



CITY OF VENICE FACILITIES PLAN FOR CLEAN WATER AND STORMWATER FUNDING

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APPENDIX A

Resolution 2016-14

Capital Financing Plan - Stormwater

Capital Financing Plan - Wastewater

CHAPTER 1.0 - EXECUTIVE SUMMARY

This Facilities Plan (FP) has been prepared for the Florida Department of Environmental Protection (FDEP) by Hazen and Sawyer (Hazen) to meet the requirements of the State Revolving Fund (SRF) loan funding of clean water systems. This Plan is for the implementation of wastewater, reclaimed water and storm water projects identified in the City of Venice's (City) 2016 Capital Improvement Plan (CIP) that are anticipated to be constructed within the next five years. Many of the projects included in this Plan were identified in the 2012 Reclaimed Water Master Plan (RWMP), the 2013 Wastewater Master Plan (WWMP) by McKim and Creed and other information provided by the City. It is anticipated that this Plan will be amended to include future projects that require SRF funding as they become closer to execution.

The proposed projects that have been identified for implementation within the next five years, which are incorporated into this Plan, include the following:

- Eastgate Utilities Wastewater Relocations (Phases 1 thru 3)
- Additional Reclaimed Water Storage Tank
- Expansion and Looping of Reclaimed Water System
- Osprey Stormwater Improvements
- Downtown District Stormwater Project
- Stormwater Rehabilitation Projects

The estimated construction cost for the identified projects is Twenty-Four Million Dollars (\$24,100,000.00). This includes replacement of approximately 11,500 feet of sewers located in back yard easements, the addition of a 5 MG reclaimed water storage tank, conversion of wastewater forcemains to reclaimed water mains and the expansion of the reclaimed water system. In addition, stormwater projects are included for Osprey Ave, the Downtown District and rehabilitation of existing stormwater system. Documents utilized to develop this facilities plan include the following:

- Wastewater Master Plan, McKim and Creed, 2013
- Reclaimed Water Master Plan, McKim and Creed, 2012
- Other maps, cost data and planning data provided by the City.

CHAPTER 2.0 – INTRODUCTION

2.1 Background

The City Utilities Department is responsible for the planning and implementation of the service area infrastructure needs. The City is located in southwest Sarasota County on the west coast of Florida. Figure 2-1 shows the planning area for the City, which includes the existing service area and future annexation areas that are part of the Joint Planning Area/Interlocal Service Boundary Agreement Areas (JPA/ILSBA).

Through the use of gravity sanitary sewer mains, lift stations, and force mains, all of the City's wastewater flow is received and treated at the Eastside Water Reclamation Facility (EWRF). The EWRF is currently permitted to treat 6.0 million gallons per day (mgd) based on a three-month average daily flow (3-MADF). Of the total 6.0 mgd capacity, Sarasota County owns 3.0 mgd of capacity and sends flow to the plant on an as-needed basis. The interconnection between Sarasota County and the City is located just upstream of the EWRF entrance road at the intersection of Laurel Road and Knights Trail Road.

As of November 2015, the EWRF treated an average annual daily flow of 2.94 mgd with approximately 1.24 mgd that was contributed from Sarasota County and 1.7 mgd from the City. The City reuses the treated wastewater to provide irrigation water to commercial users, residential users and golf courses to meet their needs and reduce the use of precious groundwater resources. In addition to irrigation, the City also has other disposal options for treated effluent when reclaimed water demands are low; these options include two permitted surface water discharge locations and interconnect with Sarasota County, which discharges to a deep injection well. This diversification of disposal methods allows the City reliable disposal capacity under varying conditions. In 2015, approximately 2.7 mgd of treated effluent was reused, with the remainder sent to Sarasota County for disposal.

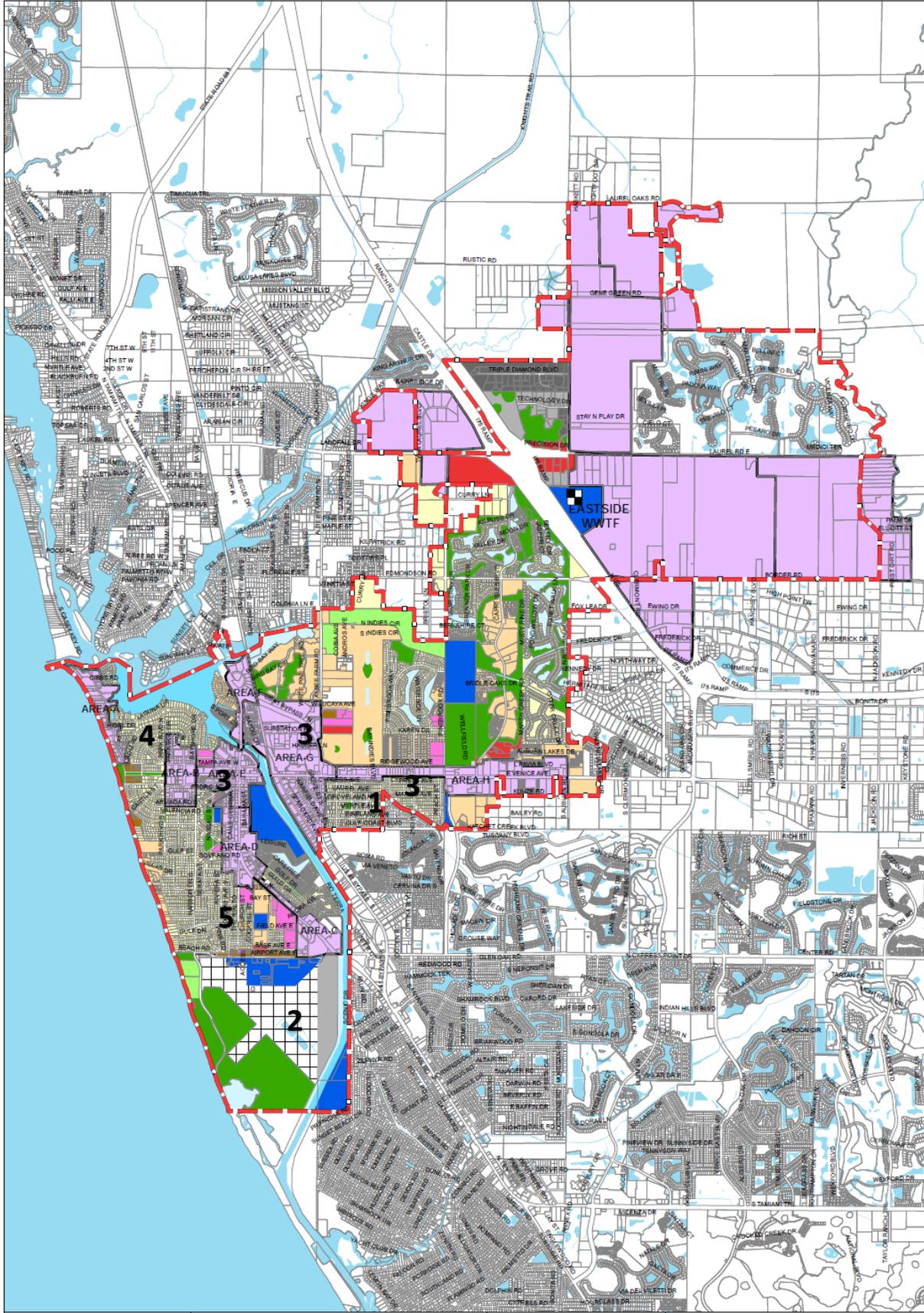
2.2 Need

The 2012 RWMP and 2013 WWMP recommended numerous projects that the City should implement over the next 20 years. The City is currently in the process of implementing several of the recommended projects, in addition to other identified projects that will help improve the City's wastewater and stormwater systems. The City is seeking assistance with SRF funding to help these projects move forward. Future projects may also be added as the City continues to implement recommended projects from their RWMP and WWMP, and as future needs arise. The projects that are included in this plan include the following:

1. **Eastgate Utilities Sewer Relocations-** The sewers in the Eastgate area are primarily vitrified clay pipe installed in the early 1950's and located within rear lot easements, which are difficult to access and maintain. Currently, these lines are subject to excessive infiltration and inflow and require significant maintenance. Therefore, the City plans to relocate these sewers to the front of the properties with new PVC pipe that is subject to significantly less maintenance.
2. **Additional Reclaimed Water Storage Tank-** Reclaimed water system storage facilities allow the City to meet peak demands and store water during periods of low demand. They also reduce the need to discharge effluent to surface water discharge points during periods of high wastewater flow and low irrigation demand. The City currently meets all regulations for storage requirements, however, the reliable and effective operation of the reclaimed system demands more than the minimum storage requirement. Satisfying the storage requirements for the ten-year wet weather recurrence interval assures that the majority of the reclaimed water generated by the City will be applied beneficially to the reclaimed water system users and not lost to surface discharge.
3. **Expansion of Reclaimed Water System-** As part of the Going Green Initiative, the City would like to increase the use of reclaimed water for irrigation. This would include expansion of the existing system to provide system looping to improve pressure and allow additional customers to connect and to evaluate and potentially convert several abandoned forcemains to reclaimed water providing a cost effective option to provide reclaimed water in built out areas. In an effort to reduce reclaimed water disposal into Curry Creek, and increase the beneficial use of reclaimed water for irrigation in place of potable water, the expansion of the reclaimed water system is necessary. Additionally, there are a number of customers in this region that are still utilizing potable water for irrigation, which can be added to the reclaimed water system as part of the City's Going Green Initiative.
4. **Osprey Ditch Improvements-** Currently, the depth of the Osprey ditch ranges from 8-10 feet deep and is located directly adjacent to Osprey Street. The slope of the ditch begins approximately 1 foot away from the edge of the road, measured perpendicularly. This deep channel poses a safety hazard to local drivers and residents, whose property butts up against the opposite side of the ditch. Additionally, the natural channel and steep sloping edges pose difficulties in regards to maintenance.
5. **Downtown District Stormwater Project-** Nokomis Ave. S located in downtown Venice floods regularly during rain events and is identified as a flood hazard area on the updated FEMA Flood Map due to insufficient drainage facilities. Therefore, improved drainage is required in this area to reduce flooding.
6. **Stormwater Rehabilitation Program -** In addition to the stormwater projects, the City is planning to rehabilitate the existing stormwater infrastructure to maintain its current integrity and to protect water quality and prevent flooding. This program will be city-wide.

A map showing the general location of the projects as numbered above is shown on Figure 2.1, which also provides the planning area for this Facilities Plan.

Figure 2.1: City of Venice Service Area and Proposed Project Locations



2.3 Scope of Study

The scope of this FP is to provide the information necessary to obtain SRF funding for implementation of the projects included in the City's Capital Improvement Plan and identified in this FP. The development of the FP relied on information included in the 2012 RWMP, 2013 WWMP, and additional information provided by City staff. As a result, this FP was developed to supplement the information included in the 2012 RWMP and 2013 WWMP and verify the proposed projects were the most cost-effective and environmentally sound to meet the planning needs of the City.

This FP includes the information noted in Clean Water SRF Planning Requirements based on Section 62-503.700(2) FAC. This information is incorporated in the following sections, outlined below:

- Executive Summary – Summary of recommended projects and estimated cost.
- Introduction – Background of projects and associated need with location map
- Existing Conditions – Review of existing conditions including description of planning area, socio-economic conditions, wastewater utility and storm water utility.
- Development of Alternatives and Cost Comparison – Summary of various alternatives and cost for projects proposed for funding.
- Description of Selected Alternatives and Environmental Effects and Benefits – Cost comparison of at least two alternatives for all selected projects.
- Implementation and Compliance with Funding Requirements – Review of public participation process, financial feasibility, schedule and adopting resolution.

