-286	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-154	246.06	M3-17	M6-4	20	Ductile Iron	100.0	Open		0.08	-80.54
P-155	270.22	J-286	J-289	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-156	235.65	M6-4	J-257	20	Ductile Iron	100.0	Open		0.12	-117.44
P-157	251.22	J-289	J-291	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-158	261.60	J-257	J-262	20	Ductile Iron	100.0	Open		0.12	-117.44
P-159	249.87	J-291	J-292	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-160	251.86	J-262	J-264	20	Ductile Iron	100.0	Open		0.12	-117.44
P-161	246.07	J-292	J-294	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-162	250.56	J-294	J-297	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-163	246.74	J-264	J-266	20	Ductile Iron	100.0	Open		0.12	-117.44
P-164	249.77	J-297	J-298	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-165	243.71	J-266	J-214	20	Ductile Iron	100.0	Open		0.12	-117.44
P-166	250.24	M1-7	J-268	30	Ductile Iron	100.0	Open		4.08	8,979.39
P-167	251.42	J-298	J-301	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-168	263.80	J-268	J-36	30	Ductile Iron	100.0	Open		4.08	8,979.39
P-169	249.17	J-301	J-303	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-171	251.23	J-303	J-305	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-172	247.11	J-305	J-307	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-173	251.50	J-307	J-309	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-174	243.00	J-309	J-310	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-175	260.10	J-310	J-311	42	Ductile Iron	100.0	Open		1.60	-6,897.47

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-177	246.08	J-311	J-312	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-178	253.00	J-278	J-280	30	Ductile Iron	100.0	Open		2.61	5,748.03
P-179	257.27	J-280	J-282	30	Ductile Iron	100.0	Open		2.61	5,748.03
P-180	252.36	J-312	J-313	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-181	254.63	J-28	J-282	30	Ductile Iron	100.0	Open		2.61	-5,748.03
P-182	248.60	J-313	J-314	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-183	189.25	J-9	J-283	20	Ductile Iron	100.0	Open		4.06	3,978.04
P-184	244.85	J-314	J-315	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-185	109.76	J-283	J-11	20	Ductile Iron	100.0	Open		4.06	3,978.04
P-186	252.48	J-315	J-317	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-187	248.33	J-317	J-319	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-188	160.58	J-792	M3-11	24	Ductile Iron	100.0	Open		1.79	2,524.15
P-189	127.72	M3-11	J-20	24	Ductile Iron	100.0	Open		1.79	2,523.93
P-190	255.61	J-319	J-321	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-191	245.30	J-321	J-323	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-192	780.69	J-288	J-637	20	Ductile Iron	100.0	Open		4.06	3,978.04
P-193	255.68	J-323	J-324	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-194	271.30	J-11	J-290	20	Ductile Iron	100.0	Open		1.60	-6,897.47
P-195	248.51	J-324	J-326	42	Ductile Iron	100.0	Open		4.06	3,978.04
P-196	245.40	J-326	J-329	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-197	260.58	J-290	J-288	20	Ductile Iron	100.0	Open		1.60	-6,897.47
P-198	249.27	J-28	J-293	30	Ductile Iron	100.0	Open		4.06	3,978.04
P-199	255.34	J-329	J-330	42	Ductile Iron	100.0	Open		2.61	5,748.03
P-200	248.25	J-330	Crooked Creek	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-201	243.64	Crooked Creek	M4-1	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-202	249.53	J-293	J-295	30	Ductile Iron	100.0	Open		2.61	5,748.03
P-203	251.57	J-295	J-29	30	Ductile Iron	100.0	Open		2.61	5,748.03
P-204	189.48	AV-16	J-335	42	Ductile Iron	100.0	Open		1.60	-6,907.42

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-205	247.81	J-29	J-296	30	Ductile Iron	100.0	Open		2.61	5,748.03
P-206	250.95	J-338	J-339	42	Ductile Iron	100.0	Open		1.60	-6,907.42
P-207	178.46	J-296	J-299	30	Ductile Iron	100.0	Open		2.61	5,748.03
P-208	248.38	J-339	J-340	42	Ductile Iron	100.0	Open		1.60	-6,907.42
P-209	142.90	J-299	M1-7	30	Ductile Iron	100.0	Open		2.61	5,748.03
P-210	255.20	J-340	J-341	42	Ductile Iron	100.0	Open		1.60	-6,907.42
P-211	235.71	J-54	J-300	30	Ductile Iron	100.0	Open		3.27	7,207.16
P-212	1,909.42	J-300	J-638	30	Ductile Iron	100.0	Open		3.27	7,207.16
P-213	242.72	J-341	J-342	42	Ductile Iron	100.0	Open		1.60	-6,907.42
P-214	254.24	J-342	J-343	42	Ductile Iron	100.0	Open		1.60	-6,907.42
P-215	251.50	J-343	J-344	42	Ductile Iron	100.0	Open		1.60	-6,907.42
P-216	247.69	J-344	J-345	42	Ductile Iron	100.0	Open		1.60	-6,907.42
P-217	224.50	J-302	J-304	24	Ductile Iron	100.0	Open		1.26	1,772.23
P-218	251.75	J-345	J-346	42	Ductile Iron	100.0	Open		1.60	-6,907.42
P-219	247.85	J-346	J-347	42	Ductile Iron	100.0	Open		1.60	-6,907.42
P-220	246.68	J-304	J-306	24	Ductile Iron	100.0	Open		1.26	1,772.23
P-221	245.07	J-347	J-348	42	Ductile Iron	100.0	Open		1.60	-6,907.42
P-222	238.77	J-306	J-308	24	Ductile Iron	100.0	Open		1.26	1,772.23
P-223	254.76	J-348	J-349	42	Ductile Iron	100.0	Open		1.60	-6,907.42
P-224	249.93	J-349	J-350	42	Ductile Iron	100.0	Open		1.60	-6,907.42
P-225	249.99	J-350	J-351	42	Ductile Iron	100.0	Open		1.60	-6,907.42
P-226	244.65	J-308	J-202	24	Ductile Iron	100.0	Open		1.26	1,772.23
P-227	255.06	J-351	J-352	42	Ductile Iron	100.0	Open		1.60	-6,907.42
P-228	254.03	J-142	J-58	24	Ductile Iron	100.0	Open		1.26	1,772.23
P-229	242.50	J-352	J-353	42	Ductile Iron	100.0	Open		1.60	-6,907.42
P-230	245.74	J-353	J-354	42	Ductile Iron	100.0	Open		1.60	-6,907.42
P-231	258.77	J-354	J-355	42	Ductile Iron	100.0	Open		1.60	-6,907.42
P-232	238.77	J-58	J-86	24	Ductile Iron	100.0	Open		1.26	1,772.23
P-233	246.13	J-355	J-356	42	Ductile Iron	100.0	Open		1.60	-6,907.42
P-234	294.64	J-356	J-357	42	Ductile Iron	100.0	Open		1.60	-6,907.42

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-235	226.32	J-202	J-166	24	Ductile Iron	100.0	Open		1.26	1,772.23
P-236	252.42	J-357	M4-2	42	Ductile Iron	100.0	Open		1.60	-6,907.42
P-237	246.03	M4-2	J-358	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-238	2,321.15	J-638	M1-5	30	Ductile Iron	100.0	Open		3.27	7,207.16
P-238	223.08	J-166	J-99	24	Ductile Iron	100.0	Open		1.26	1,772.23
P-239	249.44	J-358	J-359	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-240	1,481.14	M1-6	M8-1	20	Ductile Iron	100.0	Open		1.58	1,543.61
P-240	177.66	J-99	J-91	24	Ductile Iron	100.0	Open		1.26	1,772.23
P-241	3,894.77	M8-1	J-170	20	Ductile Iron	100.0	Open		2.09	2,048.71
P-241	232.22	J-86	J-204	24	Ductile Iron	100.0	Open		1.26	1,772.23
P-242	252.15	J-359	J-360	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-243	251.21	J-360	J-361	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-244	4,063.24	J-791	J-786 23rd & Beck	24	Ductile Iron	100.0	Open		4.47	6,304.12
P-244	227.87	J-204	J-316	24	Ductile Iron	100.0	Open		1.26	1,772.23
P-245	5,113.62	J-786 23rd & Beck	J-640	24	Ductile Iron	100.0	Open		4.47	6,304.12
P-245b	248.89	J-361	J-362	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-246	1,699.48	J-640	M8-6	24	Ductile Iron	100.0	Open		4.47	6,304.12
P-246b	246.13	J-362	J-363	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-247	256.65	J-363	J-364	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-248	245.44	J-316	J-318	24	Ductile Iron	100.0	Open		1.26	1,772.23
P-249	246.50	J-364	J-365	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-249	5,086.51	J-177	M1-6	20	Ductile Iron	100.0	Open		1.60	1,561.96
P-250	247.34	J-318	J-66	24	Ductile Iron	100.0	Open		1.26	1,772.23
P-251	3,200.01	M1-2	M6-5	16	Ductile Iron	100.0	Open		2.48	1,556.64
P-251	250.00	J-365	J-366	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-252	275.25	J-320	J-322	24	Ductile Iron	100.0	Open		1.26	1,772.23
P-253	200.94	J-322	J-325	24	Ductile Iron	100.0	Open		1.26	1,772.23
P-254	250.00	J-366	J-367	42	Ductile Iron	100.0	Open		1.61	-6,947.06

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (In)	Material	Hazen- Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-254	7,429.73	M8-2	M11-1	24	Ductile Iron	100.0	Open		2.11	-2,972.24
P-255	2,391.83	M1-1	J-184	24	Ductile Iron	100.0	Open		2.29	-3,231.16
P-255	249.46	J-367	J-368	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-257	251.19	J-368	J-369	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-258	262.09	J-327	J-328	24	Ductile Iron	100.0	Open		1.24	1,744.36
P-258	1,304.82	J-186	J-187	24	Ductile Iron	100.0	Open		1.47	-2,066.55
P-259	1,268.11	J-187	J-790	24	Ductile Iron	100.0	Open		1.47	-2,066.55
P-259	249.97	J-369	J-370	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-260	4,015.36	J-636	J-790	24	Ductile Iron	100.0	Open		3.74	5,279.22
P-260	222.50	J-328	J-331	24	Ductile Iron	100.0	Open		1.24	1,744.36
P-261	249.99	J-370	J-371	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-261	1,940.71	J-790	J-189	20	Ductile Iron	100.0	Open		3.28	3,212.67
P-262	245.12	J-331	J-332	24	Ductile Iron	100.0	Open		1.24	1,744.36
P-263	249.95	J-371	J-372	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-263	878.48	J-189	J-177	20	Ductile Iron	100.0	Open		3.28	3,212.67
P-264	1,789.86	J-637	M11-7	20	Ductile Iron	100.0	Open		2.93	2,873.61
P-264	258.15	J-66	J-320	24	Ductile Iron	100.0	Open		1.26	1,772.23
P-265	2,129.01	M11-7	M11-6	20	Ductile Iron	100.0	Open		2.89	2,827.39
P-265	250.00	J-372	J-373	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-266	5,707.87	M11-6	M11-5	20	Ductile Iron	100.0	Open		1.35	1,323.60
P-266	236.55	J-332	J-333	24	Ductile Iron	100.0	Open		1.24	1,744.36
P-267	2,271.58	M11-5	M11-2	18	Ductile Iron	100.0	Open		1.67	1,323.38
P-267	252.49	J-373	J-374	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-268	255.80	J-333	J-334	24	Ductile Iron	100.0	Open		1.24	1,744.36
P-269	249.32	J-374	J-375	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-269	2,615.01	M11-3	J-195	18	Ductile Iron	100.0	Open		0.80	634.76
P-270	239.61	J-334	J-336	24	Ductile Iron	100.0	Open		1.24	1,744.36
P-271	2,743.04	J-186	M11-6	16	Ductile Iron	100.0	Open		2.03	-1,272.88
P-271	246.16	J-375	J-376	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-272	78.66	J-636	J-637	24	Ductile Iron	100.0	Open		1.33	1,872.06

FlexTable: Pipe Table (HMM Model Peak with improvements.wfg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (In)	Material	Hazen-Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-272	149.40	J-336	J-337	24	Ductile Iron	100.0	Open		1.24	1,744.36
P-273	1,881.43	J-637	J-197	24	Ductile Iron	100.0	Open		2.11	2,976.49
P-273	255.03	J-376	J-377	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-274	10,485.90	J-197	M11-4	24	Ductile Iron	100.0	Open		2.11	2,976.49
P-274	120.60	J-634	J-236	36	Ductile Iron	100.0	Open		2.45	-7,786.20
P-275	247.80	J-377	J-378	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-276	127.24	J-236	J-157	36	Ductile Iron	100.0	Open		2.12	-6,735.13
P-276	1,354.04	M11-11	M11-8 & 11-9	24	Ductile Iron	100.0	Open		2.08	2,939.77
P-277	70.06	J-195	J-201	18	Ductile Iron	100.0	Open		0.80	634.76
P-277	249.26	J-378	J-379	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-278	1,300.28	J-201	M5-7	18	Ductile Iron	100.0	Open		2.43	1,926.79
P-278	231.79	J-167	J-232	42	HDPE	100.0	Open		1.60	-6,897.47
P-279	3,210.21	M11-8 & 11-9	J-201	24	Ductile Iron	100.0	Open		2.07	2,912.36
P-279	244.50	J-379	J-380	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-280	13,308.28	J-201	M5-4	24	Ductile Iron	100.0	Open		1.15	1,620.33
P-280	210.86	J-232	J-170	42	HDPE	100.0	Open		1.60	-6,897.47
P-281	2,736.21	M5-7	M5-1	18	Ductile Iron	100.0	Open		0.96	761.91
P-281	250.60	J-380	J-381	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-282	152.73	J-205	J-235	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-282	3,948.24	M5-1	M10-1	18	Ductile Iron	100.0	Open		0.83	656.23
P-283	250.59	J-381	J-382	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-284	1,322.97	M5-5	M5-4	18	Ductile Iron	100.0	Open		0.01	-5.79
P-284	159.39	J-235	J-209	42	Ductile Iron	100.0	Open		1.60	-6,897.47
P-285	247.75	J-382	J-383	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-286	156.83	J-549	J-237	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-287	250.14	J-383	J-384	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-288	157.55	J-237	J-550	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-289	2,026.08	J-788	J-789	20	Ductile Iron	100.0	Open		0.28	272.93
P-289	16.35	J-796	J-23	24	Ductile Iron	100.0	Open		5.23	-7,379.91

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-290	3,800.26	J-789		20	Ductile Iron	100.0	Open		0.28	272.93
P-290	250.00	J-384	J-385	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-291	250.89	J-385	J-386	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-292	5,111.76	J-635	J-213	24	Ductile Iron	100.0	Open		0.49	693.29
P-292	63.20	J-49	J-234	30	Ductile Iron	100.0	Open		0.80	1,772.23
P-293	3,808.84	J-213	M3-5	24	Ductile Iron	100.0	Open		0.49	693.29
P-293	193.56	J-234	J-302	24	Ductile Iron	100.0	Open		1.26	1,772.23
P-294	245.69	J-386	J-387	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-294	4,449.79	M3-5	M3-1	24	Ductile Iron	100.0	Open		0.45	629.73
P-295	12,662.67	M3-1	M3-3	24	Ductile Iron	100.0	Open		0.14	198.53
P-295	35.44	J-337	J-236	20	Ductile Iron	100.0	Open		1.07	1,051.07
P-296	253.87	J-387	J-388	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-297	248.91	J-388	J-389	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-298	246.34	J-389	J-390	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-299	79.24	J-78	AV- Intercoastal WaterWay	42	HDPE	100.0	Open		1.60	-6,897.47
P-300	1,564.89	M11-2	M11-10	18	Ductile Iron	100.0	Open		1.59	1,260.20
P-300	249.49	J-390	J-391	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-301	105.30	J-1	J-6	42	HDPE	100.0	Open		1.60	-6,897.47
P-301	2,952.53	M11-10	M11-3	18	Ductile Iron	100.0	Open		1.59	1,258.00
P-302	66.16	J-6	J-78	42	HDPE	100.0	Open		1.60	-6,897.47
P-302	8.74	J-222 PUMP SUCTION	J-223 PUMP SUCTION	48	Ductile Iron	100.0	Open		0.00	0.00
P-303	250.38	J-391	J-392	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-303	8.29	J-223 PUMP SUCTION	J-224 PUMP SUCTION	48	Ductile Iron	100.0	Open		0.47	-2,676.52
P-304	250.12	J-392	J-163	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-304	8.32	J-224 PUMP SUCTION	J-225 PUMP SUCTION	48	Ductile Iron	100.0	Open		1.34	-7,543.36
P-305	64.90	J-13	J-2	42	HDPE	100.0	Open		1.60	-6,897.47

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-305	10.83	J-225 PUMP SUCTION	a PS Input PUMP SUCTION	48	Ductile Iron	100.0	Open		2.40	-13,552.46
P-306	10.77	a PS Input PUMP SUCTION	J-226 PUMP SUCTION	48	Ductile Iron	100.0	Open		2.40	13,545.11
P-306	162.83	J-2	J-1	42	HDPE	100.0	Open		1.60	-6,897.47
P-307	9.55	J-226 PUMP SUCTION	J-227 PUMP SUCTION	48	Ductile Iron	100.0	Open		2.40	13,545.11
P-307	254.69	J-163	J-136	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-308	9.32	J-227 PUMP SUCTION	J-228 PUMP SUCTION	48	Ductile Iron	100.0	Open		1.93	10,869.04
P-308	222.72	J-35	J-34	42	HDPE	100.0	Open		1.60	-6,897.47
P-309	9.34	J-228 PUMP SUCTION	J-229 PUMP SUCTION	48	Ductile Iron	100.0	Open		0.86	4,864.44
P-309	243.11	J-136	Burnt Mill Creek	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-310	9.29	J-230	J-231	36	Ductile Iron	100.0	Open		3.10	-9,850.85
P-310	107.89	J-34	J-13	42	HDPE	100.0	Open		1.60	-6,897.47
P-311	249.98	Burnt Mill Creek	J-129	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-312	188.16	AV-12	J-243	42	HDPE	100.0	Open		1.60	-6,897.47
P-312	7.84	J-232	J-233	36	Ductile Iron	100.0	Open		0.73	-2,307.49
P-312	66.89	J-225	J-791	30	Ductile Iron	100.0	Open		2.86	6,304.12
P-313	10.33	J-233	Bay County WTP	36	Ductile Iron	100.0	Open		1.17	3,701.61
P-313	250.00	J-129	J-127	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-314	9.73	Bay County WTP	J-234	36	Ductile Iron	100.0	Open		1.12	-3,553.78
P-314	250.00	J-127	J-126	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-315	9.72	J-234	J-235	36	Ductile Iron	100.0	Open		1.12	-3,553.78
P-315	2,460.81	J-226	J-788	20	Ductile Iron	100.0	Open		0.28	272.93

Bentley WaterCAD V8i (SELECTseries 3)
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HMM Model Peak with improvements.wtg
11/8/2012

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen- Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-315	65.51	J-243	J-171	42	HDPE	100.0	Open		1.60	-6,897.47
P-316	9.30	J-235	J-236	36	Ductile Iron	100.0	Open		0.28	-877.71
P-316	99.41	J-393	J-244	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-317	250.00	J-126	J-123	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-317	7.78	J-236	J-237	36	Ductile Iron	100.0	Open		1.62	5,126.89
P-318	150.56	J-244	AV-9	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-318	13,166.59	J-227	J-228	12	Ductile Iron	100.0	Open		0.36	-128.40
P-319	4,892.27	J-228	J-229	12	Ductile Iron	100.0	Open		0.36	-128.40
P-319	250.00	J-123	J-131	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-320	250.00	J-131	J-393	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-320	127.95	J-229	J-598	12	Ductile Iron	100.0	Open		1.11	-392.91
P-321	10,899.10	J-535	J-230	12	Ductile Iron	100.0	Open		1.11	-392.91
P-321	165.35	AV-9	J-246	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-322	84.53	J-246	J-394	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-323	95.86	J-335	J-249	42	Ductile Iron	100.0	Open		1.60	-6,907.42
P-324	247.35	J-394	J-395	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-325	149.04	J-249	J-338	42	Ductile Iron	100.0	Open		1.60	-6,907.42
P-326	4,874.44	J-232	J-233	30	Ductile Iron	100.0	Open		2.17	4,786.99
P-326	9.88	J-226 PUMP SUCTION	PMP-5	36	Ductile Iron	100.0	Open		0.00	0.00
P-326	153.17	M4-1	J-251	42	Ductile Iron	100.0	Open		1.60	-6,907.42
P-327	252.45	J-395	J-396	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-328	241.62	J-396	J-397	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-328	8.83	J-227 PUMP SUCTION	PMP-6	36	Ductile Iron	100.0	Open		0.84	2,676.07
P-328	4,459.37	J-234	J-171	30	Ductile Iron	100.0	Open		3.35	7,384.80
P-329	161.15	J-251	AV-16	42	Ductile Iron	100.0	Open		1.60	-6,907.42
P-330	257.87	J-397	J-398	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-330	8.12	J-228 PUMP SUCTION	PMP-7	36	Ductile Iron	100.0	Open		1.89	6,004.60

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (In)	Material	Hazen- Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-331	12.83	Bay County WTP	J-253	36	Ductile Iron	100.0	Open		2.29	7,255.39
P-332	8.31	J-229 PUMP SUCTION	PMP-8	36	Ductile Iron	100.0	Open		1.53	4,864.44
P-333	242.92	J-398	J-399	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-335	250.00	J-399	J-400	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-335	17.68	J-230	J-238	36	Ductile Iron	100.0	Open		3.10	9,850.85
P-336	250.00	J-400	J-401	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-336	35.30	J-238	J-260	36	Ductile Iron	100.0	Open		3.10	9,850.85
P-337	108.43	M3-21	J-276	30	Ductile Iron	100.0	Open		4.81	10,604.01
P-338	250.00	J-401	J-402	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-339	215.80	M3-21	J-256	36	Ductile Iron	100.0	Open		3.34	-10,604.05
P-340	250.00	J-402	J-403	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-342	251.68	J-403	J-404	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-344	24.67	J-260	J-259	36	Ductile Iron	100.0	Open		2.45	7,774.20
P-345	248.69	J-404	J-405	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-345	8.60	PMP-5	CV-8	18	Ductile Iron	100.0	Open		0.00	0.00
P-346	8.53	CV-8	J-234	18	Ductile Iron	100.0	Open		0.00	0.00
P-347	9.87	PMP-6	CV-9	18	Ductile Iron	100.0	Open		3.37	2,676.07
P-347	247.91	J-405	J-406	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-348	8.15	CV-9	J-235	18	Ductile Iron	100.0	Open		3.37	2,676.07
P-349	274.42	J-260	J-9	18	Ductile Iron	100.0	Open		2.62	2,076.65
P-349	9.68	PMP-7	CV-10	18	Ductile Iron	100.0	Open		7.57	6,004.60
P-350	8.73	CV-10	J-236	18	Ductile Iron	100.0	Open		7.57	6,004.60
P-351	260.36	J-408	J-409	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-351	9.92	PMP-8	CV-11	18	Ductile Iron	100.0	Open		6.13	4,864.44
P-352	242.28	J-409	J-410	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-352	8.86	CV-11	J-237	18	Ductile Iron	100.0	Open		6.13	4,864.44
P-353	246.19	J-410	J-411	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-353	11.05	J-238	SV-1	18	Ductile Iron	100.0	Open		0.00	0.00

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-354	12.08	J-237	J-239	36	Ductile Iron	100.0	Open		3.15	9,991.32
P-354	249.99	J-411	J-412	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-355	249.93	J-412	J-413	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-355	15.06	J-239	SV-2	18	Ductile Iron	100.0	Open		0.00	0.00
P-356	250.00	J-413	J-414	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-356	228.01	J-239	J-3	36	Ductile Iron	100.0	Open		3.15	9,991.32
P-357	251.71	J-414	a P-Burnt Mill Pressure Station	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-358	248.22	a P-Burnt Mill Pressure Station	J-416	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-358	43.19	J-256	J-240	36	Ductile Iron	100.0	Open		3.34	-10,604.05
P-359	139.60	J-240	J-253	36	Ductile Iron	100.0	Open		2.29	-7,255.39
P-359	250.00	J-416	J-417	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-360	250.00	J-417	J-418	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-360	34.97	J-259	J-240	36	Ductile Iron	100.0	Open		1.06	3,348.66
P-361	249.37	J-418	J-419	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-364	250.00	J-419	J-420	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-365	249.83	J-420	J-421	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-366	26.60	J-270	J-4	24	Ductile Iron	100.0	Open		5.23	7,379.91
P-367	17.96	J-4	J-23	24	Ductile Iron	100.0	Open		5.23	7,379.91
P-368	250.00	J-421	J-422	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-369	229.13	J-422	J-423	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-372	249.90	J-423	J-424	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-373	245.80	J-424	J-425	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-374	249.96	J-425	J-426	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-375	249.95	J-426	J-427	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-376	249.97	J-427	J-428	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-377	252.12	J-428	J-429	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-378	250.00	J-429	J-430	42	Ductile Iron	100.0	Open		1.61	-6,947.06

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen- Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-379	250.00	J-430	J-431	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-380	249.98	J-431	J-432	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-381	250.00	J-432	J-433	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-382	249.95	J-433	J-434	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-383	246.04	J-434	J-435	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-384	249.98	J-435	J-436	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-385	250.00	J-436	J-437	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-386	252.84	J-437	J-438	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-387	254.88	J-438	J-439	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-388	244.70	J-439	J-440	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-389	252.51	J-440	J-441	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-390	252.09	J-441	J-442	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-391	249.53	J-442	J-443	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-392	249.97	J-443	J-444	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-393	249.99	J-444	J-445	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-394	249.96	J-445	J-446	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-395	249.98	J-446	J-447	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-396	250.00	J-447	J-448	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-397	278.37	J-448	J-449	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-398	249.65	J-449	J-450	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-399	250.00	J-450	J-451	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-400	249.99	J-451	J-452	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-401	250.00	J-452	J-453	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-402	247.32	J-453	J-454	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-403	250.00	J-454	J-455	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-404	250.00	J-455	J-456	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-405	250.00	J-456	J-457	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-406	250.00	J-457	J-458	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-407	251.40	J-458	J-459	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-408	270.30	J-459	J-460	42	Ductile Iron	100.0	Open		1.61	-6,947.06

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen- Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-409	250.00	J-460	AV-13	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-410	250.00	AV-13	J-461	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-411	249.95	J-461	J-462	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-412	250.00	J-462	J-463	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-413	249.85	J-463	J-464	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-414	250.00	J-464	J-465	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-415	239.26	J-465	J-466	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-416	251.16	J-466	J-467	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-417	246.93	J-467	J-468	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-418	250.00	J-468	J-469	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-419	250.00	J-469	J-470	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-420	253.91	J-470	J-471	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-421	250.00	J-471	J-472	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-422	250.00	J-472	J-473	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-423	250.00	J-473	J-474	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-424	245.91	J-474	J-475	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-425	251.13	J-475	J-476	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-426	250.00	J-476	J-477	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-427	250.00	J-477	J-478	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-428	250.00	J-478	J-479	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-429	245.11	J-479	J-480	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-430	250.00	J-480	J-481	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-431	249.95	J-481	J-482	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-432	255.98	J-482	J-483	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-433	243.37	J-483	J-484	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-434	310.05	J-484	J-485	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-435	250.20	J-485	J-486	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-436	247.98	J-486	J-487	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-437	252.32	J-487	J-488	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-438	252.10	J-488	J-489	42	Ductile Iron	100.0	Open		1.61	-6,947.06

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen- Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-439	251.32	J-489	J-490	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-440	241.21	J-490	J-491	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-441	258.70	J-491	J-492	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-442	247.41	J-492	J-493	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-443	250.00	J-493	J-494	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-444	247.20	J-494	J-495	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-445	250.00	J-495	J-496	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-446	252.69	J-496	J-497	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-447	249.90	J-497	J-498	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-448	239.66	J-498	J-499	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-449	249.40	J-499	J-500	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-450	249.86	J-500	J-501	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-451	250.00	J-501	J-502	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-452	311.06	J-502	J-503	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-453	250.00	J-503	J-504	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-454	250.00	J-504	J-505	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-455	249.95	J-505	J-506	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-456	250.00	J-506	J-507	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-457	248.28	J-507	J-508	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-458	7,770.23	J-229	J-248	12	Ductile Iron	100.0	Open		0.75	264.51
P-458	253.07	J-508	J-509	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-459	249.83	J-509	J-510	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-459	5,296.70	J-248	J-230	12	Ductile Iron	100.0	Open		0.75	264.51
P-460	246.47	J-510	J-511	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-461	265.44	J-511	J-512	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-462	249.10	J-512	J-513	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-463	245.56	J-513	J-514	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-464	251.83	J-514	J-515	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-465	253.48	J-515	J-516	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-466	251.81	J-516	J-517	42	Ductile Iron	100.0	Open		1.61	-6,947.06

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-467	250.00	J-517	J-518	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-468	250.00	J-518	J-519	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-469	250.00	J-519	J-520	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-470	249.96	J-520	J-521	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-471	250.00	J-521	J-522	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-472	250.84	J-522	Hwy 77 and HWY 388	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-473	244.37	Hwy 77 and HWY 388	J-523	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-474	212.12	J-523	M2-3	42	Ductile Iron	100.0	Open		1.61	-6,953.58
P-475	251.49	M2-3	J-525	42	Ductile Iron	100.0	Open		1.61	-6,953.62
P-476	250.23	J-525	J-526	42	Ductile Iron	100.0	Open		1.61	-6,953.62
P-477	255.99	J-526	J-527	42	Ductile Iron	100.0	Open		1.61	-6,953.62
P-478	251.30	J-527	J-528	42	Ductile Iron	100.0	Open		1.61	-6,953.62
P-479	247.62	J-528	J-529	42	Ductile Iron	100.0	Open		1.61	-6,953.62
P-480	243.58	J-529	J-530	42	Ductile Iron	100.0	Open		1.61	-6,953.62
P-481	252.49	J-530	J-531	42	Ductile Iron	100.0	Open		1.61	-6,953.62
P-482	250.29	J-531	J-532	42	Ductile Iron	100.0	Open		1.61	-6,953.62
P-483	250.00	J-532	J-533	42	Ductile Iron	100.0	Open		1.61	-6,953.62
P-484	138.49	J-20	J-276	24	Ductile Iron	100.0	Open		0.82	-1,152.18
P-485	250.00	J-533	J-276	42	Ductile Iron	100.0	Open		1.61	-6,953.62
P-485	282.49	J-276	J-270	24	Ductile Iron	100.0	Open		5.23	7,379.91
P-485	218.26	J-534	J-535	42	Ductile Iron	100.0	Open		1.61	-6,953.62
P-486	138.49	J-276	J-20	30	Ductile Iron	100.0	Open		0.94	2,071.92
P-486	211.31	J-535	AV-8	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-487	30.16	J-20	J-278	30	Ductile Iron	100.0	Open		2.61	5,748.03
P-487	213.56	AV-8	J-536	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-488	262.02	J-536	J-537	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-489	250.00	J-537	J-538	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-490	250.00	J-538	J-539	36	Ductile Iron	100.0	Open		2.07	-6,560.71

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen- Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-491	250.00	J-539	J-540	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-491	9.52	CV-5	PMP-2	18	Ductile Iron	100.0	Open		3.37	-2,676.52
P-492	264.70	J-259	J-9	24	Ductile Iron	100.0	Open		3.14	4,425.54
P-492	250.00	J-540	J-541	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-493	251.61	J-541	J-542	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-493	38.23	J-9	J-792	24	Ductile Iron	100.0	Open		1.79	2,524.15
P-494	250.00	J-542	J-543	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-495	250.00	J-543	J-544	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-496	250.00	J-544	J-545	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-497	250.00	J-545	J-546	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-498	251.91	J-546	J-547	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-499	248.44	J-547	J-548	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-500	169.56	J-548	J-549	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-501	250.00	J-550	J-551	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-502	249.50	J-551	J-552	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-503	253.89	J-552	J-553	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-504	249.05	J-553	J-554	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-504	7.62	CV-6	PMP-3	24	Ductile Iron	100.0	Open		3.45	-4,866.85
P-505	249.20	J-554	J-555	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-506	250.59	J-555	J-556	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-507	250.00	J-556	J-557	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-508	250.00	J-557	J-558	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-509	244.70	J-558	J-559	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-510	249.83	J-559	J-560	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-510	6.06	CV-7	PMP-4	18	Ductile Iron	100.0	Open		7.58	-6,009.10
P-511	250.84	J-560	J-561	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-512	256.66	J-561	J-562	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-513	248.01	J-562	J-563	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-514	99.39	J-33	M1-7	36	Ductile Iron	100.0	Open		3.15	9,991.32
P-514	248.84	J-563	J-564	36	Ductile Iron	100.0	Open		2.07	-6,560.71

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-515	243.34	J-564	J-565	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-515	150.49	M1-7	J-37	36	Ductile Iron	100.0	Open		2.13	6,746.05
P-516	250.00	J-565	J-566	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-517	250.00	J-566	J-567	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-518	250.00	J-567	J-568	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-519	250.00	J-568	J-569	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-520	250.00	J-569	J-570	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-521	250.00	J-570	J-571	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-522	255.89	J-571	J-572	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-523	250.00	J-572	J-573	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-524	250.00	J-573	J-574	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-525	250.00	J-574	J-575	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-526	250.00	J-575	J-576	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-527	250.00	J-576	J-577	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-528	250.00	J-577	J-145	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-529	250.00	J-145	J-77	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-530	106.99	J-77	J-61	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-531	316.72	J-61	J-578	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-532	250.00	J-578	J-579	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-533	251.08	J-579	J-580	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-534	250.00	J-580	J-581	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-535	285.09	J-581	J-407	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-536	269.24	J-407	J-583	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-537	250.66	J-583	J-584	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-538	247.05	J-584	J-585	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-539	248.47	J-585	J-586	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-540	254.16	J-586	J-587	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-541	250.00	J-587	J-588	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-542	250.00	J-588	J-589	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-543	248.54	J-589	J-590	36	Ductile Iron	100.0	Open		2.07	-6,560.71

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-544	251.75	J-590	J-591	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-545	251.33	J-591	J-592	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-546	248.87	J-592	J-593	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-547	250.52	J-593	J-96	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-548	201.55	J-96	M2-5	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-549	316.71	M2-5	J-595	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-550	250.00	J-595	J-596	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-551	250.00	J-596	J-597	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-552	250.00	J-597	J-206	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-553	250.00	J-206	AV-14	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-554	104.25	AV-14	M2-1	36	Ductile Iron	100.0	Open		2.07	-6,560.71
P-555	395.67	M2-1	J-52	36	Ductile Iron	100.0	Open		2.24	-7,104.32
P-556	249.33	J-52	J-76	36	Ductile Iron	100.0	Open		2.24	-7,104.32
P-557	249.53	J-76	J-96	36	Ductile Iron	100.0	Open		2.24	-7,104.32
P-558	244.82	J-96	J-158	36	Ductile Iron	100.0	Open		2.24	-7,104.32
P-559	243.82	J-158	J-184	36	Ductile Iron	100.0	Open		2.24	-7,104.32
P-560	259.89	J-184	J-193	36	Ductile Iron	100.0	Open		2.24	-7,104.32
P-561	246.47	J-193	J-194	36	Ductile Iron	100.0	Open		2.24	-7,104.32
P-562	246.57	J-194	J-598	36	Ductile Iron	100.0	Open		2.24	-7,104.32
P-563	250.00	J-598	J-599	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-564	250.00	J-599	J-600	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-565	250.00	J-600	J-601	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-566	253.46	J-601	J-602	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-567	250.00	J-602	J-603	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-568	220.59	J-603	J-604	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-569	248.33	J-604	J-605	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-570	257.72	J-605	J-208	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-571	223.76	J-208	J-201	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-572	247.79	J-201	J-197	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-573	251.29	J-197	J-186	36	Ductile Iron	100.0	Open		2.36	-7,497.23

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-574	248.25	J-186	J-188	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-575	248.99	J-188	J-183	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-576	250.00	J-183	J-181	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-577	250.00	J-181	J-176	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-578	249.99	J-176	J-174	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-579	250.00	J-174	J-173	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-580	249.99	J-173	J-140	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-581	249.99	J-140	J-87	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-582	249.90	J-87	J-70	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-583	249.80	J-70	J-69	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-584	249.79	J-69	J-68	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-585	249.78	J-68	J-65	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-586	249.96	J-65	J-80	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-587	249.98	J-80	J-148	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-588	249.54	J-148	J-161	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-589	249.34	J-161	J-151	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-590	249.40	J-151	J-138	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-591	257.87	J-138	AV-15	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-592	243.20	AV-15	J-160	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-593	247.00	J-160	J-97	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-594	245.70	J-97	J-63	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-595	254.29	J-63	J-19	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-596	250.00	J-19	J-16	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-597	250.00	J-16	J-17	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-598	250.00	J-17	J-24	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-599	250.00	J-24	J-50	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-600	250.99	J-50	J-48	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-601	241.16	J-48	M3-9 & 3-10	36	Ductile Iron	100.0	Open		2.36	-7,497.23
P-602	207.26	M3-9 & 3-10	AV-7	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-603	255.96	AV-7	J-47	36	Ductile Iron	100.0	Open		2.36	-7,497.46

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-604	249.98	J-47	J-45	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-605	249.97	J-45	J-44	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-606	249.97	J-44	J-42	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-607	249.98	J-42	J-40	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-608	250.00	J-40	J-38	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-609	250.00	J-38	J-32	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-610	250.00	J-32	J-30	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-611	250.00	J-30	J-27	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-612	250.00	J-27	J-25	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-613	250.00	J-25	J-51	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-614	250.00	J-51	J-55	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-615	250.00	J-55	J-64	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-616	250.00	J-64	J-59	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-617	250.00	J-59	J-57	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-618	250.00	J-57	J-84	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-619	250.00	J-84	J-94	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-620	250.00	J-94	J-101	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-621	250.00	J-101	J-120	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-622	250.00	J-120	J-71	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-623	204.07	J-71	J-74	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-624	238.79	J-74	J-116	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-625	250.00	J-116	J-122	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-626	250.00	J-122	J-117	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-627	250.00	J-117	J-113	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-628	250.23	J-113	J-149	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-629	250.00	J-149	J-154	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-630	250.00	J-154	J-169	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-631	250.00	J-169	J-165	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-632	250.00	J-165	J-143	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-633	250.00	J-143	J-106	36	Ductile Iron	100.0	Open		2.36	-7,497.46

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-634	266.75	J-106	J-104	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-635	250.00	J-104	J-606	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-636	250.00	J-606	J-607	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-637	246.54	J-607	J-608	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-638	250.00	J-608	J-609	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-639	250.00	J-609	J-610	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-640	250.00	J-610	J-611	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-641	245.77	J-611	J-612	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-642	250.00	J-612	J-613	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-643	250.00	J-613	J-614	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-644	250.39	J-614	J-615	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-645	250.00	J-615	J-616	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-646	250.00	J-616	J-617	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-647	250.00	J-617	J-618	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-648	250.00	J-618	J-619	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-649	250.00	J-619	J-620	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-650	250.00	J-620	J-621	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-651	250.00	J-621	J-622	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-652	250.00	J-622	J-623	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-653	250.00	J-623	J-624	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-654	250.00	J-624	AV-6	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-655	250.00	AV-6	J-108	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-656	250.00	J-108	J-21	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-657	250.00	J-21	J-156	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-658	250.88	J-156	HWY390 and Pipeline Rd-12"	36	Ductile Iron	100.0	Open		2.36	-7,497.46
P-659	247.74	HWY390 and Pipeline Rd- 12"	M6-9 & M6- 10	36	Ductile Iron	100.0	Open		2.36	-7,497.46

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-660	243.52	M6-9 & M6-10	J-625	36	Ductile Iron	100.0	Open		2.45	-7,786.20
P-661	254.31	J-625	J-626	36	Ductile Iron	100.0	Open		2.45	-7,786.20
P-662	249.92	J-626	J-627	36	Ductile Iron	100.0	Open		2.45	-7,786.20
P-663	252.73	J-627	J-628	36	Ductile Iron	100.0	Open		2.45	-7,786.20
P-664	247.52	J-628	AV-5	36	Ductile Iron	100.0	Open		2.45	-7,786.20
P-665	250.10	AV-5	J-629	36	Ductile Iron	100.0	Open		2.45	-7,786.20
P-666	256.01	J-629	J-630	36	Ductile Iron	100.0	Open		2.45	-7,786.20
P-667	243.52	J-630	J-631	36	Ductile Iron	100.0	Open		2.45	-7,786.20
P-668	249.97	J-631	J-632	36	Ductile Iron	100.0	Open		2.45	-7,786.20
P-669	250.16	J-632	J-633	36	Ductile Iron	100.0	Open		2.45	-7,786.20
P-670	253.81	J-633	J-634	36	Ductile Iron	100.0	Open		2.45	-7,786.20
P-679	33.10	a Tank Connection PUMP SUCTION	a PS Input PUMP SUCTION	48	Ductile Iron	100.0	Open		4.80	27,097.57
P-680	295.02	WTP Tanks	a Tank Connection PUMP SUCTION	48	Ductile Iron	100.0	Open		4.80	27,097.57
P-693	252.87	J-406	J-338	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-958	151.83	J-513	J-408	42	Ductile Iron	100.0	Open		1.61	-6,947.06
P-1457	0.00	J-762	J-513	42	Ductile Iron	100.0	Open		0.00	0.00
P-1460	2,424.27	M8-6	M8-4	24	Ductile Iron	100.0	Open		4.42	6,233.76
P-1464	8.77	J-222 PUMP SUCTION	PMP-1	36	Ductile Iron	100.0	Open		0.00	0.00
P-1465	8.10	PMP-1	CV-1	18	Ductile Iron	100.0	Open		0.00	0.00
P-1466	8.84	CV-1	J-230	18	Ductile Iron	100.0	Open		0.00	0.00
P-1467	7.92	J-223 PUMP SUCTION	PMP-2	36	Ductile Iron	100.0	Open		0.84	2,676.52
P-1469	9.07	CV-5	J-231	18	Ductile Iron	100.0	Open		3.37	2,676.52

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-1470	8.54	J-231	J-232	36	Ductile Iron	100.0	Open		2.26	-7,174.34
P-1471	8.17	J-224 PUMP SUCTION	PMP-3	36	Ductile Iron	100.0	Open		1.53	4,866.85
P-1472	9.61	J-225 PUMP SUCTION	PMP-4	36	Ductile Iron	100.0	Open		1.89	6,009.10
P-1473	8.37	CV-7	J-233	18	Ductile Iron	100.0	Open		7.58	6,009.10
P-1474	8.41	CV-6	J-232	18	Ductile Iron	100.0	Open		6.14	4,866.85
P-1485	305.14	a P-West Bay Tank Pressure SCADA	J-167	42	PVC	100.0	Open		1.60	-6,897.47
P-1492	5,179.81	M3-15 & 3-16	a P-Harders Park PressureStat ion	12	Ductile Iron	100.0	Open		0.00	0.00
P-1493	6,724.59	M8-4	a P-McElvey Tank Pressure SCADA	24	Ductile Iron	100.0	Open		4.31	6,082.45
P-1498	70.81	J-225	J-770	18	Ductile Iron	100.0	Open		1.36	1,080.68
P-1500	61.45	J-785	J-770	18	Ductile Iron	100.0	Open		1.36	-1,080.68
P-1502	55.77	M8-5	J-785	18	Ductile Iron	100.0	Open		1.36	-1,080.68
P-1504	145.14	a P-South Port Tank Pressure SCADA	J-596	12	Ductile Iron	100.0	Open		0.00	0.00
P-1508	331.68	M12-1 12-2 & 12-3	J-226	18	Ductile Iron	100.0	Open		1.42	-1,122.47
P-1511	57,033.89	a P-Mexico Beach Pressure Station		18	PVC	100.0	Open		0.34	272.93

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (In)	Material	Hazen-Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-1515	126.39	J-513 a P-West Bay Tank Pressure SCADA	J-338	42	Ductile Iron	100.0	Open		1.61	6,947.06
P-1516	41.48	a P-McElvey Tank Pressure SCADA	M9-2	42	PVC	100.0	Open		1.60	6,897.47
P-1517	58.46	a P-Mexico Beach Pressure SCADA	M9-1	24	Ductile Iron	100.0	Open		1.51	2,129.93
P-1518	117.04	Beach Pressure Station	M7-1	20	Ductile Iron	100.0	Open		0.28	272.93
P-1519	9,172.59	J-1531	J-1532	12	Ductile Iron	100.0	Open		0.02	6.52
P-1520	0.75	M10-2	M5-5	18	Ductile Iron	100.0	Open		0.19	151.62
P-1522	336.04	M7-1	Mexico Beach Tank	20	Ductile Iron	100.0	Closed		0.00	0.00
P-1523	95.32	M9-1	McElvey Tank	24	Ductile Iron	100.0	Closed		0.00	0.00
P-1524	104.78	M9-2	West Bay Tank	36	Ductile Iron	100.0	Closed		0.00	0.00
P-1526	676.36	M12-1 12-2 & 12-3	Tyndall Tank	18	Ductile Iron	100.0	Closed		0.00	0.00
P-1527	2.78	M10-1	M5-6	18	Ductile Iron	100.0	Open		0.36	283.12
P-1528	3,944.21	M5-6	M10-2	18	Ductile Iron	100.0	Open		0.23	181.75
P-1529	97.47	J-184	M1-3	24	Ductile Iron	100.0	Open		2.29	-3,231.16
P-1530	1,260.53	M1-3	M11-1	24	Ductile Iron	100.0	Open		2.37	-3,338.50
P-1533	3,798.30	M6-5	M6-3	16	Ductile Iron	100.0	Open		2.35	1,473.92
P-1534	0.35	M6-3	M8-3 & 8-7	16	Ductile Iron	100.0	Open		1.96	1,227.28
P-1536	10,467.89	M3-4	M3-15 & 3-16	12	Ductile Iron	100.0	Open		0.00	1.15
P-1537	78.88	J-325	M3-6	24	Ductile Iron	100.0	Open		1.26	1,772.23

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen- Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-1540	1,793.63	M3-7	J-226	18	Ductile Iron	120.0	Open		1.76	1,395.40
P-1541	5.43	M3-6	M3-8	24	Ductile Iron	100.0	Open		1.24	1,754.13
P-1542	157.07	M3-8	J-327	24	Ductile Iron	100.0	Open		1.24	1,744.36
P-1544	1,176.16	M3-12	M3-18	24	Ductile Iron	100.0	Open		0.00	1.88
P-1545	1,125.48	M3-3	M3-13 & 3-19	24	Ductile Iron	100.0	Open		0.07	92.38
P-1547	23.58	M3-13 & 3-19	M3-14	24	Ductile Iron	100.0	Open		0.00	2.18
P-1548	25.29	M3-14	M3-12	24	Ductile Iron	100.0	Open		0.00	1.97
P-1550	13.06	M3-20	M3-4	12	Ductile Iron	100.0	Open		0.06	20.42
P-1551	332.10	M3-1	M8-8	12	Ductile Iron	100.0	Open		0.43	152.33
P-1552	15.32	M8-8	M3-20	12	Ductile Iron	100.0	Open		0.41	144.20
P-1553	474.39	M10-4	M10-10	18	Ductile Iron	100.0	Open		1.81	1,435.46
P-1555	539.76	M10-10	M10-9	18	Ductile Iron	100.0	Open		1.81	1,435.22
P-1557	141.04	M10-9	M10-11	18	Ductile Iron	100.0	Open		1.81	1,435.16
P-1559	163.94	M10-11	M10-12	18	Ductile Iron	100.0	Open		1.81	1,435.01
P-1561	112.10	M10-12	M10-13	18	Ductile Iron	100.0	Open		1.81	1,434.81
P-1563	97.97	M10-13	M10-14	18	Ductile Iron	100.0	Open		1.81	1,434.61
P-1565	96.61	M10-14	M10-15	18	Ductile Iron	100.0	Open		1.81	1,434.41
P-1570	95.28	M10-17	M10-16	18	Ductile Iron	100.0	Open		1.81	1,433.51
P-1572	1,231.30	M10-18	M10-4	18	Ductile Iron	100.0	Open		1.88	1,487.75
P-1573	7.68	M1-5	M6-1 & 6-2	30	Ductile Iron	100.0	Open		3.27	7,205.48
P-1574	10,285.09	M6-1 & 6-2	J-232	30	Ductile Iron	100.0	Open		3.17	6,993.07
P-1575	635.24	J-177	M6-8	16	Ductile Iron	100.0	Open		2.63	1,650.71
P-1576	753.71	M6-8	M1-2	16	Ductile Iron	100.0	Open		2.61	1,638.02
P-1577	272.67	M10-3	M10-7	18	Ductile Iron	100.0	Open		1.78	1,410.71
P-1578	5,224.77	M10-7	J-787	18	Ductile Iron	120.0	Open		1.77	1,404.45
P-1579	74.06	M10-15	M10-6	18	Ductile Iron	100.0	Open		1.81	1,434.28
P-1580	181.81	M10-6	M10-17	18	Ductile Iron	100.0	Open		1.81	1,433.89
P-1581	905.74	M10-16	M10-5	18	Ductile Iron	100.0	Open		1.81	1,433.45
P-1582	793.58	M10-5	M10-3	18	Ductile Iron	100.0	Open		1.80	1,424.74

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-1583	187.54	M10-8	M5-2	18	Ductile Iron	100.0	Open		2.02	1,605.66
P-1584	42.63	M5-2	M10-18	18	Ductile Iron	100.0	Open		1.88	1,488.17
P-1585	981.60	M5-4	M5-3	18	Ductile Iron	100.0	Open		2.03	1,613.88
P-1586	2,218.08	M5-3	M10-8	18	Ductile Iron	100.0	Open		2.03	1,610.46
P-1608	4,199.97	J-827	J-234	20	Ductile Iron	100.0	Open		2.65	2,597.81
P-1609	934.48	J-170	J-828	20	Ductile Iron	100.0	Open		2.65	2,597.81
P-1610	650.97	J-828	J-827	20	Ductile Iron	100.0	Open		2.65	2,597.81
P-1611	204.24	J-170	J-829	20	Ductile Iron	100.0	Open		0.88	-549.10
P-1612	1,307.97	J-829	M8-2	16	Ductile Iron	100.0	Open		0.88	-549.10
P-1613	718.30	J-233	J-830	24	Ductile Iron	100.0	Open		3.39	4,786.99
P-1614	4,144.14	J-830	J-234	24	Ductile Iron	100.0	Open		3.39	4,786.99
P-1615	1,026.30	J-787	J-831	18	Ductile Iron	100.0	Open		1.77	1,404.45
P-1617	2,642.62	J-831	J-832	18	Ductile Iron	120.0	Open		1.77	1,404.45
P-1618	1,717.62	J-832	M3-7	18	Ductile Iron	100.0	Open		1.77	1,404.45
P-1619	1,448.24	J-230	J-833	10	Ductile Iron	100.0	Open		0.52	-128.40
P-1620	3,922.23	J-833	J-227	8	Ductile Iron	100.0	Open		0.82	-128.40
P-2044	4,895.15	J-523	J-1531	12	Ductile Iron	100.0	Open		0.02	6.52
P-2048	831.26	J-9853	M11-11	24	Ductile Iron	120.0	Open		2.11	2,973.52
P-2049	493.23	M11-4	J-9854	24	Ductile Iron	120.0	Open		2.11	2,973.52
P-2050	788.43	J-9854	J-9853	24	Ductile Iron	120.0	Open		2.11	2,973.52
P-2051	64.85	M11-1	J-9855	24	Ductile Iron	120.0	Open		2.37	-3,339.43
P-2052	4,230.26	J-9855	J-186	24	Ductile Iron	120.0	Open		2.37	-3,339.43
P-2055	9,195.64	J-1532	M2-2	12	Ductile Iron	100.0	Open		0.02	6.52
P-2057	198.52	Frankford Tank	Frankford Booster Pump	18	Ductile Iron	100.0	Open		0.00	0.00
P-2058	3,261.77	J-171	J-9858	30	Ductile Iron	100.0	Open		3.35	7,384.80
P-2059	376.65	J-9858	J-225	30	Ductile Iron	100.0	Open		3.35	7,384.80
P-2060	316.38	Frankford Booster Pump	J-9858	18	Ductile Iron	120.0	Open		0.00	0.00

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (In)	Material	Hazen-Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-9000- W02-1- 2010	17.08	M3-21	J-9818-2010	48	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9000- W08-1 2015 HMM	5,109.64	J-786 23rd & Beck	J-9814-2015 HMM	36	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9001- W02-2- 2010	1,080.84	J-9818-2010	J-9819-2010	48	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9001- W08-2- 2015 HMM	1,723.47	J-9814-2015 HMM	J-9815-2015 HMM	36	Ductile Iron	120.0	Open		0.00	0.00
P-9002- W03- 2010	65.21	J-9819-2010	J-636	30	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9002- W08-3- 2015 HMM	2,241.74	J-9815-2015 HMM	J-9816-2015 HMM	36	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9003- W04- 2010	28.78	J-9819-2010	J-637	30	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9004- W04- 2010	126.69	J-232	M8-1	30	Ductile Iron	120.0	Open		1.00	2,206.08
P-9004- W08-5- 2015 HMM	15.96	J-9817-2015 HMM	M9-1	30	Ductile Iron	120.0	Open		1.79	3,952.52

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-9006-W05-2-2015	1,271.86	J-9821-2015	J-9822-2015	36	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9006-W05-3-2015	1,890.51	J-9822-2015	J-9826-2015	36	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9007-W06-1-2015	825.94	J-9826-2015	J-9823-2015	36	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9008-W06-2-2015	1,966.08	J-9823-2015	J-9824-2015	36	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9009-W06-3-2015	850.04	J-9824-2015	J-9825-2015	36	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9010-W06-4-2015	49.02	J-9825-2015	J-177	36	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9011-W06A-2015	55.98	J-9823-2015	J-790	24	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9012-W07-1-2015	24.79	M11-5	J-9834-2015	30	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9013-W07-2-2015	2,271.63	J-9834-2015	J-9835-2015	30	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9014-W07-4-2015	1,553.93	J-9835-2015	J-9836-2015	30	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9015-W07-6-2015	2,928.39	J-9836-2015	J-9837-2015	30	Ductile Iron	120.0	Open		(N/A)	(N/A)

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (In)	Material	Hazen- Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-9016- W07-7- 2015	39.83	J-9837-2015	M11-3	30	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9017- W07-5- 2015	52.38	J-9836-2015	M11-10	18	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9018- W07-3- 2015	12.04	J-9835-2015	M11-2	18	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9020- W09-5- 2020	2,116.88	J-9838-2020	J-9839-2020	30	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9021- W09-7- 2020	5,720.00	J-9839-2020	J-9840-2020	30	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9022- W09-8- 2020	22.40	J-9840-2020	M11-5	30	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9023- W09-6- 2020	17.20	J-9839-2020	M11-6	16	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9024- W09-4- 2020	19.85	J-9838-2020	M11-7	20	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9025- W09-1- 2020	1,245.06	J-9819-2010	J-9841-2020	30	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9026- W09-3- 2020	523.35	J-9841-2020	J-9838-2020	30	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9027- W09-2- 2020	64.12	J-9841-2020	J-9822-2015	30	Ductile Iron	120.0	Open		(N/A)	(N/A)

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen- Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-9028-2015 HMM	22.16	J-9815-2015 HMM	M8-6	24	Ductile Iron	120.0	Open		0.00	0.00
P-9029	169.87	J-9816-2015 HMM	J-9843-2015 HMM	36	Ductile Iron	120.0	Open		0.00	0.00
P-9030	6,779.91	J-9843-2015 HMM	J-9817-2015 HMM	36	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9031-W08-2015 HMM	54.32	J-9843-2015 HMM	M8-4	24	Ductile Iron	120.0	Open		0.00	0.00
P-9033-W08-6-2015 HMM	61.36	J-9817-2015 HMM	a P-McElvey Tank Pressure SCADA	30	Ductile Iron	120.0	Open		1.79	-3,952.52
P-9038 HMM2-4 2025	37.91	J-791	J-9849 HMM2 2025	36	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9039 HMM2-3 2025	858.94	J-9849 HMM2 2025	J-9850 HMM2 2025	36	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9040 HMM2-2 2025	3,041.79	J-9850 HMM2 2025	J-9851 HMM2 2025	36	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9041 HMM2-1 2025	9.73	J-9851 HMM2 2025	J-786 23rd & Beck	30	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9042 HMM3-1 2025	4,871.02	J-233	J-234	36	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9043 HMM3-2 2025	101.27	J-828	J-233	20	Ductile Iron	120.0	Open		(N/A)	(N/A)

FlexTable: Pipe Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Status (Initial)	Notes	Velocity (ft/s)	Flow (gal/min)
P-9053	4,924.50	J-523	J-1531	42	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9056	9,216.17	J-1531	J-1532	24	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9062	327.11	PMP-16	J-9858	18	Ductile Iron	130.0	Open		0.00	0.00
P-9063	224.99	Frankford Tank	PMP-16	18	Ductile Iron	130.0	Open		0.00	0.00
P-9065										
HMM NB BOOSTE R2 2020	157.30	R-29	NB BOOSTER 2020	18	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9066										
NB BOOSTE R1 2020	202.33	NB BOOSTER 2020	J-523	18	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9068	22,284.06	J-9859	J-9860	42	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9069	17,561.75	J-9860	J-513	42	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9070	24,881.42	J-9860	J-9861	24	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-9071	1,420.82	M2-2	J-9862	12	Ductile Iron	100.0	Open		0.01	2.61
P-9072	263.65	J-9862	M2-4	12	Ductile Iron	100.0	Open		0.01	2.61
P-9073	4.73	J-9862	J-9861	24	Ductile Iron	120.0	Open		(N/A)	(N/A)
P-90005- W05-1- 2015	4.35	J-636	J-9821-2015	36	Ductile Iron	120.0	Open		(N/A)	(N/A)

FlexTable: Junction Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/min)	Hydraulic Grade (ft)	Pressure (psi)
3698	M12-1 12-2 & 12-3	Tyndall	28.00	1,122.47	213.10	80.1
1751	M11-8 & 11-9	Bob Little Rd & 12th St	30.00	27.41	245.05	93.0
1729	M11-7	Transmitter Rd & Orlando Rd	39.00	46.22	256.86	94.3
1731	M11-6	Transmitter Rd & Lane Rd	39.00	230.91	251.86	92.1
1733	M11-5	Transmitter Rd, Suncoast Machine Shop	32.00	0.22	248.58	93.7
1747	M11-4	Hwy 98 & Lucky St	25.00	2.97	248.05	96.5
1737	M11-3	Transmitter Rd & 7th St	26.00	623.24	242.44	93.6
1735	M11-2	Transmitter Rd & 14th St	31.00	63.18	246.40	93.2
1749	M11-11	Bob Little Rd & 14th St	29.00	33.75	246.46	94.1
1796	M11-10	Transmitter Rd & Wave Av	29.00	2.20	245.02	93.5
1716	M11-1	Ammie's Trailer Park	35.00	0.93	243.49	90.2
3863	M10-9	6039 Hwy 98 Parker	12.00	0.06	229.86	94.3
1766	M10-8	Ivy Rd & Donna Av	12.00	4.80	232.77	95.5
3896	M10-7	Sun Bay Condos	12.00	6.26	226.61	92.9
3899	M10-6	5941 Tyndall Pkwy	12.00	0.39	229.10	93.9
3902	M10-5	Parker City Meters	12.00	8.71	227.78	93.4
1768	M10-4	Under the Oaks Park - Tyndall Pkwy	12.00	52.29	230.99	94.7
1770	M10-3	E Cooper Dr & Tyndall Pkwy	12.00	14.03	226.91	93.0
3784	M10-2	Lake Dr & Tyndall Pkwy Parker	17.00	30.13	237.20	95.3
3887	M10-18	Tyndall Pkwy & Ivy Rd.	15.00	0.42	232.46	94.1
3884	M10-17	6147 Hwy 98	12.00	0.38	228.89	93.8
3881	M10-16	6209 Hwy 98	12.00	0.06	228.79	93.8
3878	M10-15	6141 Hwy 98	12.00	0.13	229.18	94.0
3875	M10-14	6135 Hwy 98	12.00	0.20	229.29	94.0
3872	M10-13	6129 Hwy 98	12.00	0.20	229.40	94.1
3869	M10-12	6127 Hwy 98	12.00	0.20	229.52	94.1
3866	M10-11	6043 Hwy 98	12.00	0.15	229.71	94.2
3860	M10-10	6001 Hwy 98	12.00	0.24	230.47	94.5
1761	M10-1	Cherry St & Tyndall Pkwy Parker	26.00	373.11	237.30	91.4

FlexTable: Junction Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/min)	Hydraulic Grade (ft)	Pressure (psi)
519	M9-2	West Bay pumpstation - Hwy 79 & School Rd Tank Loaded	6.00	6,897.47	198.79	83.4
1698	M9-1	McElvey Tank across Hathaway Bridge Tank Loaded	9.00	6,082.45	119.78	47.9
3857	M8-8	John Pitts & Yukon	46.00	8.13	258.27	91.8
1696	M8-6	FSU-PC - Collegiate Dr - Go Gators	5.00	70.36	156.74	65.7
3689	M8-5	Frankford Av & RR Tank	17.00	1,080.68	203.16	80.5
3635	M8-4	Moody Ave Hathaway Bridge	5.00	151.31	146.63	61.3
1708	M8-3 & 8-7	Baldwin Rd; Baldwin Rd & Hwy 77 (NW corner); Baldwin Rd & Hwy 77	33.00	1,227.28	221.71	81.6
1710	M8-2	17th St & Cove Blvd	29.00	2,423.14	230.89	87.3
1684	M8-1	23rd St & Hwy 231	34.00	1,700.98	235.41	87.1
1778	M7-1	Mexico Beach - Hwy 98 E Tank loaded	16.00	272.93	210.13	84.0
499	M6-9 & M6-10	Hwy 390 & Pipeline Rd	31.00	133.84	256.71	97.7
3893	M6-8	Sarasota Ave - LH	35.00	12.69	238.89	88.2
1311	M6-6 & 6-7	Grants Mill - Hwy 390	16.00	37.46	256.66	104.1
1706	M6-5	Kirkwell Av & Alamo St	33.00	82.72	229.61	85.1
1345	M6-4	Transmitter Rd & Hwy 390 LH	24.00	36.90	256.65	100.7
3830	M6-3	Hwy 77 & Baldwin LH	33.00	246.64	221.71	81.6
3890	M6-1 & 6-2	Ormond Ave & Hwy 231 LH	27.00	212.41	253.34	97.9
1741	M5-7	Seneca and 7th	32.00	1,164.88	239.28	89.7
3818	M5-6	Cherry st & Tyndall Callaway	26.00	101.37	237.30	91.4
1763	M5-5	Lake Dr & Tyndall Pkwy Callaway	17.00	157.41	237.20	95.3
1757	M5-4	Good Shepherd Church Daycare - Tyndall Pkwy	11.00	0.66	237.20	97.9
3908	M5-3	Ponderosa Trailer Park	11.00	3.42	235.84	97.3
3905	M5-2	Ivy Rd & Tyndall Pkwy CALL	13.00	117.49	232.52	95.0
1759	M5-1	Seneca ave and 3rd st. (Hwy 22)	29.00	105.68	238.33	90.6
539	M4-3	Hwy 388 & Hwy 79	10.00	0.00	201.60	82.9
95	M4-2	Airport	17.00	39.64	208.55	82.9
69	M4-1	RiverCamps	11.00	9.95	206.60	84.6

Bentley WaterCAD V8i (SELECTseries 3)
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HMM Model Peak with improvements.wtg
11/8/2012

FlexTable: Junction Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/min)	Hydraulic Grade (ft)	Pressure (psi)
434	M3-9 & 3-10	Ira Hutch & Everitt Dog Park	3.00	0.23	244.96	104.7
3842	M3-8	Leisure Services	43.00	9.77	259.93	93.9
3839	M3-7	Lagoon	22.00	9.05	215.23	83.6
3836	M3-6	Cato Rd & Hwy 231	43.00	18.10	259.93	93.9
1782	M3-5	Cherokee Heights	44.00	63.56	258.57	92.8
3833	M3-4	Joh Pitts & Star Ave	47.00	19.27	258.26	91.4
1786	M3-3	Sweetwater Village	51.00	106.15	258.22	89.7
1515	M3-21	Enviro Security	28.00	0.04	268.48	104.0
3854	M3-20	Bay Co Jail Annex	47.00	123.78	258.26	91.4
1230	M3-2	Derby Woods	24.00	224.39	260.64	102.4
1788	M3-18	Animal Control - 6401 Bay Line Dr	56.00	1.88	258.22	87.5
1343	M3-17	Britton Rd & Hwy 390	22.00	80.54	256.65	101.5
3674	M3-15 & 3-16	Roads & Bridges & Sign Shop	27.00	1.15	258.26	100.1
3851	M3-14	Misquito Control	55.00	0.21	258.22	87.9
3848	M3-13 & 3-19	WTE Facility & Maint	55.00	90.20	258.22	87.9
3845	M3-12	Solid Waste	55.00	0.09	258.22	87.9
1379	M3-11	Lab - Transmitter Rd	28.00	0.22	268.14	103.9
1784	M3-1	Commercial meter 1A, 1B, John Pitts Rd & Yukon Rd, Mosquito Control - Fire Tower Rd, Sign Shop - 4740 Fire Tower Rd	47.00	278.87	258.31	91.4
376	M2-5	2109 Ball Park Lane	13.00	0.00	234.58	95.9
1840	M2-4	Sand Hills Fire	82.00	2.61	223.36	61.2
293	M2-3	North Bay WWTP	40.00	0.04	223.44	79.4
3827	M2-2	Lake Merial	72.00	3.91	223.36	65.5
383	M2-1	S Gainer Bayou Rd & Hwy 2321	2.69	543.61	235.48	100.7
281	M1-8	Pipeline Rd & Country Lake Dr	40.00	10.92	262.76	96.4
1191	M1-7	A St & E St	29.00	13.91	265.48	102.3
1682	M1-6	24th Plz & Davis Av	33.00	18.35	236.55	88.1
1680	M1-5	Ormond Ave & Hwy 231	27.00	1.68	253.36	97.9
1259	M1-4	Picadilly Ln and Transmitter road	40.00	4.24	262.94	96.5

FlexTable: Junction Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/min)	Hydraulic Grade (ft)	Pressure (psi)
3821	M1-3	22nd ct and sherman - Cedar Grove	35.00	107.34	241.83	89.5
1704	M1-2	Baldwin and Selma	35.00	81.38	236.98	87.4
1712	M1-1	19th and Sherman - Cedar Grove	32.00	258.92	238.75	89.5
4085	J-9862		0.00	0.00	223.36	96.6
4083	J-9861		0.00	(N/A)	(N/A)	(N/A)
4080	J-9860		66.00	(N/A)	(N/A)	(N/A)
4078	J-9859		90.00	(N/A)	(N/A)	(N/A)
4049	J-9858		0.00	0.00	203.91	88.2
4036	J-9855		0.00	0.00	243.55	105.4
4033	J-9854		25.00	0.00	247.68	96.3
4030	J-9853		25.00	0.00	247.09	96.1
4017	J-9851 HMM2 2025		9.00	(N/A)	(N/A)	(N/A)
4015	J-9850 HMM2 2025		15.00	(N/A)	(N/A)	(N/A)
4013	J-9849 HMM2 2025		12.00	(N/A)	(N/A)	(N/A)
3996	J-9843-2015 HMM		6.00	0.00	146.63	60.8
3990	J-9841-2020		40.00	(N/A)	(N/A)	(N/A)
3985	J-9840-2020		32.00	(N/A)	(N/A)	(N/A)
3983	J-9839-2020		38.00	(N/A)	(N/A)	(N/A)
3981	J-9838-2020		37.96	(N/A)	(N/A)	(N/A)
3976	J-9837-2015		23.50	(N/A)	(N/A)	(N/A)
3974	J-9836-2015		31.00	(N/A)	(N/A)	(N/A)
3972	J-9835-2015		28.00	(N/A)	(N/A)	(N/A)
3970	J-9834-2015		32.00	(N/A)	(N/A)	(N/A)
3940	J-9826-2015		25.00	(N/A)	(N/A)	(N/A)
3937	J-9825-2015		38.00	(N/A)	(N/A)	(N/A)
3935	J-9824-2015		36.00	(N/A)	(N/A)	(N/A)
3933	J-9823-2015		26.30	(N/A)	(N/A)	(N/A)
3931	J-9822-2015		40.00	(N/A)	(N/A)	(N/A)
3929	J-9821-2015		24.80	(N/A)	(N/A)	(N/A)
3922	J-9819-2010		26.34	(N/A)	(N/A)	(N/A)

FlexTable: Junction Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/min)	Hydraulic Grade (ft)	Pressure (psi)
3920	J-9818-2010		26.72	(N/A)	(N/A)	(N/A)
3917	J-9817-2015 HMM		13.62	0.00	119.78	45.9
3915	J-9816-2015 HMM		13.62	0.00	146.63	57.5
3913	J-9815-2015 HMM		5.00	0.00	156.74	65.7
3911	J-9814-2015 HMM		1.39	0.00	156.74	67.2
4040	J-1532		55.00	0.00	223.37	72.8
4025	J-1531		52.00	0.00	223.37	74.1
3963	J-833		30.00	0.00	232.70	87.7
3960	J-832		22.00	0.00	217.07	84.4
3957	J-831		12.00	0.00	219.91	90.0
3954	J-830		30.00	0.00	229.39	86.3
3951	J-829		31.00	0.00	230.45	86.3
3948	J-828		30.00	0.00	228.51	85.9
3945	J-827		30.00	0.00	227.20	85.3
1277	J-797	Commercial meter 1A	34.85	0.00	264.47	99.3
1302	J-796		26.01	0.00	266.11	103.9
551	J-795	WTP Actiflo - Transmitter Rd	29.92	0.00	266.75	102.5
1175	J-792	WTP	28.09	0.00	268.27	103.9
1690	J-791	Frankford Av & RR	11.86	0.00	203.09	82.7
1722	J-790	Ormond Av & Baldwin Rd	26.30	0.00	248.90	96.3
1774	J-789		25.10	0.00	213.19	81.4
1772	J-788	Seneca Av & 7th St	26.50	0.00	213.25	80.8
1790	J-787	na	17.30	0.00	221.01	88.1
1692	J-786 23rd & Beck	23rd St & Beck Av	8.65	0.00	185.77	76.6
3826	J-785		12.00	0.00	203.17	82.7
3683	J-770		19.52	0.00	203.18	79.5
3628	J-762		20.87	0.00	213.51	83.3
1694	J-640		1.39	0.00	163.98	70.3
1207	j-638	Previous Regional Demand Zone 1,1,12	31.38	0.00	257.63	97.9
1173	J-637	Previous Regional Demand Zone 2,3,4b	26.34	0.00	261.18	101.6

FlexTable: Junction Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/min)	Hydraulic Grade (ft)	Pressure (psi)
1306	J-636	Previous Regional Demand Zone 2,3,4a	24.80	0.00	261.22	102.3
1217	J-635	previous regional demand zone 1	41.35	0.00	259.21	94.3
511	J-634		41.71	0.00	259.11	94.1
510	J-633		40.89	0.00	258.89	94.3
509	J-632		42.04	0.00	258.67	93.7
508	J-631		42.72	0.00	258.45	93.3
507	J-630		40.74	0.00	258.24	94.1
506	J-629		39.06	0.00	258.01	94.7
504	J-628		29.90	0.00	257.58	98.5
502	J-627		29.82	0.00	257.36	98.4
501	J-626		29.38	0.00	257.14	98.5
500	J-625		31.32	0.00	256.92	97.6
493	J-624		26.61	0.00	255.48	99.0
491	J-623		30.03	0.00	255.28	97.5
490	J-622		30.63	0.00	255.08	97.1
489	J-621		29.45	0.00	254.87	97.5
488	J-620		28.71	0.00	254.67	97.8
487	J-619		24.96	0.00	254.46	99.3
486	J-618		22.04	0.00	254.26	100.5
485	J-617		20.77	0.00	254.06	100.9
484	J-616		20.77	0.00	253.85	100.8
483	J-615		20.77	0.00	253.65	100.8
482	J-614		18.62	0.00	253.45	101.6
480	J-613		15.54	0.00	253.24	102.8
479	J-612		15.29	0.00	253.04	102.9
478	J-611		15.29	0.00	252.84	102.8
477	J-610		15.29	0.00	252.63	102.7
476	J-609		15.29	0.00	252.43	102.6
475	J-608		15.29	0.00	252.23	102.5
474	J-607		15.29	0.00	252.03	102.4

FlexTable: Junction Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/min)	Hydraulic Grade (ft)	Pressure (psi)
473	J-606		15.56	0.00	251.82	102.2
399	J-605		10.72	0.00	238.46	98.5
398	J-604		11.63	0.00	238.26	98.1
397	J-603		11.63	0.00	238.08	98.0
396	J-602		11.63	0.00	237.88	97.9
395	J-601		11.63	0.00	237.67	97.8
394	J-600		10.97	0.00	237.47	98.0
393	J-599		10.72	0.00	237.26	98.0
391	J-598		10.72	0.00	237.06	97.9
379	J-597		11.97	0.00	235.10	96.5
378	J-596		13.41	0.00	234.94	95.8
377	J-595		13.16	0.00	234.78	95.9
374	J-593		12.46	0.00	234.29	96.0
373	J-592		12.51	0.00	234.13	95.9
372	J-591		12.36	0.00	233.97	95.9
371	J-590		12.06	0.00	233.81	95.9
369	J-589		12.41	0.00	233.65	95.7
368	J-588		12.46	0.00	233.50	95.6
367	J-587		12.52	0.00	233.34	95.5
366	J-586		12.44	0.00	233.17	95.5
365	J-585		11.63	0.00	233.02	95.8
364	J-584		11.52	0.00	232.86	95.8
363	J-583		11.09	0.00	232.70	95.9
361	J-581		10.72	0.00	232.35	95.9
360	J-580		11.59	0.00	232.19	95.4
357	J-579		14.37	0.00	232.03	94.2
356	J-578		14.56	0.00	231.87	94.0
352	J-577		16.22	0.00	231.23	93.0
351	J-576		18.92	0.00	231.07	91.8
350	J-575		16.08	0.00	230.91	92.9

FlexTable: Junction Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/min)	Hydraulic Grade (ft)	Pressure (psi)
349	J-574		15.30	0.00	230.75	93.2
348	J-573		15.29	0.00	230.59	93.2
346	J-572		15.36	0.00	230.43	93.1
345	J-571		16.47	0.00	230.27	92.5
344	J-570		20.77	0.00	230.11	90.6
343	J-569		20.22	0.00	229.95	90.7
342	J-568		20.27	0.00	229.79	90.7
341	J-567		21.68	0.00	229.63	90.0
340	J-566		24.19	0.00	229.47	88.8
339	J-565		24.85	0.00	229.31	88.5
338	J-564		25.15	0.00	229.16	88.3
337	J-563		25.48	0.00	229.00	88.1
335	J-562		26.26	0.00	228.84	87.6
334	J-561		27.10	0.00	228.68	87.2
333	J-560		28.95	0.00	228.52	86.3
332	J-559		29.92	0.00	228.36	85.9
331	J-558		31.75	0.00	228.20	85.0
330	J-557		31.75	0.00	228.05	84.9
329	J-556		32.66	0.00	227.89	84.5
328	J-555		33.47	0.00	227.73	84.0
327	J-554		35.07	0.00	227.57	83.3
326	J-553		33.79	0.00	227.41	83.8
324	J-552		33.55	0.00	227.25	83.8
323	J-551		34.47	0.00	227.09	83.3
322	J-550		34.49	0.00	226.93	83.3
321	J-549		34.49	0.00	226.73	83.2
320	J-548		34.49	0.00	226.62	83.1
319	J-547		34.49	0.00	226.46	83.1
318	J-546		34.49	0.00	226.30	83.0
317	J-545		34.49	0.00	226.14	82.9

FlexTable: Junction Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/min)	Hydraulic Grade (ft)	Pressure (psi)
316	J-544		34.43	0.00	225.99	82.9
315	J-543		35.31	0.00	225.81	82.4
313	J-542		36.32	0.00	225.65	81.9
312	J-541		37.20	0.00	225.49	81.5
311	J-540		38.15	0.00	225.33	81.0
310	J-539		37.27	0.00	225.18	81.3
309	J-538		39.06	0.00	225.02	80.5
308	J-537		39.97	0.00	224.86	80.0
307	J-536		40.60	0.00	224.69	79.6
305	J-535		40.30	0.00	224.42	79.7
304	J-534		41.25	0.00	224.35	79.2
302	J-533		42.43	0.00	224.26	78.7
301	J-532		43.95	0.00	224.11	77.9
300	J-531		43.03	0.00	224.03	78.3
299	J-530		43.19	0.00	223.94	78.2
298	J-529		42.58	0.00	223.86	78.4
297	J-528		42.56	0.00	223.78	78.4
296	J-527		41.81	0.00	223.70	78.7
295	J-526		42.72	0.00	223.61	78.3
294	J-525		40.05	0.00	223.53	79.4
291	J-523		38.62	0.00	223.37	79.9
289	J-522		39.06	0.00	223.21	79.7
288	J-521		39.06	0.00	223.12	79.6
287	J-520		39.06	0.00	223.04	79.6
286	J-519		39.06	0.00	222.96	79.6
285	J-518		39.37	0.00	222.87	79.4
284	J-517		40.65	0.00	222.79	78.8
283	J-516		42.08	0.00	222.70	78.1
282	J-515		40.89	0.00	222.62	78.6
280	J-514		40.09	0.00	222.54	78.9

FlexTable: Junction Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/min)	Hydraulic Grade (ft)	Pressure (psi)
2680	J-513		22.50	0.00	213.51	82.6
279	J-513		40.94	0.00	222.45	78.5
278	J-512		40.89	0.00	222.37	78.5
277	J-511		40.89	0.00	222.28	78.5
276	J-510		40.89	0.00	222.20	78.4
275	J-509		39.98	0.00	222.12	78.8
274	J-508		40.88	0.00	222.03	78.4
273	J-507		39.08	0.00	221.95	79.1
272	J-506		40.46	0.00	221.86	78.5
271	J-505		43.43	0.00	221.78	77.2
269	J-504		45.33	0.00	221.70	76.3
268	J-503		45.33	0.00	221.61	76.3
267	J-502		44.40	0.00	221.51	76.6
266	J-501		44.40	0.00	221.43	76.6
265	J-500		43.42	0.00	221.34	77.0
264	J-499		41.84	0.00	221.26	77.6
263	J-498		40.70	0.00	221.18	78.1
262	J-497		40.82	0.00	221.10	78.0
261	J-496		40.89	0.00	221.01	77.9
260	J-495		41.40	0.00	220.93	77.7
258	J-494		41.25	0.00	220.85	77.7
257	J-493		40.89	0.00	220.76	77.8
256	J-492		40.15	0.00	220.68	78.1
255	J-491		39.06	0.00	220.59	78.5
254	J-490		39.06	0.00	220.51	78.5
253	J-489		41.38	0.00	220.43	77.5
252	J-488		43.18	0.00	220.34	76.7
251	J-487		41.79	0.00	220.26	77.2
250	J-486		39.31	0.00	220.18	78.3
249	J-485		38.18	0.00	220.09	78.7

FlexTable: Junction Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/min)	Hydraulic Grade (ft)	Pressure (psf)
246	J-484		39.06	0.00	219.99	78.3
245	J-483		38.15	0.00	219.91	78.6
244	J-482		38.15	0.00	219.82	78.6
243	J-481		38.15	0.00	219.74	78.6
242	J-480		38.72	0.00	219.66	78.3
241	J-479		40.56	0.00	219.57	77.5
240	J-478		41.68	0.00	219.49	76.9
239	J-477		42.06	0.00	219.41	76.7
238	J-476		41.13	0.00	219.32	77.1
237	J-475		40.89	0.00	219.24	77.2
235	J-474		40.95	0.00	219.16	77.1
234	J-473		41.55	0.00	219.07	76.8
233	J-472		41.77	0.00	218.99	76.7
232	J-471		42.24	0.00	218.91	76.4
231	J-470		42.76	0.00	218.82	76.2
230	J-469		43.38	0.00	218.74	75.9
229	J-468		42.45	0.00	218.66	76.2
228	J-467		41.68	0.00	218.57	76.5
227	J-466		39.71	0.00	218.49	77.3
226	J-465		39.06	0.00	218.41	77.6
224	J-464		39.06	0.00	218.33	77.6
223	J-463		39.06	0.00	218.24	77.5
222	J-462		40.56	0.00	218.16	76.8
221	J-461		43.33	0.00	218.08	75.6
219	J-460		43.97	0.00	217.91	75.3
218	J-459		44.58	0.00	217.82	75.0
217	J-458		41.00	0.00	217.73	76.5
216	J-457		39.06	0.00	217.65	77.3
215	J-456		39.06	0.00	217.57	77.2
213	J-455		39.06	0.00	217.48	77.2

FlexTable: Junction Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/min)	Hydraulic Grade (ft)	Pressure (psi)
212	J-454		39.06	0.00	217.40	77.2
211	J-453		39.06	0.00	217.32	77.1
210	J-452		39.06	0.00	217.23	77.1
209	J-451		39.06	0.00	217.15	77.1
208	J-450		39.06	0.00	217.07	77.0
207	J-449		39.06	0.00	216.98	77.0
206	J-448		40.05	0.00	216.89	76.5
205	J-447		40.57	0.00	216.81	76.2
204	J-446		39.87	0.00	216.72	76.5
202	J-445		39.06	0.00	216.64	76.8
201	J-444		38.15	0.00	216.56	77.2
200	J-443		38.63	0.00	216.47	76.9
199	J-442		38.48	0.00	216.39	77.0
198	J-441		38.18	0.00	216.31	77.1
197	J-440		37.43	0.00	216.22	77.4
196	J-439		36.77	0.00	216.14	77.6
195	J-438		35.65	0.00	216.05	78.1
194	J-437		34.49	0.00	215.97	78.5
193	J-436		34.49	0.00	215.89	78.5
191	J-435		33.20	0.00	215.80	79.0
190	J-434		32.09	0.00	215.72	79.4
189	J-433		31.63	0.00	215.64	79.6
188	J-432		30.67	0.00	215.55	80.0
187	J-431		28.21	0.00	215.47	81.0
186	J-430		27.39	0.00	215.39	81.3
185	J-429		26.93	0.00	215.30	81.5
184	J-428		25.85	0.00	215.22	81.9
183	J-427		24.58	0.00	215.14	82.4
182	J-426		23.58	0.00	215.05	82.8
180	J-425		22.23	0.00	214.97	83.4

FlexTable: Junction Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/min)	Hydraulic Grade (ft)	Pressure (psi)
179	J-424		21.69	0.00	214.89	83.6
178	J-423		21.53	0.00	214.80	83.6
177	J-422		21.61	0.00	214.73	83.6
176	J-421		20.77	0.00	214.64	83.9
175	J-420		20.77	0.00	214.56	83.8
174	J-419		20.77	0.00	214.48	83.8
173	J-418		20.77	0.00	214.39	83.8
172	J-417		19.28	0.00	214.31	84.4
171	J-416		15.83	0.00	214.23	85.8
168	J-414		15.29	0.00	214.06	86.0
167	J-413		14.40	0.00	213.98	86.3
166	J-412		14.59	0.00	213.89	86.2
165	J-411		14.61	0.00	213.81	86.2
164	J-410		13.83	0.00	213.73	86.5
163	J-409		21.69	0.00	213.64	83.0
162	J-408		21.69	0.00	213.56	83.0
362	J-407		10.72	0.00	232.53	96.0
160	J-406		20.87	0.00	213.38	83.3
158	J-405		20.77	0.00	213.30	83.3
157	J-404		20.77	0.00	213.21	83.3
156	J-403		20.65	0.00	213.13	83.3
155	J-402		19.86	0.00	213.05	83.6
154	J-401		19.14	0.00	212.96	83.9
153	J-400		17.82	0.00	212.88	84.4
152	J-399		15.89	0.00	212.80	85.2
151	J-398		14.18	0.00	212.72	85.9
150	J-397		10.15	0.00	212.63	87.6
149	J-396		11.90	0.00	212.55	86.8
147	J-395		15.29	0.00	212.46	85.3
146	J-394		14.42	0.00	212.38	85.6

FlexTable: Junction Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/min)	Hydraulic Grade (ft)	Pressure (psi)
144	J-393		6.98	0.00	212.21	88.8
133	J-392		4.62	0.00	211.46	89.5
132	J-391		13.04	0.00	211.38	85.8
131	J-390		15.29	0.00	211.30	84.8
130	J-389		15.29	0.00	211.21	84.8
129	J-388		15.54	0.00	211.13	84.6
128	J-387		16.42	0.00	211.05	84.2
127	J-386		16.20	0.00	210.96	84.3
126	J-385		17.12	0.00	210.88	83.8
124	J-384		16.21	0.00	210.80	84.2
123	J-383		15.29	0.00	210.71	84.6
122	J-382		15.29	0.00	210.63	84.5
121	J-381		15.29	0.00	210.55	84.5
120	J-380		15.29	0.00	210.46	84.4
119	J-379		15.32	0.00	210.38	84.4
118	J-378		15.87	0.00	210.30	84.1
117	J-377		16.74	0.00	210.22	83.7
116	J-376		16.66	0.00	210.13	83.7
115	J-375		16.50	0.00	210.05	83.7
113	J-374		17.02	0.00	209.97	83.5
112	J-373		15.29	0.00	209.88	84.2
111	J-372		17.02	0.00	209.80	83.4
110	J-371		17.13	0.00	209.71	83.3
109	J-370		17.37	0.00	209.63	83.2
108	J-369		16.47	0.00	209.55	83.5
107	J-368		15.64	0.00	209.46	83.9
106	J-367		15.92	0.00	209.38	83.7
105	J-366		16.08	0.00	209.30	83.6
104	J-365		16.14	0.00	209.21	83.5
102	J-364		15.29	0.00	209.13	83.9

FlexTable: Junction Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/min)	Hydraulic Grade (ft)	Pressure (psi)
101	J-363		16.20	0.00	209.04	83.4
100	J-362		15.91	0.00	208.96	83.5
99	J-361		16.20	0.00	208.88	83.4
98	J-360		16.22	0.00	208.80	83.3
97	J-359		16.20	0.00	208.71	83.3
96	J-358		16.20	0.00	208.63	83.3
94	J-357		15.29	0.00	208.46	83.6
93	J-356		16.20	0.00	208.36	83.1
91	J-355		16.37	0.00	208.28	83.0
90	J-354		15.99	0.00	208.20	83.2
89	J-353		15.29	0.00	208.12	83.4
88	J-352		15.29	0.00	208.04	83.4
87	J-351		15.29	0.00	207.95	83.4
86	J-350		15.29	0.00	207.87	83.3
85	J-349		15.29	0.00	207.79	83.3
84	J-348		15.29	0.00	207.70	83.2
83	J-347		15.29	0.00	207.62	83.2
82	J-346		15.29	0.00	207.54	83.2
80	J-345		15.29	0.00	207.46	83.1
79	J-344		14.50	0.00	207.37	83.4
78	J-343		16.81	0.00	207.29	82.4
77	J-342		17.16	0.00	207.21	82.2
76	J-341		17.41	0.00	207.13	82.1
75	J-340		17.39	0.00	207.04	82.1
74	J-339		15.21	0.00	206.96	83.0
2441	J-338		22.67	0.00	213.46	82.5
73	J-338		13.28	0.00	206.84	83.7
1460	J-337		40.84	0.00	259.23	94.5
1457	J-336		40.86	0.00	259.29	94.5
72	J-335		12.00	0.00	206.76	84.3

FlexTable: Junction Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/min)	Hydraulic Grade (ft)	Pressure (psi)
1455	J-334		41.40	0.00	259.38	94.3
1453	J-333		40.89	0.00	259.48	94.6
1450	J-332		40.89	0.00	259.58	94.6
1448	J-331		39.98	0.00	259.67	95.1
67	J-330		7.40	0.00	206.43	86.1
66	J-329		8.89	0.00	206.35	85.4
1446	J-328		39.98	0.00	259.76	95.1
1444	J-327		39.06	0.00	259.86	95.5
65	J-326		9.43	0.00	206.27	85.2
1442	J-325		38.85	0.00	259.96	95.7
64	J-324		10.72	0.00	206.19	84.6
63	J-323		10.72	0.00	206.10	84.5
1440	J-322		38.83	0.00	260.04	95.7
62	J-321		10.72	0.00	206.02	84.5
1439	J-320		36.33	0.00	260.15	96.8
61	J-319		10.59	0.00	205.94	84.5
1436	J-318		30.01	0.00	260.36	99.7
60	J-317		9.80	0.00	205.85	84.8
1433	J-316		22.39	0.00	260.46	103.0
58	J-315		9.49	0.00	205.77	84.9
57	J-314		8.97	0.00	205.69	85.1
56	J-313		9.23	0.00	205.61	85.0
55	J-312		9.49	0.00	205.53	84.8
54	J-311		9.01	0.00	205.44	85.0
53	J-310		9.23	0.00	205.36	84.9
52	J-309		8.89	0.00	205.28	85.0
1412	J-308		18.37	0.00	261.31	105.1
51	J-307		8.89	0.00	205.20	84.9
1409	J-306		22.25	0.00	261.41	103.5
50	J-305		8.89	0.00	205.11	84.9

FlexTable: Junction Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/min)	Hydraulic Grade (ft)	Pressure (psi)
1406	J-304		24.39	0.00	261.51	102.6
49	J-303		8.91	0.00	205.03	84.9
1403	J-302		26.04	0.00	261.60	101.9
47	J-301		8.44	0.00	204.95	85.0
1400	J-300		30.41	0.00	261.15	99.8
1397	J-299		25.44	0.00	265.65	103.9
46	J-298		8.40	0.00	204.87	85.0
45	J-297		8.32	0.00	204.78	85.0
1394	J-296		27.88	0.00	265.87	103.0
1391	J-295		29.92	0.00	266.47	102.3
44	J-294		8.20	0.00	204.70	85.0
1388	J-293		29.61	0.00	266.78	102.6
43	J-292		8.20	0.00	204.62	85.0
42	J-291		8.36	0.00	204.54	84.9
1385	J-290		26.72	0.00	265.78	103.4
41	J-289		8.19	0.00	204.46	84.9
1382	J-288		26.63	0.00	264.63	103.0
40	J-286		8.09	0.00	204.37	84.9
39	J-285		7.08	0.00	204.28	85.3
38	J-284		7.45	0.00	204.20	85.1
1375	J-283		28.05	0.00	267.46	103.6
1372	J-282		27.18	0.00	267.39	103.9
36	J-281		7.06	0.00	204.12	85.3
1370	J-280		27.18	0.00	267.70	104.1
35	J-279		7.28	0.00	204.04	85.1
1368	J-278		26.99	0.00	268.01	104.3
34	J-277		7.75	0.00	203.96	84.9
1366	J-276		26.90	0.00	268.07	104.3
33	J-275		8.15	0.00	203.87	84.7
32	J-273		9.26	0.00	203.79	84.2