CHAPTER 3.0 – EXISTING CONDITIONS

3.1 Description of Planning Area

3.1.1 Planning Area

The City is located in southwest Sarasota County on the Gulf of Mexico. The planning area considered in preparing this plan includes the City of Venice and areas that are anticipated to be served by the City by future annexation in accordance with the Joint Planning Area/Interlocal Service Boundary Agreement Areas (JPA/ILSBA). **Figure 3-1** provides the planning area that was included in the 2013 WWMP, which includes areas outside the City limits that may be provided with sewer in the future.

3.1.2 Climate

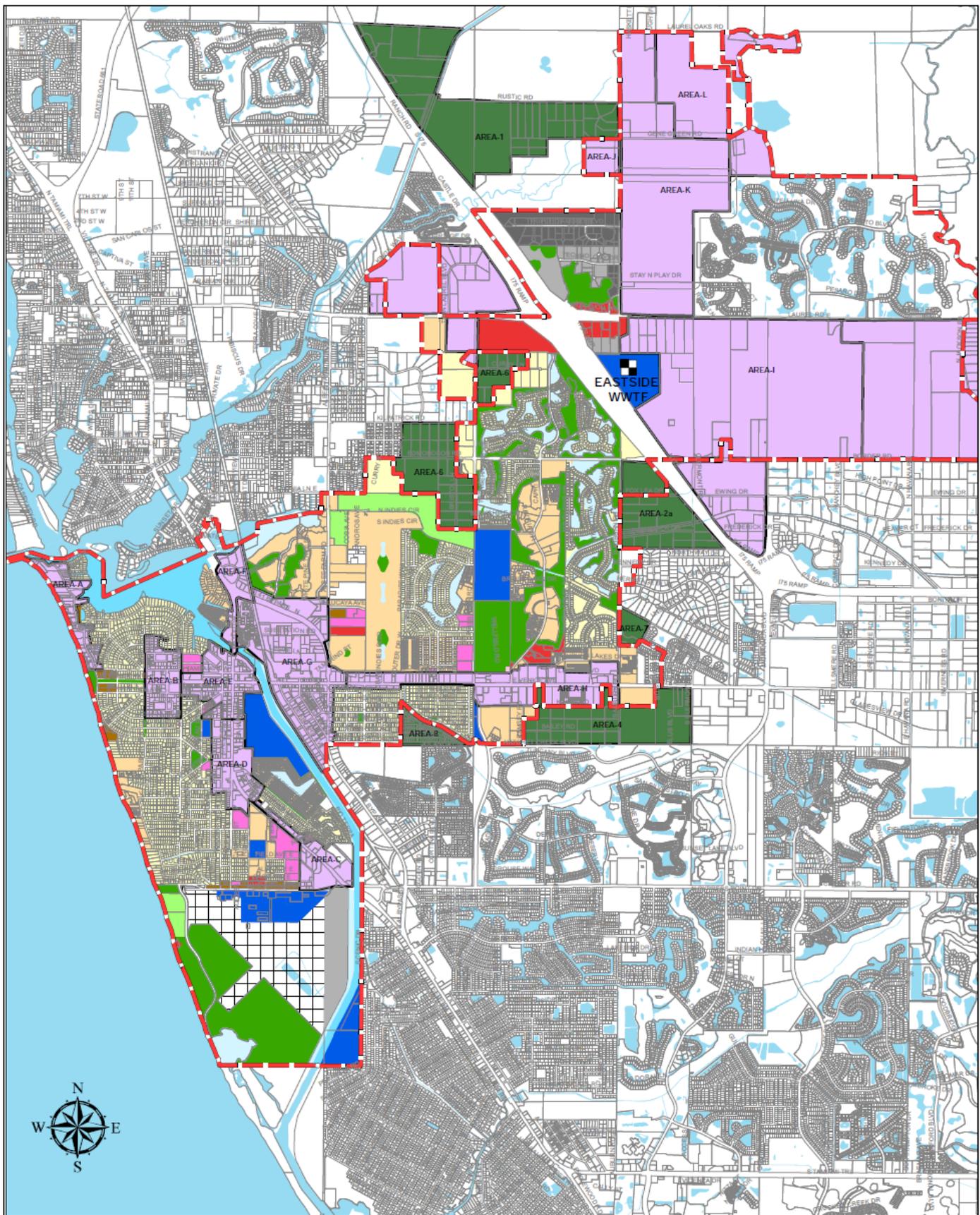
Like most coastal communities in south Florida, the climate is oceanic and subtropical, characterized by high relative humidity, short mild winters, long warm summers and rainfall that is abundant but heaviest from June through September. According to the Soil Survey of the area provided by the USDA Soil Conservation Service, the average annual temperature is approximately 72°F. During the summer, the average temperature is 80°F and the average daily maximum is 92 °F. Winters are generally short and mild, with average daily temperature of 62° F with the average daily minimum of 49° F. The average annual rainfall is approximately 55 inches with 70 percent rainfall seen between the months of April through September.

3.1.3 Topography and Drainage

The topography of Venice is fairly flat being a coastal community on the southwest coast of Florida. Elevations range from mean sea level along the gulf coast to approximately 15 feet above mean sea level. Most of the area is poorly drained with the water table at or near the surface. Natural drainage systems have been channelized and there are also many ditches to improve drainage. Soils are primarily sandy soils.

3.1.4 Geology, Soils and Physiography

The service area is located along the coast, with the dominant soil types being sandy soils. According to the USDA, Soil Conservation Service, nearly all of Sarasota County is in the Gulf Coastal Lowlands. The City is within the Coastal Area drainage basin, which is the low-lying coastal area between the Myakka River and Alafia river drainage basins. An important drainage feature is the manmade Intracoastal Waterway (ICWW) that was completed in 1966. This waterway is open to the Gulf of Mexico and under tidal influence. Many of the sloughs in the area were connected by canal and drained to the Gulf of Mexico so that the rich muck lands and adjacent areas could be farmed.



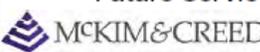
LEGEND	
	City Boundary
	PLANNING AREA
	JPAIL/SBA AREA
<i>Future Land Use</i>	
	LOW DENSITY RESIDENTIAL
	MODERATE DENSITY RESIDENTIAL
	MEDIUM DENSITY RESIDENTIAL
	INSTITUTIONAL-PROFESSIONAL
	COMMERCIAL
	TRANSITION
	INDUSTRIAL
	INDUSTRIAL-COMMERCIAL
	AIRPORT OPERATIONS
	PUBLIC BUILDINGS & FACILITIES
	RECREATION & OPEN SPACE
	CONSERVATION
	MARINE PARK
	GREENWAY/RIVER BUFFER
	WATERWAYS

PLANNING AREAS
A - Tarpon Center/Esplanade
B - Heritage Park
C - Southern Gateway
D - Island Professional
E - City Center
F - Northern Seaboard
G - Seaboard
H - Eastern Seaboard

JPAIL/SBA AREAS
1 - Rustic Rd
2a - Auburn Rd to I-75
2b - I-75/Jacaranda Blvd
3 - Border Rd to Myakka River
4 - South Venice Ave
5 - Laurel Rd Mixed Use
6 - Pinebrook Rd
7 - Auburn Rd
8 - Gulf Coast Blvd



Figure 3 - 1
 Wastewater Collection System
 Future Service Area



Sediments primarily consist of quartz sand, consolidated and unconsolidated shell beds, clay, limestone and dolomite. These sediments range in age from Oligocene (38 to 22.5 million years ago) to Holocene (10,000 years ago to the present).

3.1.5 Surface and Ground Water Hydrology

There are no Outstanding Florida Waters in the planning area. All surface waters are designated as Class III waters, suitable for recreation and for propagation of fish and wildlife. The planning area is located on the gulf coast of Florida in the Dona and Roberts Bay Watershed.

The geologic and hydrogeologic conditions of Sarasota County have been described in numerous publications over the past century. Initially, the US Geological Survey (USGS) defined the geologic conditions based on various classification schemes for sedimentary rocks. With recent emphasis on groundwater resources, research throughout the 1990s by the Florida Geological Survey (FGS), SWFWMD, and the USGS has shifted toward re-defining the geology of the area into hydrostratigraphic units. In general, the hydrogeology of Sarasota County is represented by three regional aquifer systems; the Surficial Aquifer System (SAS), the Intermediate Aquifer System (IAS), and the Floridan Aquifer System (FAS). These aquifer systems are separated by regional aquitards, or semi-confining units. Each aquifer system generally contains one or more water producing zones separated by less permeable units which provide confined or semi-confined conditions and upward hydraulic gradients.

3.1.6 Environmentally Sensitive Areas or Features

The proposed projects are all located in previously developed areas and are not anticipated to impact any wetlands, prime agricultural lands, environmentally sensitive lands, endangered species or any archeological and historical sites.

The US Fish and Wildlife Service provides an online species report of threatened and endangered species that are known or are believed to occur in specific areas. A review of this data for Sarasota County is provided in **Table 3.1**. A site visit was made to the proposed project sites and none of the listed species were observed at that time.

Of the species listed above, the most likely species to be encountered include the Gopher tortoise, Eastern indigo snake and Florida scrub jay although none of these species were observed when investigating the project sites. Should any evidence of these protected species be observed during construction, it will be brought to the attention of the City with the possible impacts noted and construction plans modified as necessary to accommodate the listed species.

The nesting sites for Bald Eagles in Sarasota County were also investigated and none of the proposed project sites were within 660 ft of any active eagle nest.

Table 3.1: Threatened and Endangered Species in Sarasota County

Group	Name	Status
Birds	Whooping crane (<i>Grus americana</i>)	Experimental Population, Non-Essential
Birds	Wood stork (<i>Mycteria americana</i>)	Threatened
Birds	Audubon's crested caracara (<i>Polyborus plancus audubonii</i>)	Threatened
Birds	Piping Plover (<i>Charadrius melodus</i>)	Threatened
Birds	Piping Plover (<i>Charadrius melodus</i>)	Threatened
Birds	Florida scrub-jay (<i>Aphelocoma coerulescens</i>)	Threatened
Birds	Red knot (<i>Calidris canutus rufa</i>)	Threatened
Group	Name	Status
Fishes	Atlantic sturgeon (Gulf subspecies) (<i>Acipenser oxyrinchus (=oxyrynchus) desotoi</i>)	Threatened
Flowering Plants	Aboriginal Prickly-apple (<i>Harrisia (=Cereus) aboriginum (=gracilis)</i>)	Endangered
Flowering Plants	Florida bonamia (<i>Bonamia grandiflora</i>)	Threatened
Flowering Plants	Pygmy fringe-tree (<i>Chionanthus pygmaeus</i>)	Endangered
Mammals	West Indian Manatee (<i>Trichechus manatus</i>)	Endangered
Mammals	West Indian Manatee (<i>Trichechus manatus</i>)	Endangered
Mammals	Florida panther (<i>Puma (=Felis) concolor coryi</i>)	Endangered
Mammals	Puma (=mountain lion) (<i>Puma (=Felis) concolor</i> (all subsp. except <i>coryi</i>))	Similarity of Appearance (Threatened)
Reptiles	American alligator (<i>Alligator mississippiensis</i>)	Similarity of Appearance (Threatened)
Reptiles	Hawksbill sea turtle (<i>Eretmochelys imbricata</i>)	Endangered
Reptiles	Hawksbill sea turtle (<i>Eretmochelys imbricata</i>)	Endangered
Reptiles	Leatherback sea turtle (<i>Dermochelys coriacea</i>)	Endangered
Reptiles	Leatherback sea turtle (<i>Dermochelys coriacea</i>)	Endangered
Reptiles	Green sea turtle (<i>Chelonia mydas</i>)	Endangered
Reptiles	Green sea turtle (<i>Chelonia mydas</i>)	Endangered
Reptiles	Loggerhead sea turtle (<i>Caretta caretta</i>)	Threatened
Reptiles	Eastern indigo snake (<i>Drymarchon corais couperi</i>)	Threatened
Reptiles	Gopher tortoise (<i>Gopherus polyphemus</i>)	Candidate

3.1.7 Flood Plain

Flood zones for the City were evaluated utilizing the Flood Insurance Rate Map (FIRM) for the City. Since the City is located on the Gulf coast of Florida much of the City's area was designated to be in areas labeled as AE, which has a one percent annual chance of flooding. All construction performed in the flood plain will be completed in accordance with state and local regulatory and building department requirements.