Link "P-170" split by node "J-276"

FlexTable: Junction Table (HMM Model Peak with Improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/min)	Hydraulic Grade (ft)	Pressure (psi)
31	J-272		9.21	0.00	203.71	84.2
30	J-271		9.03	0.00	203.63	84.2
1360	J-270		26.62	0.00	266.46	103.8
29	J-269		9.56	0.00	203.55	83.9
1357	J-268		21.47	0.00	264.79	105.3
28	J-267		8.79	0.00	203.46	84.2
1353	J-266		20.01	0.00	256.66	102.4
27	J-265		6.14	0.00	203.38	85.3
1351	J-264		23.71	0.00	256.66	100.8
561	J-263		6.14	0.00	203.30	85.3
1349	J-262		25.18	0.00	256.66	100.1
560	J-261		6.14	0.00	203.22	85.3
1522	J-260		27.18	0.00	268.90	104.6
1521	J-259		27.18	0.00	268.88	104.6
559	J-258		6.14	0.00	203.14	85.2
1347	J-257		21.95	0.00	256.66	101.5
1518	J-256		27.00	0.00	268.81	104.6
1512	J-253		27.18	0.00	268.98	104.6
558	J-252		6.14	0.00	203.05	85.2
1507	J-251		12.00	0.00	206.65	84.2
1504	J-249		6.00	0.00	206.79	86.9
2093	J-248		10.00	0.00	234.24	97.0
557	J-248		6.26	0.00	202.97	85.1
556	J-247		8.25	0.00	202.89	84.2
1499	J-246		10.00	0.00	212.35	87.5
1339	J-245		20.59	0.00	256.70	102.2
1496	J-244		5.00	0.00	212.25	89.7
1492	J-243		3.00	0.00	199.68	85.1
555	J-242		8.71	0.00	202.81	84.0
1337	J-241		20.52	0.00	256.70	102.2

FlexTable: Junction Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/min)	Hydraulic Grade (ft)	Pressure (psi)
1939	J-240		27.00	0.00	268.88	104.6
554	J-240		8.72	0.00	202.73	83.9
1932	J-239		34.00	0.00	268.98	101.7
1335	J-239		20.52	0.00	256.70	102.2
1899	J-238		34.00	0.00	268.95	101.7
553	J-238		8.89	0.00	202.64	83.8
1880	J-237		34.00	0.00	268.99	101.7
1469	J-237		34.49	0.00	226.83	83.2
1878	J-236		34.00	0.00	269.00	101.7
1477	J-236		40.84	0.00	259.22	94.5
1876	J-235		34.00	0.00	269.00	101.7
1466	J-235		2.17	0.00	200.14	85.7
1846	J-234		32.52	0.00	218.78	80.6
1874	J-234		34.00	0.00	269.00	101.7
1474	J-234		28.18	0.00	261.68	101.0
1333	J-233		20.77	0.00	256.69	102.1
1844	J-233		32.52	0.00	231.23	86.0
1871	J-233	Link "P-343" split by node "J-233"	34.00	0.00	269.00	101.7
1463	J-232		6.86	0.00	199.14	83.2
1842	J-232		36.35	0.00	235.43	86.1
1869	J-232	Link "P-341" split by node "J-232"	34.00	0.00	268.99	101.7
552	J-231		8.79	0.00	202.56	83.8
1867	J-231	Link "P-339" split by node "J-231"	34.00	0.00	268.99	101.7
1331	J-230		34.76	0.00	256.69	96.0
1836	J-230		38.56	0.00	232.38	83.9
1866	J-230		34.00	0.00	268.98	101.7
1864	J-229 PUMP SUCTION	Link "P-337" split by node "J-230"	33.00	0.00	47.27	6.2
550	J-229		7.97	0.00	202.48	84.2
1833	J-229		10.72	0.00	236.97	97.9
1862	J-228 PUMP SUCTION		33.00	0.00	47.27	6.2

FlexTable: Junction Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/min)	Hydraulic Grade (ft)	Pressure (psi)
1329	J-228		28.41	0.00	256.69	98.8
1831	J-228		11.30	0.00	236.52	97.4
1860	J-227 PUMP SUCTION		33.00	0.00	47.28	6.2
549	J-227		7.97	0.00	202.40	84.1
1829	J-227		13.47	0.00	235.30	96.0
1858	J-226 PUMP SUCTION		33.00	0.00	47.28	6.2
1824	J-226		22.00	0.00	213.33	82.8
1327	J-226		20.72	0.00	256.69	102.1
1855	J-225 PUMP SUCTION		33.00	0.00	47.28	6.2
548	J-225		7.72	0.00	202.31	84.2
1819	J-225		12.00	0.00	203.18	82.7
1853	J-224 PUMP SUCTION		33.00	0.00	47.28	6.2
1325	J-224		21.27	0.00	256.68	101.9
1851	J-223 PUMP SUCTION		33.00	0.00	47.28	6.2
547	J-223		8.60	0.00	202.23	83.8
1850	J-222 PUMP SUCTION		33.00	0.00	47.28	6.2
546	J-222		10.22	0.00	202.15	83.0
545	J-221		10.15	0.00	202.07	83.0
544	J-220		7.91	0.00	201.98	84.0
543	J-219		7.74	0.00	201.90	84.0
542	J-218		7.76	0.00	201.82	84.0
1313	J-217		22.46	0.00	256.67	101.3
1310	J-214		21.50	0.00	256.66	101.7
1780	J-213		43.91	0.00	258.85	93.0
537	J-213		7.04	0.00	200.43	83.7
536	J-212		7.51	0.00	200.37	83.4
535	J-211		4.13	0.00	200.28	84.9
1304	J-210		25.92	0.00	265.33	103.6
534	J-209		2.39	0.00	200.20	85.6
400	J-208		10.72	0.00	238.67	98.6

FlexTable: Junction Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/min)	Hydraulic Grade (ft)	Pressure (psi)
380	J-206		8.94	0.00	235.26	97.9
533	J-205		-0.02	0.00	200.09	86.6
1430	J-204		15.72	0.00	260.55	105.9
1300	J-203		26.26	0.00	266.10	103.8
1415	J-202		15.51	0.00	261.22	106.3
401	J-201		9.91	0.00	238.86	99.1
1753	J-201		28.90	0.00	241.78	92.1
1298	J-200		27.04	0.00	266.10	103.4
1317	J-199		15.24	0.00	256.67	104.5
1296	J-198		27.13	0.00	265.94	103.3
402	J-197		9.80	0.00	239.06	99.2
1745	J-197		25.64	0.00	259.19	101.0
1315	J-196		15.11	0.00	256.67	104.5
1295	J-195		27.14	0.00	265.78	103.2
1739	J-195		28.90	0.00	241.80	92.1
390	J-194		8.96	0.00	236.88	98.6
389	J-193		8.89	0.00	236.70	98.6
170	J-192		18.55	0.00	264.54	106.4
1291	J-191		29.60	0.00	265.61	102.1
236	J-190		17.81	0.00	263.54	106.3
1289	J-189		32.27	0.00	265.44	100.9
1725	J-189		35.94	0.00	243.13	89.6
405	J-188		9.30	0.00	239.47	99.6
1720	J-187		33.37	0.00	248.22	93.0
1287	J-187		33.50	0.00	265.27	100.3
1718	J-186		34.99	0.00	247.51	91.9
404	J-186		9.00	0.00	239.26	99.6
525	J-185		2.58	0.00	199.55	85.2
1714	J-184		33.99	0.00	241.71	89.9
388	J-184		7.97	0.00	236.50	98.9

FlexTable: Junction Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/min)	Hydraulic Grade (ft)	Pressure (psi)
406	J-183		8.89	0.00	239.67	99.8
524	J-182		5.10	0.00	199.44	84.1
407	J-181		8.89	0.00	239.87	99.9
1285	J-180		33.58	0.00	265.11	100.2
523	J-179		6.38	0.00	199.37	83.5
1283	J-177		34.62	0.00	264.96	99.7
1700	J-177		38.42	0.00	240.52	87.4
408	J-176		8.89	0.00	240.08	100.0
522	J-175		6.92	0.00	199.30	83.2
409	J-174		8.89	0.00	240.28	100.1
410	J-173		8.89	0.00	240.48	100.2
1281	J-172		35.44	0.00	264.78	99.2
527	J-171		-5.00	0.00	199.70	88.6
1688	J-171		26.84	0.00	210.19	79.3
521	J-170		7.08	0.00	199.21	83.1
1686	J-170		28.00	0.00	230.38	87.6
466	J-169		11.63	0.00	250.79	103.5
1279	J-168		35.41	0.00	264.62	99.2
520	J-167		6.51	0.00	199.06	83.3
1424	J-166		13.50	0.00	261.12	107.1
467	J-165		11.46	0.00	250.99	103.6
134	J-163		-1.05	0.00	211.55	92.0
1275	J-162		35.31	0.00	264.25	99.1
420	J-161		8.65	0.00	242.32	101.1
424	J-160		8.62	0.00	243.13	101.5
1273	J-159		34.23	0.00	264.08	99.4
387	J-158		6.53	0.00	236.32	99.4
517	J-157		40.19	0.00	259.36	94.8
497	J-156		12.48	0.00	256.30	105.5
1271	J-155		35.54	0.00	263.92	98.8

FlexTable: Junction Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/min)	Hydraulic Grade (ft)	Pressure (psi)
465	J-154		10.73	0.00	250.59	103.8
516	J-153		39.51	0.00	259.53	95.2
515	J-152		39.06	0.00	259.70	95.5
421	J-151		8.29	0.00	242.52	101.3
1269	J-150		35.57	0.00	263.76	98.7
464	J-149		10.36	0.00	250.38	103.8
419	J-148		7.74	0.00	242.11	101.4
514	J-147		39.06	0.00	259.86	95.5
1267	J-146		36.18	0.00	263.60	98.4
353	J-145		3.95	0.00	231.39	98.4
513	J-144		39.06	0.00	260.03	95.6
468	J-143		10.15	0.00	251.20	104.3
1211	J-142		11.83	0.00	260.85	107.7
1265	J-141		36.29	0.00	263.43	98.3
411	J-140		6.67	0.00	240.69	101.2
1263	J-139		36.40	0.00	263.27	98.2
422	J-138		7.23	0.00	242.72	101.9
512	J-137		39.06	0.00	260.20	95.7
135	J-136		-2.74	0.00	211.63	92.7
1261	J-135		36.36	0.00	263.10	98.1
503	J-134		39.06	0.00	260.36	95.7
159	J-133		15.28	0.00	264.71	107.9
492	J-132		39.04	0.00	260.53	95.8
143	J-131		-2.74	0.00	212.13	93.0
139	J-129		-3.00	0.00	211.80	92.9
1257	J-128		36.71	0.00	262.79	97.8
140	J-127		-3.00	0.00	211.88	93.0
141	J-126		-3.00	0.00	211.96	93.0
481	J-125		38.40	0.00	260.70	96.2
470	J-124		36.61	0.00	260.87	97.0

FlexTable: Junction Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/min)	Hydraulic Grade (ft)	Pressure (psi)
142	J-123		-3.00	0.00	212.05	93.0
461	J-122		8.89	0.00	249.77	104.2
1255	J-121		37.58	0.00	262.62	97.4
456	J-120		8.62	0.00	249.00	104.0
1253	J-119		35.68	0.00	262.48	98.1
458	J-118		38.98	0.00	261.03	96.1
462	J-117		8.89	0.00	249.97	104.3
460	J-116		8.71	0.00	249.57	104.2
1251	J-115		33.94	0.00	262.32	98.8
1249	J-114		33.34	0.00	262.17	99.0
463	J-113		8.89	0.00	250.18	104.4
125	J-112		14.89	0.00	265.21	108.3
436	J-111		38.15	0.00	261.37	96.6
425	J-110		39.06	0.00	261.53	96.3
1323	J-109		10.71	0.00	256.68	106.4
495	J-108		10.30	0.00	255.89	106.3
1247	J-107		34.22	0.00	262.01	98.6
471	J-106		8.89	0.00	251.40	104.9
1245	J-105		36.09	0.00	261.85	97.7
472	J-104		8.89	0.00	251.62	105.0
414	J-103		39.06	0.00	261.70	96.3
403	J-102		39.06	0.00	261.87	96.4
455	J-101		7.97	0.00	248.80	104.2
1243	J-100		37.90	0.00	261.70	96.8
1427	J-99		10.49	0.00	261.03	108.4
1241	J-98		40.40	0.00	261.54	95.7
426	J-97		6.27	0.00	243.33	102.6
386	J-96		3.98	0.00	236.14	100.4
375	J-96		12.41	0.00	234.45	96.1
392	J-95		39.94	0.00	262.03	96.1

FlexTable: Junction Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/min)	Hydraulic Grade (ft)	Pressure (psi)
454	J-94		6.89	0.00	248.59	104.6
381	J-93		41.36	0.00	262.20	95.5
1239	J-92		40.29	0.00	261.38	95.7
1209	J-91		9.37	0.00	260.96	108.9
370	J-90		41.55	0.00	262.37	95.5
1237	J-88		40.38	0.00	261.23	95.6
412	J-87		4.31	0.00	240.89	102.4
1421	J-86		9.03	0.00	260.65	108.9
359	J-85		40.76	0.00	262.54	96.0
453	J-84		6.16	0.00	248.39	104.8
1235	J-83		39.71	0.00	261.12	95.8
137	J-82		12.56	0.00	265.05	109.2
1233	J-81		30.38	0.00	260.95	99.8
418	J-80		4.00	0.00	241.91	102.9
1231	J-79		23.82	0.00	260.79	102.5
1480	J-78		-10.00	0.00	200.00	90.9
354	J-77		10.00	0.00	231.55	95.9
385	J-76		1.92	0.00	235.96	101.3
270	J-75		36.05	0.00	262.94	98.2
459	J-74		5.98	0.00	249.37	105.3
259	J-73		31.26	0.00	263.12	100.3
248	J-72		23.31	0.00	263.28	103.8
457	J-71		5.93	0.00	249.21	105.3
413	J-70		3.40	0.00	241.09	102.8
415	J-69		3.40	0.00	241.30	102.9
416	J-68		3.40	0.00	241.50	103.0
225	J-67		21.68	0.00	263.70	104.7
1213	J-66		33.50	0.00	260.26	98.1
417	J-65		3.40	0.00	241.71	103.1
450	J-64		5.23	0.00	247.78	104.9

FlexTable: Junction Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/min)	Hydraulic Grade (ft)	Pressure (psi)
427	J-63		3.93	0.00	243.53	103.7
214	J-62		32.39	0.00	263.87	100.2
355	J-61		10.00	0.00	231.61	95.9
192	J-60		28.06	0.00	264.21	102.2
451	J-59		5.16	0.00	247.98	105.1
1418	J-58		8.02	0.00	260.74	109.3
452	J-57		4.94	0.00	248.19	105.2
181	J-56		22.86	0.00	264.37	104.5
449	J-55		4.72	0.00	247.58	105.1
1205	J-54		29.29	0.00	261.58	100.5
1203	J-53		29.07	0.00	261.62	100.6
384	J-52		0.81	0.00	235.78	101.7
448	J-51		4.32	0.00	247.37	105.2
432	J-50		3.40	0.00	244.55	104.3
1201	J-49		28.71	0.00	261.69	100.8
433	J-48		3.40	0.00	244.76	104.4
437	J-47		3.40	0.00	245.33	104.7
1199	J-46		26.13	0.00	262.37	102.2
438	J-45		3.40	0.00	245.54	104.8
439	J-44		3.40	0.00	245.74	104.8
1197	J-43		24.43	0.00	263.09	103.3
440	J-42		3.40	0.00	245.94	104.9
1195	J-41		24.19	0.00	263.37	103.5
441	J-40		3.40	0.00	246.15	105.0
442	J-38		3.40	0.00	246.35	105.1
114	J-37		20.94	0.00	265.38	105.8
1193	J-36		23.26	0.00	264.06	104.2
528	J-35		-12.00	0.00	199.76	91.6
1489	J-34		-12.00	0.00	199.84	91.7
103	J-33		24.77	0.00	265.62	104.2

FlexTable: Junction Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/min)	Hydraulic Grade (ft)	Pressure (psi)
443	J-32		3.40	0.00	246.56	105.2
444	J-30		3.40	0.00	246.76	105.3
1189	J-29		28.92	0.00	266.17	102.6
1187	J-28		27.18	0.00	267.08	103.8
445	J-27		3.40	0.00	246.96	105.4
26	J-26		29.05	0.00	266.40	102.7
446	J-25		3.40	0.00	247.17	105.5
431	J-24		2.37	0.00	244.35	104.7
1178	J-23		26.60	0.00	266.20	103.7
496	J-21		5.81	0.00	256.09	108.3
1176	J-20	Link "P-176" split by node "J-20"	26.67	0.00	268.04	104.4
428	J-19		2.04	0.00	243.74	104.6
540	J-18		29.25	0.00	267.28	103.0
430	J-17		1.59	0.00	244.15	104.9
429	J-16		1.17	0.00	243.94	105.0
148	J-14		8.91	0.00	264.88	110.7
530	J-13		-15.00	0.00	199.87	93.0
518	J-12		27.51	0.00	267.82	104.0
1171	J-11		26.80	0.00	266.98	103.9
1321	J-10		2.80	0.00	256.68	109.8
1170	J-9	Link "P-346" split by node "J-9"	28.09	0.00	268.30	103.9
1319	J-8		2.59	0.00	256.68	109.9
1152	J-7		28.77	0.00	266.21	102.7
1483	J-6		-22.00	0.00	199.98	96.0
247	J-5		28.69	0.00	268.21	103.6
1646	J-4		25.88	0.00	266.30	104.0
136	J-3		27.18	0.00	268.66	104.5
1486	J-2		-25.00	0.00	199.89	97.3
531	J-1		-25.00	0.00	199.95	97.3

FlexTable: Junction Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Notes	Elevation (ft)	Demand (gal/miH)	Hydraulic Grade (ft)	Pressure (psi)
498	HWY390 and Pipeline Rd- 12"		16.11	0.00	256.50	104.0
290	Hwy 77 and HWY 388		38.87	0.00	223.29	79.8
68	Crooked Creek		2.74	0.00	206.51	88.2
138	Burnt Mill Creek		-2.88	0.00	211.71	92.8
25	Bay County WTP		34.00	0.00	268.99	101.7
1121	a Tank Connection PUMP SUCTION		23.71	0.00	47.36	10.2
3664	a P-West Bay Tank Pressure SCADA		11.50	0.00	198.80	81.0
3692	a P-South Port Tank Pressure SCADA		14.00	0.00	234.94	95.6
1117	a PS Input PUMP SUCTION		33.00	0.00	47.29	6.2
3704	a P-Mexico Beach Pressure Station		20.50	0.00	210.13	82.0
3677	a P-McEvey Tank Pressure SCADA		16.50	0.00	119.81	44.7
3633	a P-Harders Park PressureStation		16.50	0.00	258.26	104.6
169	a P-Burnt Mill Pressure Station		23.00	0.00	214.14	82.7
1776			22.20	0.00	213.07	82.6

FlexTable: Pump Table (HMM Model Peak with improvements.wtg)

Current Time: 0.000 hours

ID	Label	Elevation (ft)	Pump Definition	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gal/min)	Pump Head (ft)
1098	PMP-1	35.00	27ML-7000AW,PUMP 1,4,5,7	Off	47.28	268.98	0.00	0.00
1099	PMP-2	35.00	21H-7000AW 12.75",PUMP2,6	On	47.28	269.05	2,676.52	221.77
1100	PMP-3	35.00	21H-7000AW 12.82", PUMP3, 8	On	47.28	269.11	4,866.85	221.83
1101	PMP-4	35.00	27ML-7000AW,PUMP 1,4,5,7	On	47.28	269.22	6,009.10	221.95
1102	PMP-5	35.00	27ML-7000AW,PUMP 1,4,5,7	Off	47.28	269.00	0.00	0.00
1103	PMP-6	35.00	21H-7000AW 12.75", PUMP2,6	On	47.28	269.06	2,676.07	221.79
1104	PMP-7	35.00	27ML-7000AW,PUMP 1,4,5,7	On	47.27	269.29	6,004.60	222.02
1105	PMP-8	35.00	21H-7000AW 12.82", PUMP3, 8	On	47.27	269.20	4,864.44	221.93
4045	Frankford Booster Pump 1	12.00	Frankford Booster Pump	Off	42.70	203.91	0.00	0.00
4066	Frankford Booster Pump 2	0.00	Frankford Booster Pump	Off	42.70	203.91	0.00	0.00
4074	NB BOOSTER 2020	0.00	Frankford Booster Pump	Off	(N/A)	(N/A)	(N/A)	(N/A)

APPENDIX C

WASTEWATER MODEL OUTPUT

Current System Model

FlexTable: Wet Well Table (Bay County SewerCAD Model.swc)

Current Time: 0.000 hours

Label	Notes	Elevation (Ground) (ft)	Elevation (Base) (ft)	Elevation (Minimum) (ft)	Elevation (Initial) (ft)	Elevation (Maximum) (ft)	Diameter (ft)	Flow (Total Out) (gpm)
BC-42	AIRPORT MAIN PS	45.00	24.00	27.00	30.00	40.00	8.00	519.55
BC-46	WEST BAY BUSINESS CENTER EAST	49.00	34.50	35.50	36.50	49.00	6.00	203.92
BC-48	WEST BAY BUS CENTER WEST	43.00	23.65	24.65	26.65	43.15	6.00	212.46
BC-49	HWY 79&388	11.00	-9.00	-8.00	-5.00	11.00	8.00	160.89
RCBS	RIVERCAMPS BOOSTER STATION	13.00	-10.00	-7.00	-2.50	11.00	8.00	223.25
WW-BC-1	AT WTP	36.00	21.00	22.00	24.00	36.00	13.00	2,841.29
WW-BC-2	CALLAWAY MASTER PS	20.00	3.50	4.50	6.50	20.00	12.00	4,488.46
WW-BC-3	PARKER MASTER PS	5.00	-19.00	-18.00	-15.00	5.00	8.00	1,258.50
WW-BC-4	SPRINGFIELD MASTER PS	5.00	-16.60	-15.60	-13.60	5.00	19.80	3,263.00
WW-BC-5	BC CEDAR GROVE MASTER PS	33.00	9.40	10.40	12.40	33.00	12.00	1,869.73
WW-BC-36	SOUTHPORT ELEM PS	6.00	-9.00	-8.00	-6.00	7.00	8.00	180.19
WW-BC-37	LAKE MERIAL PS	64.00	47.00	48.00	50.00	64.00	8.00	292.79
WW-BC-39		12.00	-3.00	0.00	1.00	12.00	10.00	232.79
WW-BC-40		4.00	-12.00	-11.00	-9.00	5.00	10.00	429.58
WW-BC-43	BAY CO EOC PS	28.00	10.00	10.00	12.00	28.00	10.00	44.34

FlexTable: Pump Table (Bay County SewerCAD Model.swc)

Current Time: 0.000 hours

ID	Label	Elevation (Invert) (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Design) (gpm)	Flow (Total) (gpm)	Head (Design) (ft)	Pump Head (ft)	Head (Shutoff) (ft)
868	BC-1-1	21.00	On	23.90	221.13	900.00	947.10	200.00	197.23	265.00
869	BC-1-2	21.00	On	23.90	221.13	900.00	947.10	200.00	197.23	265.00
870	BC-1-3	21.00	On	23.90	221.13	900.00	947.10	200.00	197.23	265.00
871	BC-1-4	21.00	Off	24.00	220.65	900.00	0.00	200.00	0.00	265.00
842	BC-2-1	3.50	On	6.42	115.40	1,200.00	1,496.15	120.00	108.97	160.00
843	BC-2-2	3.50	On	6.42	115.40	1,200.00	1,496.15	120.00	108.97	160.00
844	BC-2-3	3.50	On	6.42	115.40	1,200.00	1,496.15	120.00	108.97	160.00
845	BC-2-4	3.50	Off	6.50	115.02	1,200.00	0.00	120.00	0.00	160.00
832	BC3-1	-19.00	On	-15.04	96.04	650.00	629.25	110.00	111.08	146.00
833	BC-3-2	-19.00	On	-15.04	96.04	650.00	629.25	110.00	111.08	146.00
834	BC-3-3	-19.00	Off	-15.00	95.81	650.00	0.00	110.00	0.00	146.00
727	BC-4-1	-16.00	On	-13.69	77.26	900.00	1,631.50	122.00	90.95	158.00
726	BC-4-2	-16.00	On	-13.69	77.26	900.00	1,631.50	122.00	90.95	158.00
725	BC-4-3	-16.00	Off	-13.60	76.82	900.00	0.00	70.00	0.00	93.00
724	BC-4-4	-16.00	Off	-13.60	76.82	900.00	0.00	70.00	0.00	93.00
855	BC-5-1	0.00	On	12.36	181.32	600.00	623.24	170.00	168.97	203.00
856	BC-5-2	0.00	On	12.36	181.32	600.00	623.24	170.00	168.97	203.00
857	BC-5-3	0.00	On	12.36	181.32	600.00	623.24	170.00	168.97	203.00
858	BC-5-4	0.00	Off	12.40	181.10	600.00	0.00	170.00	0.00	203.00
1005	BC-36-1	-9.00	On	-6.13	124.82	220.00	180.19	118.00	130.95	157.33
1006	BC-36-2	-9.00	Off	-6.00	124.17	220.00	0.00	118.00	0.00	157.33
932	BC-37-1	0.00	On	49.96	139.09	200.00	292.79	95.00	89.14	108.00
933	BC-37-2	0.00	Off	50.00	138.87	200.00	0.00	95.00	0.00	108.00
948	BC-39-1	-3.00	On	0.97	141.17	400.00	232.79	130.00	140.20	158.00
949	BC-39-2	-3.00	Off	1.00	141.02	400.00	0.00	130.00	0.00	158.00
982	BC-40-1	-12.00	On	-9.09	168.52	400.00	429.58	180.00	177.61	216.00
983	BC-40-2	-12.00	Off	-9.00	168.07	400.00	0.00	180.00	0.00	216.00
62	BC-42-1	1.00	On	29.87	79.05	352.00	519.55	81.00	49.18	108.00
63	BC-42-2	1.00	Off	30.00	78.54	352.00	0.00	81.00	0.00	108.00

FlexTable: Pump Table (Bay County SewerCAD Model.swc)

Current Time: 0.000 hours

ID	Label	Elevation (Invert) (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Design) (gpm)	Flow (Total) (gpm)	Head (Design) (ft)	Pump Head (ft)	Head (Shutoff) (ft)
1014	BC-43-1	0.00	On	11.99	206.21	21.51	44.34	207.07	194.22	220.00
1015	BC-43-2	0.00	Off	12.00	206.16	21.51	0.00	207.07	0.00	220.00
635	BC-46-1	34.50	On	36.47	78.09	90.00	203.92	49.00	41.62	68.00
636	BC-46-2	34.50	Off	36.50	74.70	90.00	0.00	49.00	0.00	68.00
624	BC-48-1	23.65	On	26.61	89.05	140.00	212.46	67.00	62.43	84.00
623	BC-48-2	23.65	Off	26.65	85.38	140.00	0.00	67.00	0.00	84.00
492	BC-49-1	-7.00	On	-5.00	120.56	600.00	160.89	98.00	125.56	138.00
493	BC-49-2	-7.00	Off	-5.00	120.17	600.00	0.00	98.00	0.00	138.00
18	RCBS-1	-10.00	On	-3.50	81.30	311.00	223.25	73.00	84.79	97.33
19	RCBS-2	-10.00	Off	-2.50	80.68	311.00	0.00	73.00	0.00	97.33

FlexTable: Pressure Pipe Table (Bay County SewerCAD Model.swc)

Current Time: 0.000 hours

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-1	RCBS	-7.00	RCBS-2	-10.00	170.0	6.0	120.0	0.00	0.00	0.00
P-2	RCBS-2	-10.00	J-1	10.00	25.0	6.0	120.0	0.00	0.00	0.00
P-3	RCBS	-7.00	RCBS-1	-10.00	186.0	6.0	120.0	223.25	2.53	1.00
P-4	RCBS-1	-10.00	J-1	10.00	25.0	6.0	120.0	223.25	2.53	0.62
P-5	J-1	10.00	J-2	13.00	166.0	8.0	120.0	223.25	1.42	0.28
P-23	BC-42	27.00	BC-42-1	1.00	5.0	6.0	120.0	519.55	5.90	0.13
P-24	BC-42-1	1.00	J-20	42.00	20.0	6.0	120.0	519.55	5.90	0.51
P-25	BC-42	27.00	BC-42-2	1.00	5.0	6.0	120.0	0.00	0.00	0.00
P-26	BC-42-2	1.00	J-20	42.00	20.0	6.0	120.0	0.00	0.00	0.00
P-27	J-20	42.00	J-21	42.00	38.0	8.0	120.0	519.55	3.32	0.24
P-28	J-21	42.00	AV-1	56.00	2,576.0	8.0	120.0	519.55	3.32	16.23
P-29	AV-1	56.00	J-23	50.00	348.0	8.0	120.0	519.55	3.32	2.19
P-30	J-23	50.00	J-24	50.00	88.0	8.0	120.0	0.00	0.00	0.55
P-32	J-25	31.00	J-26	27.00	181.0	8.0	120.0	0.00	0.00	0.00
P-33	J-26	27.00	J-27	25.00	462.0	8.0	120.0	0.00	0.00	0.00
P-34	J-27	25.00	J-28	18.00	1,998.0	8.0	120.0	0.00	0.00	0.00
P-35	J-28	18.00	J-29	17.00	1,153.0	8.0	120.0	0.00	0.00	0.00
P-36	J-29	17.00	J-30	16.00	292.0	8.0	120.0	0.00	0.00	0.00
P-37	J-30	16.00	J-31	17.00	54.0	8.0	120.0	0.00	0.00	0.00
P-38	J-31	17.00	J-32	17.00	936.0	8.0	120.0	0.00	0.00	0.00
P-40	J-33	17.00	J-34	16.00	1,910.0	8.0	120.0	0.00	0.00	0.00
P-41	J-34	16.00	J-35	16.00	85.0	8.0	120.0	0.00	0.00	0.00
P-42	J-35	16.00	J-36	15.00	897.0	8.0	120.0	0.00	0.00	0.00
P-43	J-36	15.00	J-37	15.00	595.0	8.0	120.0	0.00	0.00	0.00
P-44	J-37	15.00	J-38	14.00	470.0	8.0	120.0	0.00	0.00	0.00
P-45	J-38	14.00	J-39	11.00	115.0	8.0	120.0	0.00	0.00	0.00
P-46	J-39	11.00	J-40	-10.00	179.0	8.0	120.0	0.00	0.00	0.00
P-47	J-40	-10.00	J-41	-10.00	309.0	8.0	120.0	0.00	0.00	0.00
P-48	J-41	-10.00	J-42	10.00	310.0	8.0	120.0	0.00	0.00	0.00
P-49	J-42	10.00	J-43	12.00	721.0	8.0	120.0	0.00	0.00	0.00
P-148	J-131	17.00	J-33	17.00	990.0	8.0	120.0	0.00	0.00	0.00

FlexTable: Pressure Pipe Table (Bay County SewerCAD Model.swc)

Current Time: 0.000 hours

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-149	J-32	17.00	J-132	17.00	213.0	8.0	120.0	0.00	0.00	0.00
P-151	J-131	17.00	J-133	14.00	71.0	6.0	120.0	0.00	0.00	0.00
P-152	J-133	14.00	J-132	17.00	60.0	6.0	120.0	0.00	0.00	0.00
P-158	J-135	9.00	J-136	2.00	100.0	6.0	120.0	160.89	1.83	0.29
P-159	J-136	2.00	J-137	9.00	46.0	6.0	120.0	160.89	1.83	0.13
P-160	J-137	9.00	J-138	9.00	440.0	6.0	120.0	160.89	1.83	1.28
P-161	J-138	9.00	J-139	9.00	613.0	6.0	120.0	160.89	1.83	1.79
P-162	J-139	9.00	J-140	9.00	297.0	6.0	120.0	160.89	1.83	0.87
P-163	J-140	9.00	J-141	9.00	100.0	6.0	120.0	160.89	1.83	0.29
P-164	J-141	9.00	J-142	8.00	947.0	6.0	120.0	160.89	1.83	2.76
P-165	J-142	8.00	J-143	1.00	83.0	6.0	120.0	160.89	1.83	0.24
P-166	J-143	1.00	J-144	8.00	107.0	6.0	120.0	160.89	1.83	0.31
P-167	J-144	8.00	J-145	8.00	397.0	6.0	120.0	160.89	1.83	1.16
P-168	J-145	8.00	J-146	5.00	1,128.0	6.0	120.0	160.89	1.83	3.29
P-169	J-146	5.00	J-147	2.00	95.0	6.0	120.0	160.89	1.83	0.28
P-170	J-147	2.00	J-148	5.00	77.0	6.0	120.0	160.89	1.83	0.22
P-171	J-148	5.00	J-149	7.00	60.0	6.0	120.0	160.89	1.83	0.18
P-172	J-149	7.00	J-150	6.00	1,780.0	6.0	120.0	160.89	1.83	5.19
P-173	J-150	6.00	J-151	3.00	76.0	6.0	120.0	160.89	1.83	0.22
P-174	J-151	3.00	J-152	6.00	80.0	6.0	120.0	160.89	1.83	0.23
P-175	J-152	6.00	J-153	7.00	1,021.0	6.0	120.0	160.89	1.83	2.98
P-176	J-153	7.00	J-154	8.00	855.0	6.0	120.0	160.89	1.83	2.50
P-177	J-154	8.00	J-155	5.00	48.0	6.0	120.0	160.89	1.83	0.14
P-178	J-155	5.00	J-156	8.00	53.0	6.0	120.0	160.89	1.83	0.15
P-179	J-156	8.00	J-157	13.00	3,647.0	6.0	120.0	160.89	1.83	10.64
P-180	J-157	13.00	J-158	9.00	53.0	6.0	120.0	160.89	1.83	0.15
P-181	J-158	9.00	J-159	13.00	76.0	6.0	120.0	160.89	1.83	0.22
P-182	J-159	13.00	J-160	13.00	21.0	6.0	120.0	160.89	1.83	0.06
P-211	BC-49	-8.00	BC-49-2	-7.00	1.0	6.0	120.0	0.00	0.00	0.00
P-212	BC-49-2	-7.00	J-167	9.00	25.0	6.0	120.0	0.00	0.00	0.00
P-213	BC-49	-8.00	BC-49-1	-7.00	1.0	6.0	120.0	160.89	1.83	0.00

FlexTable: Pressure Pipe Table (Bay County SewerCAD Model.swc)

Current Time: 0.000 hours

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-214	BC-49-1	-7.00	J-167	9.00	25.0	6.0	120.0	160.89	1.83	0.39
P-215	J-167	9.00	J-168	9.00	129.0	6.0	120.0	160.89	1.83	0.42
P-216	J-168	9.00	J-135	9.00	35.0	6.0	120.0	160.89	1.83	0.11
P-246	J-2	13.00	J-173	13.00	87.0	8.0	120.0	384.14	2.45	0.31
P-247	J-173	13.00	J-174	15.00	377.0	8.0	120.0	384.14	2.45	1.36
P-248	J-174	15.00	J-175	15.00	177.0	8.0	120.0	384.14	2.45	0.64
P-249	J-175	15.00	J-176	16.00	432.0	8.0	120.0	384.14	2.45	1.56
P-250	J-176	16.00	J-177	17.00	272.0	8.0	120.0	384.14	2.45	0.98
P-251	J-177	17.00	J-178	18.00	657.0	8.0	120.0	384.14	2.45	2.37
P-252	J-178	18.00	J-179	16.00	339.0	8.0	120.0	384.14	2.45	1.22
P-253	J-179	16.00	J-180	14.00	180.0	8.0	120.0	384.14	2.45	0.65
P-254	J-180	14.00	J-181	18.00	443.0	8.0	120.0	384.14	2.45	1.60
P-255	J-181	18.00	J-182	19.00	512.0	8.0	120.0	384.14	2.45	1.84
P-256	J-182	19.00	J-183	19.00	416.0	8.0	120.0	384.14	2.45	1.50
P-257	J-183	19.00	J-184	21.00	224.0	8.0	120.0	384.14	2.45	0.81
P-258	J-184	21.00	J-185	41.00	544.0	8.0	120.0	384.14	2.45	1.96
P-259	J-185	41.00	J-186	37.00	841.0	8.0	120.0	384.14	2.45	3.03
P-260	J-186	37.00	J-187	31.00	573.0	8.0	120.0	384.14	2.45	2.06
P-261	J-187	31.00	J-188	33.00	341.0	8.0	120.0	384.14	2.45	1.23
P-262	J-188	33.00	J-189	37.00	965.0	8.0	120.0	384.14	2.45	3.48
P-263	J-189	37.00	J-190	37.00	234.0	8.0	120.0	384.14	2.45	0.84
P-264	J-190	37.00	J-191	38.00	410.0	8.0	120.0	384.14	2.45	1.48
P-265	J-191	38.00	J-192	41.00	1,234.0	8.0	120.0	384.14	2.45	4.44
P-266	J-192	41.00	J-193	41.00	360.0	8.0	120.0	384.14	2.45	1.30
P-267	J-193	41.00	J-194	42.00	174.0	8.0	120.0	384.14	2.45	0.63
P-268	J-194	42.00	J-195	43.00	245.0	8.0	120.0	384.14	2.45	0.88
P-269	J-195	43.00	Rivercamps WWTP	43.00	162.0	8.0	120.0	384.14	2.45	0.58
P-270	J-160	13.00	J-196	13.00	1,189.0	6.0	120.0	160.89	1.83	3.49
P-274	J-196	13.00	J-2	13.00	52.0	6.0	120.0	160.89	1.83	0.15
P-275	J-198	40.00	J-199	40.00	18.0	4.0	120.0	212.46	5.42	0.63

FlexTable: Pressure Pipe Table (Bay County SewerCAD Model.swc)

Current Time: 0.000 hours

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-276	J-199	40.00	J-200	40.00	59.0	4.0	120.0	212.46	5.42	2.08
P-277	J-200	40.00	J-201	40.00	17.0	4.0	120.0	212.46	5.42	0.60
P-278	J-201	40.00	J-202	41.00	975.0	4.0	120.0	212.46	5.42	34.31
P-279	J-203	46.00	J-204	46.00	41.0	4.0	120.0	203.92	5.21	1.34
P-280	J-204	46.00	J-205	46.00	109.0	4.0	120.0	203.92	5.21	3.56
P-281	J-205	46.00	J-206	53.00	313.0	4.0	120.0	203.92	5.21	10.21
P-282	BC-48	24.65	BC-48-2	23.65	1.0	4.0	120.0	0.00	0.00	0.00
P-283	BC-48-2	23.65	J-198	40.00	25.0	4.0	120.0	0.00	0.00	0.00
P-284	BC-48	24.65	BC-48-1	23.65	1.0	4.0	120.0	212.46	5.42	0.04
P-285	BC-48-1	23.65	J-198	40.00	25.0	4.0	120.0	212.46	5.42	3.67
P-286	J-134	49.00	J-207 BCW	41.00	634.0	8.0	120.0	723.48	4.62	7.38
P-288	J-202	41.00	J-207 BCW	41.00	48.0	4.0	120.0	212.46	5.42	2.45
P-289	J-24	50.00	J-208 BCE	49.10	883.0	8.0	120.0	519.55	3.32	5.56
P-290	J-208 BCE	49.10	J-134	49.00	93.0	8.0	120.0	723.48	4.62	1.08
P-291	J-206	53.00	J-208 BCE	49.10	179.0	4.0	120.0	203.92	5.21	5.84
P-292	BC-46	35.50	BC-46-1	34.50	1.0	4.0	120.0	203.92	5.21	0.03
P-293	BC-46-1	34.50	J-203	46.00	25.0	4.0	120.0	203.92	5.21	3.39
P-294	BC-46	35.50	BC-46-2	34.50	1.0	4.0	120.0	0.00	0.00	0.00
P-295	BC-46-2	34.50	J-203	46.00	25.0	4.0	120.0	0.00	0.00	0.00
P-297	J-209	41.00	J-25	31.00	676.0	8.0	120.0	0.00	0.00	0.00
P-298	J-207 BCW	41.00	High Point	41.00	194.0	8.0	120.0	935.94	5.97	3.64
P-1016	J-1007	16.00	J-1009	16.00	244.0	16.0	120.0	0.00	0.00	0.00
P-1017	J-1009	16.00	J-1010	17.00	2,081.0	16.0	120.0	0.00	0.00	0.00
P-1018	J-1010	17.00	J-1011	15.00	1,069.0	16.0	120.0	0.00	0.00	0.00
P-1019	J-1011	15.00	J-1012	5.00	1,044.0	16.0	120.0	0.00	0.00	0.00
P-1020	J-1012	5.00	J-1013	17.00	1,222.0	16.0	120.0	0.00	0.00	0.00
P-1021	J-1013	17.00	J-1014	8.00	4,889.0	16.0	120.0	0.00	0.00	0.00
P-1022	J-1014	8.00	J-1015	27.00	3,391.0	16.0	120.0	0.00	0.00	0.00
P-1023	J-1015	27.00	J-1016	19.00	6,876.0	16.0	120.0	0.00	0.00	0.00
P-1024	J-1016	19.00	J-1017	5.00	7,018.0	16.0	120.0	0.00	0.00	0.00
P-1025	J-1017	5.00	J-1018	10.00	3,284.0	16.0	120.0	0.00	0.00	0.00

FlexTable: Pressure Pipe Table (Bay County SewerCAD Model.swc)

Current Time: 0.000 hours

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-1026	J-1018	10.00	J-1019	10.00	940.0	16.0	120.0	0.00	0.00	0.00
P-1027	WW-BC-4	-15.60	BC-4-1	-16.00	5.0	10.0	120.0	1,631.50	6.66	0.09
P-1028	BC-4-1	-16.00	J-1020	2.00	25.0	10.0	120.0	1,631.50	6.66	0.44
P-1029	WW-BC-4	-15.60	BC-4-2	-16.00	5.0	10.0	120.0	1,631.50	6.66	0.09
P-1030	BC-4-2	-16.00	J-1020	2.00	25.0	10.0	120.0	1,631.50	6.66	0.44
P-1031	WW-BC-4	-15.60	BC-4-3	-16.00	5.0	10.0	120.0	0.00	0.00	0.00
P-1032	BC-4-3	-16.00	J-1020	2.00	25.0	10.0	120.0	0.00	0.00	0.00
P-1033	WW-BC-4	-15.60	BC-4-4	-16.00	5.0	10.0	120.0	0.00	0.00	0.00
P-1034	BC-4-4	-16.00	J-1020	2.00	25.0	10.0	120.0	0.00	0.00	0.00
P-1037	J-1022	22.00	J-1023	17.00	718.0	36.0	120.0	13,720.98	4.32	1.28
P-1038	J-1023	17.00	J-1024	16.00	289.0	36.0	120.0	13,720.98	4.32	0.51
P-1039	J-1024	16.00	J-1026	9.00	2,328.0	36.0	120.0	13,720.98	4.32	4.15
P-1040	J-1026	9.00	J-1029	-1.00	1,063.0	36.0	120.0	13,720.98	4.32	1.89
P-1041	J-1029	-1.00	J-1031	-59.00	2,759.0	36.0	120.0	13,720.98	4.32	4.91
P-1042	J-1031	-59.00	J-1033	2.00	1,704.0	36.0	120.0	13,720.98	4.32	3.03
P-1043	J-1033	2.00	J-1019	10.00	3,283.0	36.0	120.0	13,720.98	4.32	5.85
P-1044	J-1021	5.00	J-1036	21.00	898.0	16.0	120.0	2,923.44	4.66	4.74
P-1045	J-1036	21.00	J-1022	22.00	609.0	36.0	120.0	13,720.98	4.32	1.08
P-1046	J-1020	2.00	J-1037	2.00	87.0	16.0	120.0	3,263.00	5.21	0.56
P-1047	J-1037	2.00	J-1021	5.00	773.0	16.0	120.0	2,923.44	4.66	4.08
P-1049	J-1037	2.00	J-1038	5.00	834.0	20.0	120.0	5,050.58	5.16	4.09
P-1050	J-1038	5.00	J-1039	21.00	862.0	20.0	120.0	5,050.58	5.16	4.22
P-1051	J-1039	21.00	J-1036	21.00	104.0	20.0	120.0	5,050.58	5.16	0.51
P-1052	J-1040	17.00	J-1041	25.00	1,282.0	18.0	120.0	4,488.46	5.66	8.44
P-1053	J-1041	25.00	J-1042	25.00	1,009.0	18.0	120.0	4,488.46	5.66	6.64
P-1054	J-1042	25.00	J-1043	28.00	693.0	18.0	120.0	4,488.46	5.66	4.56
P-1055	J-1043	28.00	J-1044	28.00	389.0	18.0	120.0	4,488.46	5.66	2.56
P-1056	J-1044	28.00	J-1045	27.00	1,303.0	18.0	120.0	4,488.46	5.66	8.57
P-1057	J-1045	27.00	J-1046	27.00	59.0	20.0	120.0	4,488.46	4.58	0.23
P-1058	J-1046	27.00	J-1047	26.00	662.0	20.0	120.0	4,488.46	4.58	2.61
P-1059	J-1047	26.00	J-1048	25.00	1,123.0	20.0	120.0	4,488.46	4.58	4.42

FlexTable: Pressure Pipe Table (Bay County SewerCAD Model.swc)

Current Time: 0.000 hours

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-1060	J-1048	25.00	J-1049	25.00	105.0	24.0	120.0	5,746.96	4.08	0.27
P-1061	J-1049	25.00	J-1050	2.00	2,175.0	24.0	120.0	5,746.96	4.08	5.57
P-1062	J-1050	2.00	J-1051	5.00	598.0	24.0	120.0	5,746.96	4.08	1.53
P-1063	J-1051	5.00	J-1052	21.00	650.0	24.0	120.0	5,746.96	4.08	1.66
P-1064	J-1052	21.00	J-1036	21.00	203.0	24.0	120.0	5,746.96	4.08	0.52
P-1067	J-1053	2.00	J-1048	25.00	1,721.0	10.0	120.0	1,258.50	5.14	18.82
P-1068	J-1054	30.00	J-1055	30.00	1,230.0	12.0	120.0	1,869.73	5.30	11.52
P-1069	J-1055	30.00	J-1056	31.00	4,121.0	12.0	120.0	1,869.73	5.30	38.60
P-1070	J-1057	33.00	J-1058	29.00	684.0	16.0	120.0	2,841.29	4.53	3.43
P-1071	J-1058	29.00	J-1059	33.00	2,966.0	16.0	120.0	2,841.29	4.53	14.85
P-1072	J-1059	33.00	J-1060	29.00	2,377.0	16.0	120.0	2,841.29	4.53	11.90
P-1073	J-1060	29.00	J-1061	23.00	7,825.0	16.0	120.0	2,841.29	4.53	39.18
P-1074	J-1061	23.00	J-1062	30.00	1,392.0	16.0	120.0	2,841.29	4.53	6.97
P-1075	J-1062	30.00	J-1056	31.00	2,664.0	16.0	120.0	2,841.29	4.53	13.34
P-1076	J-1056	31.00	J-1063	27.00	2,650.0	18.0	120.0	4,711.02	5.94	19.07
P-1077	J-1063	27.00	J-1064	10.00	1,342.0	18.0	120.0	4,711.02	5.94	9.66
P-1078	J-1064	10.00	J-1065	10.00	1,327.0	18.0	120.0	4,711.02	5.94	9.55
P-1079	J-1065	10.00	J-1066	17.00	738.0	18.0	120.0	4,711.02	5.94	5.31
P-1080	J-1066	17.00	J-1067	15.00	1,205.0	18.0	120.0	4,711.02	5.94	8.67
P-1081	J-1067	15.00	J-1037	2.00	342.0	18.0	120.0	4,711.02	5.94	2.46
P-1082	WW-BC-3	-18.00	BC3-1	-19.00	5.0	8.0	120.0	629.25	4.02	0.04
P-1083	BC3-1	-19.00	J-1053	2.00	25.0	8.0	120.0	629.25	4.02	0.22
P-1084	WW-BC-3	-18.00	BC-3-2	-19.00	5.0	8.0	120.0	629.25	4.02	0.04
P-1085	BC-3-2	-19.00	J-1053	2.00	25.0	8.0	120.0	629.25	4.02	0.22
P-1086	WW-BC-3	-18.00	BC-3-3	-19.00	5.0	8.0	120.0	0.00	0.00	0.00
P-1087	BC-3-3	-19.00	J-1053	2.00	25.0	8.0	120.0	0.00	0.00	0.00
P-1088	WW-BC-2	4.50	BC-2-1	3.50	5.0	10.0	120.0	1,496.15	6.11	0.08
P-1089	BC-2-1	3.50	J-1040	17.00	25.0	10.0	120.0	1,496.15	6.11	0.38
P-1090	WW-BC-2	4.50	BC-2-2	3.50	5.0	10.0	120.0	1,496.15	6.11	0.08
P-1091	BC-2-2	3.50	J-1040	17.00	25.0	10.0	120.0	1,496.15	6.11	0.38
P-1092	WW-BC-2	4.50	BC-2-3	3.50	5.0	10.0	120.0	1,496.15	6.11	0.08

FlexTable: Pressure Pipe Table (Bay County SewerCAD Model.swc)

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Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (ft)	Diameter (In)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-1093	BC-2-3	3.50	J-1040	17.00	25.0	10.0	120.0	1,496.15	6.11	0.38
P-1094	WW-BC-2	4.50	BC-2-4	3.50	5.0	10.0	120.0	0.00	0.00	0.00
P-1095	BC-2-4	3.50	J-1040	17.00	25.0	10.0	120.0	0.00	0.00	0.00
P-1096	WW-BC-5	10.40	BC-5-4	0.00	5.0	8.0	120.0	0.00	0.00	0.00
P-1097	BC-5-4	0.00	J-1054	30.00	25.0	8.0	120.0	0.00	0.00	0.00
P-1098	WW-BC-5	10.40	BC-5-3	0.00	5.0	8.0	120.0	623.24	3.98	0.04
P-1099	BC-5-3	0.00	J-1054	30.00	25.0	8.0	120.0	623.24	3.98	0.22
P-1100	WW-BC-5	10.40	BC-5-2	0.00	5.0	8.0	120.0	623.24	3.98	0.04
P-1101	BC-5-2	0.00	J-1054	30.00	25.0	8.0	120.0	623.24	3.98	0.22
P-1102	WW-BC-5	10.40	BC-5-1	0.00	5.0	8.0	120.0	623.24	3.98	0.04
P-1103	BC-5-1	0.00	J-1054	30.00	25.0	8.0	120.0	623.24	3.98	0.22
P-1104	WW-BC-1	22.00	BC-1-1	21.00	5.0	8.0	120.0	947.10	6.05	0.10
P-1105	BC-1-1	21.00	J-1057	33.00	25.0	8.0	120.0	947.10	6.05	0.48
P-1106	WW-BC-1	22.00	BC-1-2	21.00	5.0	8.0	120.0	947.10	6.05	0.10
P-1107	BC-1-2	21.00	J-1057	33.00	25.0	8.0	120.0	947.10	6.05	0.48
P-1108	WW-BC-1	22.00	BC-1-3	21.00	5.0	8.0	120.0	947.10	6.05	0.10
P-1109	BC-1-3	21.00	J-1057	33.00	25.0	8.0	120.0	947.10	6.05	0.48
P-1110	WW-BC-1	22.00	BC-1-4	21.00	5.0	8.0	120.0	0.00	0.00	0.00
P-1111	BC-1-4	21.00	J-1057	33.00	25.0	8.0	120.0	0.00	0.00	0.00
P-1118	AV-1005	77.00	J-1076	58.00	1,005.0	6.0	120.0	292.79	3.32	8.89
P-1119	J-1077	81.00	J-1078	71.00	2,123.0	8.0	120.0	0.00	0.00	0.00
P-1120	J-1078	71.00	J-1079	62.00	2,129.0	8.0	120.0	0.00	0.00	0.00
P-1121	J-1079	62.00	J-1076	58.00	812.0	8.0	120.0	0.00	0.00	0.00
P-1122	J-1076	58.00	AV-1006	67.00	3,018.0	8.0	120.0	292.79	1.87	6.57
P-1123	AV-1006	67.00	J-1081	64.00	2,434.0	8.0	120.0	292.79	1.87	5.30
P-1124	J-1081	64.00	J-1082	57.00	988.0	8.0	120.0	292.79	1.87	2.15
P-1125	J-1082	57.00	AV-1007	60.00	4,950.0	8.0	120.0	292.79	1.87	10.78
P-1126	AV-1007	60.00	J-1084	49.00	6,375.0	8.0	120.0	292.79	1.87	13.89
P-1127	J-1084	49.00	J-1085	43.00	4,423.0	8.0	120.0	292.79	1.87	9.63
P-1129	J-1019	10.00	J-1087	10.00	65.0	36.0	120.0	13,720.98	4.32	0.12
P-1130	J-1087	10.00	J-1088	12.00	2,480.0	36.0	120.0	13,720.98	4.32	4.42

FlexTable: Pressure Pipe Table (Bay County SewerCAD Model.swc)

Current Time: 0.000 hours

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (ft)	Diameter (in)	Hazen-Williams-C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-1131	J-1088	12.00	J-1089	12.00	521.0	36.0	120.0	13,720.98	4.32	0.93
P-1132	WW-BC-37	48.00	BC-37-1	0.00	5.0	6.0	120.0	292.79	3.32	0.04
P-1133	BC-37-1	0.00	J-1090	61.00	25.0	6.0	120.0	292.79	3.32	0.22
P-1135	WW-BC-37	48.00	BC-37-2	0.00	5.0	6.0	120.0	0.00	0.00	0.00
P-1136	BC-37-2	0.00	J-1090	61.00	25.0	6.0	120.0	0.00	0.00	0.00
P-1137	J-1090	61.00	J-1091	60.00	576.0	6.0	120.0	292.79	3.32	5.09
P-1138	J-1091	60.00	AV-1005	77.00	2,281.0	6.0	120.0	292.79	3.32	20.17
P-1139	WW-BC-39	0.00	BC-39-1	-3.00	5.0	6.0	120.0	232.79	2.64	0.03
P-1140	BC-39-1	-3.00	J-1092	9.00	25.0	6.0	120.0	232.79	2.64	0.14
P-1141	WW-BC-39	0.00	BC-39-2	-3.00	5.0	6.0	120.0	0.00	0.00	0.00
P-1142	BC-39-2	-3.00	J-1092	9.00	25.0	6.0	120.0	0.00	0.00	0.00
P-1143	J-1092	9.00	J-1093	11.00	844.0	8.0	120.0	232.79	1.49	1.20
P-1144	J-1093	11.00	J-1094	10.00	672.0	8.0	120.0	232.79	1.49	0.96
P-1146	J-1095	2.00	J-1096	2.00	98.0	10.0	120.0	232.79	0.95	0.05
P-1148	J-1097	7.00	J-1098	1.00	2,006.0	8.0	120.0	232.79	1.49	2.86
P-1149	J-1098	1.00	J-1099	4.00	715.0	8.0	120.0	662.36	4.23	7.06
P-1150	J-1099	4.00	J-1100	5.00	112.0	8.0	120.0	662.36	4.23	1.11
P-1151	J-1100	5.00	J-1101	5.00	737.0	8.0	120.0	662.36	4.23	7.28
P-1152	J-1101	5.00	J-1102	27.00	4,695.0	8.0	120.0	662.36	4.23	46.38
P-1153	J-1102	27.00	J-1103	39.00	6,198.0	12.0	120.0	662.36	1.88	8.50
P-1154	J-1103	39.00	J-1104	39.00	1,180.0	12.0	120.0	662.36	1.88	1.62
P-1156	WW-BC-40	-11.00	BC-40-1	-12.00	5.0	6.0	120.0	429.58	4.87	0.09
P-1157	BC-40-1	-12.00	J-1106	1.00	25.0	6.0	120.0	429.58	4.87	0.45
P-1158	WW-BC-40	-11.00	BC-40-2	-12.00	5.0	6.0	120.0	0.00	0.00	0.00
P-1159	BC-40-2	-12.00	J-1106	1.00	25.0	6.0	120.0	0.00	0.00	0.00
P-1160	J-1106	1.00	J-1107	2.00	122.0	8.0	120.0	429.57	2.74	0.54
P-1161	J-1107	2.00	J-1108	2.00	365.0	8.0	120.0	429.57	2.74	1.62
P-1162	J-1108	2.00	J-1109	4.00	1,978.0	8.0	120.0	429.57	2.74	8.76
P-1163	J-1109	4.00	J-1110	4.00	546.0	8.0	120.0	429.57	2.74	2.42
P-1164	J-1110	4.00	J-1111	5.00	1,875.0	8.0	120.0	429.57	2.74	8.31
P-1165	J-1111	5.00	J-1112	4.00	2,314.0	8.0	120.0	429.57	2.74	10.25

FlexTable: Pressure Pipe Table (Bay County SewerCAD Model.swc)

Current Time: 0.000 hours

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (ft)	Diameter (In)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-1166	J-1112	4.00	J-1113	5.00	660.0	8.0	120.0	429.57	2.74	2.92
P-1167	J-1113	5.00	J-1098	1.00	944.0	8.0	120.0	429.57	2.74	4.18
P-1168	WW-BC-36	-8.00	BC-36-1	-9.00	5.0	4.0	120.0	180.19	4.60	0.13
P-1169	BC-36-1	-9.00	J-1114	3.00	25.0	4.0	120.0	180.19	4.60	0.65
P-1170	WW-BC-36	-8.00	BC-36-2	-9.00	5.0	4.0	120.0	0.00	0.00	0.00
P-1171	BC-36-2	-9.00	J-1114	3.00	25.0	4.0	120.0	0.00	0.00	0.00
P-1173	WW-BC-43	10.00	BC-43-1	0.00	5.0	4.0	120.0	44.34	1.13	0.01
P-1174	BC-43-1	0.00	J-1115	24.00	25.0	4.0	120.0	44.34	1.13	0.05
P-1175	WW-BC-43	10.00	BC-43-2	0.00	5.0	4.0	120.0	0.00	0.00	0.00
P-1176	BC-43-2	0.00	J-1115	24.00	25.0	4.0	120.0	0.00	0.00	0.00
P-1177	J-1115	24.00	J-1116	24.00	543.0	2.5	120.0	44.34	2.90	10.36
P-1178	J-1116	24.00	J-1117	27.00	4,787.0	2.5	120.0	44.34	2.90	91.31
P-1182	J-1119	39.00	J-1120	42.00	503.0	6.0	120.0	224.52	2.55	2.72
P-1183	J-1120	42.00	J-1121	42.00	144.0	6.0	120.0	224.52	2.55	0.78
P-1184	J-1121	42.00	J-1122	44.00	327.0	6.0	120.0	224.52	2.55	1.77
P-1185	J-1122	44.00	J-1123	44.00	105.0	6.0	120.0	224.52	2.55	0.57
P-1186	J-1123	44.00	J-1124	46.00	351.0	6.0	120.0	224.52	2.55	1.90
P-1187	J-1124	46.00	J-1125	49.00	357.0	6.0	120.0	224.52	2.55	1.93
P-1188	J-1105	42.00	J-1126	44.00	370.0	12.0	120.0	662.36	1.88	0.51
P-1189	J-1126	44.00	J-1127	44.00	137.0	12.0	120.0	662.36	1.88	0.19
P-1190	J-1127	44.00	J-1128	46.00	401.0	12.0	120.0	662.36	1.88	0.55
P-1191	J-1128	46.00	J-1129	49.00	254.0	12.0	120.0	955.16	2.71	0.69
P-1192	J-1125	49.00	North Bay AWTP	52.00	109.0	6.0	120.0	224.52	2.55	0.59
P-1193	J-1129	49.00	North Bay AWTP	52.00	105.0	12.0	120.0	955.16	2.71	0.28
P-1195	J-1085	43.00	J-1130	45.00	303.0	8.0	120.0	292.79	1.87	0.66
P-1196	J-1130	45.00	J-1086	47.00	519.0	12.0	120.0	292.79	0.83	0.16
P-1198	J-1104	39.00	J-1131	39.50	67.0	12.0	120.0	662.36	1.88	0.09
P-1199	J-1131	39.50	J-1105	42.00	410.0	14.0	120.0	662.36	1.38	0.27
P-1201	J-1086	47.00	J-1128	46.00	165.0	12.0	120.0	292.79	0.83	0.05

FlexTable: Pressure Pipe Table (Bay County SewerCAD Model.swc)

Current Time: 0.000 hours

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-1202	J-1094	10.00	J-1132	4.00	1,031.0	8.0	120.0	232.79	1.49	1.47
P-1203	J-1132	4.00	J-1095	2.00	312.0	10.0	120.0	232.79	0.95	0.15
P-1204	J-1096	2.00	J-1133	4.00	596.0	10.0	120.0	232.79	0.95	0.29
P-1205	J-1133	4.00	J-1097	7.00	3,503.0	8.0	120.0	232.79	1.49	4.99
P-1208	J-1134	39.00	J-1119	39.00	1,212.0	6.0	120.0	224.52	2.55	6.56
P-1209	J-1089	12.00	Military Point AWTP	0.00	218.0	36.0	120.0	13,720.98	4.32	0.39
P-1210	J-1117	27.00	J-1135	27.00	37.0	6.0	120.0	40.31	0.46	0.01
P-1211	J-1135	27.00	J-1134	39.00	6,123.0	6.0	120.0	224.52	2.55	33.12
P-1213	J-1114	3.00	J-1136	3.00	81.0	6.0	120.0	180.18	2.04	0.29
P-1214	J-1136	3.00	J-1137	5.00	614.0	6.0	120.0	180.18	2.04	2.21
P-1215	J-1137	5.00	J-1135	27.00	4,775.0	6.0	120.0	180.18	2.04	17.19
P-1216	J-1117	27.00	J-1135	27.00	37.0	2.5	120.0	4.03	0.26	0.01
P-1217	J-209	41.00	High Point	41.00	203.0	8.0	120.0	0.00	0.00	0.00
P-1221	J-207 BCW	41.00	J-209	41.00	35.0	8.0	120.0	0.00	0.00	0.00
P-1222	J-43	12.00	J-1139	0.00	352.0	8.0	120.0	0.00	0.00	0.00
P-1223	J-1139	0.00	RCBS	-10.00	252.0	8.0	120.0	0.00	0.00	0.00

FlexTable: Pressure Junction Table (Bay County SewerCAD Model.swc)

Current Time: 0.000 hours

ID	Label	Elevation (Ground) (ft)	Elevation (ft)	Sanitary Loads	Inflow (Wet) Collection	Hydraulic Grade Line (Calculated) (ft)	Pressure (psi)	Notes
20	J-1	13.00	10.00	<Collection: 0 items>	<Collection: 0 items>	80.68	30.6	
25	J-2	16.00	13.00	<Collection: 0 items>	<Collection: 0 items>	80.40	29.2	
64	J-20	45.00	42.00	<Collection: 0 items>	<Collection: 0 items>	78.54	15.8	
69	J-21	45.00	42.00	<Collection: 0 items>	<Collection: 0 items>	78.30	15.7	
73	J-23	53.00	50.00	<Collection: 0 items>	<Collection: 0 items>	59.88	4.3	
75	J-24	53.00	50.00	<Collection: 0 items>	<Collection: 0 items>	59.32	4.0	
77	J-25	34.00	31.00	<Collection: 0 items>	<Collection: 0 items>	41.67	4.6	
79	J-26	30.00	27.00	<Collection: 0 items>	<Collection: 0 items>	41.67	6.3	
81	J-27	28.00	25.00	<Collection: 0 items>	<Collection: 0 items>	41.67	7.2	
83	J-28	21.00	18.00	<Collection: 0 items>	<Collection: 0 items>	41.67	10.2	
85	J-29	20.00	17.00	<Collection: 0 items>	<Collection: 0 items>	41.67	10.7	
87	J-30	19.00	16.00	<Collection: 0 items>	<Collection: 0 items>	41.67	11.1	
89	J-31	20.00	17.00	<Collection: 0 items>	<Collection: 0 items>	41.67	10.7	
91	J-32	20.00	17.00	<Collection: 0 items>	<Collection: 0 items>	41.67	10.7	
93	J-33	20.00	17.00	<Collection: 0 items>	<Collection: 0 items>	41.67	10.7	

FlexTable: Pressure Junction Table (Bay County SewerCAD Model.swc)

Current Time: 0.000 hours

ID	Label	Elevation (Ground) (ft)	Elevation (ft)	Sanitary Loads	Inflow (Wet) Collection	Hydraulic Grade Line (Calculated) (ft)	Pressure (psf)	Notes
95	J-34	19.00	16.00	<Collection: 0 items>	<Collection: 0 items>	41.67	11.1	
97	J-35	19.00	16.00	<Collection: 0 items>	<Collection: 0 items>	41.67	11.1	
99	J-36	18.00	15.00	<Collection: 0 items>	<Collection: 0 items>	41.67	11.5	
101	J-37	18.00	15.00	<Collection: 0 items>	<Collection: 0 items>	41.67	11.5	
103	J-38	17.00	14.00	<Collection: 0 items>	<Collection: 0 items>	41.67	12.0	
105	J-39	14.00	11.00	<Collection: 0 items>	<Collection: 0 items>	41.67	13.3	
107	J-40	-7.00	-10.00	<Collection: 0 items>	<Collection: 0 items>	41.67	22.4	
109	J-41	-7.00	-10.00	<Collection: 0 items>	<Collection: 0 items>	41.67	22.4	
111	J-42	13.00	10.00	<Collection: 0 items>	<Collection: 0 items>	41.67	13.7	
113	J-43	15.00	12.00	<Collection: 0 items>	<Collection: 0 items>	41.67	12.8	
303	J-131	20.00	17.00	<Collection: 0 items>	<Collection: 0 items>	41.67	10.7	
307	J-132	20.00	17.00	<Collection: 0 items>	<Collection: 0 items>	41.67	10.7	
310	J-133	17.00	14.00	<Collection: 0 items>	<Collection: 0 items>	41.67	12.0	
332	J-134	52.00	49.00	<Collection: 0 items>	<Collection: 0 items>	52.68	1.6	
342	J-135	12.00	9.00	<Collection: 0 items>	<Collection: 0 items>	119.64	47.9	

FlexTable: Pressure Junction Table (Bay County SewerCAD Model.swc)

Current Time: 0.000 hours

ID	Label	Elevation (Ground) (ft)	Elevation (ft)	Sanitary Loads	Inflow (Wet) Collection	Hydraulic Grade Line (Calculated) (ft)	Pressure (psi)	Notes
343	J-136	5.00	2.00	<Collection: 0 items>	<Collection: 0 items>	119.35	50.8	
345	J-137	12.00	9.00	<Collection: 0 items>	<Collection: 0 items>	119.22	47.7	
347	J-138	12.00	9.00	<Collection: 0 items>	<Collection: 0 items>	117.93	47.1	
349	J-139	12.00	9.00	<Collection: 0 items>	<Collection: 0 items>	116.14	46.4	
351	J-140	12.00	9.00	<Collection: 0 items>	<Collection: 0 items>	115.28	46.0	
353	J-141	12.00	9.00	<Collection: 0 items>	<Collection: 0 items>	114.98	45.9	
355	J-142	11.00	8.00	<Collection: 0 items>	<Collection: 0 items>	112.22	45.1	
357	J-143	4.00	1.00	<Collection: 0 items>	<Collection: 0 items>	111.98	48.0	
359	J-144	11.00	8.00	<Collection: 0 items>	<Collection: 0 items>	111.67	44.9	
361	J-145	11.00	8.00	<Collection: 0 items>	<Collection: 0 items>	110.51	44.4	
363	J-146	8.00	5.00	<Collection: 0 items>	<Collection: 0 items>	107.22	44.2	
365	J-147	5.00	2.00	<Collection: 0 items>	<Collection: 0 items>	106.94	45.4	
367	J-148	8.00	5.00	<Collection: 0 items>	<Collection: 0 items>	106.71	44.0	
369	J-149	10.00	7.00	<Collection: 0 items>	<Collection: 0 items>	106.54	43.1	
371	J-150	9.00	6.00	<Collection: 0 items>	<Collection: 0 items>	101.34	41.3	

FlexTable: Pressure Junction Table (Bay County SewerCAD Model.swc)

Current Time: 0.000 hours

ID	Label	Elevation (Ground) (ft)	Elevation (ft)	Sanitary Loads	Inflow (Wet) Collection	Hydraulic Grade Line (Calculated) (ft)	Pressure (psi)	Notes
373	J-151	6.00	3.00	<Collection: 0 items>	<Collection: 0 items>	101.12	42.5	
375	J-152	9.00	6.00	<Collection: 0 items>	<Collection: 0 items>	100.89	41.1	
377	J-153	10.00	7.00	<Collection: 0 items>	<Collection: 0 items>	97.91	39.3	
379	J-154	11.00	8.00	<Collection: 0 items>	<Collection: 0 items>	95.41	37.8	
381	J-155	8.00	5.00	<Collection: 0 items>	<Collection: 0 items>	95.27	39.1	
383	J-156	11.00	8.00	<Collection: 0 items>	<Collection: 0 items>	95.12	37.7	
385	J-157	16.00	13.00	<Collection: 0 items>	<Collection: 0 items>	84.48	30.9	
387	J-158	12.00	9.00	<Collection: 0 items>	<Collection: 0 items>	84.32	32.6	
389	J-159	16.00	13.00	<Collection: 0 items>	<Collection: 0 items>	84.10	30.8	
391	J-160	16.00	13.00	<Collection: 0 items>	<Collection: 0 items>	84.04	30.7	
495	J-167	12.00	9.00	<Collection: 0 items>	<Collection: 0 items>	120.17	48.1	
499	J-168	12.00	9.00	<Collection: 0 items>	<Collection: 0 items>	119.75	47.9	
562	J-173	16.00	13.00	<Collection: 0 items>	<Collection: 0 items>	80.09	29.0	
564	J-174	18.00	15.00	<Collection: 0 items>	<Collection: 0 items>	78.73	27.6	
566	J-175	18.00	15.00	<Collection: 0 items>	<Collection: 0 items>	78.09	27.3	

FlexTable: Pressure Junction Table (Bay County SewerCAD Model.swc)

Current Time: 0.000 hours

ID	Label	Elevation (Ground) (ft)	Elevation (ft)	Sanitary Loads	Inflow (Wet) Collection	Hydraulic Grade Line (Calculated) (ft)	Pressure (psi)	Notes
568	J-176	19.00	16.00	<Collection: 0 items>	<Collection: 0 items>	76.54	26.2	
570	J-177	20.00	17.00	<Collection: 0 items>	<Collection: 0 items>	75.56	25.3	
572	J-178	21.00	18.00	<Collection: 0 items>	<Collection: 0 items>	73.19	23.9	
574	J-179	19.00	16.00	<Collection: 0 items>	<Collection: 0 items>	71.97	24.2	
576	J-180	17.00	14.00	<Collection: 0 items>	<Collection: 0 items>	71.32	24.8	
578	J-181	21.00	18.00	<Collection: 0 items>	<Collection: 0 items>	69.72	22.4	
580	J-182	22.00	19.00	<Collection: 0 items>	<Collection: 0 items>	67.88	21.1	
582	J-183	22.00	19.00	<Collection: 0 items>	<Collection: 0 items>	66.38	20.5	
584	J-184	24.00	21.00	<Collection: 0 items>	<Collection: 0 items>	65.58	19.3	
586	J-185	44.00	41.00	<Collection: 0 items>	<Collection: 0 items>	63.62	9.8	
588	J-186	40.00	37.00	<Collection: 0 items>	<Collection: 0 items>	60.59	10.2	
590	J-187	34.00	31.00	<Collection: 0 items>	<Collection: 0 items>	58.52	11.9	
592	J-188	36.00	33.00	<Collection: 0 items>	<Collection: 0 items>	57.30	10.5	
594	J-189	40.00	37.00	<Collection: 0 items>	<Collection: 0 items>	53.82	7.3	
596	J-190	40.00	37.00	<Collection: 0 items>	<Collection: 0 items>	52.98	6.9	

FlexTable: Pressure Junction Table (Bay County SewerCAD Model.swc)

Current Time: 0.000 hours

ID	Label	Elevation (Ground) (ft)	Elevation (ft)	Sanitary Loads	Inflow (Wet) Collection	Hydraulic Grade Line (Calculated) (ft)	Pressure (psi)	Notes
598	J-191	41.00	38.00	<Collection: 0 items>	<Collection: 0 items>	51.50	5.8	
600	J-192	44.00	41.00	<Collection: 0 items>	<Collection: 0 items>	47.06	2.6	
602	J-193	44.00	41.00	<Collection: 0 items>	<Collection: 0 items>	45.76	2.1	
604	J-194	44.00	42.00	<Collection: 0 items>	<Collection: 0 items>	45.13	1.4	
606	J-195	46.00	43.00	<Collection: 0 items>	<Collection: 0 items>	44.25	0.5	
611	J-196	16.00	13.00	<Collection: 0 items>	<Collection: 0 items>	80.55	29.2	
625	J-198	43.00	40.00	<Collection: 0 items>	<Collection: 0 items>	85.38	19.6	
626	J-199	43.00	40.00	<Collection: 0 items>	<Collection: 0 items>	84.74	19.4	
628	J-200	43.00	40.00	<Collection: 0 items>	<Collection: 0 items>	82.67	18.5	
630	J-201	43.00	40.00	<Collection: 0 items>	<Collection: 0 items>	82.07	18.2	
632	J-202	44.00	41.00	<Collection: 0 items>	<Collection: 0 items>	47.75	2.9	
637	J-203	49.00	46.00	<Collection: 0 items>	<Collection: 0 items>	74.70	12.4	
638	J-204	49.00	46.00	<Collection: 0 items>	<Collection: 0 items>	73.36	11.8	
640	J-205	49.00	46.00	<Collection: 0 items>	<Collection: 0 items>	69.81	10.3	
642	J-206	56.00	53.00	<Collection: 0 items>	<Collection: 0 items>	59.60	2.9	

FlexTable: Pressure Junction Table (Bay County SewerCAD Model.swc)

Current Time: 0.000 hours

ID	Label	Elevation (Ground) (ft)	Elevation (ft)	Sanitary Loads	Inflow (Wet) Collection	Hydraulic Grade Line (Calculated) (ft)	Pressure (psi)	Notes
648	J-207 BCW	44.00	41.00	<Collection: 0 items>	<Collection: 0 items>	45.30	1.9	
652	J-208 BCE	52.10	49.10	<Collection: 0 items>	<Collection: 0 items>	53.76	2.0	
664	J-209	44.00	41.00	<Collection: 0 items>	<Collection: 0 items>	41.67	0.3	
683	J-1007	19.00	16.00	<Collection: 0 items>	<Collection: 0 items>	44.72	12.4	
701	J-1009	19.00	16.00	<Collection: 0 items>	<Collection: 0 items>	44.72	12.4	
702	J-1010	20.00	17.00	<Collection: 0 items>	<Collection: 0 items>	44.72	12.0	
703	J-1011	18.00	15.00	<Collection: 0 items>	<Collection: 0 items>	44.72	12.9	
704	J-1012	8.00	5.00	<Collection: 0 items>	<Collection: 0 items>	44.72	17.2	
705	J-1013	20.00	17.00	<Collection: 0 items>	<Collection: 0 items>	44.72	12.0	
706	J-1014	11.00	8.00	<Collection: 0 items>	<Collection: 0 items>	44.72	15.9	
707	J-1015	30.00	27.00	<Collection: 0 items>	<Collection: 0 items>	44.72	7.7	
708	J-1016	22.00	19.00	<Collection: 0 items>	<Collection: 0 items>	44.72	11.1	
709	J-1017	8.00	5.00	<Collection: 0 items>	<Collection: 0 items>	44.72	17.2	
710	J-1018	13.00	10.00	<Collection: 0 items>	<Collection: 0 items>	44.72	15.0	
711	J-1019	13.00	10.00	<Collection: 0 items>	<Collection: 0 items>	44.72	15.0	

FlexTable: Pressure Junction Table (Bay County SewerCAD Model.swc)

Current Time: 0.000 hours

ID	Label	Elevation (Ground) (ft)	Elevation (ft)	Sanitary Loads	Inflow (Wet) Collection	Hydraulic Grade Line (Calculated) (ft)	Pressure (psi)	Notes
728	J-1020	5.00	2.00	<Collection: 0 items>	<Collection: 0 items>	76.82	32.4	
729	J-1021	8.00	5.00	<Collection: 0 items>	<Collection: 0 items>	72.17	29.1	
730	J-1022	25.00	22.00	<Collection: 0 items>	<Collection: 0 items>	66.35	19.2	
731	J-1023	20.00	17.00	<Collection: 0 items>	<Collection: 0 items>	65.07	20.8	
732	J-1024	19.00	16.00	<Collection: 0 items>	<Collection: 0 items>	64.55	21.0	
734	J-1026	12.00	9.00	<Collection: 0 items>	<Collection: 0 items>	60.41	22.2	
737	J-1029	2.00	-1.00	<Collection: 0 items>	<Collection: 0 items>	58.51	25.7	
739	J-1031	-56.00	-59.00	<Collection: 0 items>	<Collection: 0 items>	53.60	48.7	
741	J-1033	5.00	2.00	<Collection: 0 items>	<Collection: 0 items>	50.57	21.0	
761	J-1036	24.00	21.00	<Collection: 0 items>	<Collection: 0 items>	67.43	20.1	
764	J-1037	5.00	2.00	<Collection: 0 items>	<Collection: 0 items>	76.25	32.1	
768	J-1038	8.00	5.00	<Collection: 0 items>	<Collection: 0 items>	72.17	29.1	
770	J-1039	24.00	21.00	<Collection: 0 items>	<Collection: 0 items>	67.94	20.3	
773	J-1040	20.00	17.00	<Collection: 0 items>	<Collection: 0 items>	115.02	42.4	
774	J-1041	28.00	25.00	<Collection: 0 items>	<Collection: 0 items>	106.58	35.3	

FlexTable: Pressure Junction Table (Bay County SewerCAD Model.swc)

Current Time: 0.000 hours

ID	Label	Elevation (Ground) (ft)	Elevation (ft)	Sanitary Loads	Inflow (Wet) Collection	Hydraulic Grade Line (Calculated) (ft)	Pressure (psi)	Notes
776	J-1042	28.00	25.00	<Collection: 0 items>	<Collection: 0 items>	99.94	32.4	
778	J-1043	31.00	28.00	<Collection: 0 items>	<Collection: 0 items>	95.38	29.2	
780	J-1044	31.00	28.00	<Collection: 0 items>	<Collection: 0 items>	92.82	28.0	
782	J-1045	30.00	27.00	<Collection: 0 items>	<Collection: 0 items>	84.25	24.8	
784	J-1046	30.00	27.00	<Collection: 0 items>	<Collection: 0 items>	84.02	24.7	
786	J-1047	29.00	26.00	<Collection: 0 items>	<Collection: 0 items>	81.41	24.0	
788	J-1048	28.00	25.00	<Collection: 0 items>	<Collection: 0 items>	76.99	22.5	
790	J-1049	28.00	25.00	<Collection: 0 items>	<Collection: 0 items>	76.72	22.4	
792	J-1050	5.00	2.00	<Collection: 0 items>	<Collection: 0 items>	71.15	29.9	
794	J-1051	8.00	5.00	<Collection: 0 items>	<Collection: 0 items>	69.62	28.0	
796	J-1052	24.00	21.00	<Collection: 0 items>	<Collection: 0 items>	67.95	20.3	
799	J-1053	5.00	2.00	<Collection: 0 items>	<Collection: 0 items>	95.81	40.6	
803	J-1054	33.00	30.00	<Collection: 0 items>	<Collection: 0 items>	181.10	65.4	
804	J-1055	33.00	30.00	<Collection: 0 items>	<Collection: 0 items>	169.58	60.4	
806	J-1056	34.00	31.00	<Collection: 0 items>	<Collection: 0 items>	130.98	43.3	

FlexTable: Pressure Junction Table (Bay County SewerCAD Model.swc)

Current Time: 0.000 hours

ID	Label	Elevation (Ground) (ft)	Elevation (ft)	Sanitary Loads	Inflow (Wet) Collection	Hydraulic Grade Line (Calculated) (ft)	Pressure (psi)	Notes
808	J-1057	36.00	33.00	<Collection: 0 items>	<Collection: 0 items>	220.65	81.2	
809	J-1058	32.00	29.00	<Collection: 0 items>	<Collection: 0 items>	217.23	81.4	
811	J-1059	36.00	33.00	<Collection: 0 items>	<Collection: 0 items>	202.38	73.3	
813	J-1060	32.00	29.00	<Collection: 0 items>	<Collection: 0 items>	190.47	69.9	
815	J-1061	26.00	23.00	<Collection: 0 items>	<Collection: 0 items>	151.29	55.5	
817	J-1062	33.00	30.00	<Collection: 0 items>	<Collection: 0 items>	144.32	49.5	
820	J-1063	30.00	27.00	<Collection: 0 items>	<Collection: 0 items>	111.91	36.7	
822	J-1064	13.00	10.00	<Collection: 0 items>	<Collection: 0 items>	102.25	39.9	
824	J-1065	13.00	10.00	<Collection: 0 items>	<Collection: 0 items>	92.70	35.8	
826	J-1066	20.00	17.00	<Collection: 0 items>	<Collection: 0 items>	87.39	30.5	
828	J-1067	18.00	15.00	<Collection: 0 items>	<Collection: 0 items>	78.71	27.6	
894	J-1076	61.00	58.00	<Collection: 0 items>	<Collection: 0 items>	104.72	20.2	
896	J-1077	84.00	81.00	<Collection: 0 items>	<Collection: 0 items>	104.72	10.3	
897	J-1078	74.00	71.00	<Collection: 0 items>	<Collection: 0 items>	104.72	14.6	
899	J-1079	65.00	62.00	<Collection: 0 items>	<Collection: 0 items>	104.72	18.5	

FlexTable: Pressure Junction Table (Bay County SewerCAD Model.swc)

Current Time: 0.000 hours

ID	Label	Elevation (Ground) (ft)	Elevation (ft)	Sanitary Loads	Inflow (Wet) Collection	Hydraulic Grade Line (Calculated) (ft)	Pressure (psi)	Notes
904	J-1081	67.00	64.00	<Collection: 0 items>	<Collection: 0 items>	92.84	12.5	
906	J-1082	60.00	57.00	<Collection: 0 items>	<Collection: 0 items>	90.69	14.6	
910	J-1084	52.00	49.00	<Collection: 0 items>	<Collection: 0 items>	66.02	7.4	
912	J-1085	46.00	43.00	<Collection: 0 items>	<Collection: 0 items>	56.39	5.8	
914	J-1086	50.00	47.00	<Collection: 0 items>	<Collection: 0 items>	55.57	3.7	
916	J-1087	13.00	10.00	<Collection: 0 items>	<Collection: 0 items>	44.60	15.0	
918	J-1088	15.00	12.00	<Collection: 0 items>	<Collection: 0 items>	40.19	12.2	
920	J-1089	15.00	12.00	<Collection: 0 items>	<Collection: 0 items>	39.26	11.8	
934	J-1090	64.00	61.00	<Collection: 0 items>	<Collection: 0 items>	138.87	33.7	
942	J-1091	63.00	60.00	<Collection: 0 items>	<Collection: 0 items>	133.78	31.9	
951	J-1092	12.00	9.00	<Collection: 0 items>	<Collection: 0 items>	141.02	57.1	
955	J-1093	14.00	11.00	<Collection: 0 items>	<Collection: 0 items>	139.82	55.7	
957	J-1094	13.00	10.00	<Collection: 0 items>	<Collection: 0 items>	138.86	55.8	
959	J-1095	5.00	2.00	<Collection: 0 items>	<Collection: 0 items>	137.25	58.5	
961	J-1096	5.00	2.00	<Collection: 0 items>	<Collection: 0 items>	137.20	58.5	

FlexTable: Pressure Junction Table (Bay County SewerCAD Model.swc)

Current Time: 0.000 hours

ID	Label	Elevation (Ground) (ft)	Elevation (ft)	Sanitary Loads	Inflow (Wet) Collection	Hydraulic Grade Line (Calculated) (ft)	Pressure (psf)	Notes
963	J-1097	10.00	7.00	<Collection: 0 items>	<Collection: 0 items>	131.92	54.0	
965	J-1098	4.00	1.00	<Collection: 0 items>	<Collection: 0 items>	129.06	55.4	
967	J-1099	7.00	4.00	<Collection: 0 items>	<Collection: 0 items>	122.00	51.1	
969	J-1100	8.00	5.00	<Collection: 0 items>	<Collection: 0 items>	120.90	50.1	
971	J-1101	8.00	5.00	<Collection: 0 items>	<Collection: 0 items>	113.61	47.0	
973	J-1102	30.00	27.00	<Collection: 0 items>	<Collection: 0 items>	67.23	17.4	
975	J-1103	42.00	39.00	<Collection: 0 items>	<Collection: 0 items>	58.74	8.5	
977	J-1104	42.00	39.00	<Collection: 0 items>	<Collection: 0 items>	57.12	7.8	
979	J-1105	45.00	42.00	<Collection: 0 items>	<Collection: 0 items>	56.76	6.4	
985	J-1106	4.00	1.00	<Collection: 0 items>	<Collection: 0 items>	168.07	72.3	
989	J-1107	5.00	2.00	<Collection: 0 items>	<Collection: 0 items>	167.53	71.6	
991	J-1108	5.00	2.00	<Collection: 0 items>	<Collection: 0 items>	165.91	70.9	
993	J-1109	7.00	4.00	<Collection: 0 items>	<Collection: 0 items>	157.15	66.3	
995	J-1110	7.00	4.00	<Collection: 0 items>	<Collection: 0 items>	154.73	65.2	
997	J-1111	8.00	5.00	<Collection: 0 items>	<Collection: 0 items>	146.42	61.2	

FlexTable: Pressure Junction Table (Bay County SewerCAD Model.swc)