3.1.8 Air Quality

The FDEP monitors and records ambient air quality continuously. This data can be found on the Florida's Air Quality System (FLAQS) website, which includes daily, monthly, and highest readings, attainment status, and contaminant levels. The attainment status of an area determines whether or not said region is in compliance with FDEP regulations.

Sarasota County receives its attainment status from the Jackson Road monitoring location. According to the FLAQS, Sarasota County is an "attainment" area, with a 3- Year Attainment Average for Ozone of 66 parts per billion (ppb), which is less than the National Ambient Air Quality Standard of 75 ppb. The construction of the City of Venice's Capital Improvement Program projects will not create any impact on the existing City air quality.

3.2 Socio-economic Conditions

3.2.1 Population

The City currently has an estimated permanent population of about 26,554 in 2015 within its service area based on the number of customers and population data provided by the Southwest Florida Water Management and Bureau of Economic and Business Research (BEBR) Estimates of Florida Population by County and City. However, the City is known as a retirement community, as well as a vacation destination. This population value is for permanent residents and does not reflect the significant "snowbird", or winter, population and influx of tourists which make up an additional seasonal population of approximately 29% (or almost 7,700 people). Per Florida Administrative Code (FAC) and SWFWMD guidelines, future planning for the City must be based on the combination of the permanent and seasonal populations, known as the functional population, which is approximately 34,254 people.

Based on maximum allowable density, the City's population could reach 67,718 at buildout; however, a functional population of only 36,219 is expected by 2020 and 41,185 is expected by 2035 if BEBR medium range projections are considered, as shown in Table 3.2. Approximately 31% of the population is expected to reside in the planning areas, and the other 69% is expected to reside in other future land use designations. Nearly 66% of the population will reside in low density and medium density residential land use designations, which continue to occupy 53% of the City's land area predominately west of I-75. It is anticipated that twenty percent (20%) of the City's population will reside in planning areas east of I-75.

Table 3.2: Population Projections

	2014	2015	2020	2025	2030	2035
Sarasota County Resident Population ¹	387,140	390,500	412,900	433,600	452,800	469,500
City of Venice Resident Population ²	26,340	26,554	28,077	29,485	30,790	31,926
City of Venice Seasonal Population ³	7,517	7,700	8,142	8,542	8,929	9,259
City of Venice Functional Population ⁴	33,857	34,254	36,219	38,027	39,719	41,185
Share of County Population ²						
	6.8%	<i>Short-Term</i>		<i>Long-Term</i>		
Seasonal Percentage ⁵	29%					

1. Based on BEBR Projections of Florida Population by County, 2015-2040, FPS Volume 42, Bulletin 171, April 2015.
2. Permanent population based on 2014 Public Supply Annual Reports and projected forward based on percentage of County population, which equates to 6.8% of the BEBR estimate for Sarasota County.
3. Based on 2014 Public Supply Annual Report, City of Venice Utilities Department, as prepared for SWFWMD for seasonal and group quarter’s population and projected forward based on seasonal percentage.
4. Sum of Resident and Seasonal Population.
5. Seasonal Population / Resident Population; percentage applied to subsequent years to determine seasonal projection.

3.2.2 Land Use and Development

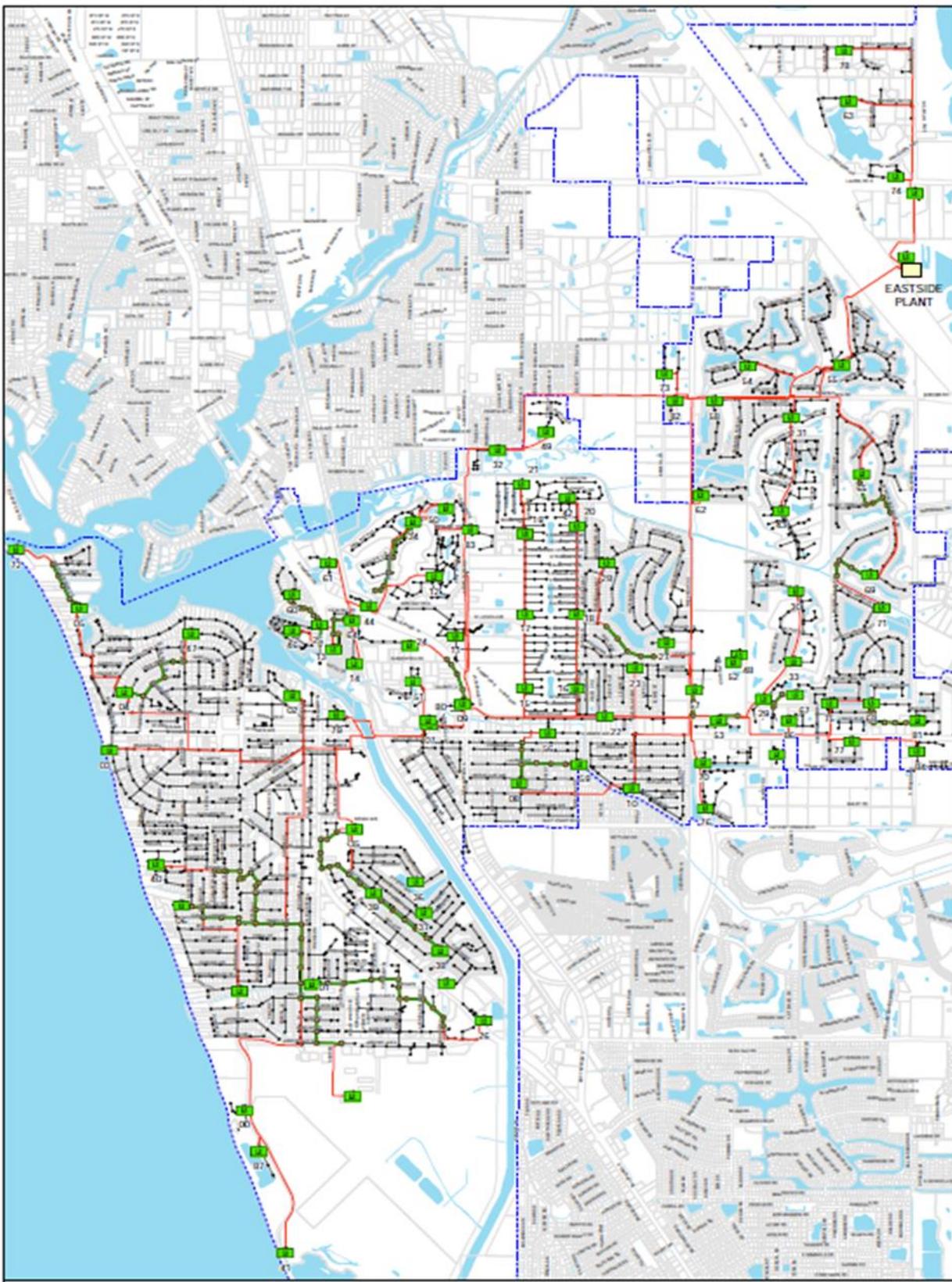
The Comprehensive Plan for the City establishes future land use and development as shown in the 2030 Future Land Use Map (Figure 3.1). Areas along the Intracoastal Waterway are predominantly planning areas, with some regions designated to government use and low-density residential. A majority of the island to the west is also low-density residential, with some medium-density regions. The airport and surrounding open space lies to the southwest. The eastern regions of the City are a blend of low to medium-density residential, commercial and recreational areas, and government property. The region Northeast of I-75, is largely undeveloped within planning areas, with the exception of an area of low-density residential use to the east.

3.3 Wastewater Collection, Treatment and Effluent Disposal

3.3.1 Wastewater Collection System

There are approximately 120,000 length feet (LF) of gravity sewer mains, not including any lines less than or equal to 6 inches in diameter. The total length of pressurized force main within the City limits is approximately 176,658 LF, and the City operates 88 lift stations, with 83 of these lift stations monitored by the City’s SCADA system. This system records operational data such as the number of pump starts and pump run time. At this time, none of the lift stations have flow meters for flow measurement. The collection system contains some cast iron piping installed as far back as the 1950’s. These components make up a collection system that transports wastewater to the northeastern part of the City to be treated at the Eastside WRF. A map of the existing collection system is provided in Figure 3-2.

Figure 3-2: City of Venice Wastewater Collection System Backbone



3.3.2 Wastewater Treatment

The EWRf facility primarily treats wastewater utilizing a dual train five stage Bardenpho process which removes organic content and nutrient concentration to levels below regulations. Prior to the biological nutrient removal (BNR) process, the wastewater must first undergo preliminary treatment consisting of mechanical bar screens and grit removal. Following the BNR process, the WRF consists of four clarifiers, three dual media automatic backwash traveling bridge filters, and three chlorine contact chambers fitted with a sodium hypochlorite system and the option to provide aeration in the event surface water discharge is necessary. Sludge is processed by four aerated holding tanks and dewatered using two belt filter presses prior to being transported by contract haulers for stabilization and final disposal. A Process Flow Diagram (PFD) for the facility is shown Figure 3-3 that was provided in the Master Plan, since that time the City has completed the construction of a second 7.5 MG Reclaimed Water Storage Tank to provide a total of 10.5 MG of reclaimed water storage.

Currently, the facility has a capacity of 6.0 mgd on a maximum 3-month rolling average and the annual average daily flow (AADF) into the EWRf was approximately 2.92 mgd at the end of 2015. By 2030, it is estimated that the AADF at the EWRf will reach 5.5 mgd.

3.3.3 Effluent Disposal

Treated effluent from the water reclamation facility is primarily disposed of via reuse for irrigation, however, the City also has two surface water discharges and interconnect with Sarasota County.

3.3.3.1. Reclaimed Water Distribution System

The reclaimed water distribution system is comprised of approximately 165,000 LF of piping, ranging from 2 to 24 inches. 6-inch pipes account for almost 40% of the system. The reclaimed system serves residential homes, businesses, parks, and golf courses, with an expansive future service area planned. Table 3-3 shows the total length of the distribution network piping classified by diameter. A map of the distribution piping network is provided in Figure 3-4.

Reclaimed water storage is provided at the treatment plant using both ground storage tanks and lined ponds. In addition, storage is provided throughout the system by large users which have unlined ponds located on their property. Overall, the current storage capacity of the reclaimed system is 85 million gallons, with 39.5 MG of storage located within unlined storage ponds for offsite bulk users. Table 3-4 provides a summary of the reclaimed water storage facilities.

The reclaimed water system also has permitted discharges to four storm water storage lakes, which have intermittent overflows to surface water

Table 3-3: Reclaimed Water Distribution Pipe

Pipe Diameter (inches)	Pipe Length (ft)	Contribution (%)
4	12,442	5.04
6	51,240	38.85
8	31,586	14.39
10	8,473	0.72
12	14,378	7.19
16	20,018	12.95
18	8,390	9.35
20	37	0.72
24	17,749	10.79
TOTAL	164,313	100

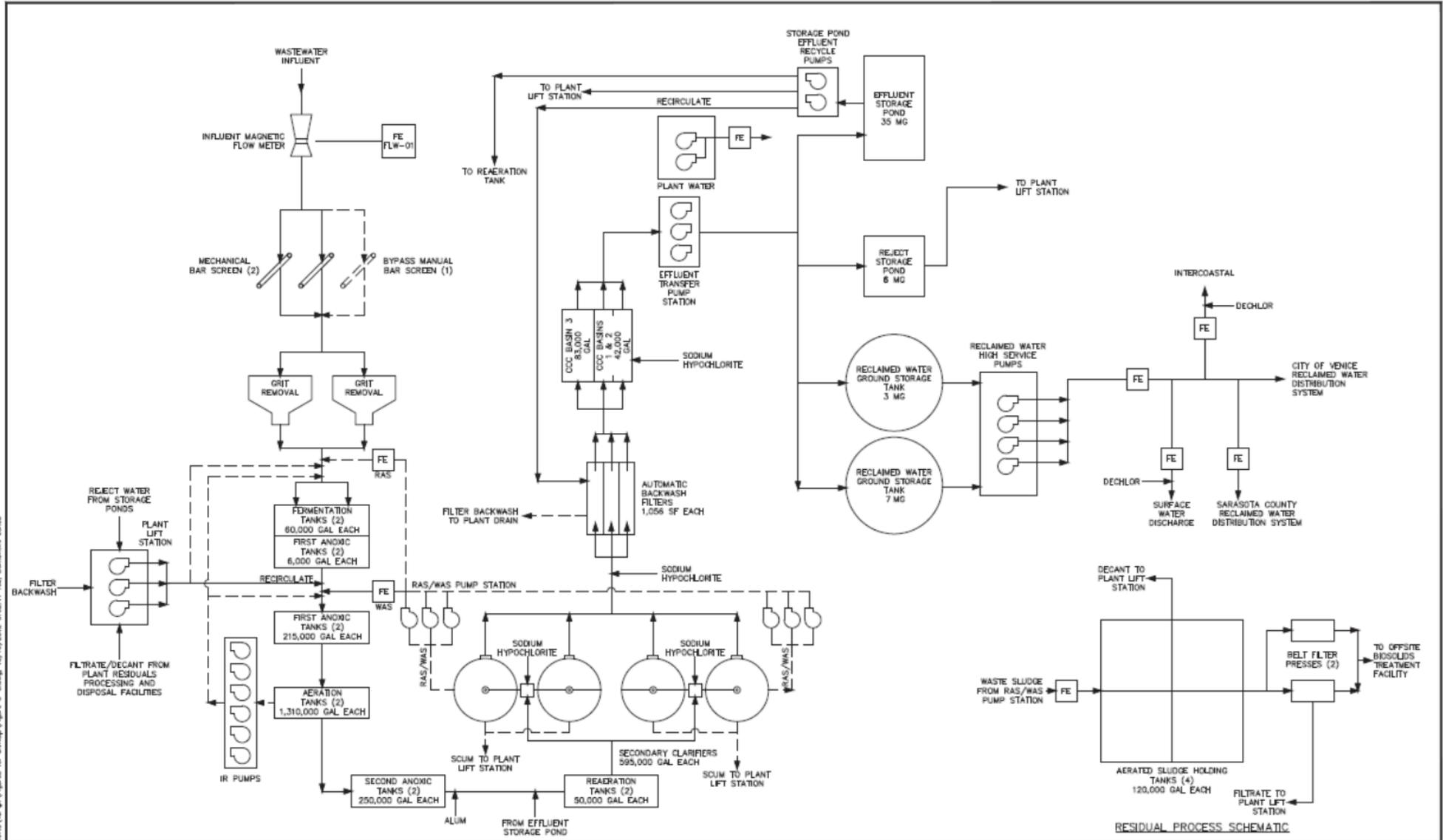
Table 3-4: Reclaimed Water Storage

Storage Location	Total Volume (MG)
Reclaimed Water Ground Storage Tank Eastside WRF (2 tanks)	10.5
Eastside WRF Reclaimed Water Lined Pond	35
Lake Venice Golf Course Unlined Pond	6.8
Venetian Golf and River Club Unlined Pond	14.6
Waterford Golf Course Unlined Pond	7.7
Capri Isle Golf Course North Unlined Pond	5.4
Capri Isle Golf Course South Unlined Pond	4.5
Bird Bay Golf Course	0.5
Total Storage Capacity	85

3.3.3.2. Surface Water Discharges

The EWRf has an existing 3.0 mgd aadf permitted discharge to Curry Creek and thence to Roberts Bay which is an aerated cascade flowing into Curry Creek. In addition, the facility has a permitted internal outfall for 1.0 mgd aadf of reclaimed water to the Venice Reverse Osmosis Concentrate Disposal system which is regulated under Industrial Permit No. FL0035335.

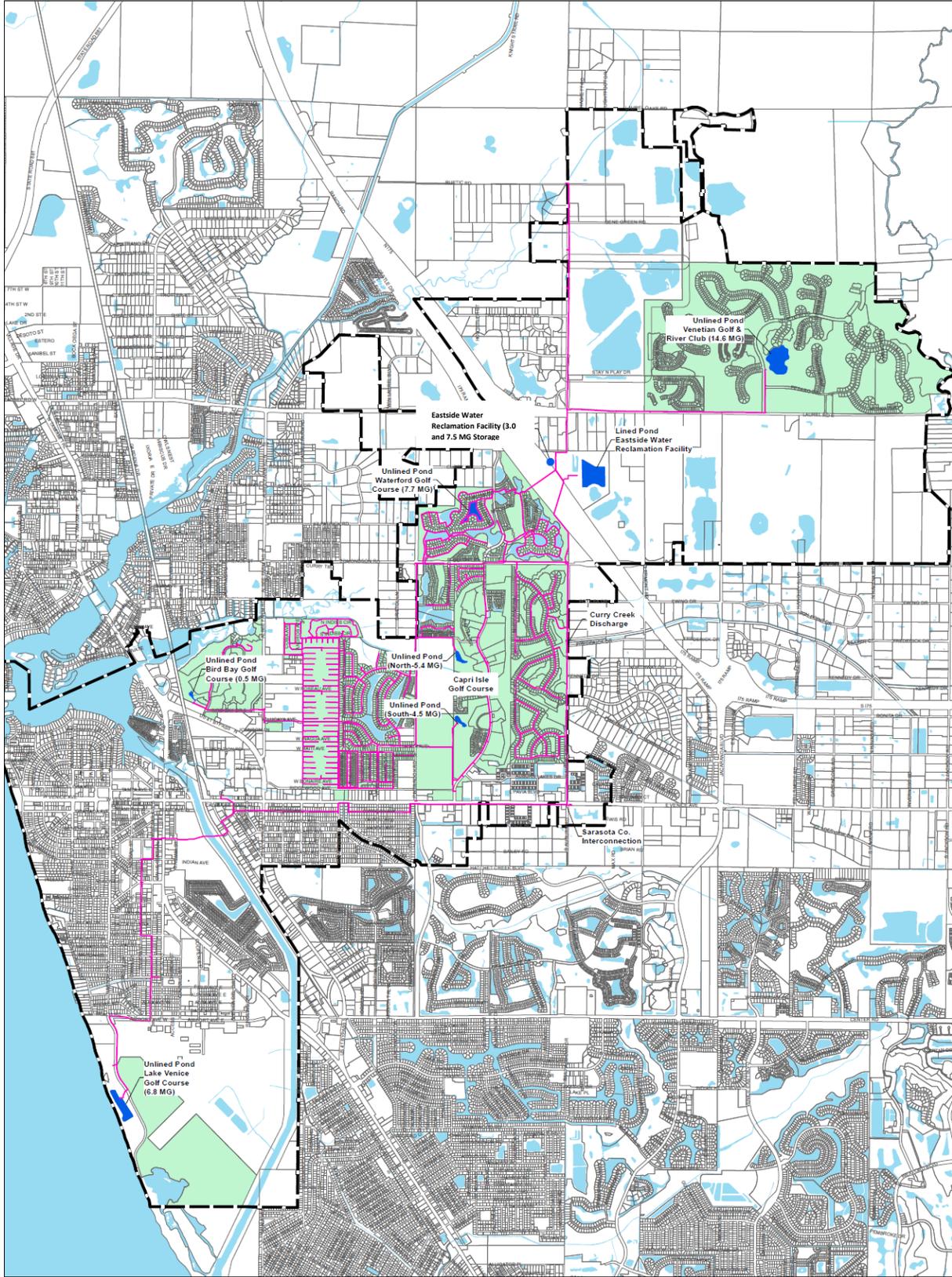
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RESIDUAL PROCESS SCHEMATIC

	<p>CITY OF VENICE RECLAIMED WATER MASTER PLAN</p> <p>EASTSIDE WRF PROCESS FLOW SCHEMATIC</p>	<p>Figure 3-3</p>
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Figure 3-4: City of Venice Reclaimed Water System Backbone

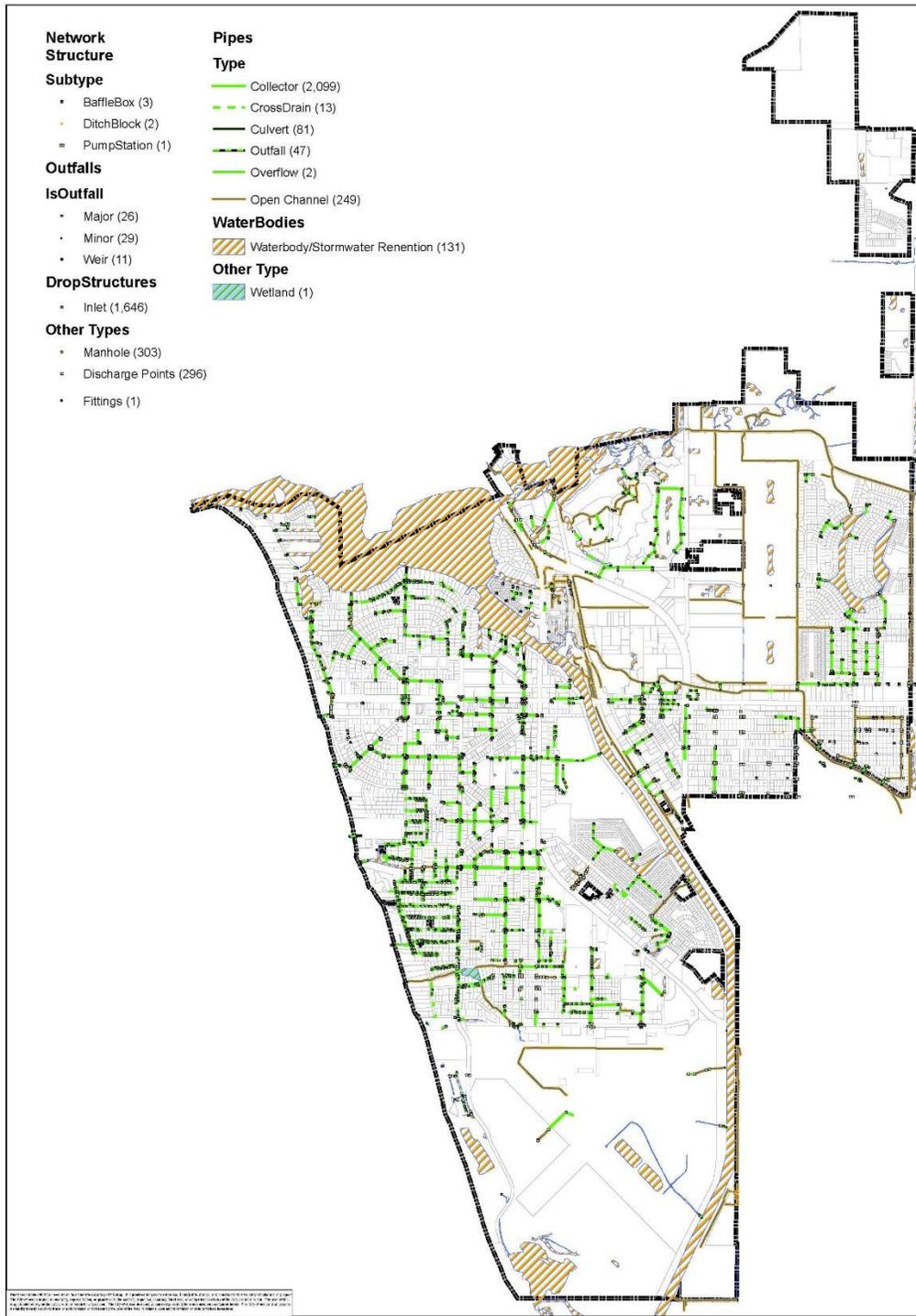


3.4 Stormwater System

The City's Stormwater Division is responsible for the maintenance of the stormwater infrastructure, which is funded through a stormwater system utility fund. The Storm Water Management Utility was established in September 1995 as an enterprise fund to be used for storm water management and related expenses. The fund provides adequate and stable funding for the City's National Pollutant Discharge Elimination System (NPDES) storm water permit, which is part of the Sarasota County Municipal Separate Stormwater System.