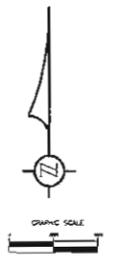
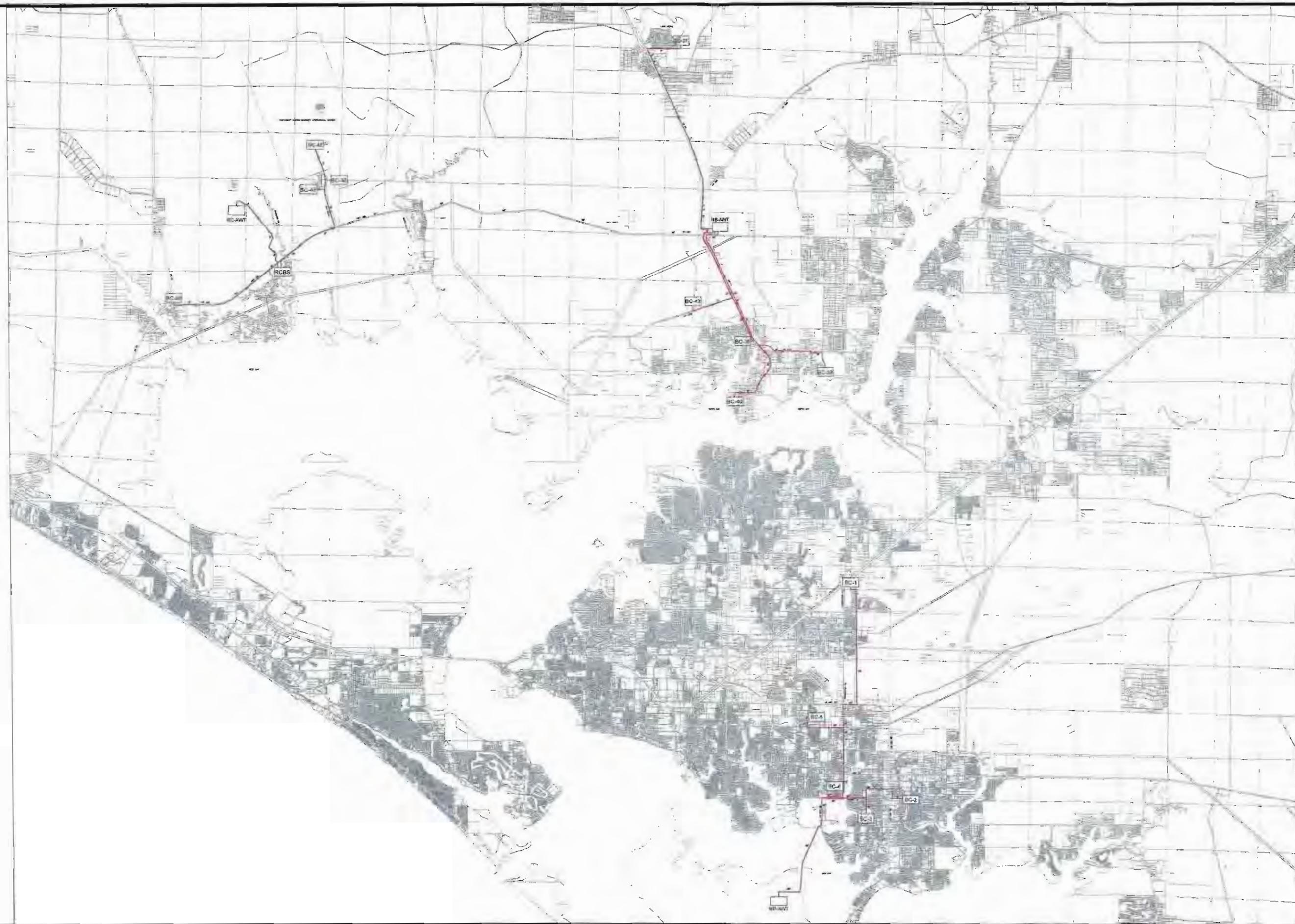
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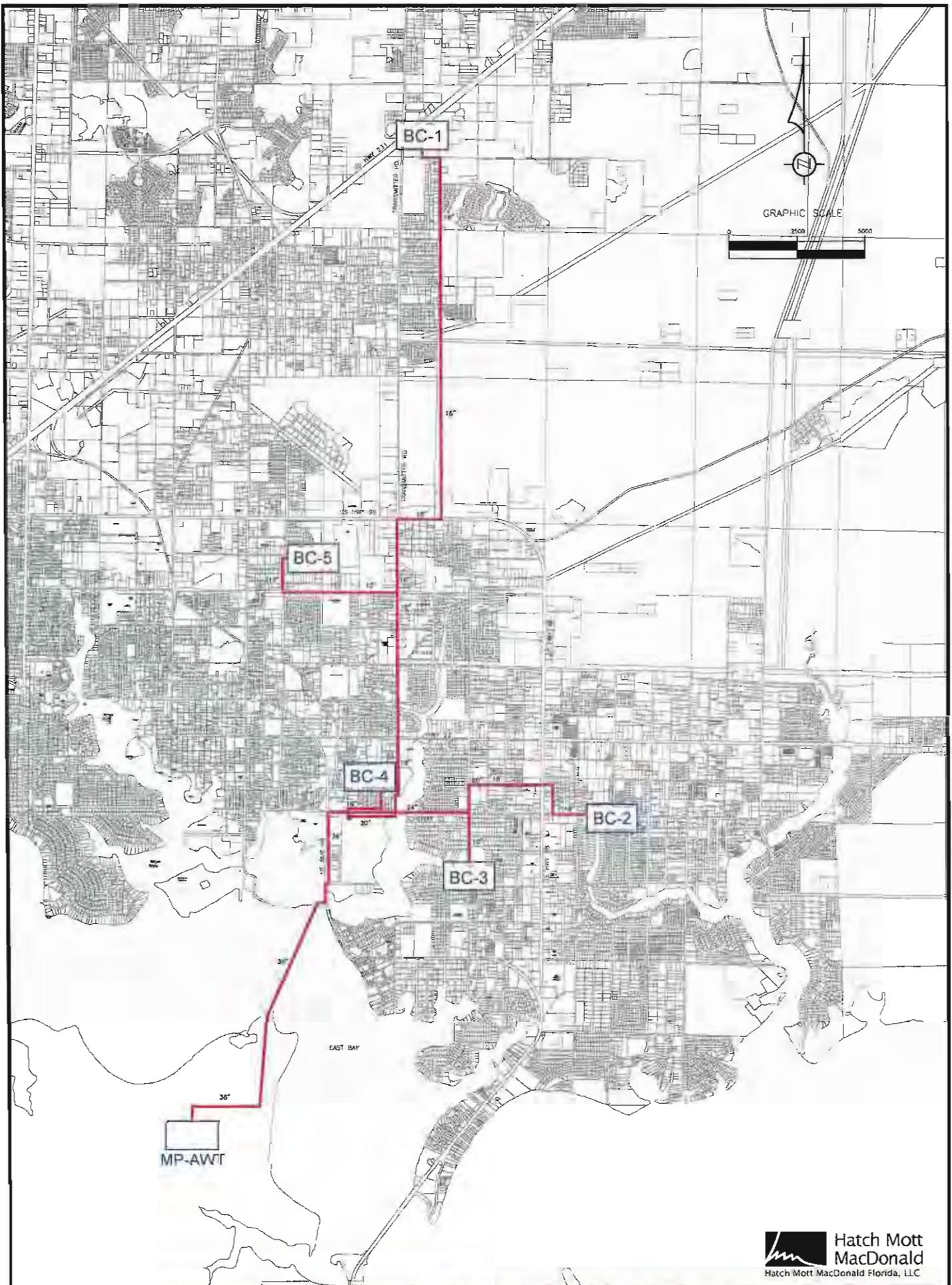
ID	Label	Elevation (Ground) (ft)	Elevation (ft)	Sanitary Loads	Inflow (Wet) Collection	Hydraulic Grade Line (Calculated) (ft)	Pressure (psf)	Notes
999	J-1112	7.00	4.00	<Collection: 0 items>	<Collection: 0 items>	136.17	57.2	
1001	J-1113	8.00	5.00	<Collection: 0 items>	<Collection: 0 items>	133.25	55.5	
1008	J-1114	6.00	3.00	<Collection: 0 items>	<Collection: 0 items>	124.17	52.4	
1017	J-1115	27.00	24.00	<Collection: 0 items>	<Collection: 0 items>	206.16	78.8	
1021	J-1116	27.00	24.00	<Collection: 0 items>	<Collection: 0 items>	195.80	74.3	
1023	J-1117	30.00	27.00	<Collection: 0 items>	<Collection: 0 items>	104.49	33.5	
1028	J-1119	42.00	39.00	<Collection: 0 items>	<Collection: 0 items>	64.81	11.2	
1030	J-1120	45.00	42.00	<Collection: 0 items>	<Collection: 0 items>	62.09	8.7	
1032	J-1121	45.00	42.00	<Collection: 0 items>	<Collection: 0 items>	61.31	8.4	
1034	J-1122	47.00	44.00	<Collection: 0 items>	<Collection: 0 items>	59.54	6.7	
1036	J-1123	47.00	44.00	<Collection: 0 items>	<Collection: 0 items>	58.97	6.5	
1038	J-1124	49.00	46.00	<Collection: 0 items>	<Collection: 0 items>	57.07	4.8	
1040	J-1125	52.00	49.00	<Collection: 0 items>	<Collection: 0 items>	55.14	2.7	
1042	J-1126	47.00	44.00	<Collection: 0 items>	<Collection: 0 items>	56.26	5.3	
1044	J-1127	47.00	44.00	<Collection: 0 items>	<Collection: 0 items>	56.07	5.2	

FlexTable: Pressure Junction Table (Bay County SewerCAD Model.swc)

Current Time: 0.000 hours

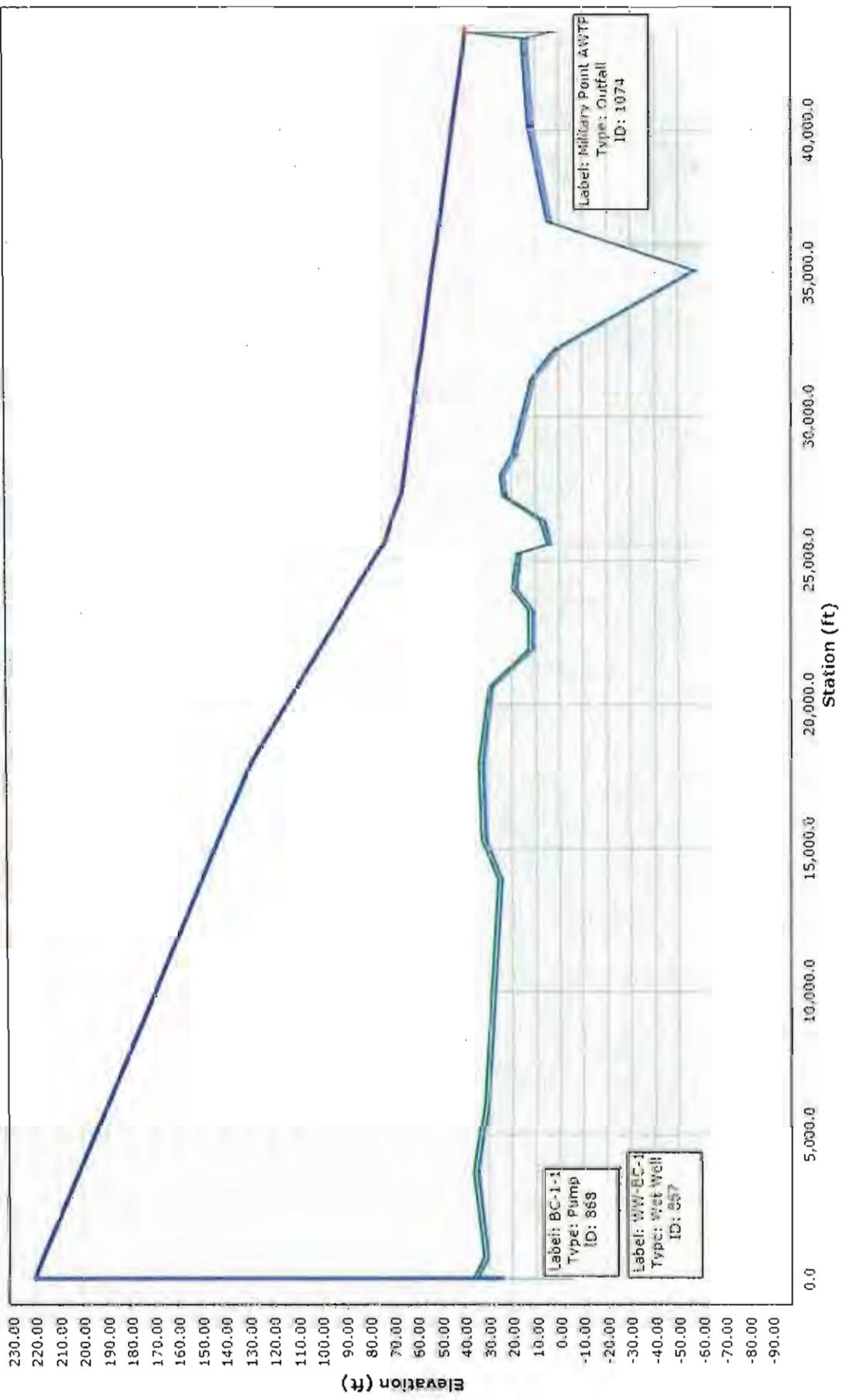
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1046	J-1128	49.00	46.00	<Collection: 0 items>	<Collection: 0 items>	55.52	4.1	
1048	J-1129	52.00	49.00	<Collection: 0 items>	<Collection: 0 items>	54.83	2.5	
1054	J-1130	48.00	45.00	<Collection: 0 items>	<Collection: 0 items>	55.73	4.6	
1058	J-1131	42.38	39.50	<Collection: 0 items>	<Collection: 0 items>	57.03	7.6	
1063	J-1132	7.00	4.00	<Collection: 0 items>	<Collection: 0 items>	137.40	57.7	
1066	J-1133	7.00	4.00	<Collection: 0 items>	<Collection: 0 items>	136.91	57.5	
1071	J-1134	42.00	39.00	<Collection: 0 items>	<Collection: 0 items>	71.36	14.0	
1076	J-1135	30.00	27.00	<Collection: 0 items>	<Collection: 0 items>	104.48	33.5	
1080	J-1136	6.00	3.00	<Collection: 0 items>	<Collection: 0 items>	123.88	52.3	
1082	J-1137	8.00	5.00	<Collection: 0 items>	<Collection: 0 items>	121.67	50.5	
1096	J-1139	15.00	0.00	<Collection: 0 items>	<Collection: 0 items>	41.67	18.0	





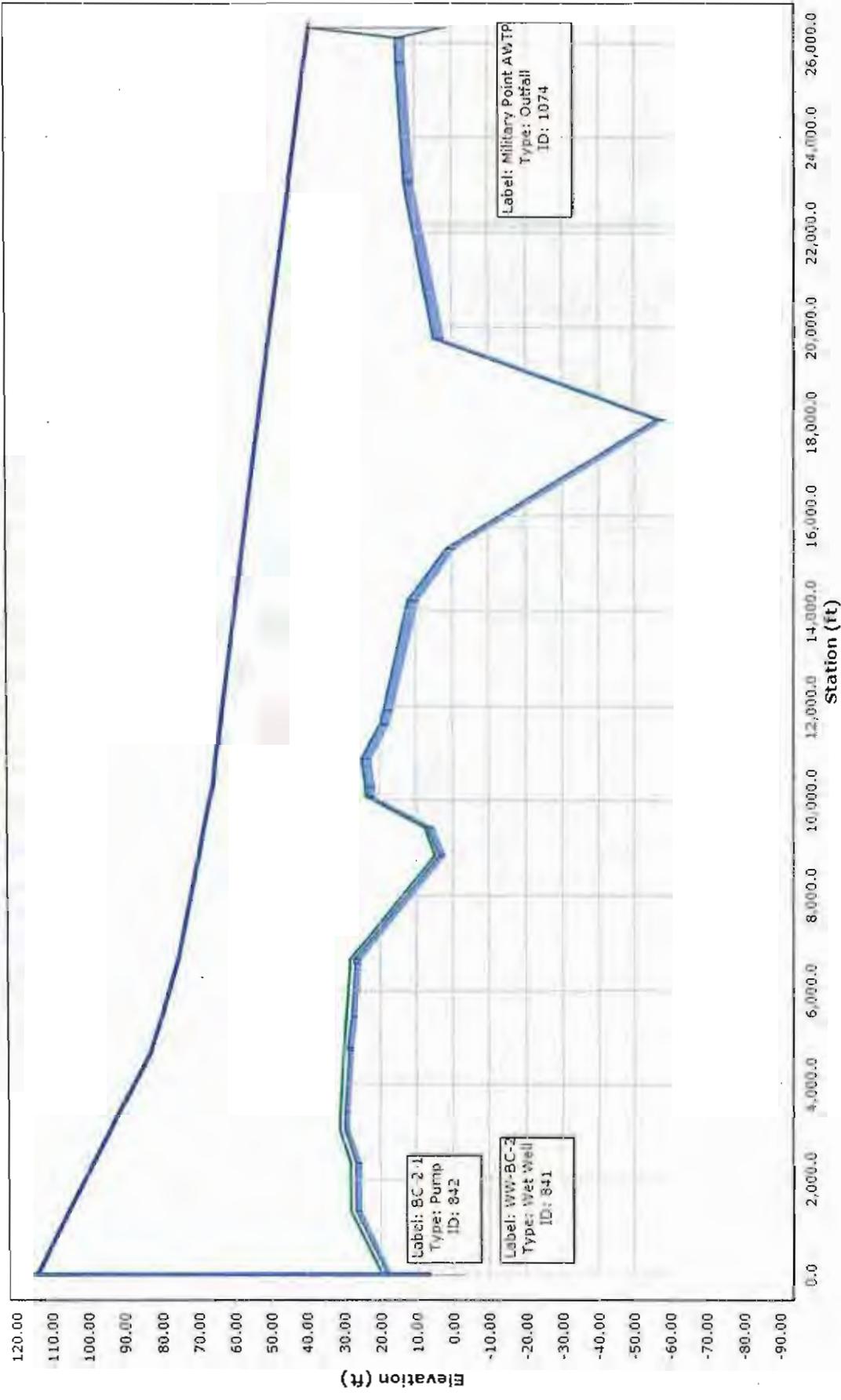
BAY COUNTY WASTEWATER SYSTEM MODEL - MUNICIPAL AREA FIGURE E.2

BC-1 to Military Point AWTP - Base Time:



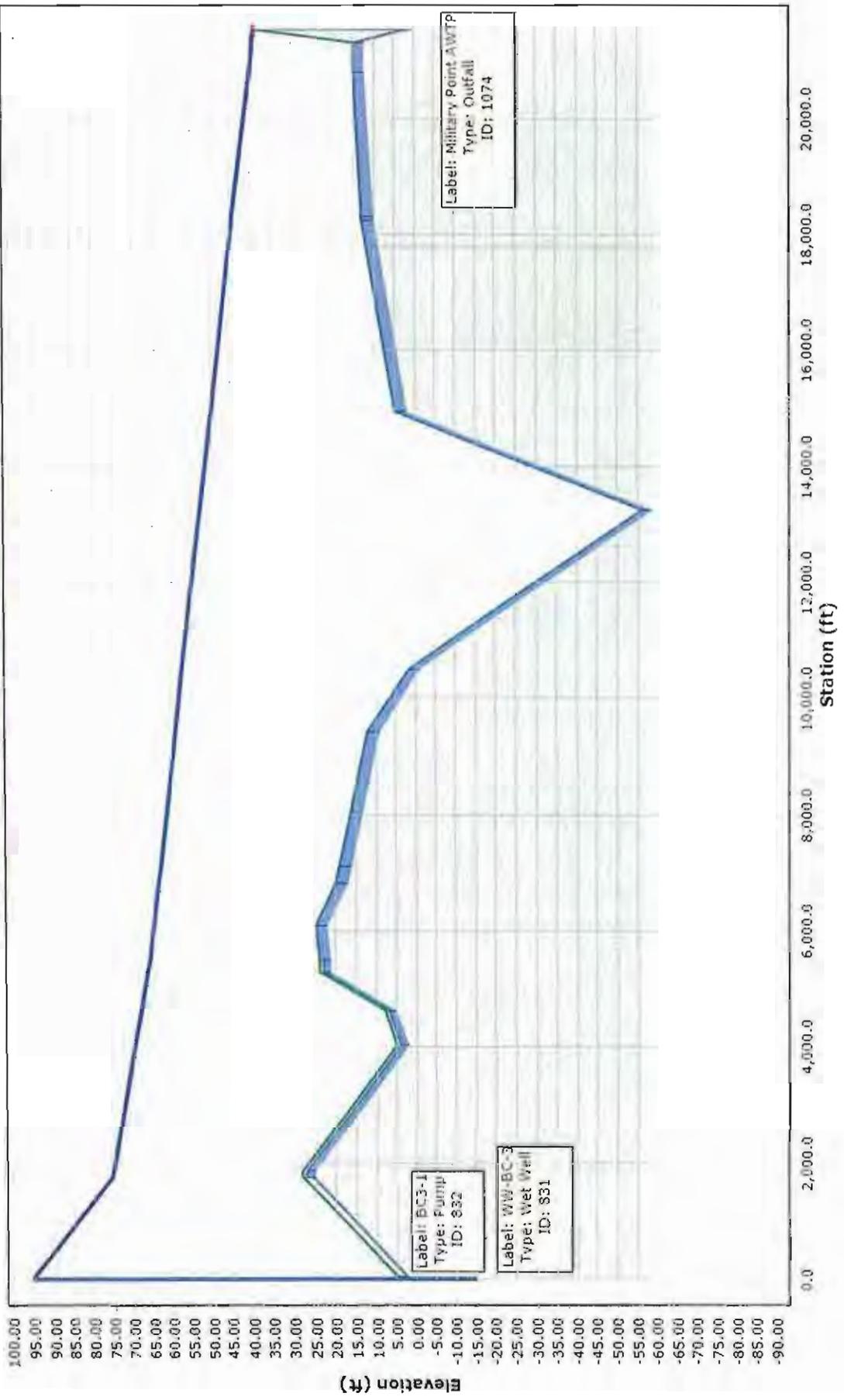
Pumping Station BC-1 to Military Point AWTP - Hydraulic Profile

BC-2 to Military Point AWTP - Base Time:

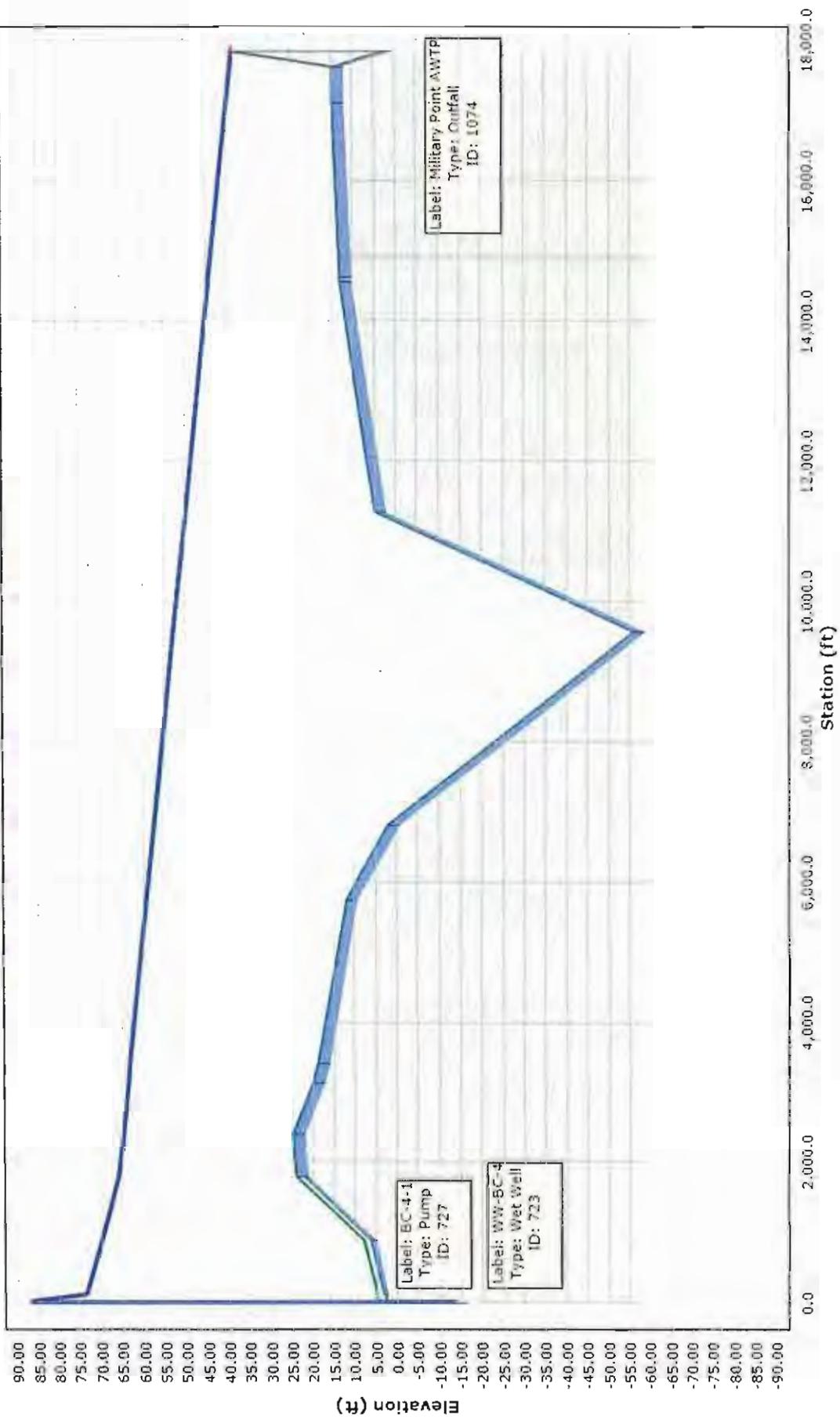


Pumping Station BC-2 to Military Point AWT – Hydraulic Profile

BC-3 to Military Point AWTP - Base Time:

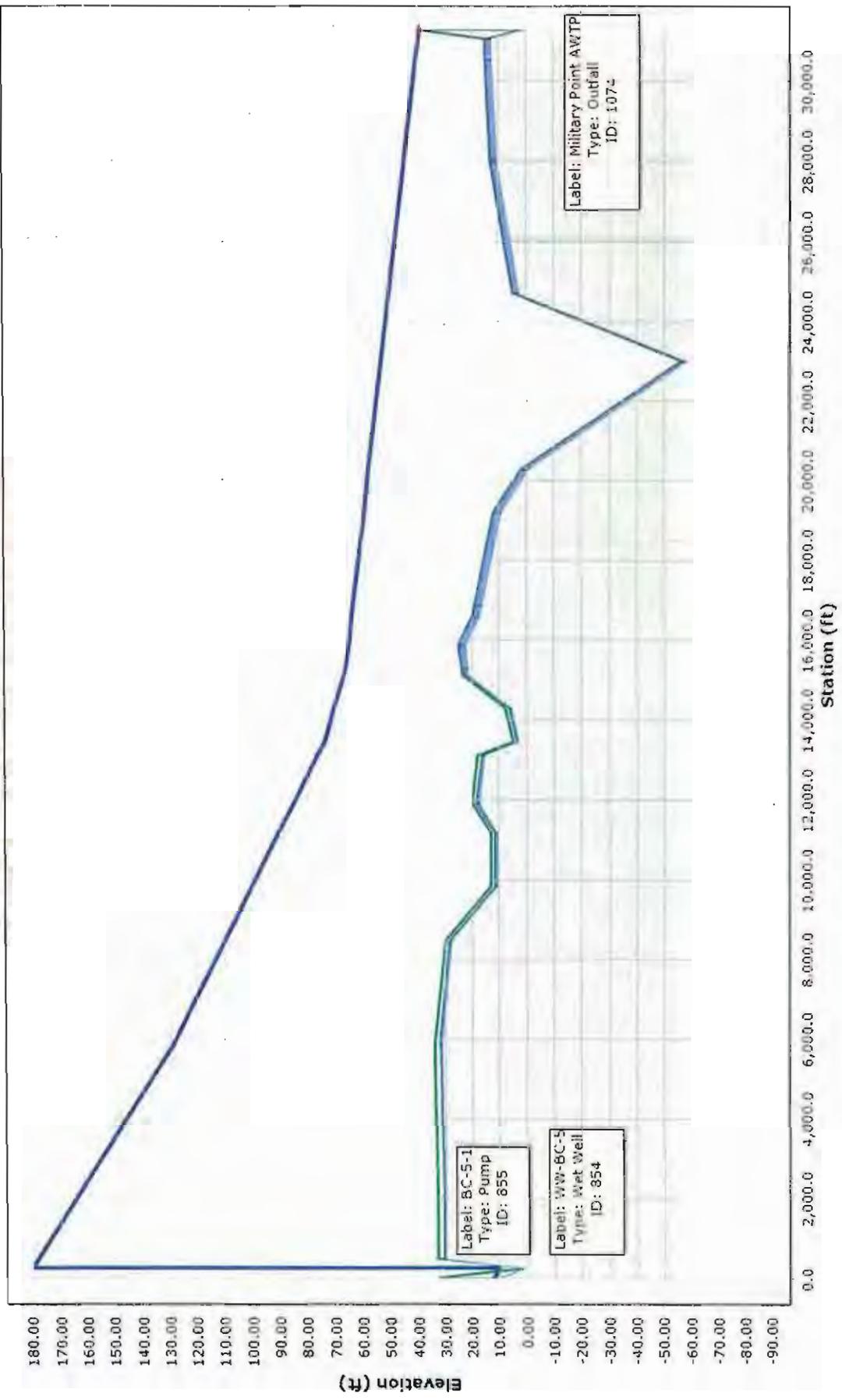


BC-4 to Military Point AWTP - Base Time:

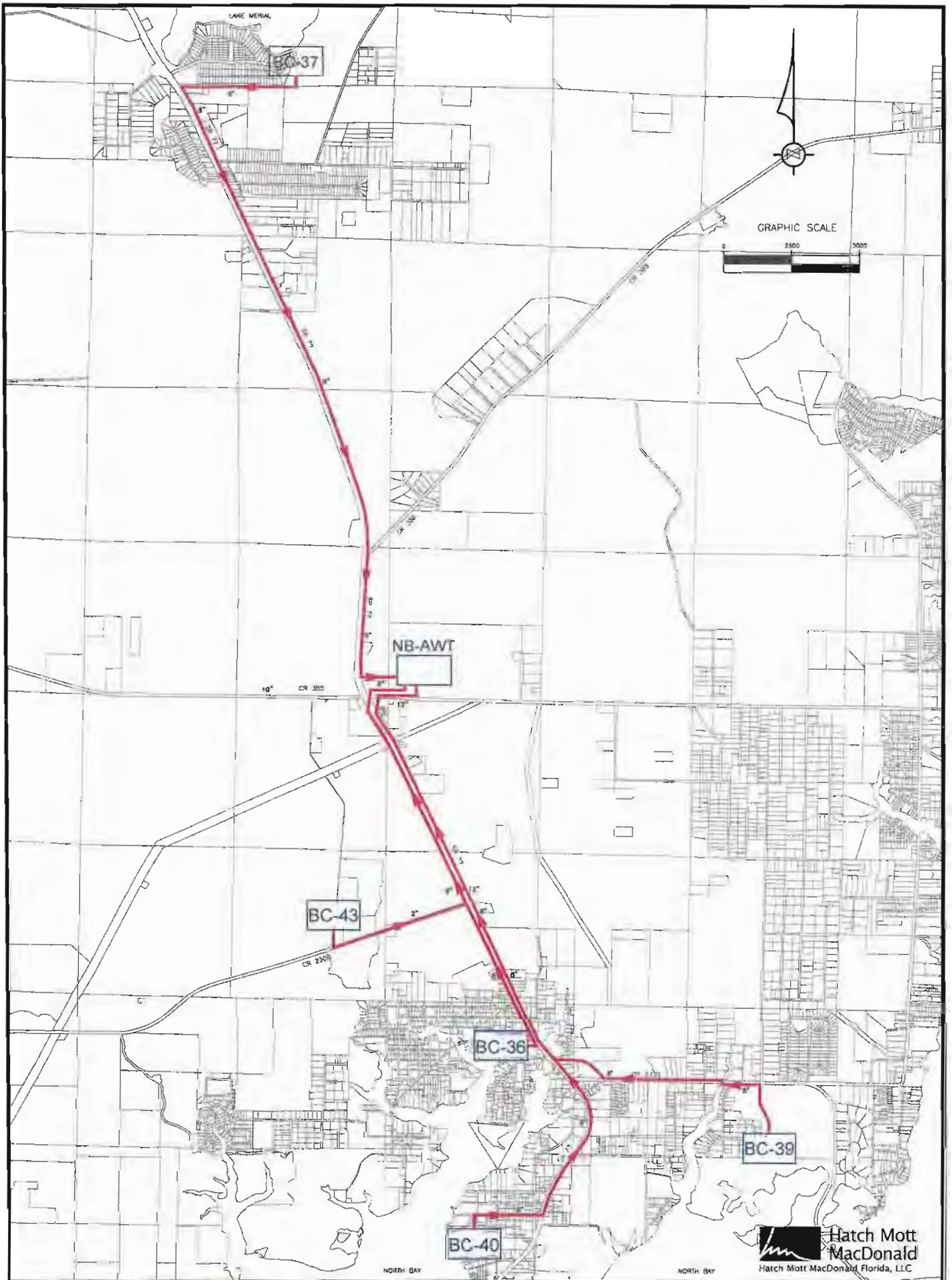


Pumping Station BC-4 to Military Point AWT – Hydraulic Profile

BC-5 to Military Point AWTP - Base Time:

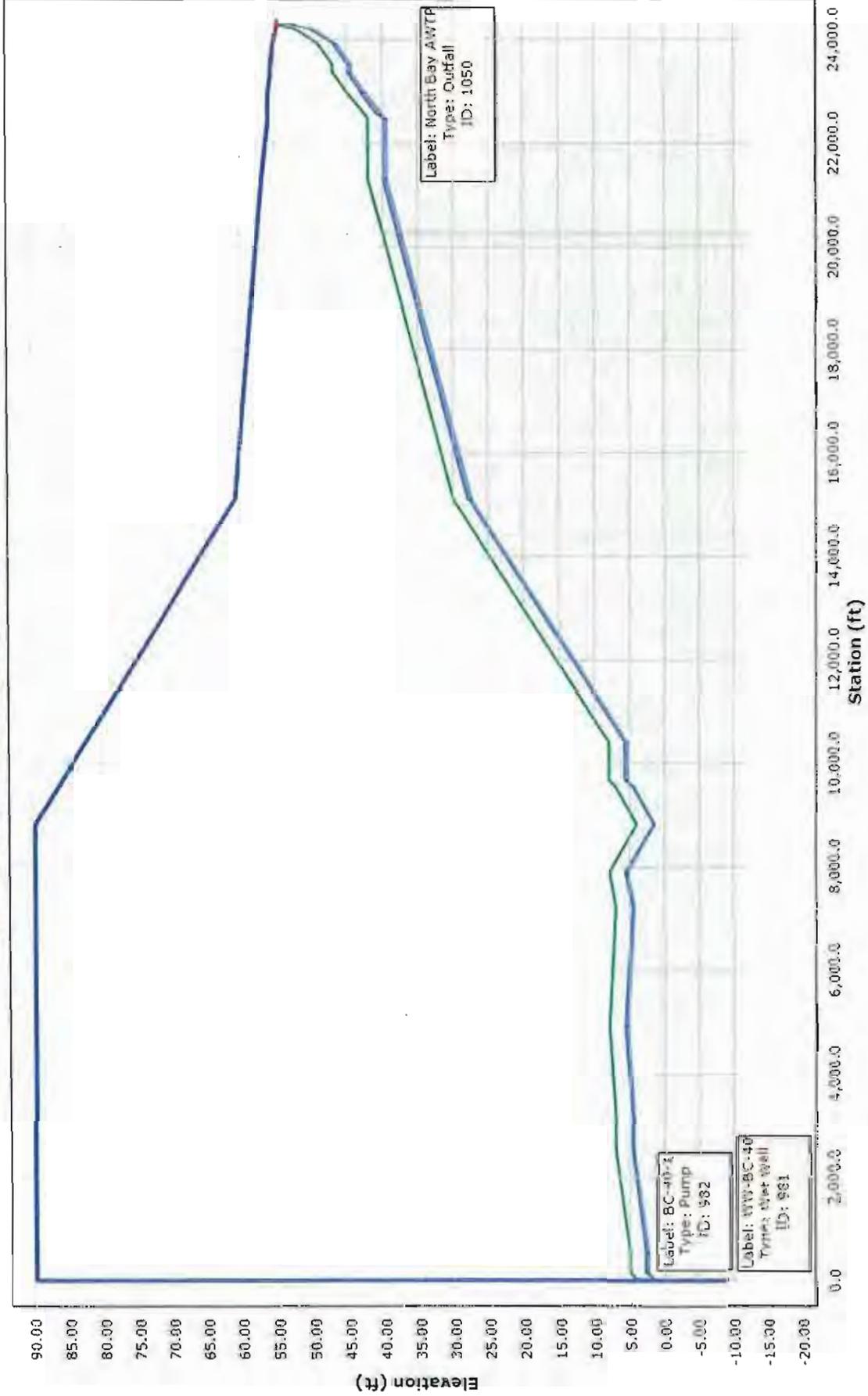


Pumping Station BC-5 to Military Point AWT - Hydraulic Profile

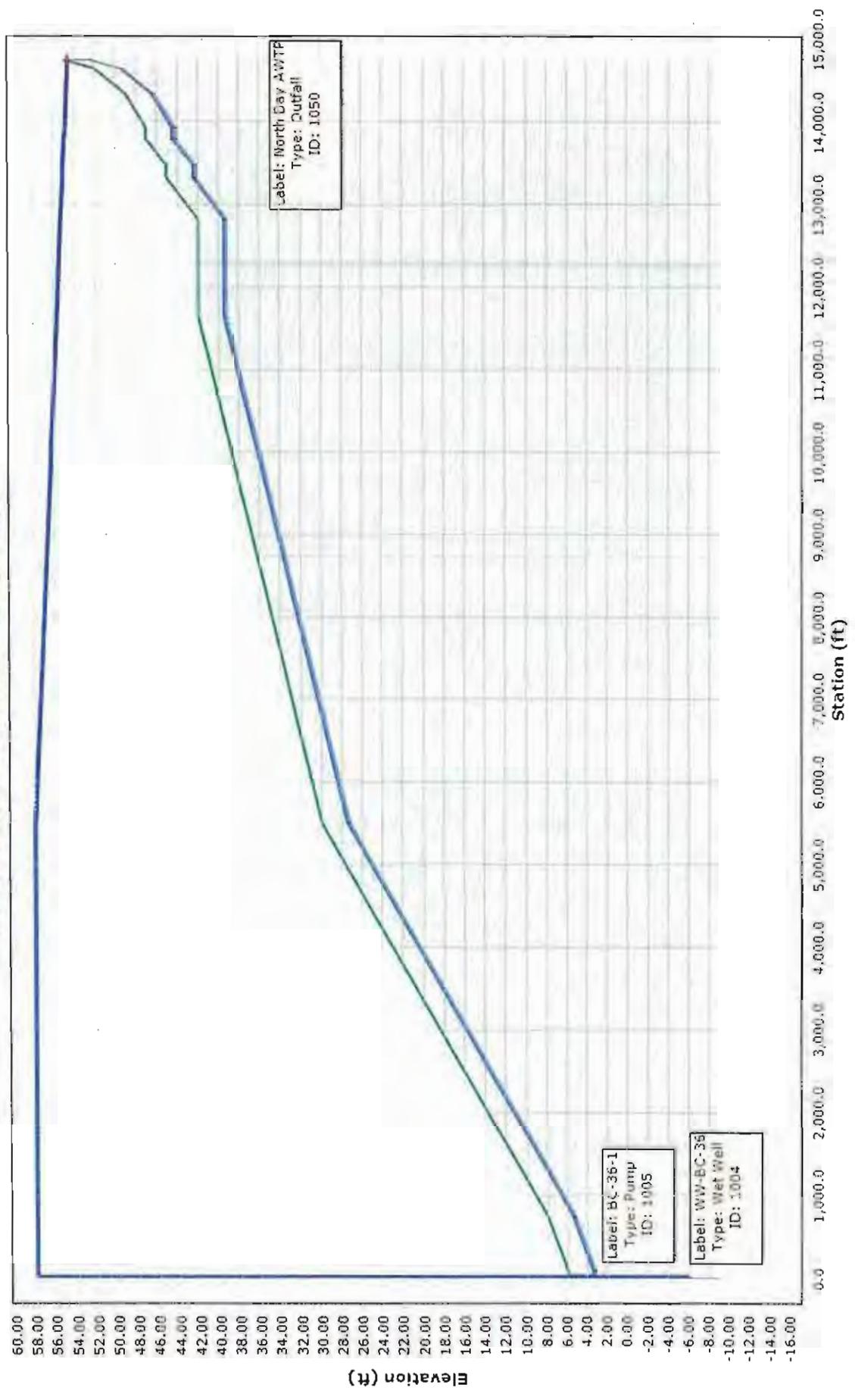


BAY COUNTY WASTEWATER SYSTEM MODEL - NORTH BAY AREA FIGURE E.3

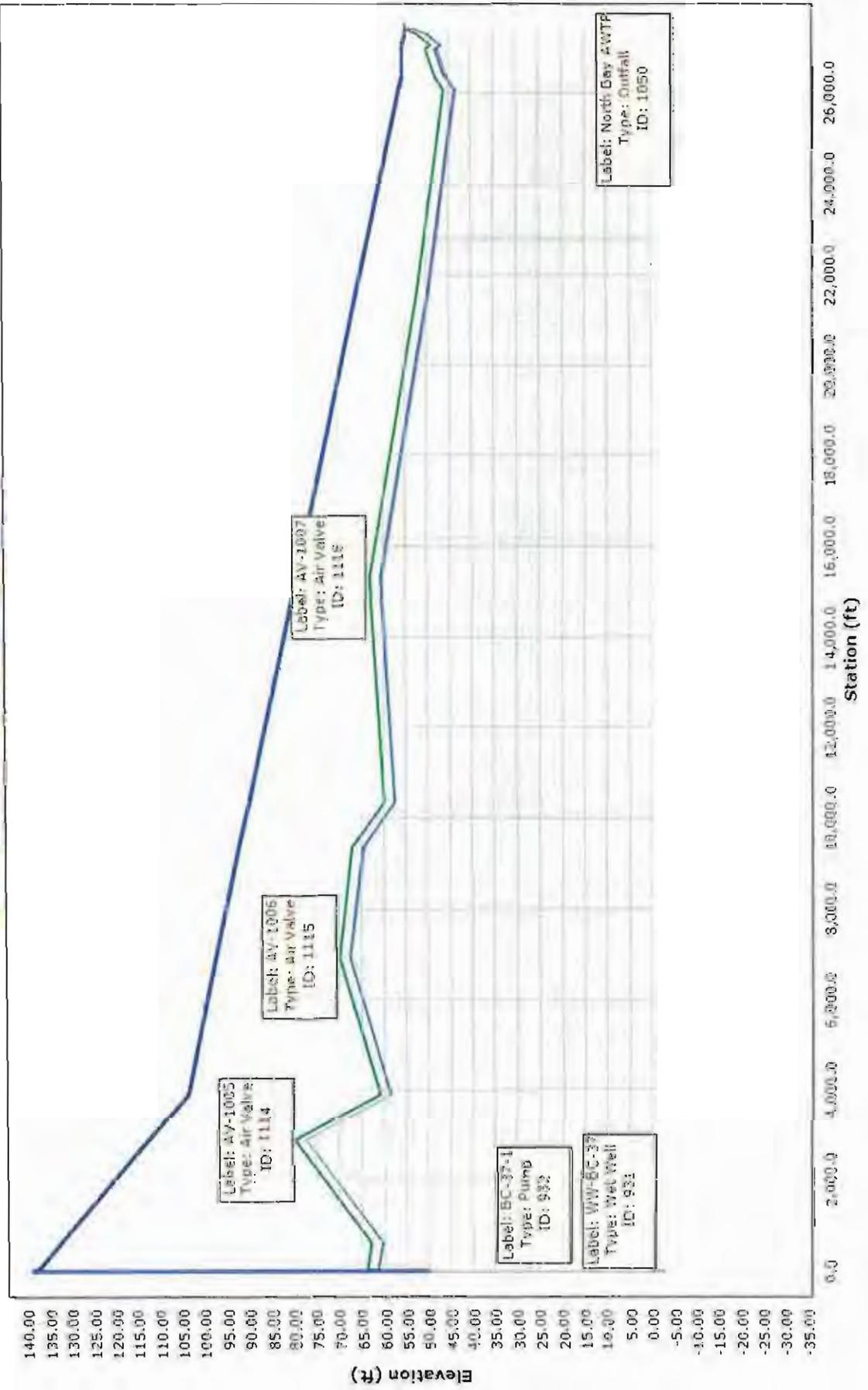
BC-40 to North Bay AWTP - Base Time:



BC-36 to North Bay AWTP - Base Time:

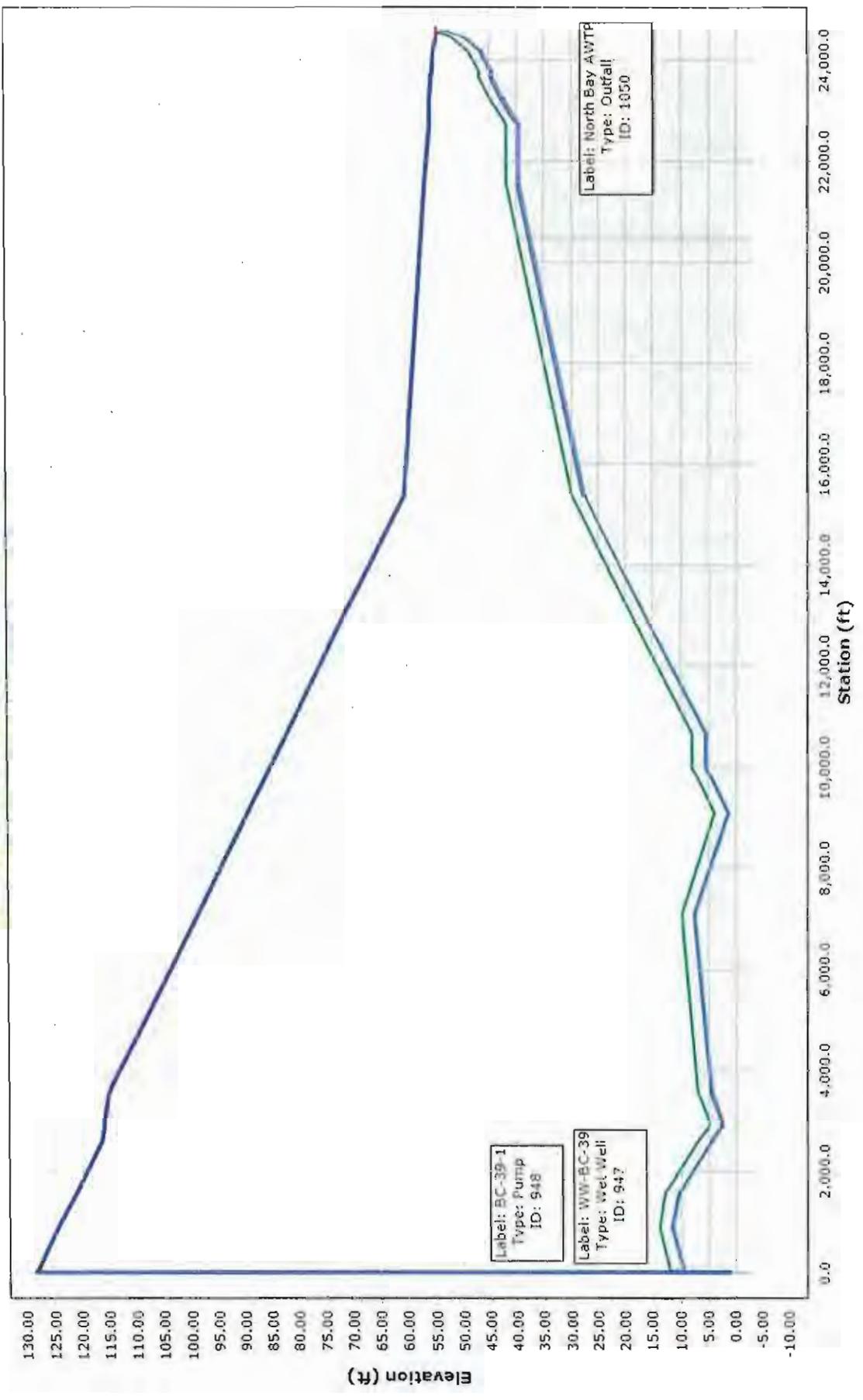


BC-37 to North Bay AWTP - Base Time:

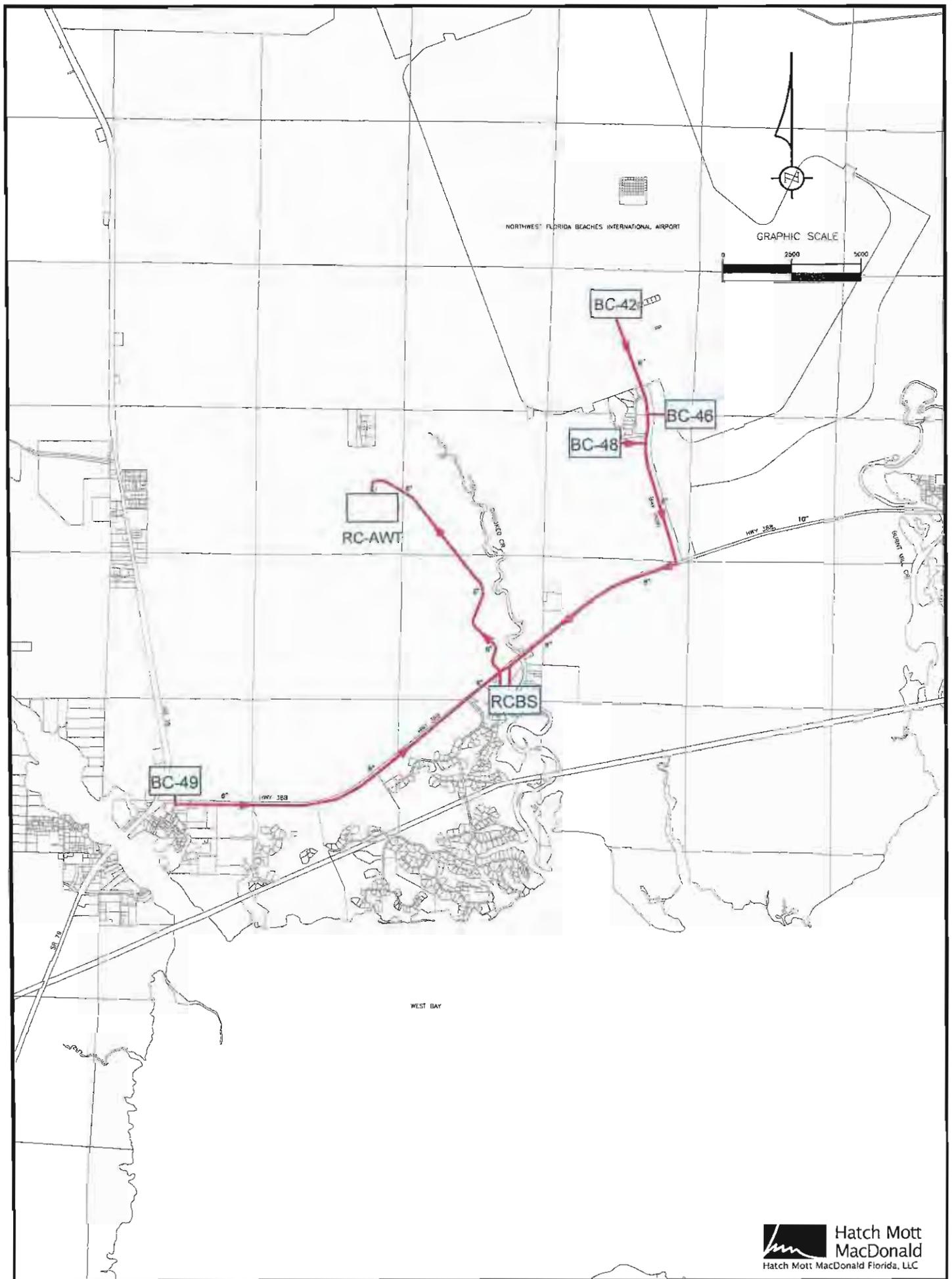


Pumping Station BC-37 to North Bay AWT – Hydraulic Profile

BC-39 to North Bay AWTP - Base Time:

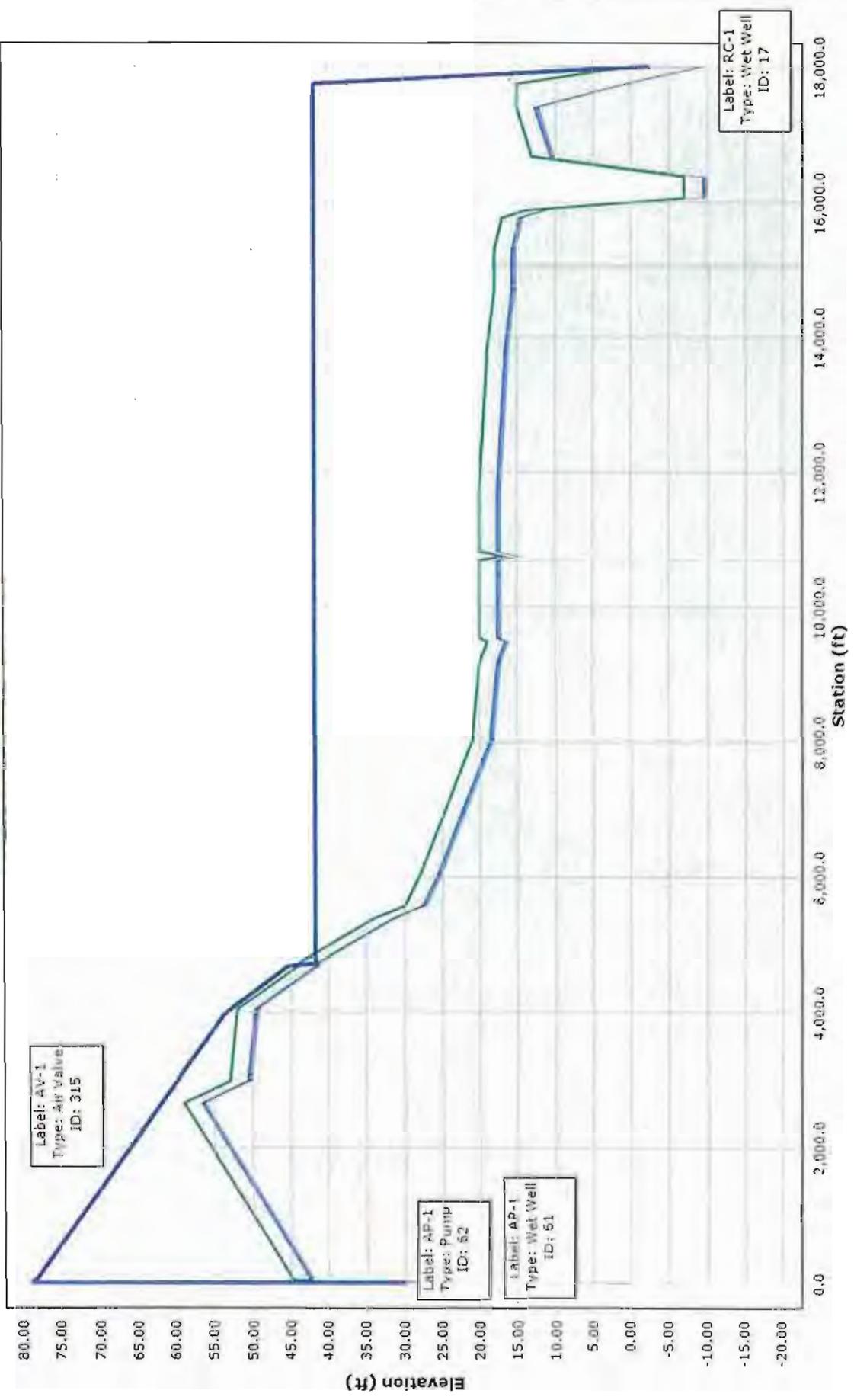


Pumping Station BC-39 to North Bay AWT - Hydraulic Profile



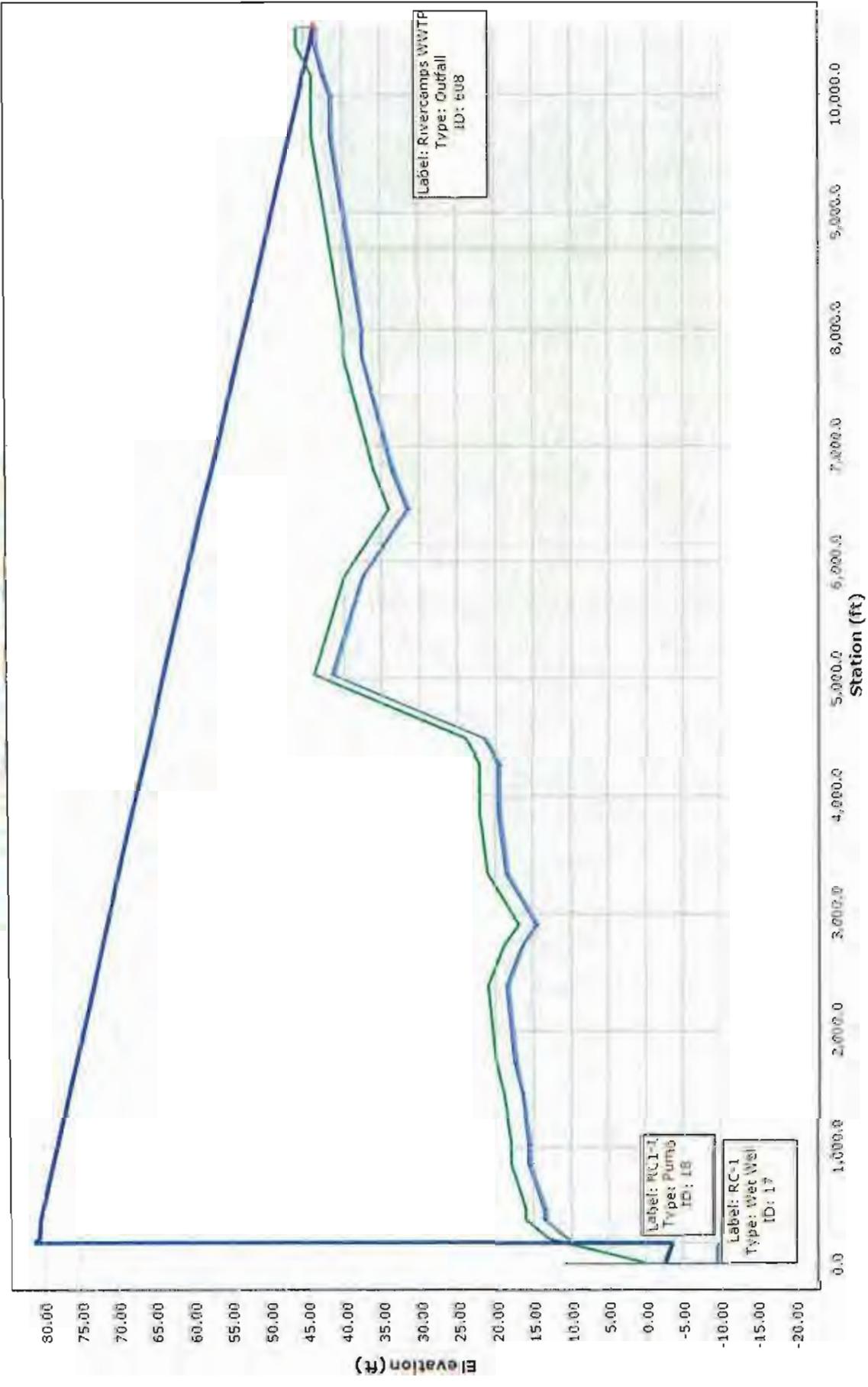
BAY COUNTY WASTEWATER SYSTEM MODEL - WEST BAY AREA FIGURE E.4

AP-1 to RC-1 - Base Time:

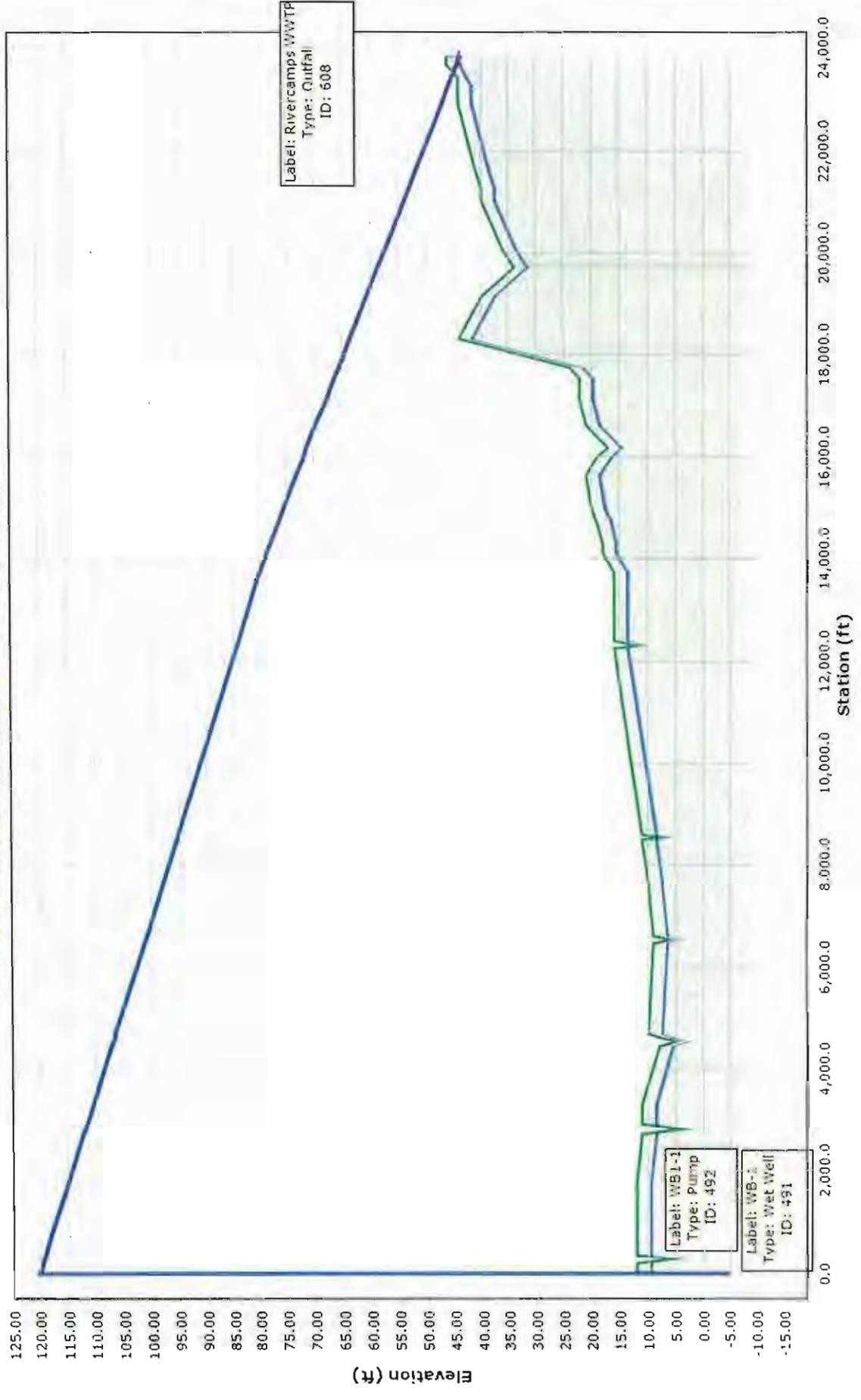


Airport pumping station to Rivercamps main pumping station- hydraulic profile

RC-1 to Rivercamps WWTP - Base Time:



WB-1 to Rivercamps WWTP - Base Time:



Future System Model

FlexTable: Wet Well Table (Bay County SewerCAD Model FUTURE.swc)

Current Time: 0.000 hours

Label	Notes	Elevation (Ground) (ft)	Elevation (Base) (ft)	Elevation (Minimum) (ft)	Elevation (Initial) (ft)	Elevation (Maximum) (ft)	Diameter (ft)	Flow (Total Out) (gpm)
BC-42	AIRPORT MAIN PS	45.00	24.00	27.00	30.00	40.00	8.00	519.55
BC-46	WEST BAY BUSINESS CENTER EAST	49.00	34.50	35.50	36.50	49.00	6.00	203.92
BC-48	WEST BAY BUS CENTER WEST	43.00	23.65	24.65	26.65	43.15	6.00	212.46
BC-49	HWY 79&388	11.00	-9.00	-8.00	-5.00	11.00	8.00	169.72
FPS1		16.00	-3.00	-2.00	4.48	17.00	10.00	837.63
FPS2		47.00	27.00	28.00	33.48	47.00	10.00	800.18
RCBS	RIVERCAMPS BOOSTER STATION	13.00	-10.00	-7.00	-2.50	11.00	8.00	257.84
WW-BC-1	AT WTP	36.00	21.00	22.00	24.00	36.00	13.00	2,841.29
WW-BC-2	CALLAWAY MASTER PS	20.00	3.50	4.50	6.50	20.00	12.00	4,488.46
WW-BC-3	PARKER MASTER PS	5.00	-19.00	-18.00	-15.00	5.00	8.00	1,258.50
WW-BC-4	SPRINGFIELD MASTER PS	5.00	-16.60	-15.60	-13.60	5.00	19.80	3,263.00
WW-BC-5	BC CEDAR GROVE MASTER PS	33.00	9.40	10.40	12.40	33.00	12.00	1,869.73
WW-BC-36	SOUTHPORT ELEM PS	6.00	-9.00	-8.00	-6.00	7.00	8.00	180.19
WW-BC-37	LAKE MERIAL PS	64.00	47.00	48.00	50.00	64.00	8.00	289.50
WW-BC-39		12.00	-3.00	0.00	1.00	12.00	10.00	218.72
WW-BC-40		4.00	-12.00	-11.00	-9.00	5.00	10.00	420.66
WW-BC-43	BAY CO EOC PS	28.00	10.00	10.00	12.00	28.00	10.00	44.34

FlexTable: Pump Table (Bay County SewerCAD Model FUTURE.swc)

Current Time: 0.000 hours

ID	Label	Elevation (Invert) (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Design) (gpm)	Flow (Total) (gpm)	Head (Design) (ft)	Pump Head (ft)	Head (Shutoff) (ft)
868	BC-1-1	21.00	On	23.90	221.13	900.00	947.10	200.00	197.23	265.00
869	BC-1-2	21.00	On	23.90	221.13	900.00	947.10	200.00	197.23	265.00
870	BC-1-3	21.00	On	23.90	221.13	900.00	947.10	200.00	197.23	265.00
871	BC-1-4	21.00	Off	24.00	220.65	900.00	0.00	200.00	0.00	265.00
842	BC-2-1	3.50	On	6.42	115.40	1,200.00	1,496.15	120.00	108.97	160.00
843	BC-2-2	3.50	On	6.42	115.40	1,200.00	1,496.15	120.00	108.97	160.00
844	BC-2-3	3.50	On	6.42	115.40	1,200.00	1,496.15	120.00	108.97	160.00
845	BC-2-4	3.50	Off	6.50	115.02	1,200.00	0.00	120.00	0.00	160.00
832	BC3-1	-19.00	On	-15.04	96.04	650.00	629.25	110.00	111.08	146.00
833	BC-3-2	-19.00	On	-15.04	96.04	650.00	629.25	110.00	111.08	146.00
834	BC-3-3	-19.00	Off	-15.00	95.81	650.00	0.00	110.00	0.00	146.00
727	BC-4-1	-16.00	On	-13.69	77.26	900.00	1,631.50	122.00	90.95	158.00
726	BC-4-2	-16.00	On	-13.69	77.26	900.00	1,631.50	122.00	90.95	158.00
725	BC-4-3	-16.00	Off	-13.60	76.82	900.00	0.00	70.00	0.00	93.00
724	BC-4-4	-16.00	Off	-13.60	76.82	900.00	0.00	70.00	0.00	93.00
855	BC-5-1	0.00	On	12.36	181.32	600.00	623.24	170.00	168.97	203.00
856	BC-5-2	0.00	On	12.36	181.32	600.00	623.24	170.00	168.97	203.00
857	BC-5-3	0.00	On	12.36	181.32	600.00	623.24	170.00	168.97	203.00
858	BC-5-4	0.00	Off	12.40	181.10	600.00	0.00	170.00	0.00	203.00
1005	BC-36-1	-9.00	On	-6.13	124.82	220.00	180.19	118.00	130.95	157.33
1006	BC-36-2	-9.00	Off	-6.00	124.17	220.00	0.00	118.00	0.00	157.33
932	BC-37-1	0.00	On	49.96	139.30	200.00	289.50	95.00	89.35	108.00
933	BC-37-2	0.00	Off	50.00	139.09	200.00	0.00	95.00	0.00	108.00
948	BC-39-1	-3.00	On	0.97	142.08	400.00	218.72	130.00	141.10	158.00
949	BC-39-2	-3.00	Off	1.00	141.95	400.00	0.00	130.00	0.00	158.00
982	BC-40-1	-12.00	On	-9.09	169.24	400.00	420.66	180.00	178.33	216.00
983	BC-40-2	-12.00	Off	-9.00	168.81	400.00	0.00	180.00	0.00	216.00
62	BC-42-1	1.00	On	29.87	79.05	352.00	519.55	81.00	49.18	108.00
63	BC-42-2	1.00	Off	30.00	78.54	352.00	0.00	81.00	0.00	108.00

FlexTable: Pump Table (Bay County SewerCAD Model FUTURE.swc)

Current Time: 0.000 hours

ID	Label	Elevation (Invert) (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Design) (gpm)	Flow (Total) (gpm)	Head (Design) (ft)	Pump Head (ft)	Head (Shutoff) (ft)
1014	BC-43-1	0.00	On	11.99	206.21	21.51	44.34	207.07	194.22	220.00
1015	BC-43-2	0.00	Off	12.00	206.16	21.51	0.00	207.07	0.00	220.00
635	BC-46-1	34.50	On	36.47	78.09	90.00	203.92	49.00	41.62	68.00
636	BC-46-2	34.50	Off	36.50	74.70	90.00	0.00	49.00	0.00	68.00
624	BC-48-1	23.65	On	26.61	89.05	140.00	212.46	67.00	62.43	84.00
623	BC-48-2	23.65	Off	26.65	85.38	140.00	0.00	67.00	0.00	84.00
492	BC-49-1	-7.00	On	-5.00	119.96	600.00	169.72	98.00	124.96	138.00
493	BC-49-2	-7.00	Off	-5.00	119.52	600.00	0.00	98.00	0.00	138.00
1213	FPS1-1	-1.00	On	4.40	118.95	800.00	837.63	118.00	114.54	180.00
1214	FPS1-2	-1.00	Off	4.48	118.57	800.00	0.00	118.00	0.00	180.00
1215	FPS1-3	-1.00	Off	4.48	118.57	800.00	0.00	118.00	0.00	180.00
1216	FPS2-1	30.00	On	33.41	151.39	800.00	800.18	118.00	117.98	180.00
1217	FPS2-2	30.00	Off	33.48	151.04	800.00	0.00	118.00	0.00	180.00
1218	FPS2-3	30.00	Off	33.48	151.04	800.00	0.00	118.00	0.00	180.00
18	RCBS-1	-10.00	On	-3.80	76.81	311.00	257.84	73.00	80.61	97.33
19	RCBS-2	-10.00	Off	-2.50	75.99	311.00	0.00	73.00	0.00	97.33

FlexTable: Pressure Pipe Table (Bay County SewerCAD Model FUTURE.swc)

Current Time: 0.000 hours

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (ft)	Diameter (In)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-1	RCBS	-7.00	RCBS-2	-10.00	170.0	6.0	120.0	0.00	0.00	0.00
P-2	RCBS-2	-10.00	J-1	10.00	25.0	6.0	120.0	0.00	0.00	0.00
P-3	RCBS	-7.00	RCBS-1	-10.00	186.0	6.0	120.0	257.84	2.93	1.30
P-4	RCBS-1	-10.00	J-1	10.00	25.0	6.0	120.0	257.84	2.93	0.82
P-5	J-1	10.00	J-2	13.00	166.0	8.0	120.0	257.84	1.65	0.37
P-23	BC-42	27.00	BC-42-1	1.00	5.0	6.0	120.0	519.55	5.90	0.13
P-24	BC-42-1	1.00	J-20	42.00	20.0	6.0	120.0	519.55	5.90	0.51
P-25	BC-42	27.00	BC-42-2	1.00	5.0	6.0	120.0	0.00	0.00	0.00
P-26	BC-42-2	1.00	J-20	42.00	20.0	6.0	120.0	0.00	0.00	0.00
P-27	J-20	42.00	J-21	42.00	38.0	8.0	120.0	519.55	3.32	0.24
P-28	J-21	42.00	AV-1	56.00	2,576.0	8.0	120.0	519.55	3.32	16.23
P-29	AV-1	56.00	J-23	50.00	348.0	8.0	120.0	519.55	3.32	2.19
P-30	J-23	50.00	J-24	50.00	88.0	8.0	120.0	519.55	3.32	0.55
P-32	J-25	31.00	J-26	27.00	181.0	8.0	120.0	131.62	0.84	0.09
P-33	J-26	27.00	J-27	25.00	462.0	8.0	120.0	131.62	0.84	0.23
P-34	J-27	25.00	J-28	18.00	1,998.0	8.0	120.0	131.62	0.84	0.99
P-35	J-28	18.00	J-29	17.00	1,153.0	8.0	120.0	131.62	0.84	0.57
P-36	J-29	17.00	J-30	16.00	292.0	8.0	120.0	131.62	0.84	0.14
P-37	J-30	16.00	J-31	17.00	54.0	8.0	120.0	131.62	0.84	0.03
P-38	J-31	17.00	J-32	17.00	936.0	8.0	120.0	-427.56	2.73	4.11
P-40	J-33	17.00	J-34	16.00	1,910.0	8.0	120.0	-427.56	2.73	8.39
P-41	J-34	16.00	J-35	16.00	85.0	8.0	120.0	-427.56	2.73	0.37
P-42	J-35	16.00	J-36	15.00	897.0	8.0	120.0	-427.56	2.73	3.94
P-43	J-36	15.00	J-37	15.00	595.0	8.0	120.0	-427.56	2.73	2.61
P-44	J-37	15.00	J-38	14.00	470.0	8.0	120.0	-427.56	2.73	2.06
P-45	J-38	14.00	J-39	11.00	115.0	8.0	120.0	-427.56	2.73	0.51
P-46	J-39	11.00	J-40	-10.00	179.0	8.0	120.0	-427.56	2.73	0.79
P-47	J-40	-10.00	J-41	-10.00	309.0	8.0	120.0	-427.56	2.73	1.36
P-48	J-41	-10.00	J-42	10.00	310.0	8.0	120.0	-427.56	2.73	1.36
P-49	J-42	10.00	J-43	12.00	721.0	8.0	120.0	-427.56	2.73	3.17
P-57	J-49	17.00	J-50	15.00	1,593.0	10.0	120.0	559.18	2.28	3.88

FlexTable: Pressure Pipe Table (Bay County SewerCAD Model FUTURE.swc)

Current Time: 0.000 hours

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (ft)	Diameter (in)	Hazen-Williams-C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-58	J-50	15.00	J-51	13.00	63.0	10.0	120.0	559.18	2.28	0.15
P-59	J-51	13.00	J-52	15.00	66.0	10.0	120.0	559.18	2.28	0.16
P-60	J-52	15.00	J-53	15.00	1,054.0	10.0	120.0	559.18	2.28	2.57
P-61	J-53	15.00	J-54	14.00	31.0	10.0	120.0	559.18	2.28	0.08
P-62	J-54	14.00	J-55	15.00	41.0	10.0	120.0	559.18	2.28	0.10
P-63	J-55	15.00	J-56	15.00	1,662.0	10.0	120.0	559.18	2.28	4.05
P-64	J-56	15.00	J-57	16.00	735.0	10.0	120.0	559.18	2.28	1.79
P-65	J-57	16.00	J-58	14.00	40.0	10.0	120.0	559.18	2.28	0.10
P-66	J-58	14.00	J-59	15.00	53.0	10.0	120.0	559.18	2.28	0.13
P-67	J-59	15.00	J-60	14.00	878.0	10.0	120.0	559.18	2.28	2.14
P-68	J-60	14.00	J-61	11.00	897.0	10.0	120.0	559.18	2.28	2.18
P-69	J-61	11.00	J-62	7.00	563.0	10.0	120.0	559.18	2.28	1.37
P-70	J-62	7.00	J-63	-6.00	1,637.0	10.0	120.0	559.18	2.28	3.99
P-71	J-63	-6.00	J-64	-12.00	192.0	10.0	120.0	559.18	2.28	0.47
P-72	J-64	-12.00	J-65	-12.00	79.0	10.0	120.0	559.18	2.28	0.19
P-73	J-65	-12.00	J-66	11.00	369.0	10.0	120.0	559.18	2.28	0.90
P-74	J-66	11.00	J-67	12.00	293.0	10.0	120.0	559.18	2.28	0.71
P-75	J-67	12.00	J-68	15.00	675.0	10.0	120.0	837.63	3.42	3.47
P-76	J-68	15.00	J-69	18.00	1,401.0	10.0	120.0	837.63	3.42	7.21
P-77	J-69	18.00	J-70	20.00	960.0	10.0	120.0	837.63	3.42	4.94
P-78	J-70	20.00	J-71	17.00	56.0	10.0	120.0	837.63	3.42	0.29
P-79	J-71	17.00	J-72	17.00	50.0	10.0	120.0	837.63	3.42	0.26
P-80	J-72	17.00	J-73	19.00	830.0	10.0	120.0	837.63	3.42	4.27
P-81	J-73	19.00	J-74	16.00	63.0	10.0	120.0	837.63	3.42	0.32
P-82	J-74	16.00	J-75	19.00	59.0	10.0	120.0	837.63	3.42	0.30
P-83	J-75	19.00	J-76	21.00	993.0	10.0	120.0	837.63	3.42	5.11
P-84	J-76	21.00	J-77	15.00	59.0	10.0	120.0	837.63	3.42	0.30
P-85	J-77	15.00	J-78	19.00	79.0	10.0	120.0	837.63	3.42	0.41
P-86	J-78	19.00	J-79	22.00	362.0	10.0	120.0	837.63	3.42	1.86
P-87	J-79	22.00	J-80	23.00	540.0	10.0	120.0	837.63	3.42	2.78
P-88	J-80	23.00	J-81	27.00	642.0	10.0	120.0	837.63	3.42	3.30
P-89	J-81	27.00	J-82							
P-90	J-82		J-83							
P-91	J-83		J-84							
P-92	J-84		J-85							

FlexTable: Pressure Pipe Table (Bay County SewerCAD Model FUTURE.swc)

Current Time: 0.000 hours

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-93	J-85	27.00	J-86	32.00	1,000.0	10.0	120.0	837.63	3.42	5.15
P-94	J-86	32.00	J-87	24.00	37.0	10.0	120.0	837.63	3.42	0.19
P-95	J-87	24.00	J-88	33.00	36.0	10.0	120.0	837.63	3.42	0.19
P-96	J-88	33.00	J-89	34.00	670.0	10.0	120.0	837.63	3.42	3.45
P-97	J-89	34.00	J-90	36.00	1,342.0	10.0	120.0	837.63	3.42	6.91
P-98	J-90	36.00	J-91	33.00	49.0	10.0	120.0	837.63	3.42	0.25
P-99	J-91	33.00	J-92	36.00	53.0	10.0	120.0	837.63	3.42	0.27
P-100	J-92	36.00	J-93	39.00	577.0	10.0	120.0	837.63	3.42	2.97
P-101	J-93	39.00	J-94	41.00	1,241.0	10.0	120.0	837.63	3.42	6.39
P-102	J-94	41.00	J-95	40.00	54.0	10.0	120.0	837.63	3.42	0.28
P-103	J-95	40.00	J-96	40.00	55.0	10.0	120.0	837.63	3.42	0.28
P-104	J-96	40.00	J-97	43.00	571.0	10.0	120.0	837.63	3.42	2.94
P-106	J-98	43.00	J-99	40.00	1,026.0	10.0	120.0	800.18	3.27	4.85
P-107	J-99	40.00	J-100	39.00	61.0	10.0	120.0	800.18	3.27	0.29
P-108	J-100	39.00	J-101	41.00	59.0	10.0	120.0	800.18	3.27	0.28
P-109	J-101	41.00	J-102	40.00	3,770.0	10.0	120.0	800.18	3.27	17.82
P-110	J-102	40.00	J-103	40.00	1,034.0	10.0	120.0	800.18	3.27	4.89
P-111	J-103	40.00	J-104	38.00	59.0	10.0	120.0	800.18	3.27	0.28
P-112	J-104	38.00	J-105	40.00	64.0	10.0	120.0	800.18	3.27	0.30
P-113	J-105	40.00	J-106	43.00	1,523.0	10.0	120.0	800.18	3.27	7.20
P-115	J-107	42.00	J-108	38.00	59.0	10.0	120.0	800.18	3.27	0.28
P-116	J-108	38.00	J-109	42.00	65.0	10.0	120.0	800.18	3.27	0.31
P-117	J-109	42.00	J-110	42.00	671.0	10.0	120.0	800.18	3.27	3.17
P-118	J-110	42.00	J-111	42.00	1,044.0	10.0	120.0	800.18	3.27	4.94
P-119	J-111	42.00	J-112	40.00	58.0	10.0	120.0	800.18	3.27	0.27
P-120	J-112	40.00	J-113	42.00	53.0	10.0	120.0	800.18	3.27	0.25
P-121	J-113	42.00	AV-2	46.00	1,585.0	10.0	120.0	800.18	3.27	7.49
P-122	AV-2	46.00	J-115	43.00	575.0	10.0	120.0	800.18	3.27	2.72
P-123	J-115	43.00	J-116	41.00	42.0	10.0	120.0	800.18	3.27	0.20
P-124	J-116	41.00	J-117	43.00	56.0	10.0	120.0	800.18	3.27	0.26
P-125	J-117	43.00	AV-3	46.00	1,328.0	10.0	120.0	800.18	3.27	6.28

FlexTable: Pressure Pipe Table (Bay County SewerCAD Model FUTURE.swc)

Current Time: 0.000 hours

Label	Start Node	Invert:(Start) (ft)	Stop Node	Invert:(Stop) (ft)	Length (ft)	Diameter (in)	Hazen-Williams-C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-126	AV-3	46.00	J-119	44.00	931.0	10.0	120.0	800.18	3.27	4.40
P-127	J-119	44.00	J-120	43.00	883.0	10.0	120.0	800.18	3.27	4.17
P-128	J-120	43.00	J-121	42.00	673.0	10.0	120.0	800.18	3.27	3.18
P-129	J-121	42.00	J-122	44.00	253.0	10.0	120.0	800.18	3.27	1.20
P-130	J-122	44.00	J-123	39.00	121.0	10.0	120.0	800.18	3.27	0.57
P-131	J-123	39.00	J-124	45.00	32.0	10.0	120.0	800.18	3.27	0.15
P-132	J-124	45.00	J-125	45.00	61.0	10.0	120.0	800.18	3.27	0.29
P-133	J-125	45.00	J-126	39.00	31.0	10.0	120.0	800.18	3.27	0.15
P-134	J-126	39.00	J-127	39.00	182.0	10.0	120.0	800.18	3.27	0.86
P-138	J-48	17.00	J-129	13.00	47.0	10.0	120.0	559.18	2.28	0.11
P-139	J-129	13.00	J-49	17.00	53.0	10.0	120.0	559.18	2.28	0.13
P-142	J-72	20.00	J-130	19.00	343.0	10.0	120.0	837.63	3.42	1.77
P-144	J-130	19.00	J-73	17.00	543.0	10.0	120.0	837.63	3.42	2.79
P-148	J-131	17.00	J-33	17.00	990.0	8.0	120.0	-427.56	2.73	4.35
P-149	J-32	17.00	J-132	17.00	213.0	8.0	120.0	-427.56	2.73	0.94
P-151	J-131	17.00	J-133	14.00	71.0	6.0	120.0	427.56	4.85	1.27
P-152	J-133	14.00	J-132	17.00	60.0	6.0	120.0	427.56	4.85	1.07
P-158	J-135	9.00	J-136	2.00	100.0	6.0	120.0	169.72	1.93	0.32
P-159	J-136	2.00	J-137	9.00	46.0	6.0	120.0	169.72	1.93	0.15
P-160	J-137	9.00	J-138	9.00	440.0	6.0	120.0	169.72	1.93	1.42
P-161	J-138	9.00	J-139	9.00	613.0	6.0	120.0	169.72	1.93	1.97
P-162	J-139	9.00	J-140	9.00	297.0	6.0	120.0	169.72	1.93	0.96
P-163	J-140	9.00	J-141	9.00	100.0	6.0	120.0	169.72	1.93	0.32
P-164	J-141	9.00	J-142	8.00	947.0	6.0	120.0	169.72	1.93	3.05
P-165	J-142	8.00	J-143	1.00	83.0	6.0	120.0	169.72	1.93	0.27
P-166	J-143	1.00	J-144	8.00	107.0	6.0	120.0	169.72	1.93	0.34
P-167	J-144	8.00	J-145	8.00	397.0	6.0	120.0	169.72	1.93	1.28
P-168	J-145	8.00	J-146	5.00	1,128.0	6.0	120.0	169.72	1.93	3.63
P-169	J-146	5.00	J-147	2.00	95.0	6.0	120.0	169.72	1.93	0.31
P-170	J-147	2.00	J-148	5.00	77.0	6.0	120.0	169.72	1.93	0.25
P-171	J-148	5.00	J-149	7.00	60.0	6.0	120.0	169.72	1.93	0.19

FlexTable: Pressure Pipe Table (Bay County SewerCAD Model FUTURE.swc)

Current Time: 0.000 hours

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-172	J-149	7.00	J-150	6.00	1,780.0	6.0	120.0	169.72	1.93	5.73
P-173	J-150	6.00	J-151	3.00	76.0	6.0	120.0	169.72	1.93	0.24
P-174	J-151	3.00	J-152	6.00	80.0	6.0	120.0	169.72	1.93	0.26
P-175	J-152	6.00	J-153	7.00	1,021.0	6.0	120.0	169.72	1.93	3.29
P-176	J-153	7.00	J-154	8.00	855.0	6.0	120.0	169.72	1.93	2.75
P-177	J-154	8.00	J-155	5.00	48.0	6.0	120.0	169.72	1.93	0.15
P-178	J-155	5.00	J-156	8.00	53.0	6.0	120.0	169.72	1.93	0.17
P-179	J-156	8.00	J-157	13.00	3,647.0	6.0	120.0	169.72	1.93	11.75
P-180	J-157	13.00	J-158	9.00	53.0	6.0	120.0	169.72	1.93	0.17
P-181	J-158	9.00	J-159	13.00	76.0	6.0	120.0	169.72	1.93	0.24
P-182	J-159	13.00	J-160	13.00	21.0	6.0	120.0	169.72	1.93	0.07
P-185	J-66	11.00	J-161	13.00	225.0	10.0	120.0	559.18	2.28	0.55
P-188	FPS1	-2.00	FPS1-1	-1.00	5.0	8.0	120.0	837.63	5.35	0.08
P-189	FPS1-1	-1.00	J-162	11.00	25.0	8.0	120.0	837.63	5.35	0.38
P-190	FPS1	-2.00	FPS1-2	-1.00	5.0	6.0	120.0	0.00	0.00	0.00
P-191	FPS1-2	-1.00	J-162	11.00	25.0	8.0	120.0	0.00	0.00	0.00
P-192	FPS1	-2.00	FPS1-3	-1.00	5.0	8.0	120.0	0.00	0.00	0.00
P-193	FPS1-3	-1.00	J-162	11.00	25.0	8.0	120.0	0.00	0.00	0.00
P-195	J-97	43.00	J-163	43.00	425.0	10.0	120.0	837.63	3.42	2.19
P-198	J-165	43.00	J-98	43.00	1,670.0	10.0	120.0	800.18	3.27	7.90
P-200	FPS2	28.00	FPS2-1	30.00	5.0	8.0	120.0	800.18	5.11	0.07
P-201	FPS2-1	30.00	J-166	43.00	25.0	8.0	120.0	800.18	5.11	0.35
P-202	FPS2	28.00	FPS2-2	30.00	5.0	8.0	120.0	0.00	0.00	0.00
P-203	FPS2-2	30.00	J-166	43.00	25.0	8.0	120.0	0.00	0.00	0.00
P-204	J-166	43.00	J-165	43.00	31.0	10.0	120.0	800.18	3.27	0.15
P-205	FPS2	28.00	FPS2-3	30.00	5.0	8.0	120.0	0.00	0.00	0.00
P-206	FPS2-3	30.00	J-166	43.00	25.0	8.0	120.0	0.00	0.00	0.00
P-209	J-163	43.00	MH-4	44.00	17.0	10.0	120.0	837.63	3.42	0.09
P-211	BC-49	-8.00	BC-49-2	-7.00	1.0	6.0	120.0	0.00	0.00	0.00
P-212	BC-49-2	-7.00	J-167	9.00	25.0	6.0	120.0	0.00	0.00	0.00
P-213	BC-49	-8.00	BC-49-1	-7.00	1.0	6.0	120.0	169.72	1.93	0.00

FlexTable: Pressure Pipe Table (Bay County SewerCAD Model FUTURE.swc)

Current Time: 0.000 hours

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-214	BC-49-1	-7.00	J-167	9.00	25.0	6.0	120.0	169.72	1.93	0.43
P-215	J-167	9.00	J-168	9.00	129.0	6.0	120.0	169.72	1.93	0.46
P-216	J-168	9.00	J-135	9.00	35.0	6.0	120.0	169.72	1.93	0.12
P-219	J-161	13.00	J-67	13.00	16.0	10.0	120.0	559.18	2.28	0.04
P-221	J-169	11.00	J-69	11.00	119.0	10.0	120.0	837.63	3.42	0.61
P-222	J-68	12.00	J-170	11.00	245.0	10.0	120.0	559.18	2.28	0.60
P-224	J-170	11.00	MH-3	11.00	378.0	12.0	120.0	559.18	1.59	0.38
P-225	J-162	11.00	J-169	11.00	109.0	12.0	120.0	837.63	2.38	0.23
P-232	J-82	22.00	J-171	22.00	373.0	10.0	120.0	837.63	3.42	1.92
P-241	J-106	43.00	J-172	42.10	270.0	10.0	120.0	800.18	3.27	1.28
P-244	J-171	22.00	J-83	22.00	23.0	12.0	120.0	837.63	2.38	0.05
P-245	J-172	42.10	J-107	42.00	29.0	12.0	120.0	800.18	2.27	0.06
P-270	J-160	13.00	J-196	13.00	1,189.0	6.0	120.0	169.72	1.93	3.85
P-274	J-196	13.00	J-2	13.00	52.0	6.0	120.0	169.72	1.93	0.17
P-275	J-198	40.00	J-199	40.00	18.0	4.0	120.0	212.46	5.42	0.63
P-276	J-199	40.00	J-200	40.00	59.0	4.0	120.0	212.46	5.42	2.08
P-277	J-200	40.00	J-201	40.00	17.0	4.0	120.0	212.46	5.42	0.60
P-278	J-201	40.00	J-202	41.00	975.0	4.0	120.0	212.46	5.42	34.31
P-279	J-203	46.00	J-204	46.00	41.0	4.0	120.0	203.92	5.21	1.34
P-280	J-204	46.00	J-205	46.00	109.0	4.0	120.0	203.92	5.21	3.56
P-281	J-205	46.00	J-206	53.00	313.0	4.0	120.0	203.92	5.21	10.21
P-282	BC-48	24.65	BC-48-2	23.65	1.0	4.0	120.0	0.00	0.00	0.00
P-283	BC-48-2	23.65	J-198	40.00	25.0	4.0	120.0	0.00	0.00	0.00
P-284	BC-48	24.65	BC-48-1	23.65	1.0	4.0	120.0	212.46	5.42	0.04
P-285	BC-48-1	23.65	J-198	40.00	25.0	4.0	120.0	212.46	5.42	3.67
P-286	J-134	49.00	J-207 BCW	41.00	634.0	8.0	120.0	723.48	4.62	7.38
P-288	J-202	41.00	J-207 BCW	41.00	48.0	4.0	120.0	212.46	5.42	2.45
P-289	J-24	50.00	J-208 BCE	49.10	883.0	8.0	120.0	519.55	3.32	5.56
P-290	J-208 BCE	49.10	J-134	49.00	93.0	8.0	120.0	723.48	4.62	1.08
P-291	J-206	53.00	J-208 BCE	49.10	179.0	4.0	120.0	203.92	5.21	5.84
P-292	BC-46	35.50	BC-46-1	34.50	1.0	4.0	120.0	203.92	5.21	0.03

FlexTable: Pressure Pipe Table (Bay County SewerCAD Model FUTURE.swc)