The City's stormwater system consists of approximately 24 miles of stormwater pipes and culverts, inlets, control structures, dry retention ponds, a storm water pump station and 14 storm water outfalls. Figure 3-5 and 3-6 provide graphic illustrations of the current stormwater system for the east and west areas of the City. The City is currently performing an assessment of the stormwater infrastructure and plans to rehabilitate the stormwater system based on the final assessment. In addition, as part of the City's stormwater program to reduce flooding and maintain the storm water system, they have identified several projects that will improve drainage in the Venice Island area. This includes the Downtown District stormwater project, improvements to Osprey Ditch and rehabilitation of the existing stormwater system.

Figure 3-6: City of Venice Stormwater System West



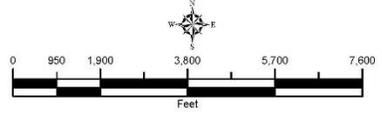
Date: 7/26/2015

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Map Series: Stormwater Inventory Map - West



City of Venice
Stormwater Inventory Map - West



CHAPTER 4.0 – DEVELOPMENT OF ALTERNATIVES

4.1 General

This FP is being developed to obtain funding to provide for facilities and infrastructure improvements deemed necessary by the City that are anticipated to be implemented within the next five years. As additional facilities and infrastructure are needed, it is anticipated that this FP will be amended to meet future planning needs. The projects included below are incorporated in the next five-year capital improvement budget for wastewater collection, reuse storage and reuse distribution and storm water improvements.

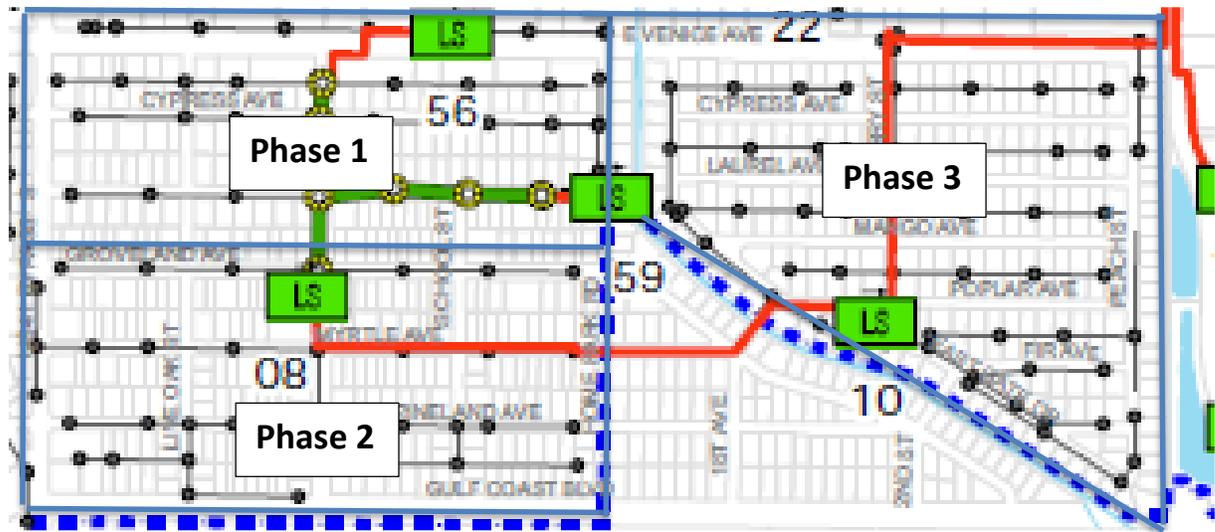
4.2 Options for Wastewater Collection

The gravity wastewater collection system improvements are part of the City’s ongoing Infiltration and Inflow (I/I) reduction program. Currently, the City is proposing to re-locate sewer mains located in backyard easements to the road way in front of the homes so that they may be more readily accessed for maintenance. These sewers are constructed of vitrified clay pipe (VCP), which are subject to degradation over time and are very difficult to repair and maintain. The replacement and relocation of the sewers located in back yard easements will reduce infiltration and inflow due to the installation of new pipe and pipe joints and provide better access for maintenance. The project will be phased to coincide with the replacement of the water mains which are also located in backyard easements; thereby construction and disruption to the area residents will be limited. Overall, the project will involve the replacement of approximately 11,500 LF of gravity sewer and associated manholes and services. Table 4.1 provides the estimated breakdown of gravity sewer and associated manholes and services associated with each phase that require relocation from backyard easements to roadway frontage. The phasing is shown in Figure 4.1, which coincides with the water main replacement. The following sections outline the available options for the replacement project.

Table 4.1: Eastgate Utilities Sewer Phasing Breakdown

Phase	Gravity Sewer (LF)	Manholes (EA)	Services (EA)	Estimated Restoration (SY)
1	1,000	4	12	11,000
2	1,500	5	15	17,000
3	9,000	34	180	100,000
Total	11,500	43	207	127,000

Figure 4.1: Eastgate Utilities Sewer Relocation/Replacement Phasing



4.2.1 No Action

Alternative 1 is to not take action. In this alternative, the existing sewer mains would remain as is, without movement or replacement. If no action is taken, maintenance of the gravity sewer main will continue to be problematic with limited access to the sewer mains based on its location and subject to increased I/I and wastewater overflows due to increased damage to the sewer mains. Therefore, this option is not considered a viable option.

4.2.2 Replace Gravity Sewers in Conjunction with Water Main Replacement

The City is currently planning to relocate the water lines located in back yard easements to the front of the lots for improved access. In order to save on costs associated with restoration and Maintenance of Traffic, this option would include removal of existing sewers and manholes located in backyard easement and relocation of the sewers and manholes to the roadway; this work would be performed in conjunction with the water line replacement to minimize impacts to local residents. It would also reduce risks associated with pipeline failure and minimize I/I. The estimated cost for this option is provided in Table 4.2 below.

Table 4.2: Replace Gravity Sewers with Water Main Replacement

Item No.	Description	Est. Qty.	Unit	Unit Price	Extended Price
1	Gravity Sewer	11,500	LF	100	\$1,150,000
2	Manholes	45	EA	6,000	\$315,000
3	Laterals w/ Clean Outs	207	EA	1,500	\$310,500
4	Remove/Abandon Existing Sewer and Manholes	11,500	LF	25	\$287,500
5	Site Restoration and MOT	127,778	SY	25	\$3,194,000
Total Estimated Construction Cost					\$5,212,444
Engineering, Contingency and Administration Cost (40%)					\$2,084,978
Total Estimated Cost					\$7,297,422

Based on the cost above, the estimated cost for each phase is shown in Table 4.3 as follows:

Table 4.3: Estimated Cost by Phases

Phase	Construction	Contingency (40%)	Total Estimated Phased Cost
Phase 1	\$444,778	\$177,911	\$622,689
Phase 2	\$656,667	\$262,667	\$919,333
Phase 3	\$4,111,000	\$1,644,400	\$5,755,400
Total	\$5,212,444	\$2,084,978	\$7,297,422

4.2.3 Replace Gravity Sewers after Water Main Replacement Project.

Alternative 3 calls for the City to replace the gravity collection system piping by constructing front lot sewer lines in road right-of-ways, and abandoning the rear lot sewer lines. This project would be performed as a stand-alone project. This alternative would still reduce sanitary sewer overflows, reduce risks associated with pipeline failure, and minimize difficulty associated with pipe maintenance. However, it would cause additional disruption to residents and traffic by being performed as a separate project in lieu of coordination with the water main replacement project. It is also estimated the associated cost of site restoration and maintenance of traffic would be twice as much as the doing the projects simultaneously

since the cost could not be shared between the project. The estimated cost is provided in Table 4.4 of all the phases and the cost per phase is shown in Table 4.5.

Table 4.4: Eastgate Utilities Gravity Sewer Replacement (Stand Alone Project)

Item No.	Description	Est. Qty.	Unit	Unit Price	Extended Price
1	Gravity Sewer	11,500	LF	100	\$1,150,000
2	Manholes	45	EA	7000	\$270,000
3	Laterals w/ Clean Outs	207	EA	1500	\$310,500
4	Remove/Abandon Existing Sewer and Manholes	11,500	LF	25	\$287,500
5	Site Restoration and MOT	127,000	SY	50	\$6,388,889
Total Estimated Construction Cost					\$8,406,889
Engineering, Contingency and Administration Cost (40%)					\$3,362,756
Total Estimated Cost					\$11,769,644

Table 4.5: Phased Construction Cost of Eastgate Utilities Gravity Sewer Replacement (Stand Alone Project)

Phase	Construction	Contingency (40%)	Total Estimated Phased Cost
Phase 1	\$722,556	\$289,022	\$1,011,578
Phase 2	\$1,073,333	\$429,333	\$1,502,667
Phase 3	\$6,611,000	\$2,644,400	\$9,255,400
Total	\$8,406,889	\$3,362,756	\$11,769,644

4.3 Options for Reclaimed Water Storage

The 2012 RWMP evaluated the storage requirements for the reclaimed water system using the FDEP LandAp 2010 water balance model to determine the storage requirements to meet the ten-year wet weather recurrence interval. Satisfying this requirement assures that the majority of the reclaimed water generated by the City will be applied beneficially to the reclaimed water system users and not lost to surface discharge.

LandAp 2010 is a water balance tool used to determine wet weather storage requirements and wet-weather discharges for permitted systems. It calculates a monthly water balance using inputs

of monthly rainfall, temperature (used for evapotranspiration), crop-specific evapotranspiration coefficients, site hydrologic characteristics, and reclaimed water hydraulic loading rates to determine storage volume requirements or wet weather discharges. The City’s existing operating parameters for 2011 were input in the model to assess the current adequacy of the system’s reclaimed water storage capacity. Table 4.6 summarizes the results of the model output.

Table 4.6: Reclaimed Water Storage Analysis 2011

Parameter	Units	Value
Reclaimed Flow Available	MGD	2.71
Total Application Area	Acres	1608
LANDAP Recommended Storage	MG	77.87
Existing System Storage Capacity	MG	77.50
Excess/ Deficient Capacity	MG	0.37 (Deficit)

Based on the model output, it was determined that the City had a 0.37 MG deficit of reclaimed water storage capacity. The small deficit shows that the existing reclaimed water storage capacity was adequate based on 2011 flows. Since the City of Venice is responsible for the disposal of the first 0.5 MGD of the Sarasota County wastewater treated at the WRF and has the remaining flow available for reuse, inflow from Sarasota County was considered in calculating the potential amount of storage to optimize use.

Since the RWMP was performed in 2012, the City constructed a new 7.5 reclaimed water storage tank located at the ESWRF which satisfies the deficit shown in the initial analysis resulting in a total storage volume of 85 MG. However, much of the available reclaimed water storage provided (shown in Table 3.3) consists of bulk user ponds (39.5 MG), which are operated by the users and should not be considered when evaluating for seasonal storage. Therefore, when bulk users are subtracted out of available storage, there is a remaining deficit of 2.4 MG as shown the alternative scenario shown in Table 4.7.