Current Time: 0.000 hours

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (ft)	Diameter (In)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-293	BC-46-1	34.50	J-203	46.00	25.0	4.0	120.0	203.92	5.21	3.39
P-294	BC-46	35.50	BC-46-2	34.50	1.0	4.0	120.0	0.00	0.00	0.00
P-295	BC-46-2	34.50	J-203	46.00	25.0	4.0	120.0	0.00	0.00	0.00
P-297	J-209	41.00	J-25	31.00	676.0	8.0	120.0	131.62	0.84	0.33
P-298	J-207 BCW	41.00	High Point	41.00	194.0	8.0	120.0	935.94	5.97	3.64
P-1016	J-1007	16.00	J-1009	16.00	244.0	16.0	120.0	0.00	0.00	0.00
P-1017	J-1009	16.00	J-1010	17.00	2,081.0	16.0	120.0	0.00	0.00	0.00
P-1018	J-1010	17.00	J-1011	15.00	1,069.0	16.0	120.0	0.00	0.00	0.00
P-1019	J-1011	15.00	J-1012	5.00	1,044.0	16.0	120.0	0.00	0.00	0.00
P-1020	J-1012	5.00	J-1013	17.00	1,222.0	16.0	120.0	0.00	0.00	0.00
P-1021	J-1013	17.00	J-1014	8.00	4,889.0	16.0	120.0	0.00	0.00	0.00
P-1022	J-1014	8.00	J-1015	27.00	3,391.0	16.0	120.0	0.00	0.00	0.00
P-1023	J-1015	27.00	J-1016	19.00	6,876.0	16.0	120.0	0.00	0.00	0.00
P-1024	J-1016	19.00	J-1017	5.00	7,018.0	16.0	120.0	0.00	0.00	0.00
P-1025	J-1017	5.00	J-1018	10.00	3,284.0	16.0	120.0	0.00	0.00	0.00
P-1026	J-1018	10.00	J-1019	10.00	940.0	16.0	120.0	0.00	0.00	0.00
P-1027	WW-BC-4	-15.60	BC-4-1	-16.00	5.0	10.0	120.0	1,631.50	6.66	0.09
P-1028	BC-4-1	-16.00	J-1020	2.00	25.0	10.0	120.0	1,631.50	6.66	0.44
P-1029	WW-BC-4	-15.60	BC-4-2	-16.00	5.0	10.0	120.0	1,631.50	6.66	0.09
P-1030	BC-4-2	-16.00	J-1020	2.00	25.0	10.0	120.0	1,631.50	6.66	0.44
P-1031	WW-BC-4	-15.60	BC-4-3	-16.00	5.0	10.0	120.0	0.00	0.00	0.00
P-1032	BC-4-3	-16.00	J-1020	2.00	25.0	10.0	120.0	0.00	0.00	0.00
P-1033	WW-BC-4	-15.60	BC-4-4	-16.00	5.0	10.0	120.0	0.00	0.00	0.00
P-1034	BC-4-4	-16.00	J-1020	2.00	25.0	10.0	120.0	0.00	0.00	0.00
P-1037	J-1022	22.00	J-1023	17.00	718.0	36.0	120.0	13,720.98	4.32	1.28
P-1038	J-1023	17.00	J-1024	16.00	289.0	36.0	120.0	13,720.98	4.32	0.51
P-1039	J-1024	16.00	J-1026	9.00	2,328.0	36.0	120.0	13,720.98	4.32	4.15
P-1040	J-1026	9.00	J-1029	-1.00	1,063.0	36.0	120.0	13,720.98	4.32	1.89
P-1041	J-1029	-1.00	J-1031	-59.00	2,759.0	36.0	120.0	13,720.98	4.32	4.91
P-1042	J-1031	-59.00	J-1033	2.00	1,704.0	36.0	120.0	13,720.98	4.32	3.03
P-1043	J-1033	2.00	J-1019	10.00	3,283.0	36.0	120.0	13,720.98	4.32	5.85

FlexTable: Pressure Pipe Table (Bay County SewerCAD Model FUTURE.swc)

Current Time: 0.000 hours

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-1044	J-1021	5.00	J-1036	21.00	898.0	16.0	120.0	2,923.44	4.66	4.74
P-1045	J-1036	21.00	J-1022	22.00	609.0	36.0	120.0	13,720.98	4.32	1.08
P-1046	J-1020	2.00	J-1037	2.00	87.0	16.0	120.0	3,263.00	5.21	0.56
P-1047	J-1037	2.00	J-1021	5.00	773.0	16.0	120.0	2,923.44	4.66	4.08
P-1049	J-1037	2.00	J-1038	5.00	834.0	20.0	120.0	5,050.58	5.16	4.09
P-1050	J-1038	5.00	J-1039	21.00	862.0	20.0	120.0	5,050.58	5.16	4.22
P-1051	J-1039	21.00	J-1036	21.00	104.0	20.0	120.0	5,050.58	5.16	0.51
P-1052	J-1040	17.00	J-1041	25.00	1,282.0	18.0	120.0	4,488.46	5.66	8.44
P-1053	J-1041	25.00	J-1042	25.00	1,009.0	18.0	120.0	4,488.46	5.66	6.64
P-1054	J-1042	25.00	J-1043	28.00	693.0	18.0	120.0	4,488.46	5.66	4.56
P-1055	J-1043	28.00	J-1044	28.00	389.0	18.0	120.0	4,488.46	5.66	2.56
P-1056	J-1044	28.00	J-1045	27.00	1,303.0	18.0	120.0	4,488.46	5.66	8.57
P-1057	J-1045	27.00	J-1046	27.00	59.0	20.0	120.0	4,488.46	4.58	2.61
P-1058	J-1046	27.00	J-1047	26.00	662.0	20.0	120.0	4,488.46	4.58	4.42
P-1059	J-1047	26.00	J-1048	25.00	1,123.0	20.0	120.0	4,488.46	4.08	0.27
P-1060	J-1048	25.00	J-1049	25.00	105.0	24.0	120.0	5,746.96	4.08	5.57
P-1061	J-1049	25.00	J-1050	2.00	2,175.0	24.0	120.0	5,746.96	4.08	1.53
P-1062	J-1050	2.00	J-1051	5.00	598.0	24.0	120.0	5,746.96	4.08	1.66
P-1063	J-1051	5.00	J-1052	21.00	650.0	24.0	120.0	5,746.96	4.08	0.52
P-1064	J-1052	21.00	J-1036	21.00	203.0	24.0	120.0	5,746.96	5.14	18.82
P-1067	J-1053	2.00	J-1048	25.00	1,721.0	10.0	120.0	1,258.50	5.30	11.52
P-1068	J-1054	30.00	J-1055	30.00	1,230.0	12.0	120.0	1,869.73	5.30	38.60
P-1069	J-1055	30.00	J-1056	31.00	4,121.0	12.0	120.0	1,869.73	4.53	3.43
P-1070	J-1057	33.00	J-1058	29.00	684.0	16.0	120.0	2,841.29	4.53	14.85
P-1071	J-1058	29.00	J-1059	33.00	2,966.0	16.0	120.0	2,841.29	4.53	11.90
P-1072	J-1059	33.00	J-1060	29.00	2,377.0	16.0	120.0	2,841.29	4.53	39.18
P-1073	J-1060	29.00	J-1061	23.00	7,825.0	16.0	120.0	2,841.29	4.53	6.97
P-1074	J-1061	23.00	J-1062	30.00	1,392.0	16.0	120.0	2,841.29	4.53	13.34
P-1075	J-1062	30.00	J-1056	31.00	2,664.0	16.0	120.0	2,841.29	5.94	19.07
P-1076	J-1056	31.00	J-1063	27.00	2,650.0	18.0	120.0	4,711.02	5.94	9.66
P-1077	J-1063	27.00	J-1064	10.00	1,342.0	18.0	120.0	4,711.02	5.94	9.66

FlexTable: Pressure Pipe Table (Bay County SewerCAD Model FUTURE.swc)

Current Time: 0.000 hours

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (ft)	Diameter (in)	Hazen-Williams-C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-1078	J-1064	10.00	J-1065	10.00	1,327.0	18.0	120.0	4,711.02	5.94	9.55
P-1079	J-1065	10.00	J-1066	17.00	738.0	18.0	120.0	4,711.02	5.94	5.31
P-1080	J-1066	17.00	J-1067	15.00	1,205.0	18.0	120.0	4,711.02	5.94	8.67
P-1081	J-1067	15.00	J-1037	2.00	342.0	18.0	120.0	4,711.02	5.94	2.46
P-1082	WW-BC-3	-18.00	BC3-1	-19.00	5.0	8.0	120.0	629.25	4.02	0.04
P-1083	BC3-1	-19.00	J-1053	2.00	25.0	8.0	120.0	629.25	4.02	0.22
P-1084	WW-BC-3	-18.00	BC-3-2	-19.00	5.0	8.0	120.0	629.25	4.02	0.04
P-1085	BC-3-2	-19.00	J-1053	2.00	25.0	8.0	120.0	629.25	4.02	0.22
P-1086	WW-BC-3	-18.00	BC-3-3	-19.00	5.0	8.0	120.0	0.00	0.00	0.00
P-1087	BC-3-3	-19.00	J-1053	2.00	25.0	8.0	120.0	0.00	0.00	0.00
P-1088	WW-BC-2	4.50	BC-2-1	3.50	5.0	10.0	120.0	1,496.15	6.11	0.08
P-1089	BC-2-1	3.50	J-1040	17.00	25.0	10.0	120.0	1,496.15	6.11	0.38
P-1090	WW-BC-2	4.50	BC-2-2	3.50	5.0	10.0	120.0	1,496.15	6.11	0.08
P-1091	BC-2-2	3.50	J-1040	17.00	25.0	10.0	120.0	1,496.15	6.11	0.38
P-1092	WW-BC-2	4.50	BC-2-3	3.50	5.0	10.0	120.0	1,496.15	6.11	0.08
P-1093	BC-2-3	3.50	J-1040	17.00	25.0	10.0	120.0	1,496.15	6.11	0.38
P-1094	WW-BC-2	4.50	BC-2-4	3.50	5.0	10.0	120.0	0.00	0.00	0.00
P-1095	BC-2-4	3.50	J-1040	17.00	25.0	10.0	120.0	0.00	0.00	0.00
P-1096	WW-BC-5	10.40	BC-5-4	0.00	5.0	8.0	120.0	0.00	0.00	0.00
P-1097	BC-5-4	0.00	J-1054	30.00	25.0	8.0	120.0	0.00	0.00	0.00
P-1098	WW-BC-5	10.40	BC-5-3	0.00	5.0	8.0	120.0	623.24	3.98	0.04
P-1099	BC-5-3	0.00	J-1054	30.00	25.0	8.0	120.0	623.24	3.98	0.22
P-1100	WW-BC-5	10.40	BC-5-2	0.00	5.0	8.0	120.0	623.24	3.98	0.04
P-1101	BC-5-2	0.00	J-1054	30.00	25.0	8.0	120.0	623.24	3.98	0.22
P-1102	WW-BC-5	10.40	BC-5-1	0.00	5.0	8.0	120.0	623.24	3.98	0.04
P-1103	BC-5-1	0.00	J-1054	30.00	25.0	8.0	120.0	623.24	3.98	0.22
P-1104	WW-BC-1	22.00	BC-1-1	21.00	5.0	8.0	120.0	947.10	6.05	0.10
P-1105	BC-1-1	21.00	J-1057	33.00	25.0	8.0	120.0	947.10	6.05	0.48
P-1106	WW-BC-1	22.00	BC-1-2	21.00	5.0	8.0	120.0	947.10	6.05	0.10
P-1107	BC-1-2	21.00	J-1057	33.00	25.0	8.0	120.0	947.10	6.05	0.48
P-1108	WW-BC-1	22.00	BC-1-3	21.00	5.0	8.0	120.0	947.10	6.05	0.10

FlexTable: Pressure Pipe Table (Bay County SewerCAD Model FUTURE.swc)

Current Time: 0.000 hours

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-1109	BC-1-3	21.00	J-1057	33.00	25.0	8.0	120.0	947.10	6.05	0.48
P-1110	WW-BC-1	22.00	BC-1-4	21.00	5.0	8.0	120.0	0.00	0.00	0.00
P-1111	BC-1-4	21.00	J-1057	33.00	25.0	8.0	120.0	0.00	0.00	0.00
P-1118	AV-1005	77.00	J-1076	58.00	1,005.0	6.0	120.0	289.50	3.29	8.70
P-1119	J-1077	81.00	J-1078	71.00	2,123.0	8.0	120.0	0.00	0.00	0.00
P-1120	J-1078	71.00	J-1079	62.00	2,129.0	8.0	120.0	0.00	0.00	0.00
P-1121	J-1079	62.00	J-1076	58.00	812.0	8.0	120.0	0.00	0.00	0.00
P-1122	J-1076	58.00	AV-1006	67.00	3,018.0	8.0	120.0	289.50	1.85	6.44
P-1123	AV-1006	67.00	J-1081	64.00	2,434.0	8.0	120.0	289.50	1.85	5.19
P-1124	J-1081	64.00	J-1082	57.00	988.0	8.0	120.0	289.50	1.85	2.11
P-1125	J-1082	57.00	AV-1007	60.00	4,950.0	8.0	120.0	289.50	1.85	10.56
P-1126	AV-1007	60.00	J-1084	49.00	6,375.0	8.0	120.0	289.50	1.85	13.60
P-1127	J-1084	49.00	J-1085	43.00	4,423.0	8.0	120.0	289.50	1.85	9.43
P-1129	J-1019	10.00	J-1087	10.00	65.0	36.0	120.0	13,720.98	4.32	0.12
P-1130	J-1087	10.00	J-1088	12.00	2,480.0	36.0	120.0	13,720.98	4.32	4.42
P-1131	J-1088	12.00	J-1089	12.00	521.0	36.0	120.0	13,720.98	4.32	0.93
P-1132	WW-BC-37	48.00	BC-37-1	0.00	5.0	6.0	120.0	289.50	3.29	0.04
P-1133	BC-37-1	0.00	J-1090	61.00	25.0	6.0	120.0	289.50	3.29	0.22
P-1135	WW-BC-37	48.00	BC-37-2	0.00	5.0	6.0	120.0	0.00	0.00	0.00
P-1136	BC-37-2	0.00	J-1090	61.00	25.0	6.0	120.0	0.00	0.00	0.00
P-1137	J-1090	61.00	J-1091	60.00	576.0	6.0	120.0	289.50	3.29	4.99
P-1138	J-1091	60.00	AV-1005	77.00	2,281.0	6.0	120.0	289.50	3.29	19.76
P-1139	WW-BC-39	0.00	BC-39-1	-3.00	5.0	6.0	120.0	218.72	2.48	0.03
P-1140	BC-39-1	-3.00	J-1092	9.00	25.0	6.0	120.0	218.72	2.48	0.13
P-1141	WW-BC-39	0.00	BC-39-2	-3.00	5.0	6.0	120.0	0.00	0.00	0.00
P-1142	BC-39-2	-3.00	J-1092	9.00	25.0	6.0	120.0	0.00	0.00	0.00
P-1143	J-1092	9.00	J-1093	11.00	844.0	8.0	120.0	218.72	1.40	1.07
P-1144	J-1093	11.00	J-1094	10.00	672.0	8.0	120.0	218.72	1.40	0.85
P-1146	J-1095	2.00	J-1096	2.00	98.0	10.0	120.0	218.72	0.89	0.04
P-1148	J-1097	7.00	J-1098	1.00	2,006.0	8.0	120.0	218.72	1.40	2.55
P-1149	J-1098	1.00	J-1099	4.00	715.0	8.0	120.0	639.38	4.08	6.62

FlexTable: Pressure Pipe Table (Bay County SewerCAD Model FUTURE.swc)

Current Time: 0.000 hours

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-1150	J-1099	4.00	J-1100	5.00	112.0	8.0	120.0	639.38	4.08	1.04
P-1151	J-1100	5.00	J-1101	5.00	737.0	8.0	120.0	639.38	4.08	6.82
P-1152	J-1101	5.00	J-1102	27.00	4,695.0	8.0	120.0	639.38	4.08	43.44
P-1153	J-1102	27.00	J-1103	39.00	6,198.0	12.0	120.0	639.38	1.81	7.96
P-1154	J-1103	39.00	J-1104	39.00	1,180.0	12.0	120.0	639.38	1.81	1.52
P-1155	WW-BC-40	-11.00	BC-40-1	-12.00	5.0	6.0	120.0	420.66	4.77	0.09
P-1157	BC-40-1	-12.00	J-1106	1.00	25.0	6.0	120.0	420.66	4.77	0.43
P-1158	WW-BC-40	-11.00	BC-40-2	-12.00	5.0	6.0	120.0	0.00	0.00	0.00
P-1159	BC-40-2	-12.00	J-1106	1.00	25.0	6.0	120.0	0.00	0.00	0.00
P-1160	J-1106	1.00	J-1107	2.00	122.0	8.0	120.0	420.66	2.68	0.52
P-1161	J-1107	2.00	J-1108	2.00	365.0	8.0	120.0	420.66	2.68	1.56
P-1162	J-1108	2.00	J-1109	4.00	1,978.0	8.0	120.0	420.66	2.68	8.43
P-1163	J-1109	4.00	J-1110	4.00	546.0	8.0	120.0	420.66	2.68	2.33
P-1164	J-1110	4.00	J-1111	5.00	1,875.0	8.0	120.0	420.66	2.68	7.99
P-1165	J-1111	5.00	J-1112	4.00	2,314.0	8.0	120.0	420.66	2.68	9.86
P-1166	J-1112	4.00	J-1113	5.00	660.0	8.0	120.0	420.66	2.68	2.81
P-1167	J-1113	5.00	J-1098	1.00	944.0	8.0	120.0	420.66	2.68	4.02
P-1168	WW-BC-36	-8.00	BC-36-1	-9.00	5.0	4.0	120.0	180.19	4.60	0.13
P-1169	BC-36-1	-9.00	J-1114	3.00	25.0	4.0	120.0	180.19	4.60	0.65
P-1170	WW-BC-36	-8.00	BC-36-2	-9.00	5.0	4.0	120.0	0.00	0.00	0.00
P-1171	BC-36-2	-9.00	J-1114	3.00	25.0	4.0	120.0	0.00	0.00	0.00
P-1173	WW-BC-43	10.00	BC-43-1	10.00	0.00	4.0	120.0	44.34	1.13	0.01
P-1174	BC-43-1	0.00	J-1115	24.00	25.0	4.0	120.0	44.34	1.13	0.05
P-1175	WW-BC-43	10.00	BC-43-2	10.00	5.0	4.0	120.0	0.00	0.00	0.00
P-1176	BC-43-2	0.00	J-1115	24.00	25.0	4.0	120.0	0.00	0.00	0.00
P-1177	J-1115	24.00	J-1116	24.00	543.0	2.5	120.0	44.34	2.90	10.36
P-1178	J-1116	24.00	J-1117	27.00	4,787.0	2.5	120.0	44.34	2.90	91.31
P-1182	J-1119	39.00	J-1120	42.00	503.0	6.0	120.0	224.52	2.55	2.72
P-1183	J-1120	42.00	J-1121	42.00	144.0	6.0	120.0	224.52	2.55	0.78
P-1184	J-1121	42.00	J-1122	44.00	327.0	6.0	120.0	224.52	2.55	1.77
P-1185	J-1122	44.00	J-1123	44.00	105.0	6.0	120.0	224.52	2.55	0.57

FlexTable: Pressure Pipe Table (Bay County SewerCAD Model FUTURE.swc)

Current Time: 0.000 hours

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-1186	J-1123	44.00	J-1124	46.00	351.0	6.0	120.0	224.52	2.55	1.90
P-1187	J-1124	46.00	J-1125	49.00	357.0	6.0	120.0	224.52	2.55	1.93
P-1188	J-1105	42.00	J-1126	44.00	370.0	12.0	120.0	1,439.55	4.08	2.14
P-1189	J-1126	44.00	J-1127	44.00	137.0	12.0	120.0	1,439.55	4.08	0.79
P-1190	J-1127	44.00	J-1128	46.00	401.0	12.0	120.0	1,439.55	4.08	2.31
P-1191	J-1128	46.00	J-1129	49.00	254.0	12.0	120.0	1,729.06	4.90	2.06
P-1192	J-1125	49.00	North Bay AWTP	52.00	109.0	6.0	120.0	224.52	2.55	0.59
P-1193	J-1129	49.00	North Bay AWTP	52.00	105.0	12.0	120.0	1,729.06	4.90	0.85
P-1195	J-1085	43.00	J-1130	45.00	303.0	8.0	120.0	289.50	1.85	0.65
P-1196	J-1130	45.00	J-1086	47.00	519.0	12.0	120.0	289.50	0.82	0.15
P-1198	J-1104	39.00	J-1131	39.50	67.0	12.0	120.0	639.38	1.81	0.09
P-1199	J-1131	39.50	J-1105	42.00	410.0	14.0	120.0	1,439.55	3.00	1.12
P-1201	J-1086	47.00	J-1128	46.00	165.0	12.0	120.0	289.50	0.82	0.05
P-1202	J-1094	10.00	J-1132	4.00	1,031.0	8.0	120.0	218.72	1.40	1.31
P-1203	J-1132	4.00	J-1095	2.00	312.0	10.0	120.0	218.72	0.89	0.13
P-1204	J-1096	2.00	J-1133	4.00	596.0	10.0	120.0	218.72	0.89	0.26
P-1205	J-1133	4.00	J-1097	7.00	3,503.0	8.0	120.0	218.72	1.40	4.45
P-1208	J-1134	39.00	J-1119	39.00	1,212.0	6.0	120.0	224.52	2.55	6.56
P-1209	J-1089	12.00	Military Point AWTP	0.00	218.0	36.0	120.0	13,720.98	4.32	0.39
P-1210	J-1117	27.00	J-1135	27.00	37.0	6.0	120.0	40.31	0.46	0.01
P-1211	J-1135	27.00	J-1134	39.00	6,123.0	6.0	120.0	224.52	2.55	33.12
P-1213	J-1114	3.00	J-1136	3.00	81.0	6.0	120.0	180.18	2.04	0.29
P-1214	J-1136	3.00	J-1137	5.00	614.0	6.0	120.0	180.18	2.04	2.21
P-1215	J-1137	5.00	J-1135	27.00	4,775.0	6.0	120.0	180.18	2.04	17.19
P-1216	J-1117	27.00	J-1135	27.00	37.0	2.5	120.0	4.03	0.26	0.01
P-1217	J-209	41.00	High Point	41.00	203.0	8.0	120.0	-131.62	0.84	0.10
P-1221	J-207 BCW	41.00	J-209	41.00	35.0	8.0	120.0	0.00	0.00	0.00
P-1223	J-1138	15.04	J-48	17.00	165.0	10.0	120.0	559.18	2.28	0.40

Bentley SewerCAD V8i (SELECTseries 2)
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Bay County SewerCAD Model FUTURE.swc
10/19/2012

FlexTable: Pressure Pipe Table (Bay County SewerCAD Model FUTURE.swc)

Current Time: 0.000 hours

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-1224	J-31	17.00	J-1138	15.04	11.0	10.0	120.0	559.18	2.28	0.03
P-1225	J-2	13.00	J-43	12.00	35.0	8.0	120.0	427.56	2.73	0.15
P-1226	J-127	39.00	J-1131	39.50	167.0	10.0	120.0	800.18	3.27	0.79

FlexTable: Pressure Junction Table (Bay County SewerCAD Model FUTURE.swc)

Current Time: 0.000 hours

ID	Label	Elevation (Ground) (ft)	Elevation (ft)	Hydraulic Grade Line: (Calculated) (ft)	Pressure (psi)
20	J-1	13.00	10.00	75.99	28.6
25	J-2	16.00	13.00	75.62	27.1
64	J-20	45.00	42.00	78.54	15.8
69	J-21	45.00	42.00	78.30	15.7
73	J-23	53.00	50.00	59.88	4.3
75	J-24	53.00	50.00	59.32	4.0
77	J-25	34.00	31.00	41.23	4.4
79	J-26	30.00	27.00	41.14	6.1
81	J-27	28.00	25.00	40.91	6.9
83	J-28	21.00	18.00	39.92	9.5
85	J-29	20.00	17.00	39.35	9.7
87	J-30	19.00	16.00	39.21	10.0
89	J-31	20.00	17.00	39.18	9.6
91	J-32	20.00	17.00	43.29	11.4
93	J-33	20.00	17.00	50.91	14.7
95	J-34	19.00	16.00	59.30	18.7
97	J-35	19.00	16.00	59.67	18.9
99	J-36	18.00	15.00	63.61	21.0
101	J-37	18.00	15.00	66.22	22.2
103	J-38	17.00	14.00	68.29	23.5
105	J-39	14.00	11.00	68.79	25.0
107	J-40	-7.00	-10.00	69.58	34.4
109	J-41	-7.00	-10.00	70.94	35.0
111	J-42	13.00	10.00	72.30	27.0
113	J-43	15.00	12.00	75.46	27.5
1119	J-48	20.00	17.00	38.75	9.4
1120	J-49	20.00	17.00	38.51	9.3
1121	J-50	18.00	15.00	34.63	8.5
1122	J-51	16.00	13.00	34.48	9.3

FlexTable: Pressure Junction Table (Bay County SewerCAD Model FUTURE.swc)

Current Time: 0.000 hours

ID	Label	Elevation: (Ground) (ft)	Elevation: (ft)	Hydraulic Grade Line (Calculated) (ft)	Pressure (psi)
1123	J-52	18.00	15.00	34.32	8.4
1124	J-53	18.00	15.00	31.75	7.2
1125	J-54	17.00	14.00	31.67	7.6
1126	J-55	18.00	15.00	31.57	7.2
1127	J-56	18.00	15.00	27.53	5.4
1128	J-57	19.00	16.00	25.74	4.2
1129	J-58	17.00	14.00	25.64	5.0
1130	J-59	18.00	15.00	25.51	4.5
1131	J-60	17.00	14.00	23.37	4.1
1132	J-61	14.00	11.00	21.19	4.4
1133	J-62	10.00	7.00	19.82	5.5
1134	J-63	-3.00	-6.00	15.83	9.4
1135	J-64	-9.00	-12.00	15.37	11.8
1136	J-65	-9.00	-12.00	15.17	11.8
1137	J-66	14.00	11.00	14.28	1.4
1138	J-67	16.00	13.00	13.69	0.3
1139	J-68	15.00	12.00	12.98	0.4
1140	J-69	14.00	11.00	117.72	46.2
1141	J-70	18.00	15.00	114.25	42.9
1142	J-71	21.00	18.00	107.04	38.5
1143	J-72	23.00	20.00	102.10	35.5
1144	J-73	20.00	17.00	97.54	34.8
1145	J-74	20.00	17.00	97.25	34.7
1146	J-75	20.00	17.00	97.00	34.6
1147	J-76	22.00	19.00	92.72	31.9
1148	J-77	19.00	16.00	92.40	33.1
1149	J-78	22.00	19.00	92.10	31.6
1150	J-79	24.00	21.00	86.99	28.5
1151	J-80	18.00	15.00	86.68	31.0

FlexTable: Pressure Junction Table (Bay County SewerCAD Model FUTURE.swc)

Current Time: 0.000 hours

ID	Label	Elevation (Ground) (ft)	Elevation (ft)	Hydraulic Grade Line (Calculated) (ft)	Pressure (psi)
1152	J-81	22.00	19.00	86.28	29.1
1153	J-82	25.00	22.00	84.41	27.0
1154	J-83	25.00	22.00	82.45	26.2
1155	J-84	26.00	23.00	79.67	24.5
1156	J-85	30.00	27.00	76.36	21.4
1157	J-86	35.00	32.00	71.22	17.0
1158	J-87	27.00	24.00	71.03	20.3
1159	J-88	36.00	33.00	70.84	16.4
1160	J-89	37.00	34.00	67.39	14.4
1161	J-90	39.00	36.00	60.49	10.6
1162	J-91	36.00	33.00	60.24	11.8
1163	J-92	39.00	36.00	59.96	10.4
1164	J-93	42.00	39.00	56.99	7.8
1165	J-94	44.00	41.00	50.61	4.2
1166	J-95	43.00	40.00	50.33	4.5
1167	J-96	43.00	40.00	50.05	4.3
1168	J-97	46.00	43.00	47.11	1.8
1169	J-98	46.00	43.00	143.00	43.3
1170	J-99	43.00	40.00	138.15	42.5
1171	J-100	42.00	39.00	137.86	42.8
1172	J-101	44.00	41.00	137.58	41.8
1173	J-102	43.00	40.00	119.76	34.5
1174	J-103	43.00	40.00	114.87	32.4
1175	J-104	41.00	38.00	114.59	33.1
1176	J-105	43.00	40.00	114.29	32.1
1177	J-106	46.00	43.00	107.09	27.7
1178	J-107	45.00	42.00	105.75	27.6
1179	J-108	41.00	38.00	105.48	29.2
1180	J-109	45.00	42.00	105.17	27.3

FlexTable: Pressure Junction Table (Bay County SewerCAD Model FUTURE.swc)

Current Time: 0.000 hours

ID	Label	Elevation (Ground) (ft)	Elevation (ft)	Hydraulic Grade Line (Calculated) (ft)	Pressure (psi)
1181	J-110	45.00	42.00	102.00	26.0
1182	J-111	45.00	42.00	97.06	23.8
1183	J-112	43.00	40.00	96.79	24.6
1184	J-113	45.00	42.00	96.53	23.6
1185	J-115	46.00	43.00	86.32	18.7
1186	J-116	44.00	41.00	86.12	19.5
1187	J-117	46.00	43.00	85.86	18.5
1188	J-119	47.00	44.00	75.18	13.5
1189	J-120	46.00	43.00	71.00	12.1
1190	J-121	45.00	42.00	67.82	11.2
1191	J-122	47.00	44.00	66.63	9.8
1192	J-123	42.00	39.00	66.05	11.7
1193	J-124	48.00	45.00	65.90	9.0
1194	J-125	48.00	45.00	65.61	8.9
1195	J-126	42.00	39.00	65.47	11.5
1196	J-127	42.00	39.00	64.61	11.1
1197	J-129	16.00	13.00	38.64	11.1
1198	J-130	22.00	19.00	100.34	35.2
303	J-131	20.00	17.00	46.56	12.8
307	J-132	20.00	17.00	44.23	11.8
310	J-133	17.00	14.00	45.30	13.5
332	J-134	52.00	49.00	52.68	1.6
342	J-135	12.00	9.00	118.94	47.6
343	J-136	5.00	2.00	118.62	50.5
345	J-137	12.00	9.00	118.47	47.4
347	J-138	12.00	9.00	117.05	46.7
349	J-139	12.00	9.00	115.08	45.9
351	J-140	12.00	9.00	114.12	45.5
353	J-141	12.00	9.00	113.80	45.3

FlexTable: Pressure Junction Table (Bay County SewerCAD Model FUTURE.swc)

Current Time: 0.000 hours

ID	Label	Elevation (Ground) (ft)	Elevation (ft)	Hydraulic Grade Line (Calculated) (ft)	Pressure (psi)
355	J-142	11.00	8.00	110.75	44.5
357	J-143	4.00	1.00	110.48	47.4
359	J-144	11.00	8.00	110.13	44.2
361	J-145	11.00	8.00	108.86	43.6
363	J-146	8.00	5.00	105.22	43.4
365	J-147	5.00	2.00	104.92	44.5
367	J-148	8.00	5.00	104.67	43.1
369	J-149	10.00	7.00	104.47	42.2
371	J-150	9.00	6.00	98.74	40.1
373	J-151	6.00	3.00	98.49	41.3
375	J-152	9.00	6.00	98.24	39.9
377	J-153	10.00	7.00	94.95	38.1
379	J-154	11.00	8.00	92.19	36.4
381	J-155	8.00	5.00	92.04	37.7
383	J-156	11.00	8.00	91.87	36.3
385	J-157	16.00	13.00	80.12	29.0
387	J-158	12.00	9.00	79.95	30.7
389	J-159	16.00	13.00	79.70	28.9
391	J-160	16.00	13.00	79.64	28.8
1199	J-161	16.00	13.00	13.73	0.3
1200	J-162	14.00	11.00	118.57	46.5
1201	J-163	46.00	43.00	44.92	0.8
1202	J-165	46.00	43.00	150.90	46.7
1203	J-166	46.00	43.00	151.04	46.7
495	J-167	12.00	9.00	119.52	47.8
499	J-168	12.00	9.00	119.06	47.6
1204	J-169	14.00	11.00	118.34	46.4
1205	J-170	14.00	11.00	12.38	0.6
1206	J-171	25.00	22.00	82.49	26.2

FlexTable: Pressure Junction Table (Bay County SewerCAD Model FUTURE.swc)

Current Time: 0.000 hours

ID	Label	Elevation (Ground) (ft)	Elevation (ft)	Hydraulic Grade Line (Calculated) (ft)	Pressure (psi)
1207	J-172	45.10	42.10	105.81	27.6
611	J-196	16.00	13.00	75.79	27.2
625	J-198	43.00	40.00	85.38	19.6
626	J-199	43.00	40.00	84.74	19.4
628	J-200	43.00	40.00	82.67	18.5
630	J-201	43.00	40.00	82.07	18.2
632	J-202	44.00	41.00	47.75	2.9
637	J-203	49.00	46.00	74.70	12.4
638	J-204	49.00	46.00	73.36	11.8
640	J-205	49.00	46.00	69.81	10.3
642	J-206	56.00	53.00	59.60	2.9
648	J-207 BCW	44.00	41.00	45.30	1.9
652	J-208 BCE	52.10	49.10	53.76	2.0
664	J-209	44.00	41.00	41.57	0.2
683	J-1007	19.00	16.00	44.72	12.4
701	J-1009	19.00	16.00	44.72	12.4
702	J-1010	20.00	17.00	44.72	12.0
703	J-1011	18.00	15.00	44.72	12.9
704	J-1012	8.00	5.00	44.72	17.2
705	J-1013	20.00	17.00	44.72	12.0
706	J-1014	11.00	8.00	44.72	15.9
707	J-1015	30.00	27.00	44.72	7.7
708	J-1016	22.00	19.00	44.72	11.1
709	J-1017	8.00	5.00	44.72	17.2
710	J-1018	13.00	10.00	44.72	15.0
711	J-1019	13.00	10.00	44.72	15.0
728	J-1020	5.00	2.00	76.82	32.4
729	J-1021	8.00	5.00	72.17	29.1
730	J-1022	25.00	22.00	66.35	19.2

FlexTable: Pressure Junction Table (Bay County SewerCAD Model FUTURE.swc)

Current Time: 0.000 hours

ID	Label	Elevation (Ground) (ft)	Elevation (ft)	Hydraulic Grade Line (Calculated) (ft)	Pressure (psi)
731	J-1023	20.00	17.00	65.07	20.8
732	J-1024	19.00	16.00	64.55	21.0
734	J-1026	12.00	9.00	60.41	22.2
737	J-1029	2.00	-1.00	58.51	25.7
739	J-1031	-56.00	-59.00	53.60	48.7
741	J-1033	5.00	2.00	50.57	21.0
761	J-1036	24.00	21.00	67.43	20.1
764	J-1037	5.00	2.00	76.25	32.1
768	J-1038	8.00	5.00	72.17	29.1
770	J-1039	24.00	21.00	67.94	20.3
773	J-1040	20.00	17.00	115.02	42.4
774	J-1041	28.00	25.00	106.58	35.3
776	J-1042	28.00	25.00	99.94	32.4
778	J-1043	31.00	28.00	95.38	29.2
780	J-1044	31.00	28.00	92.82	28.0
782	J-1045	30.00	27.00	84.25	24.8
784	J-1046	30.00	27.00	84.02	24.7
786	J-1047	29.00	26.00	81.41	24.0
788	J-1048	28.00	25.00	76.99	22.5
790	J-1049	28.00	25.00	76.72	22.4
792	J-1050	5.00	2.00	71.15	29.9
794	J-1051	8.00	5.00	69.62	28.0
796	J-1052	24.00	21.00	67.95	20.3
799	J-1053	5.00	2.00	95.81	40.6
803	J-1054	33.00	30.00	181.10	65.4
804	J-1055	33.00	30.00	169.58	60.4
806	J-1056	34.00	31.00	130.98	43.3
808	J-1057	36.00	33.00	220.65	81.2
809	J-1058	32.00	29.00	217.23	81.4

FlexTable: Pressure Junction Table (Bay County SewerCAD Model FUTURE.swc)

Current Time: 0.000 hours

ID	Label	Elevation (Ground) (ft)	Elevation (ft)	Hydraulic Grade Line (Calculated) (ft)	Pressure (psi)
811	J-1059	36.00	33.00	202.38	73.3
813	J-1060	32.00	29.00	190.47	69.9
815	J-1061	26.00	23.00	151.29	55.5
817	J-1062	33.00	30.00	144.32	49.5
820	J-1063	30.00	27.00	111.91	36.7
822	J-1064	13.00	10.00	102.25	39.9
824	J-1065	13.00	10.00	92.70	35.8
826	J-1066	20.00	17.00	87.39	30.5
828	J-1067	18.00	15.00	78.71	27.6
894	J-1076	61.00	58.00	105.64	20.6
896	J-1077	84.00	81.00	105.64	10.7
897	J-1078	74.00	71.00	105.64	15.0
899	J-1079	65.00	62.00	105.64	18.9
904	J-1081	67.00	64.00	94.01	13.0
906	J-1082	60.00	57.00	91.90	15.1
910	J-1084	52.00	49.00	67.74	8.1
912	J-1085	46.00	43.00	58.31	6.6
914	J-1086	50.00	47.00	57.51	4.5
916	J-1087	13.00	10.00	44.60	15.0
918	J-1088	15.00	12.00	40.19	12.2
920	J-1089	15.00	12.00	39.26	11.8
934	J-1090	64.00	61.00	139.09	33.8
942	J-1091	63.00	60.00	134.10	32.1
951	J-1092	12.00	9.00	141.95	57.5
955	J-1093	14.00	11.00	140.88	56.2
957	J-1094	13.00	10.00	140.02	56.3
959	J-1095	5.00	2.00	138.58	59.1
961	J-1096	5.00	2.00	138.54	59.1
963	J-1097	10.00	7.00	133.84	54.9

FlexTable: Pressure Junction Table (Bay County SewerCAD Model FUTURE.swc)

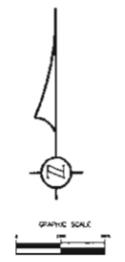
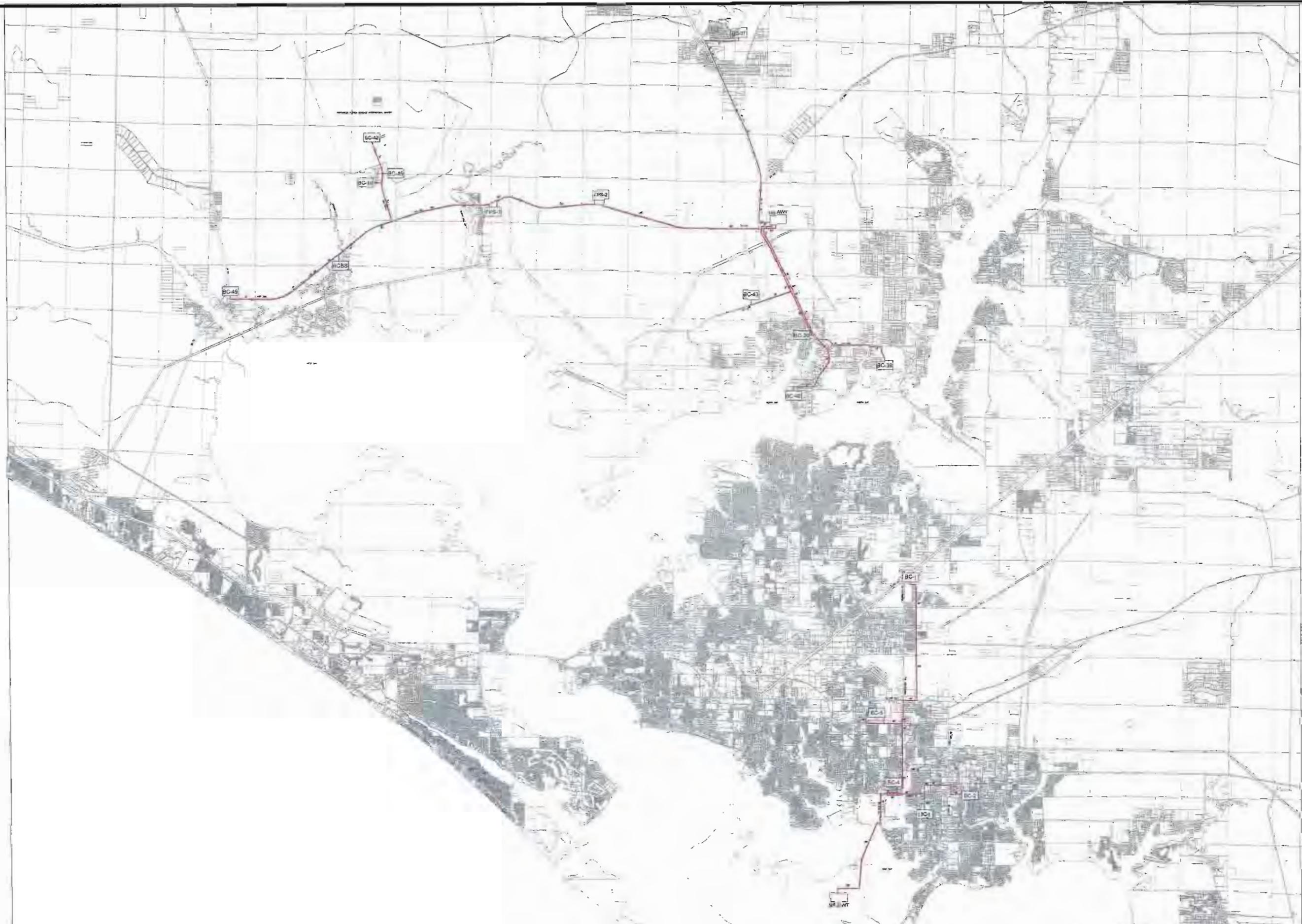
Current Time: 0.000 hours

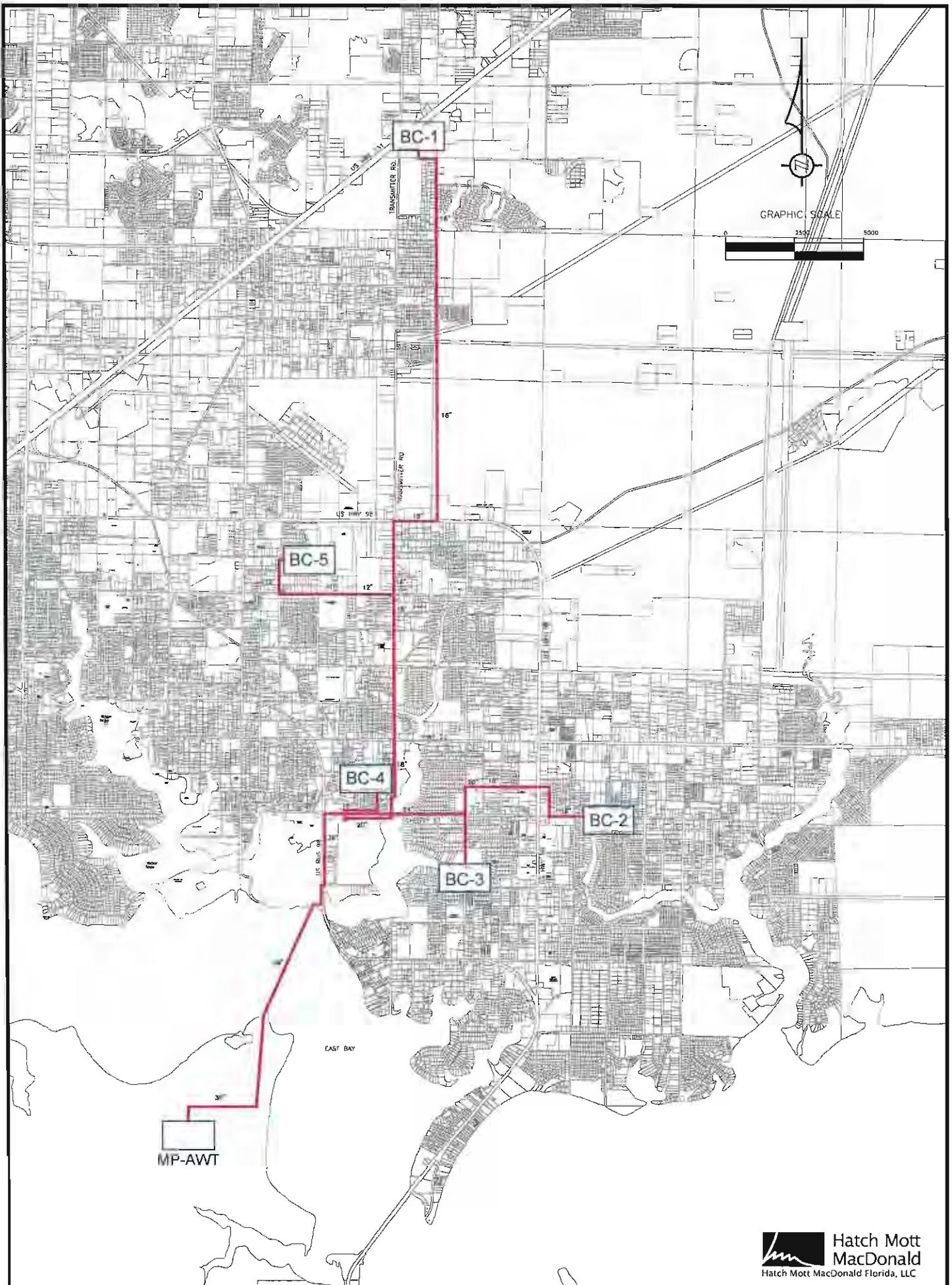
ID	Label	Elevation (Ground) (ft)	Elevation (ft)	Hydraulic Grade Line (Calculated) (ft)	Pressure (psi)
965	J-1098	4.00	1.00	131.29	56.4
967	J-1099	7.00	4.00	124.68	52.2
969	J-1100	8.00	5.00	123.64	51.3
971	J-1101	8.00	5.00	116.82	48.4
973	J-1102	30.00	27.00	73.38	20.1
975	J-1103	42.00	39.00	65.42	11.4
977	J-1104	42.00	39.00	63.90	10.8
979	J-1105	45.00	42.00	62.70	9.0
985	J-1106	4.00	1.00	168.81	72.6
989	J-1107	5.00	2.00	168.29	71.9
991	J-1108	5.00	2.00	166.73	71.3
993	J-1109	7.00	4.00	158.30	66.8
995	J-1110	7.00	4.00	155.98	65.8
997	J-1111	8.00	5.00	147.99	61.9
999	J-1112	7.00	4.00	138.13	58.0
1001	J-1113	8.00	5.00	135.31	56.4
1008	J-1114	6.00	3.00	124.17	52.4
1017	J-1115	27.00	24.00	206.16	78.8
1021	J-1116	27.00	24.00	195.80	74.3
1023	J-1117	30.00	27.00	104.49	33.5
1028	J-1119	42.00	39.00	64.81	11.2
1030	J-1120	45.00	42.00	62.09	8.7
1032	J-1121	45.00	42.00	61.31	8.4
1034	J-1122	47.00	44.00	59.54	6.7
1036	J-1123	47.00	44.00	58.97	6.5
1038	J-1124	49.00	46.00	57.07	4.8
1040	J-1125	52.00	49.00	55.14	2.7
1042	J-1126	47.00	44.00	60.56	7.2
1044	J-1127	47.00	44.00	59.77	6.8