Table 4.7: Reclaimed Water Storage Analysis Alternative Scenario 2011

Parameter	Units	Value
Reclaimed Flow Available	MGD	1.61
Total Application Area	Acres	1608
LANDAP Recommended Storage	MG	47.9
Existing System Storage Capacity	MG	45.5
Excess/ Deficient Capacity	MG	2.4 (Deficit)

The 2012 RWMP also looked at future storage requirements and recommended an additional 30 MG of storage volume to meet future reclaimed water requirements. In order to maximize the use of reclaimed water based on present use, the City is planning to provide a 5 MG reclaimed water storage tank in the distribution system to accommodate for the current deficit capacity noted in the alternative scenario. Several alternatives were evaluated to meet this requirement which are discussed below.

4.3.1 No Action

Under this alternative, no action will be taken at this time to improve problems associated with meeting future volumes of reclaimed water production and demand. The planning for increased capacity will be indefinitely postponed. There are no costs associated with the No Action alternative. Irrigation demands would be offset by the use of potable water which would result in higher potable water demands and the need to increase water treatment capacity.

4.3.2 Addition of One - 5 MG Reclaimed Water Storage Tank at Airport

The RWMP recommended two - 5 MG RCW Ground Storage Tanks to provide additional storage during normal operation and for storage required in the future. However this option, would be to only construct one 5 MG tank at this time and as demands increase the second storage tank would then be added. It would also include the addition of a booster pump station, with space for future pumps and approximately 3,500 LF of 16-inch reclaimed water main.

The construction of this amount of new storage is not required to meet permit requirements but would allow greater utilization of reclaimed water, as shown in LandAp2010 (a water balance modeling tool) scenarios. This recommendation would also be prefaced on the projected wastewater flow increases actually occurring and Sarasota County continuing to send estimated quantities of wastewater to the City. The addition of this storage tank will increase the percentage of reclaimed water generated by the City that will be applied beneficially to the reclaimed water system users and not lost to surface discharge.

Based on the cost provided in the RWMP and recent construction cost at the City, the estimated cost for this option is approximately \$7,000,000 which includes a 40% contingency for engineering and administration

4.3.3 Addition of Two - 5 MG Reclaimed Water Storage Tank at Airport

This option would be to provide two - 5 MG RCW Ground Storage Tanks to provide additional storage during normal operation and for storage required in the future. It would also include a booster pump station and approximately 3,500 LF of 16-inch reclaimed water main.

Since the present demands do not show that two tanks are necessary at this time; tank mixing and chlorination would be required to maintain circulation and prevent nitrification from occurring in the storage tank.

Based on the 2012 RWMP, the associated cost for this option is approximately 11 million which includes engineering, contingency and administration

4.4 Options for Reclaimed Water Distribution Redundancy and Expansion

The RWMP has identified several reclaimed water distribution system improvements that will create a system loop that will improve pressures in addition to allowing the City to serve additional customers. These improvements will result in additional disposal capacity for the EWRf and reduced water demands for the RO WTP. The projects that are expected to be implemented in the next five years and associated options are described in the following section.

4.4.1 No Action

This option would forego any reclaimed water improvements. This would result in lower system pressures and the inability to serve additional customers. It would also require that the EWRf be expanded to meet future demands within an earlier time period. There is no cost associated with this option.

4.4.2 Expand the Reclaimed Water System to Provide System Loops and New Customers

The 2012 RWMP identified several reclaimed water distribution systems improvements that the City plans to implement within the next twenty years. These projects are shown in Figure 4.2. Figure 4.2 also highlights projects R-100, R-101 and R-303/313, which are anticipated to be implemented within the next five years for a total estimated cost of approximately \$1,200,000, as discussed below.

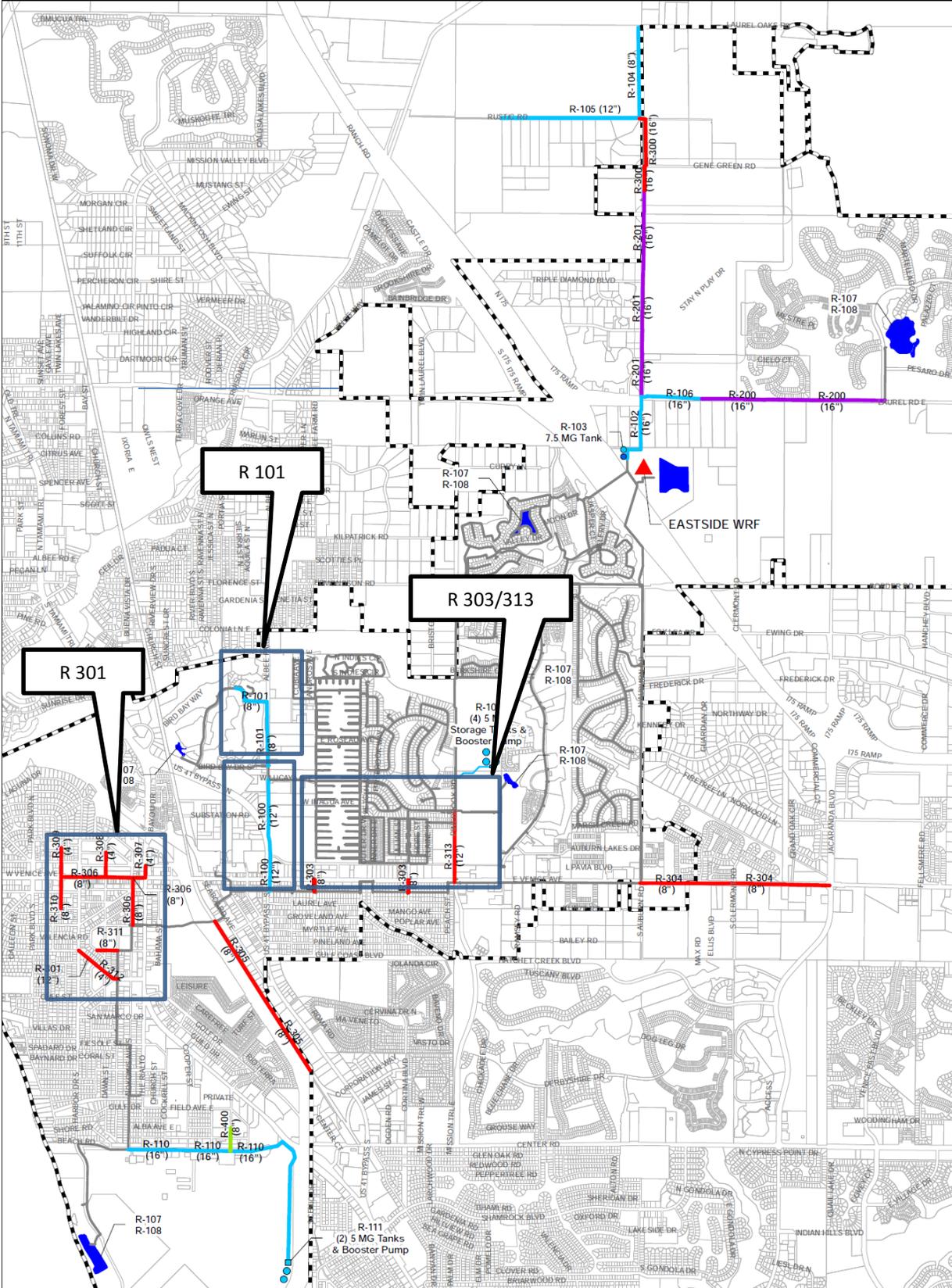
R-100: This project would include an extension of a new 12” reclaimed water main approximately 1,310 LF from the existing 8” line at the intersection of Albee Farm Road and West Lucaya Avenue south to the relocated reclaimed water main on the east side of US-41 Bypass. The remainder of this line is already under construction as part of the US-41 Bypass widening project. This improvement would increase pressure in the Bay Indies and Bird Bay areas and allow for future connections to the distribution system. Based on the 2012 RWMP, the estimated cost for this option is \$567,000

R-301 - Located along Granada Ave, Park Blvd and Alhambra Rd on Venice Island, there is an abandoned 10” force main (approximately 1,800 LF), which can be connected to the existing reclaimed water system to provide reclaimed water for irrigation to Venezia Park and Heritage Park. In addition, there is also an abandoned 10” force main (approximately 5,700 LF) that runs

along Matanzas Street east to Armada Road, north to Madrid Avenue, east to Park Boulevard, south to Alhambra Road, east and terminating at Harbor Drive that can be converted to provide reclaimed water. These force mains can then be connected to the existing reclaimed line by construction of approximately 650 LF of 12" HDPE pipe along Salerno St and 850 LF of 8" HDPE pipe along Venice Ave from Park Blvd to Avenida Des Parquess. This low cost expansion to the reclaimed water system will allow the City to provide reclaimed water to the residents and businesses in this area, including the parks, which have an irrigation demand of approximately 12,000 gpd. The estimated cost for this option is \$200,000 based on the RWMP.

R-303/R313: R-303 would include the extension of a new 8" reclaimed water main approximately 1,120 LF from the existing reclaimed water main at the intersection of Ridgewood Avenue and Cherry Parkway to the intersection of Cherry Parkway and Cypress Avenue. At East Venice Avenue, the line will be shallow (\pm 3' deep) in the median to allow for connection to the median irrigation system. This extension will serve the commercial properties on both corners on the north side of Venice Avenue. R-313 would include the extension of a new 8" reclaimed water main approximately 500 LF from the existing 24" line at the intersection of East Venice Avenue and Capri Isles Boulevard and north to the existing 8" line at the intersection of Ridgewood Avenue and Capri Isles Boulevard. By providing reclaimed water mains and connections to these high demand areas the City would be keeping up with their Going Green Initiative by providing reclaimed water to customers currently utilizing potable water for irrigation. It would also increase the availability of potable water for future demands. The estimated cost for this project based upon cost provided in the 2012 RWMP is approximately \$300,000.

Figure 4.2: Proposed Reclaimed Water Main Projects



4.5 Options for Stormwater Improvements

4.5.1 No Action

Three projects are recommended for stormwater improvements, if no action was taken the City could be subject to flooding, increased maintenance and safety hazards. In addition, not performing rehabilitation of the existing stormwater system to ensure its continued function would lead to pipe failures, roadway impacts and flooding. Therefore, no action is not considered to be a viable option.

4.5.2 Osprey Ditch Improvements

This option includes improvements that will enclose the Osprey Ditch with underground piping to reduce maintenance requirements and increase safety for drivers and pedestrians. This project will replace approximately 565 LF of ditch with piping. The proposed Osprey ditch area is highlighted in the Figure 4.3. The estimated cost for this project is approximately 1 million dollars (\$1,000,000), however engineering design is required to evaluate options and finalize cost.

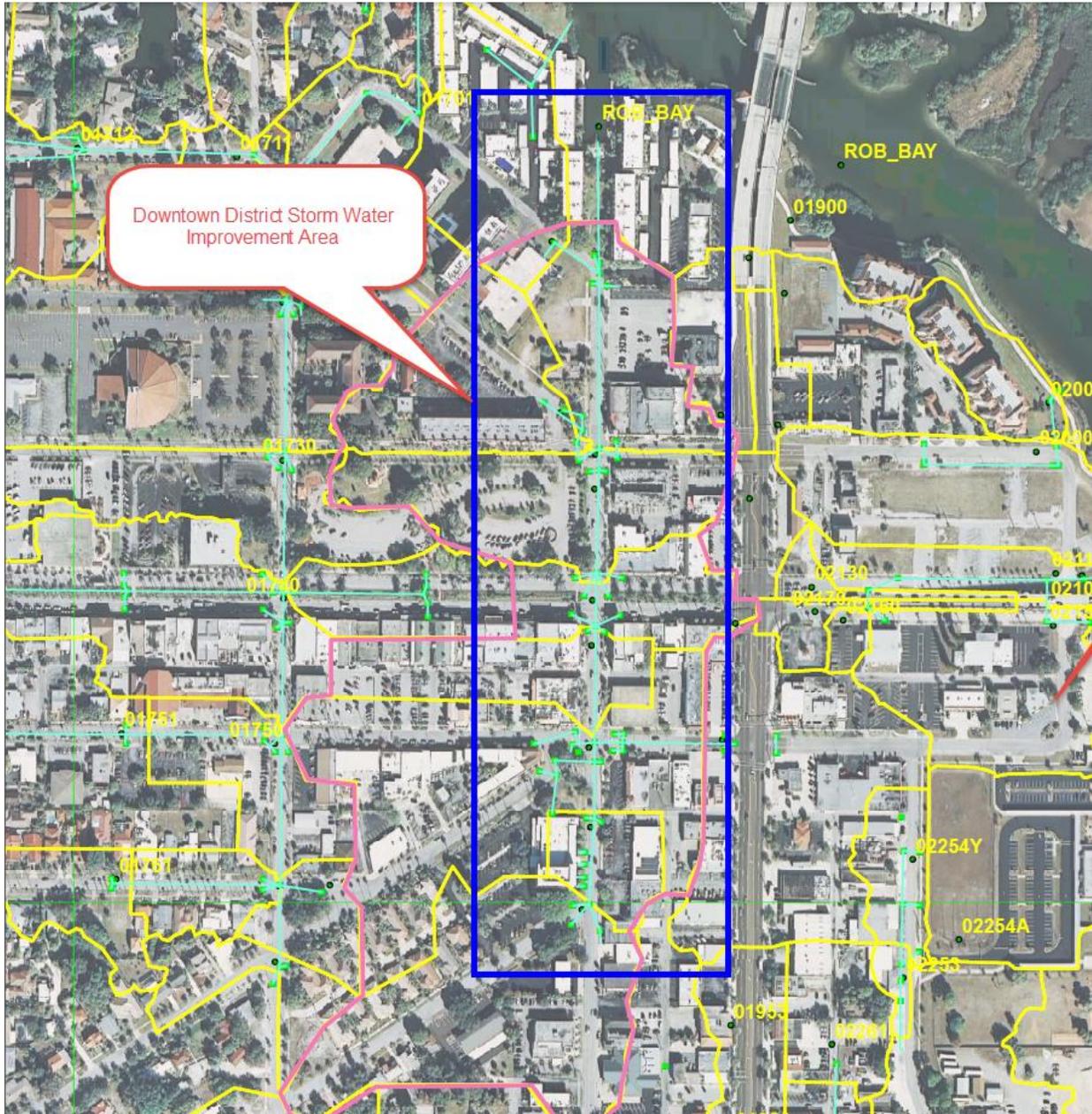
Figure 4.3: Osprey Ditch Improvement Area



4.5.3 Downtown District Stormwater Project

Engineering design and construction is needed to increase the design capacity of the Downtown District stormwater system to improve the drainage performance and reduce flooding along Nokomis Avenue South. This project will include the evaluation of the drainage service area shown in Figure 4.4, which is approximately 35.6 acres, in order to determine the best options for reducing flooding in this area. The estimated cost for this evaluation and corrective improvements is estimated to be approximately \$1,050,000, however engineering will be required to evaluate various options to determine the most cost effective solution.

Figure 4.4: Downtown District Stormwater Project Area



4.5.4 Stormwater Infrastructure Rehabilitation

The City is currently performing a detailed assessment of its stormwater system which includes televising the selected pipes, culverts and structures utilizing the National Association of Sewer Service Companies (NASSCO) for pipeline and manhole assessment and certification program (PACP/MACP) rating system. Structures and pipes that have a grade of 3 or greater, which indicate they are in failing condition would be rehabilitated via replacement and/or lining based on cost effectiveness and environmental impacts. The rehabilitation to the storm water infrastructure would provide for the continued operation of the system thereby minimizing negative impacts to water quality and flooding. It is estimated that approximately \$1,000,000 per year will be utilized for stormwater rehabilitation.

4.6 Cost Effectiveness

In order to evaluate the different options to determine the most cost effective options, cost estimates of the various options were developed. Table 4-8 provides a summary of the various cost estimates for the different options associated with wastewater collection, treatment and reuse for the City. Data for the cost estimates are based upon the referenced reports and engineering judgement. It should be noted that the table only examines capital cost in lieu of present worth analysis.

Table 4.8: Cost Effectiveness of Various Options

Description of Options	Estimated Construction Cost (Millions)	Estimated Total Cost w/ 40% Contingency for Engineering and Administration (Millions)
Collection System		
Option 1 – No Action	NA	NA
Option 2 – Replace Gravity Sewer w/WL replacement	5.4	7.5
Option 3 – Replace Gravity Sewer separately	8.5	12
Reuse System Storage		
Option 1- No Action	NA	NA
Option 2 – 1 GST at Airport	5.0	7.0
Option 3- 2 GST at Airport	8.0	11.2
Reclaimed Water Expansion		
Option 1 – No Action	NA	NA
Option 2 – Implement Loops/ Expansion (100,301, 300/313)	1.1	1.5
Storm Water Improvements		
Option 1- No Action	NA	NA
Option 2 – Implement SW Improvements	3.1	4.3

CHAPTER 5.0 – PROPOSED PROJECTS

5.1 Description of Proposed Projects

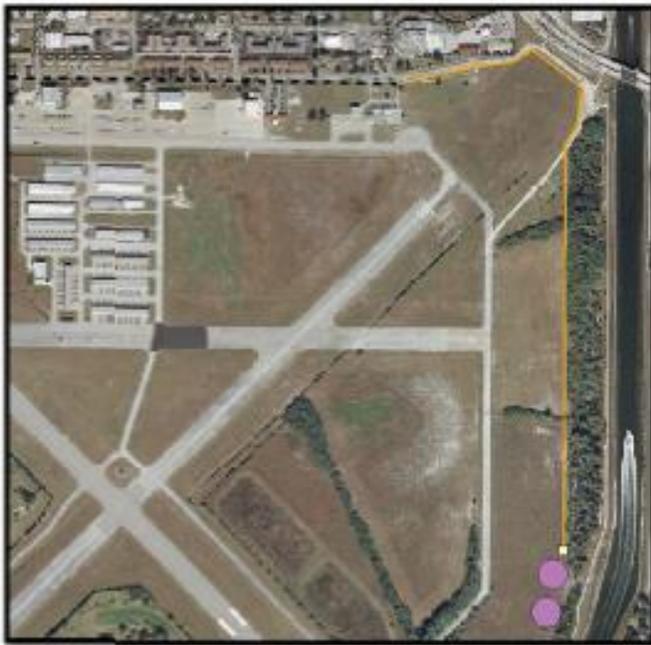
5.1.1 Wastewater Collection

This project would be to replace the gravity sewer system in the Eastgate Subdivision in conjunction with the water line replacements. This would eliminate water and sewer lines located in backyard easements with limited access and reduce restoration cost associated with the utility replacement and minimize impacts to homeowners by performing the work at the same time.

5.1.2 Reclaimed Water Storage

One 5 MG RCW ground storage tanks (GST) is proposed to provide additional RCW storage during normal operation and for storage required in the future. In addition to the ground storage tanks, there will be a booster pump station and approximately 3,500 LF of 16-inch reclaimed water main from the proposed main on Airport Ave to the GST site which would be located within the Venice Municipal Airport property as shown in **Figure 5.1**. The associated cost for this project is estimated at 7 million dollars.

Figure 5.1 – Proposed Reclaimed Water Storage Tank



5.1.3 Reclaimed Water Distribution Looping and Expansion

The 2012 RWMP identifies several projects that will reduce head losses and improve system pressure throughout the reclaimed water system, in addition to being able to serve new customers. The City has identified that three of the proposed projects that are anticipated to be implemented within the next fiscal year that are discussed below.

R-100 – This would include an extension of a new 12” reclaimed water main approximately 1,310 LF from the existing 8” line at the intersection of Albee Farm Road and West Lucaya Avenue south to the relocated reclaimed water main on the east side of US-41 Bypass. The remainder of this line is already under construction as part of the US-41 Bypass widening project. This connection would create a system loop and improve pressures in the Bay Indies and Bird Bay areas. It would also allow the City to provide reclaimed water to additional customers along Albee Farm Rd.

Figure 5.2: R-100 Looping Project



R-301 - This project will expand the reuse system to the island by converting an existing 10” wastewater force main to a reclaimed water main. Located along Granada Ave, Park Blvd and Alhambra Rd on Venice Island, there is an abandoned 1,800 LF 10” forcemain which can be connected to the existing reclaimed water system to provide reclaimed water for irrigation to Venezia Park and Heritage Park. In addition, there is also an abandoned ±5,700 LF 10” force main that runs along Matanzas Street east to Armada Road, north to Madrid Avenue, east to Park Boulevard, south to Alhambra Road, east and terminating at Harbor Drive that can be converted to provide reclaimed water, see Figure 5.4.

These force mains can then be connected to the existing reclaimed line by construction of approximately 650 LF of 12” HDPE pipe along Salerno St and 850 LF of 8” HDPE pipe along Venice Ave from Park Blvd to Avenida Des Parquess. This low cost expansion to the reclaimed water system will allow the city to provide reclaimed water to the residents and businesses in this area including the parks which have an irrigation demand of approximately 12,000 gpd for and estimated cost of \$200,000.

R-303/313 – This project would extend the reuse system with an 8” along Venice Ave to serve businesses located in that area and provide additional looping. By serving additional customers, it will allow the City to reduce the discharges to surface water from the wastewater treatment plant. This project will provide an estimated 12,000 gpd of reclaimed water and is estimated to be approximately \$200,000.

Figure 5.4: R-301 Abandoned Force Main and Proposed Reuse Mains



5.1.5 Stormwater Improvements

The stormwater conveyance ditch along Osprey Ave (Figure 5.5) is a deep open water ditch that can cause potential safety issues. The City is proposing to replace the open drainage ditch with stormwater piping, which is estimated to be 60” diameter or greater. Engineering and modeling will be required to determine the necessary sizing and options for the conveyance system. Preliminary cost estimates by the city are approximately \$1,000,000.

Figure 5.5: Osprey Drainage Ditch



In addition to the Osprey Ditch Improvements, enhancements to the Downtown District are needed to prevent flooding along Nokomis Avenue (Figure 5.6). A detailed drainage analysis and implementation of recommended improvements is necessary to assure the City maintains the proposed level of service for the roadways in the Downtown District. The City has estimated that the estimated cost for these improvements will be approximately \$1,000,000, but this will be reevaluated after engineering is completed.

Figure 5.6: S. Nokomis Ave



In addition to the stormwater projects shown above, the City is also undertaking a stormwater rehabilitation program to evaluate the existing infrastructure and perform necessary rehabilitation to insure the continued operation of the infrastructure. A rehabilitation budget of \$1,000,000 has been projected but may be revised after the assessment is completed. The total cost to implement all three stormwater projects is approximately \$4,300,000 which includes engineering, construction and administration cost.

5.2 Cost to Construct Project

A summary of the estimated cost based on the most environmentally sound and cost effective options for the various projects included in the City CIP budget for the next five years is summarized in Table 5.1. Project costs were developed based on engineering experience, previous projects, the 2012 RWMP and the 2013 WWMP.

Table 5.1: Budgetary Cost Estimate

Project	Budgetary Construction Cost Estimate	Total Estimated Cost with 40% Contingency
Eastgate Utility Relocation Phase 1	\$400,000	\$600,000
Eastgate Utility Relocation Phase 2	\$1,100,000	\$1,500,000
Eastgate Utility Relocation Phase 3	\$6,600,000	\$9,300,000
Reuse Storage Tank	\$5,000,000	\$7,000,000
Reclaimed Looping/ Expansion Projects	1,000,000	1,400,000
Osprey Ditch Improvements	1,100,000	1,500,000
Downtown District Stormwater Project	1,000,000	1,400,000
Stormwater Rehabilitation Program	1,000,000	1,400,000
Total Estimated Cost	\$17,200,000	\$24,100,000

5.3 Environmental Impacts of Proposed Projects

The short term impacts during construction of the proposed projects include increased noise levels, increased airborne particulates, and surface runoff during rainfall. Control measures will be implemented to minimize these temporary effects. The long-term impacts of the projects are beneficial, with reduced infiltration and inflow into the collection system, reduced potential for wastewater overflows, increased availability of reclaimed water and water savings for potable water by expanding the reclaimed water system. The stormwater projects would also have the potential of reduced flooding and improved water quality due to the implementation of best management practices.

5.4 Consistency with the Comprehensive Plan

All aforementioned projects are consistent with the City's Comprehensive Plan; especially those policies pertaining to Infrastructure Replacement and Improvement and Level of Service.

CHAPTER 6.0- IMPLEMENTATION AND COMPLIANCE

6.1 Public Hearing/Dedicated Revenue Hearing

A public hearing/dedicated revenue hearing will be held in the City after completion of the capital financing plan. It will be advertised in the area newspapers and interested parties will be notified of the hearing. After the hearing, an update to this FP will be provided, which will include a list of those citizens who attended and all comments that are received. A copy of the public notice and minutes will be provided.

6.2 Regulatory Agency Review

To qualify for a subsidized loan from the SRF, various governmental agencies must be contacted to verify that they are satisfied with the proposed improvements that are being recommended by the City for solving future wastewater, reclaimed water and stormwater infrastructure issues. Copies of the plan will be sent to the following government agencies for review and comments.

- Florida Department of Environmental Protection
- Florida Department of Health
- Southwest Florida Water Management District
- US Environmental Protection Agency
- Southwest Florida Regional Planning Council
- Department of Community Affairs, State Clearinghouse.

6.3 Financial Planning

The FDEP SRF loan program is the expected financing source for these projects. Separate Capital Financing Plans (CFP) for the wastewater and stormwater projects were prepared by the City for approval at the May 10, 2016 Council Meeting. Copies of the CFPs are provided in Appendix A with associated resolution. The CFPs outline to public and state agencies what the proposed financial impact to the utility customers. It is anticipated that the City's Utilities Department, which serves approximately 19,000 customers, will pay the cost for the improvements. The FP which includes the CFP was presented at a public hearing also held at the May 10 meeting. An overview of the proposed projects, alternatives evaluated, environmental impacts, cost and impact on rates and schedule was provided followed by adoption of Resolution 2016-14

6.4 Implementation

The City Utilities Department has the sole responsibility and authority to implement the recommended improvements. There are no interlocal agreements necessary for the City to provide wastewater and storm water services throughout the planning area.

6.5 Schedule for Implementation

The following schedule has been developed for the implementation of the proposed improvements, this schedule is subject to various projects and schedules being met and may change. In addition, Figure 6.1 provides a more detailed schedule of when the individual projects will be implemented.

Proposed Implementation Schedule for City of Venice Clean Water Projects

Date	Task
May 2016	Submit draft FP to FDEP/Clearinghouse (CH) for review
May 2016	Hold public hearing on FP and Capital Financing Plan
May 2016	FP resolution and meeting minute to FDEP
June 2016	FDEP/CH approval of FP
July 2016	Publication of Environmental Information Document in Florida Administrative Weekly
July 2016	Environmental Clearance Received
July 2016	Biddable plans and specifications and permits submitted to FDEP
July 2016	Hearing to place projects on priority list
August 2016	Application Complete
September 2016	Loan Agreement Received
September 2016	Project NTP

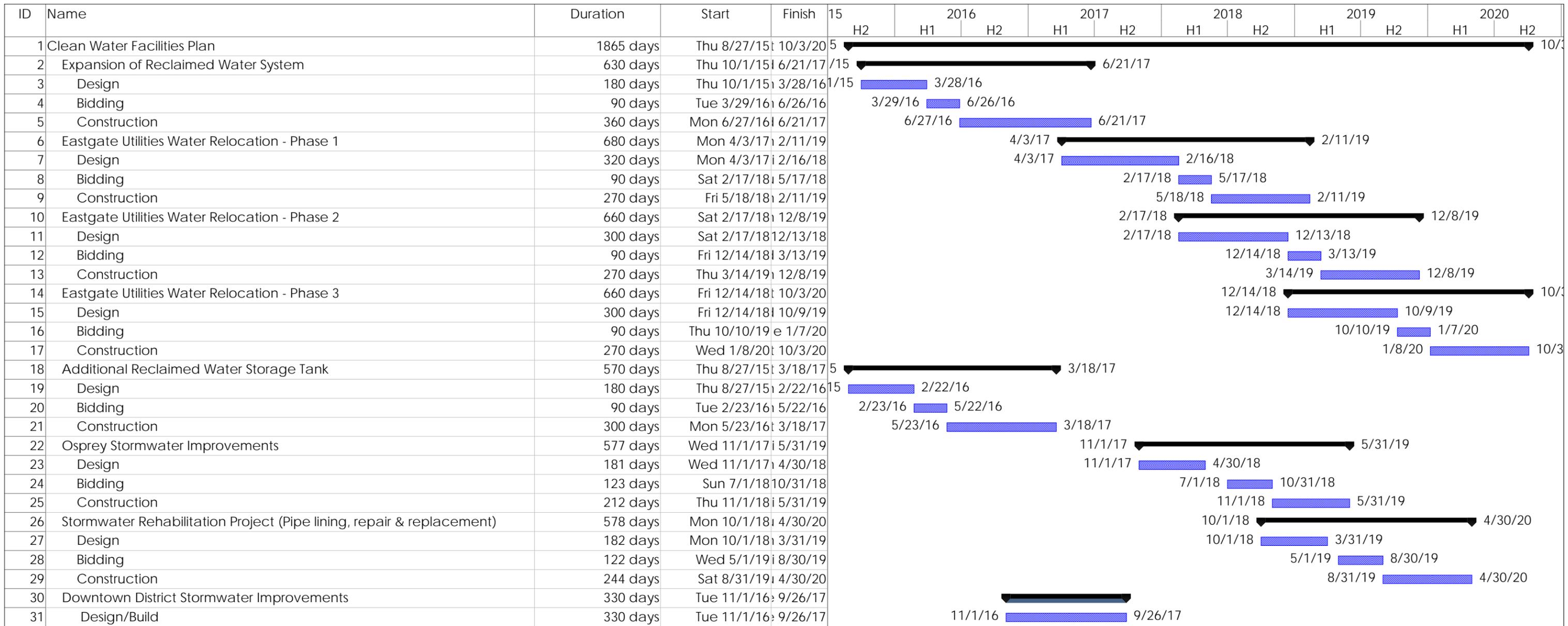


Figure 6.1:
Proposed Schedule
City of Venice Clean Water SRF Projects

APPENDIX A

RESOLUTION NO. 2016-14

A Resolution Of The City Of Venice, Florida, Relating To The State Of Florida Department Of Environmental Protection Agency State Revolving Fund Loan Program; Adopting The City Of Venice Clean Water And Stormwater Facilities Plan, May 2016; Making Findings; Authorizing Of Facilities Plan And Capital Financing Plan; And Providing An Effective Date

WHEREAS, Florida Statutes provides for financial assistance to local government agencies to finance the construction of wastewater and stormwater facilities improvements; and

WHEREAS, Florida Administrative Code requires the City of Venice to conduct a presentation to discuss various elements of the required Clean Water and Stormwater Facilities Plan and allow public comment; and

WHEREAS, the Venice City Council is required to adopt a resolution to submit the Clean Water and Stormwater Facilities Plan and participate in the State of Florida Department of Environmental Protection Agency, State Revolving Fund Loan Program.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF VENICE, FLORIDA, as follows:

SECTION 1. The above Whereas clauses are ratified and confirmed as true and correct.

SECTION 2. The Venice City Council adopts the referenced City of Venice Clean Water and Stormwater Facilities Plan, May 2016, which is on file with the city clerk's office, and authorizes the mayor to sign the Clean Water and Stormwater State Revolving Fund Capital Financing Plan for Clean Water and Capital Financing Plan for Stormwater.

SECTION 3. The city manager is hereby designated as the authorized representative to provide the assurances and commitments required by the Facilities Plan 2016.

SECTION 4. The city manager is authorized to represent the City of Venice in carrying out responsibilities under the Facilities Plan and related State Revolving Fund Loan Program documents and to delegate responsibility to appropriate staff to carry out technical, financial, and administrative activities associated with the Facilities Plan 2016 and Loan Program.

SECTION 5. This Resolution shall take effect upon adoption, as provided by law.

ADOPTED BY THE CITY COUNCIL OF THE CITY OF VENICE, FLORIDA, AT A MEETING HELD ON THE 10TH DAY OF MAY 2016.

John W. Holic, Mayor, City of Venice

ATTEST:

Lori Stelzer, MMC, City Clerk

CAPITAL FINANCING PLAN

WW-02b

City of Venice, Florida
(Project Sponsor)
John Holic, Mayor
(Authorized Representative and Title)
Venice, Florida 34285
(City, State, and Zip Code)

Linda Senne, Interim Finance Director 941-882-7421
(Capital Financing Plan Contact, Title and Telephone Number)
401 W. Venice Ave
(Mailing Address)
Venice FL, 34285
(City, State, and Zip Code)

The Department needs to know about the financial capabilities of potential State Revolving Fund (SRF) loan applicants. Therefore, a financial capability demonstration (and certification) is required well before the evaluation of the actual loan application.

The sources of revenues being dedicated to repayment of the SRF loan are Water and Sewer Net Operating Revenues

(Note: Projects pledging utility operating revenues should attach a copy of the existing/proposed rate ordinance)

Estimate of Proposed SRF Loan Debt Service

Capital Cost*	<u>16,920,000</u>
Loan Service Fee (2% of capital cost)	<u>341,784</u>
Subtotal	<u>17,261,784</u>
Capitalized Interest**	<u>169,200</u>
Total Cost to be Amortized	<u>17,430,984</u>
Interest Rate***	<u>1.00</u>
Annual Debt Service	<u>965,943</u>
Annual Debt Service Including Coverage Factor****	<u>1,110,835</u>

* Capital Cost = Allowance + Construction Cost (including a 10% contingency) + Technical Services after Bid Opening.

** Estimated Capitalized Interest = Subtotal times Interest Rate times construction time in years divided by two.

***20 GO Bond Rate times Affordability Index divided by 200.

**** Coverage Factor is generally 15%. However, it may be higher if other than utility operating revenues are pledged.

SCHEDULE OF PRIOR AND PARITY LIENS

List annual debt service beginning two years before the anticipated loan agreement date and continuing at least fifteen fiscal years. Use additional pages as necessary.

Identify Each Obligation

#1 Utility Refunding Note 2012 \$9,980,000		#2 2013 PNC (SRF) Refunding Loan \$4,157,000		#3 2012 Revenue Bonds \$20,770,000							
Coverage %		115%		Coverage %		115%		Coverage %		115%	
Insured (Yes/No)		No		Insured (Yes/No)		No		Insured (Yes/No)		No	
#4 Series 2015 \$15,355,000		#5 Pending SRF Loan DW \$4,116,153									
Coverage %		115%		Coverage %		115%					
Insured (Yes/No)		No		Insured (Yes/No)		No					
Fiscal Year	Annual Debt Service (Principal + Interest)							Total Non-SRF Debt Service w/coverage	Total SRF Debt Service w/coverage		
	#1	#2	#3	#4	#5	#6	#7				
2013	2,558,875	215,290	351,248					3,594,225			
2014	2,550,964	430,764	1,156,650					4,759,135	-		
2015	2,552,771	430,684	1,157,125					4,761,667	-		
2016	2,544,295	430,505	1,158,350	759,519				5,626,569	-		
2017		431,227	1,157,050	1,099,175				3,090,