FlexTable: Pressure Junction Table (Bay County SewerCAD Model FUTURE.swc)

Current Time: 0.000 hours

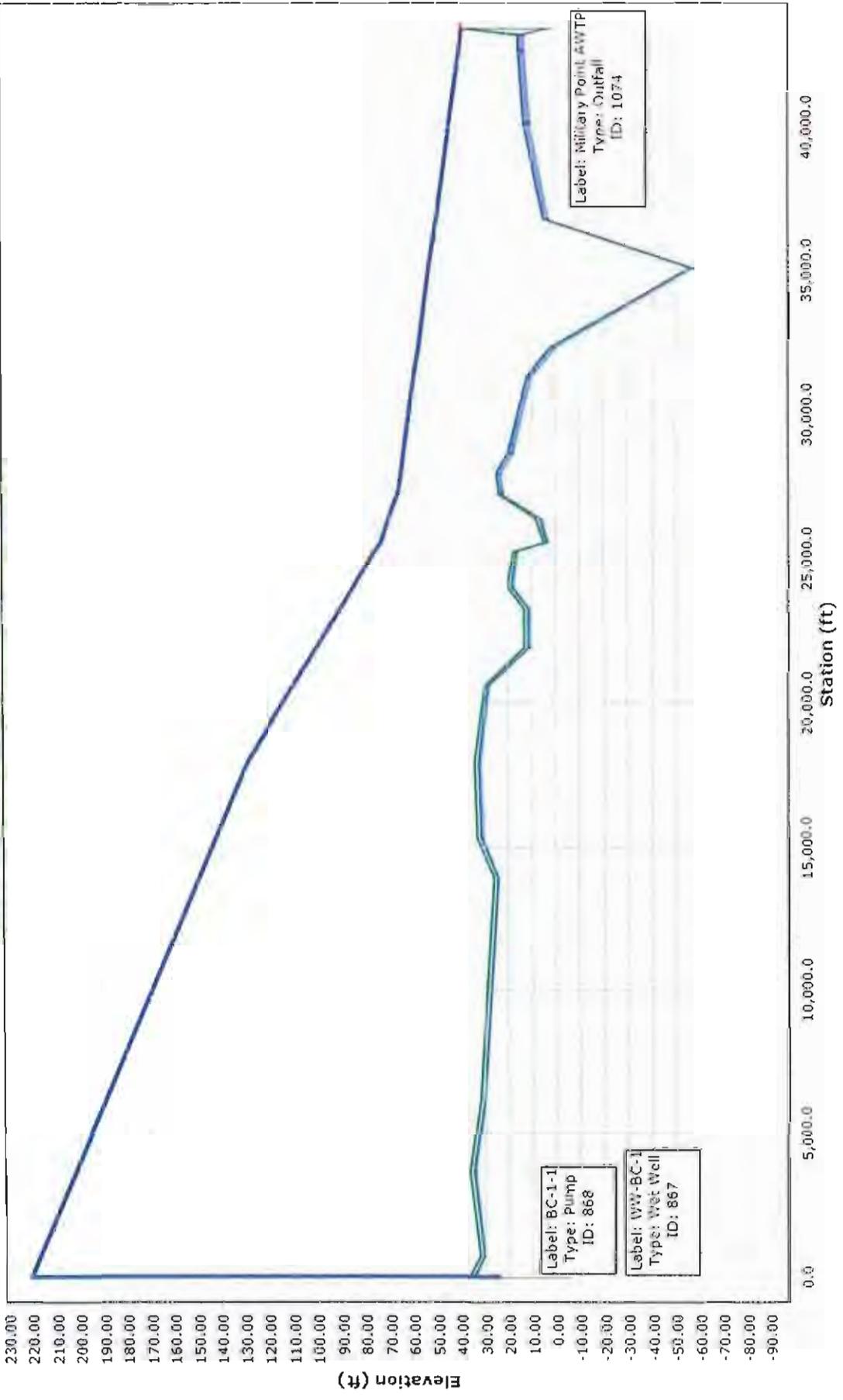
ID	Label	Elevation (Ground) (ft)	Elevation (ft)	Hydraulic Grade Line (Calculated) (ft)	Pressure (psi)
1046	J-1128	49.00	46.00	57.46	5.0
1048	J-1129	52.00	49.00	55.40	2.8
1054	J-1130	48.00	45.00	57.66	5.5
1058	J-1131	42.38	39.50	63.82	10.5
1063	J-1132	7.00	4.00	138.71	58.3
1066	J-1133	7.00	4.00	138.28	58.1
1071	J-1134	42.00	39.00	71.36	14.0
1076	J-1135	30.00	27.00	104.48	33.5
1080	J-1136	6.00	3.00	123.88	52.3
1082	J-1137	8.00	5.00	121.67	50.5
1208	J-1138	18.04	15.04	39.15	10.4





BAY COUNTY WASTEWATER SYSTEM MODEL - MUNICIPAL AREA FIGURE F2

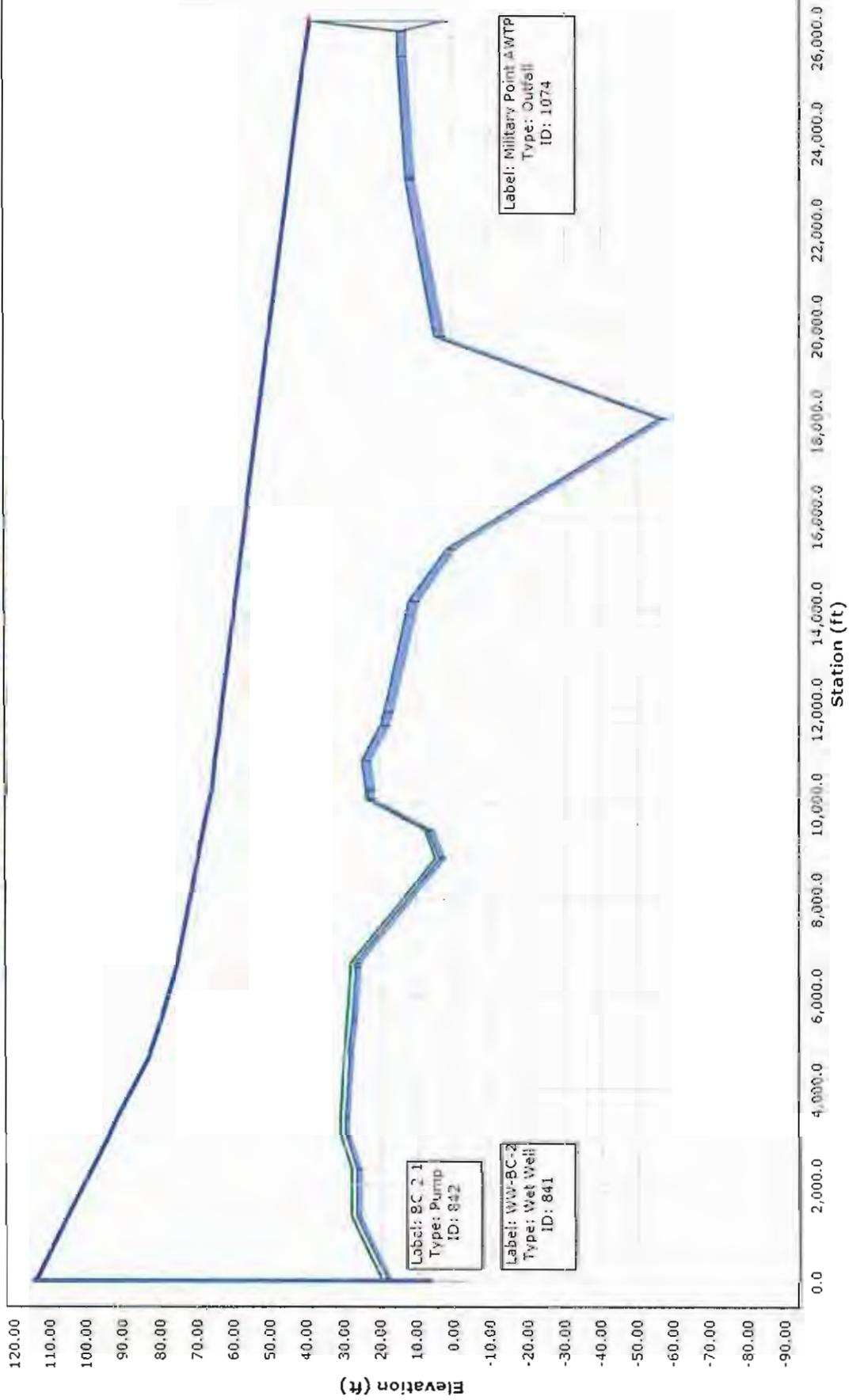
BC-1 to Military Point AWT - Base Time:



Pumping Station BC-1 to Military Point AWT - Hydraulic Profile

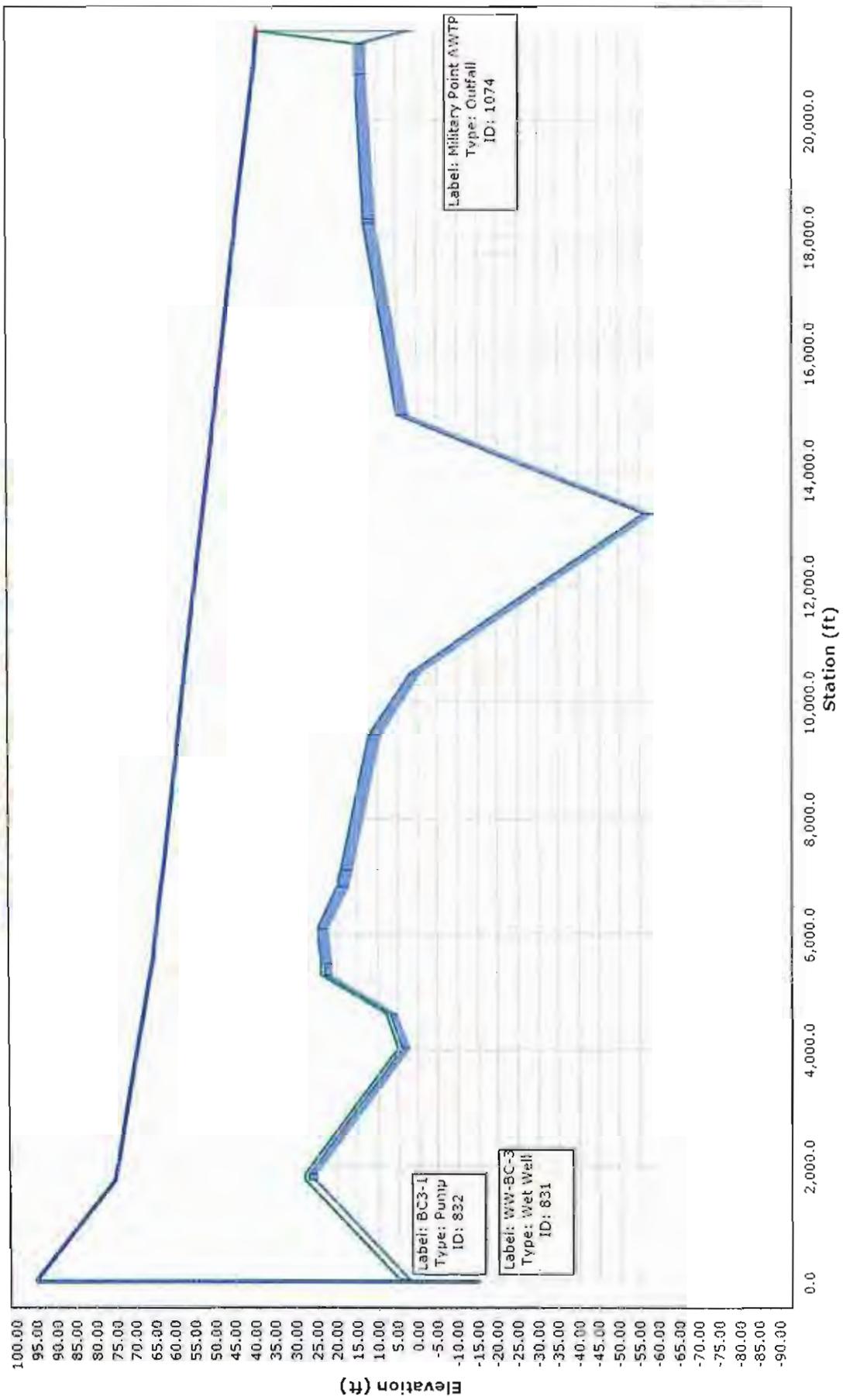
Time

BC-2 to Military Point AWTP - Base Time:



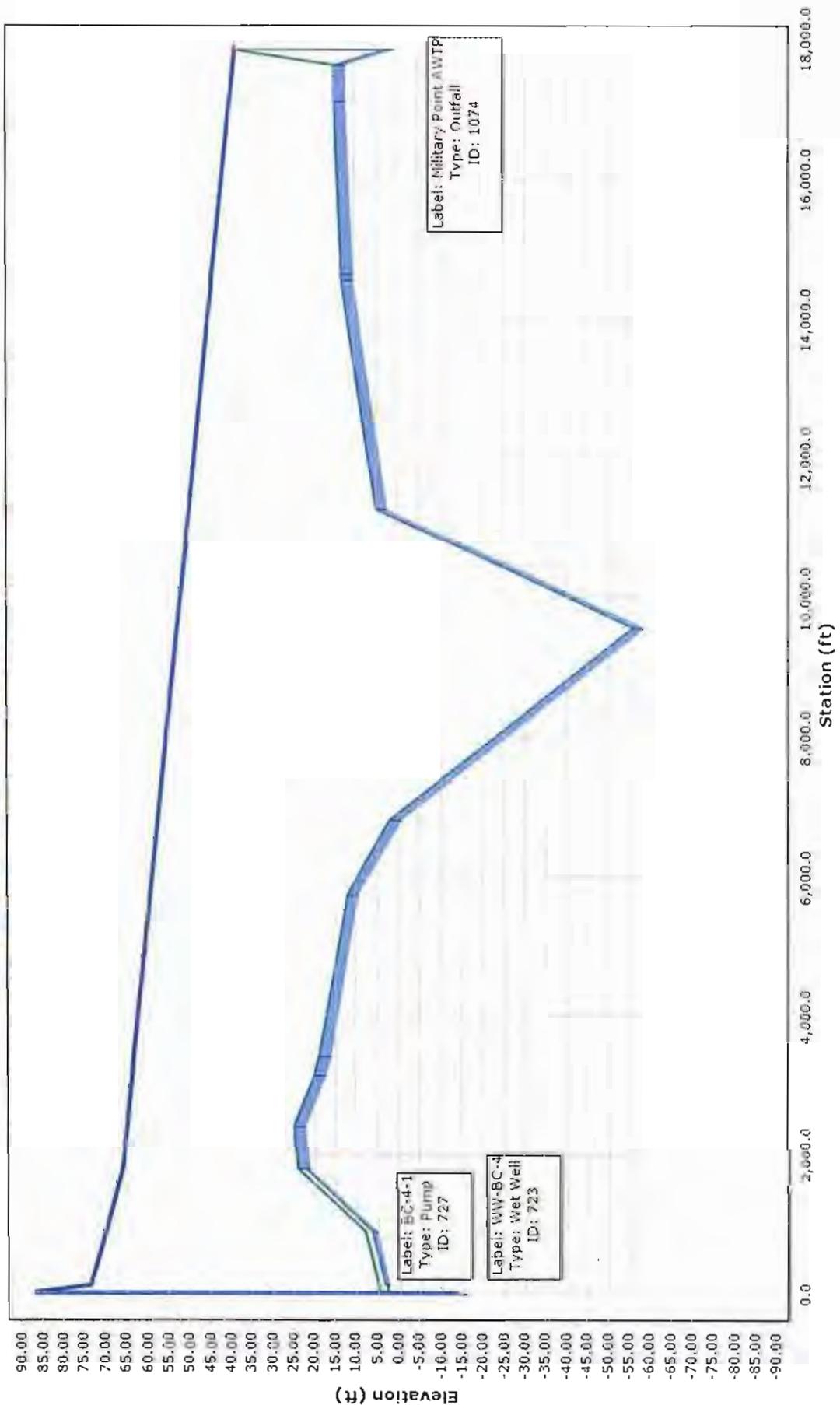
Pumping Station BC-2 to Military Point AWT – Hydraulic Profile

BC-3 to Military Point AWTP - Base Time:



Pumping Station BC-3 to Military Point AWT – Hydraulic Profile

BC-4 to Military Point AWTP - Base Time:



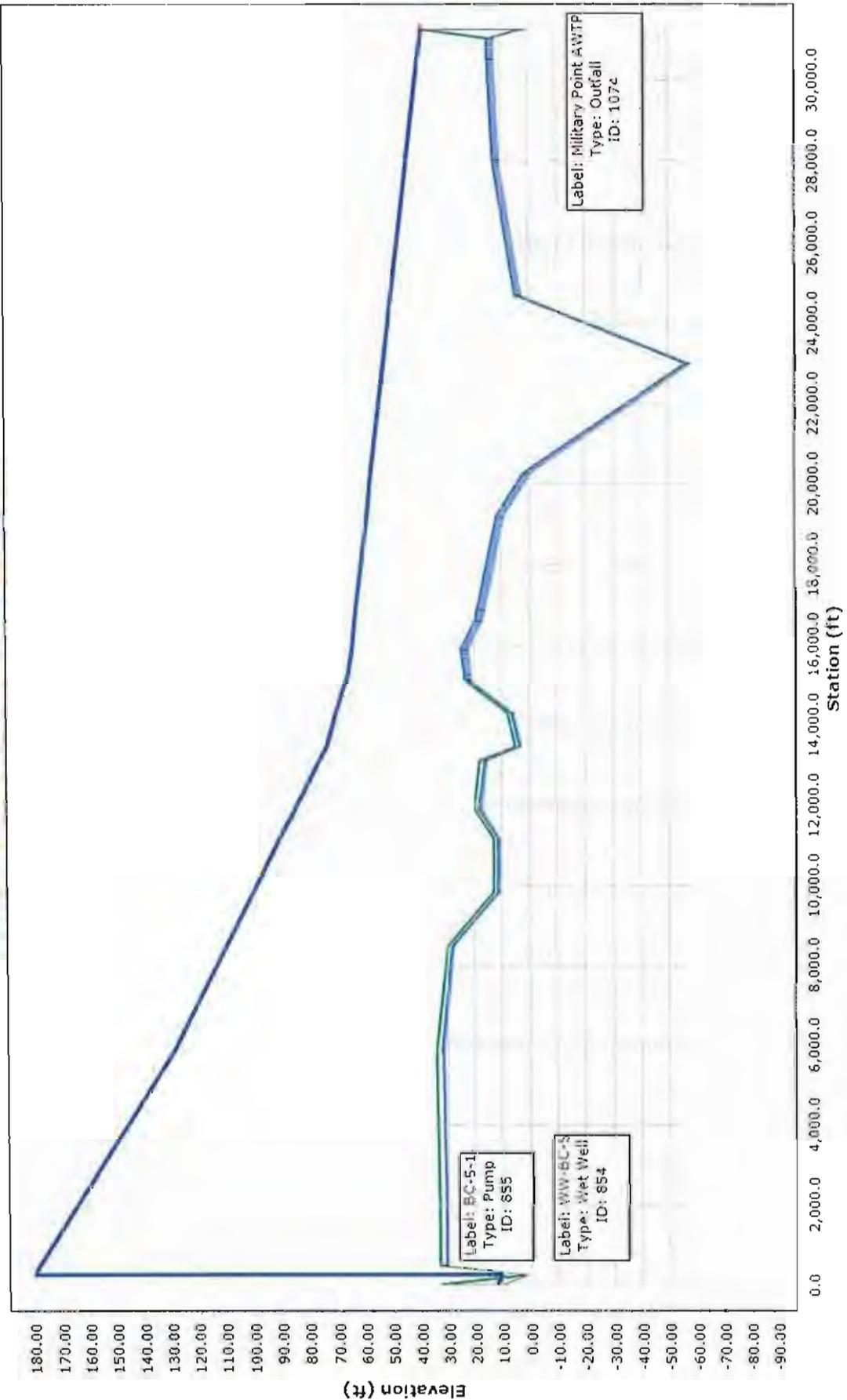
Label: BC-4-1
 Type: Pump
 ID: 727

Label: WW-BC-4
 Type: Wet Well
 ID: 723

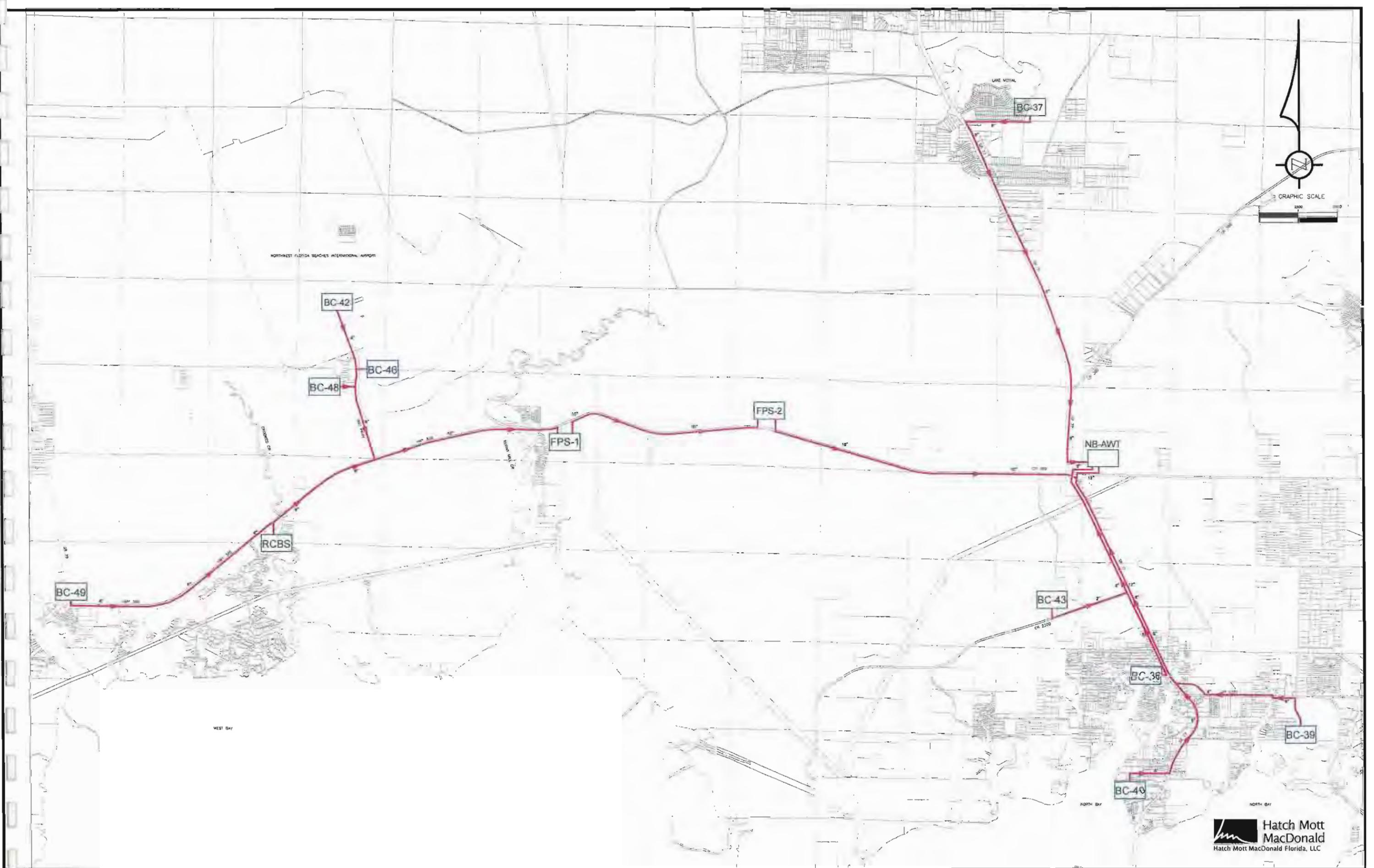
Label: Military Point AWTP
 Type: Outfall
 ID: 1074

Pumping Station BC-4 to Military Point AWTP - Hydraulic Profile

BC-5 to Military Point AWTWP - Base Time:

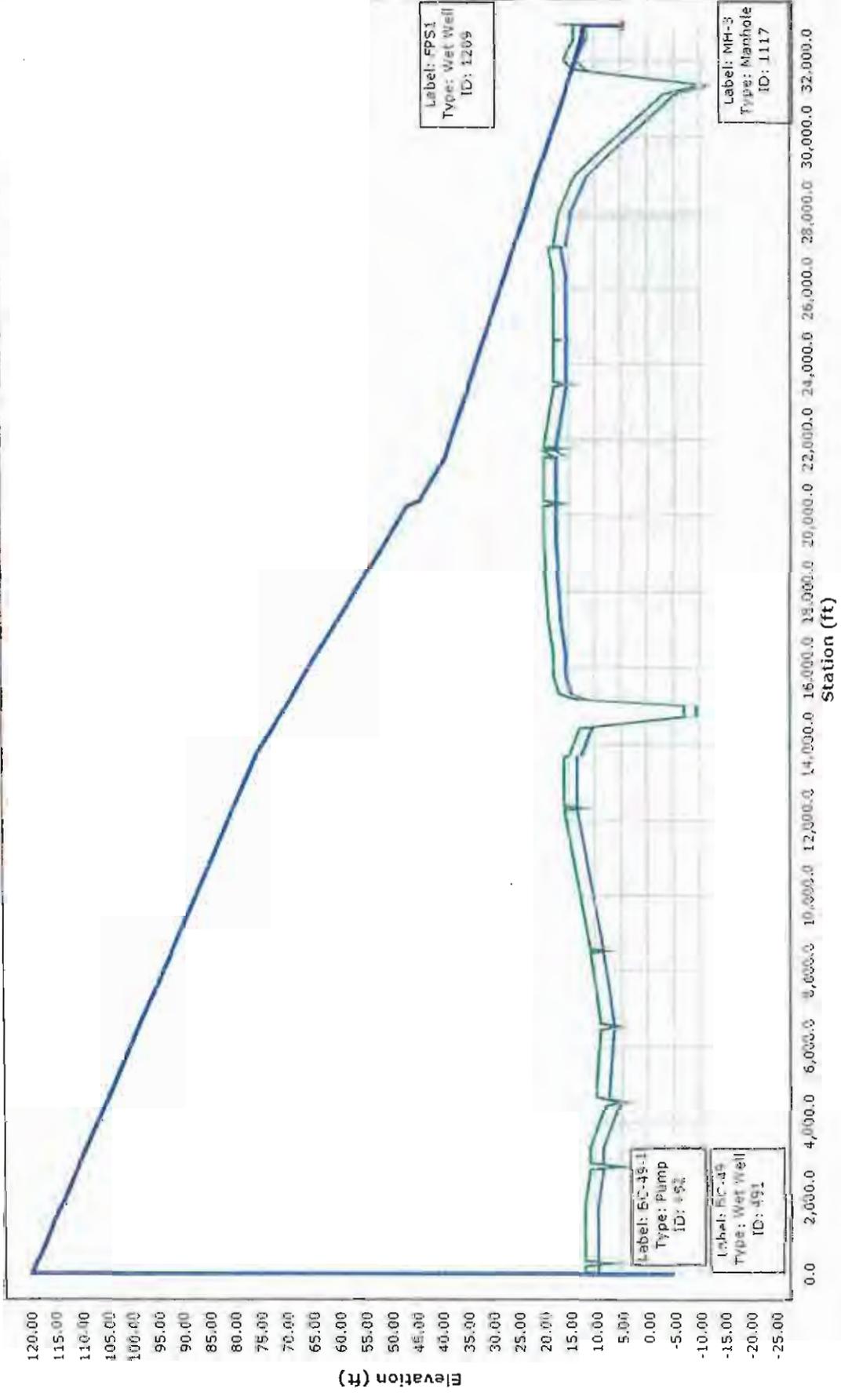


Pumping Station BC-5 to Military Point AWT - Hydraulic Profile



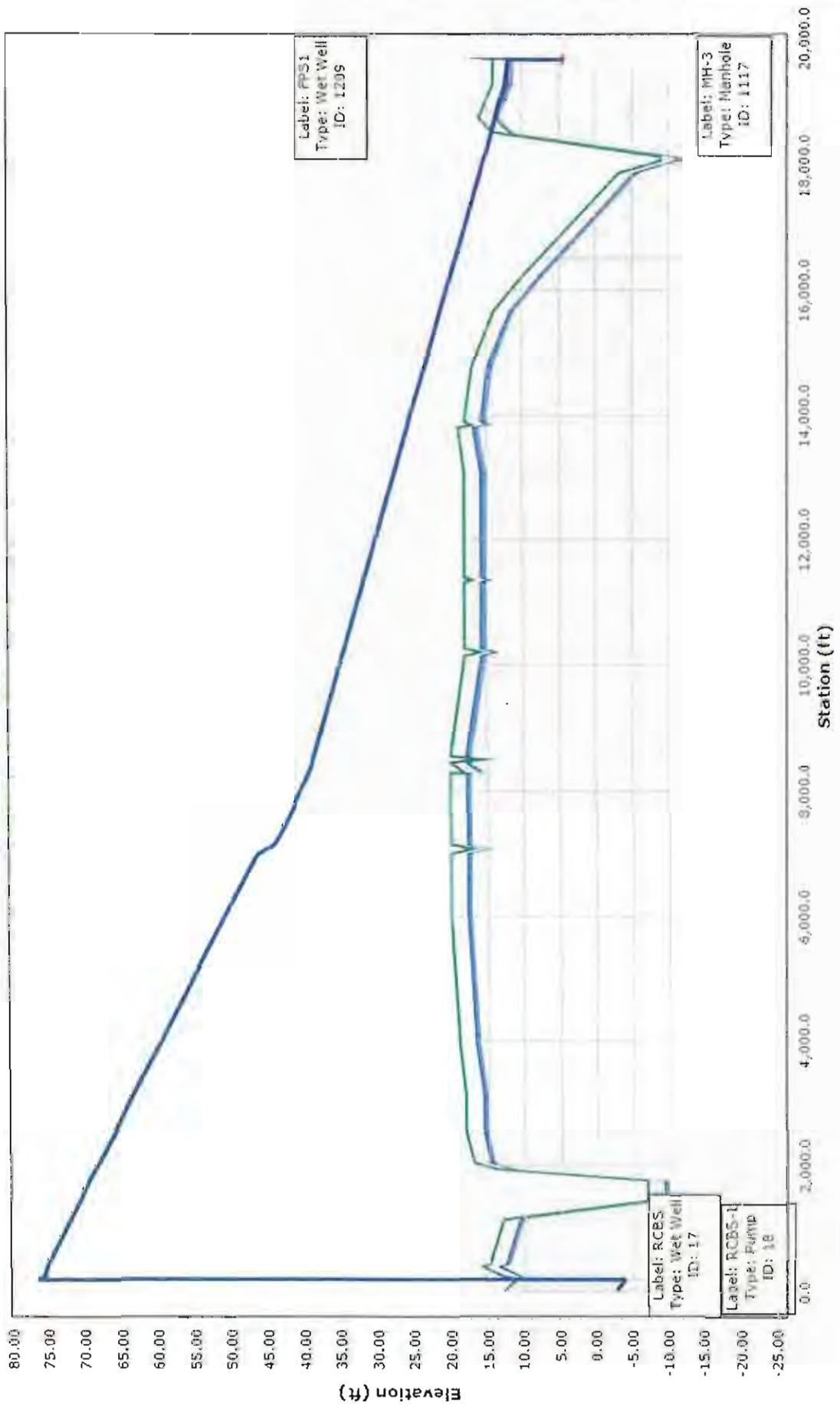
BAY COUNTY WASTEWATER SYSTEM MODEL - FUTURE NORTH BAY AREA FIGURE E 3

BC-49 TO FPS-1 - Base Time:



BC-49 to Future pumping station 1- Hydraulic Profile

Profile - 1 - Base Time:



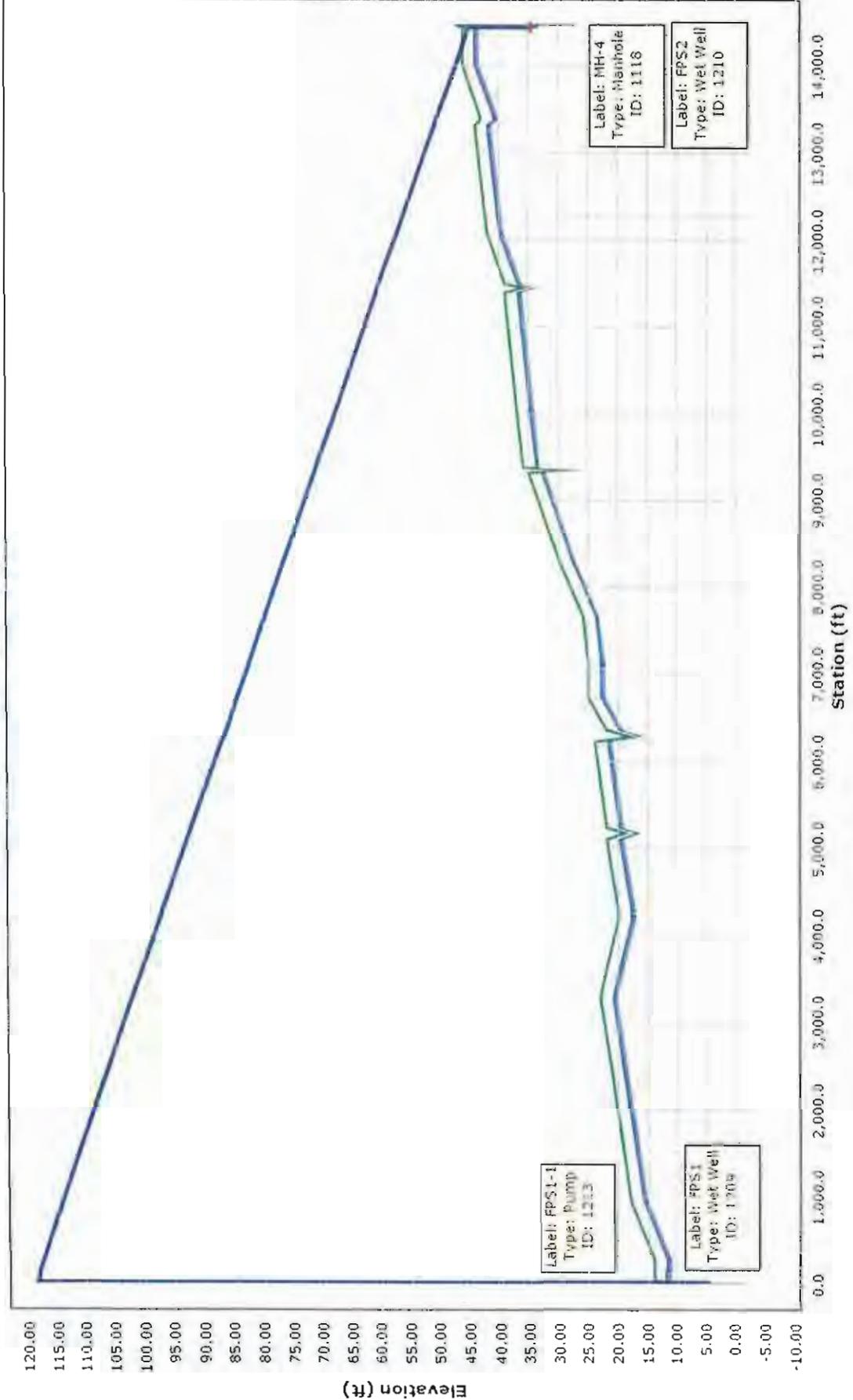
Rivercamps Booster Station to future pumping station 1 - Hydraulic Profile

BC-42 to FPS-1 = Hydraulic Profile - Base Time:



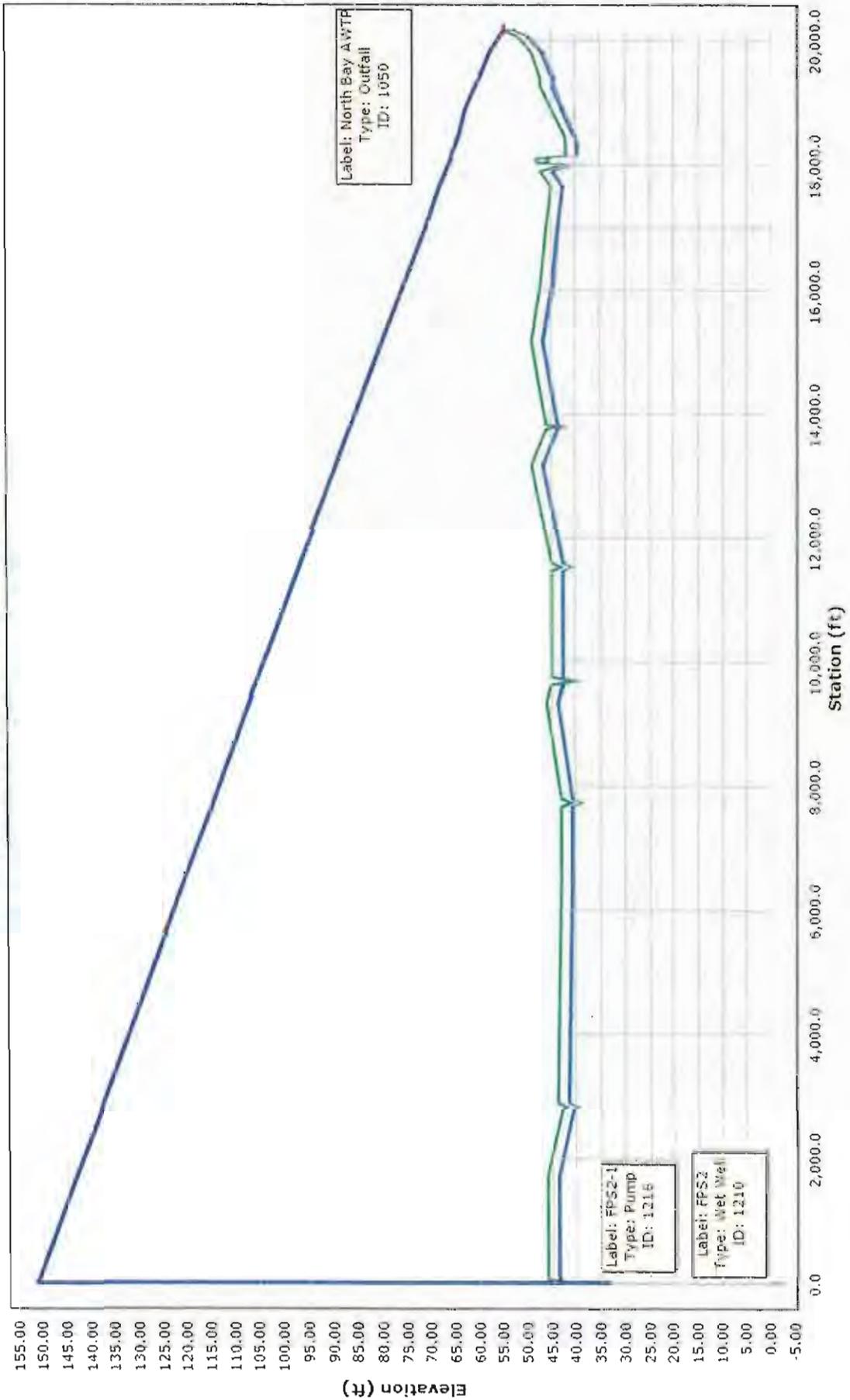
BC-42 (Airport) to future pumping station 1 on (Hwy 388)

FPS-1 to FPS-2 - Base Time:



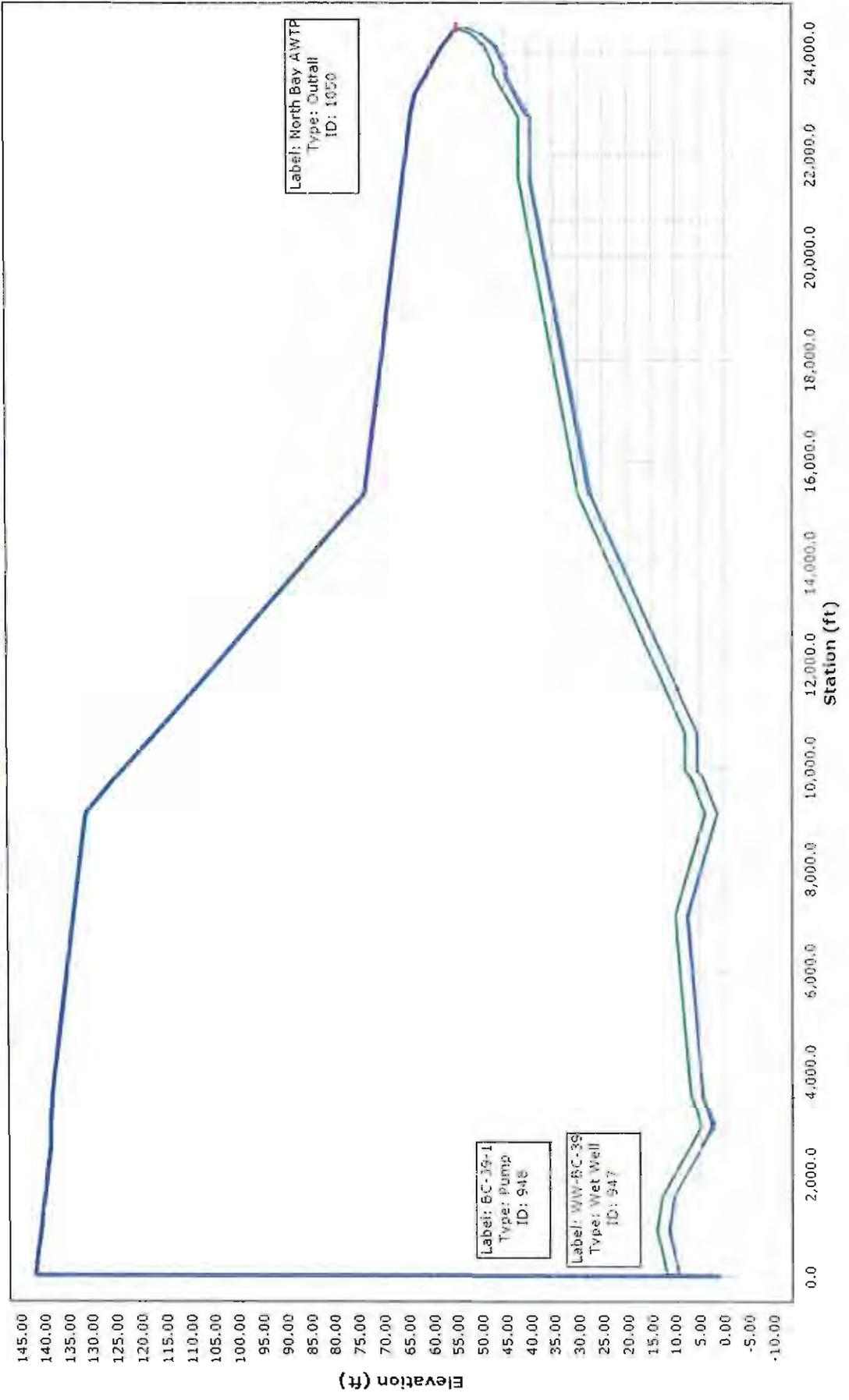
Future pumping station 1 to future pumping station 2 - Hydraulic Profile

FPS-2 to North Bay AWT - Base Time:



Future pumping station 2 to North Bay AWT -- Hydraulic Profile

BC-39 to North Bay AWT Future System - Base Time:



Pumping Station BC-39 to North Bay AWT (Future System) -- Hydraulic Profile

BC-40 to North Bay AWT Future System - Base Time:

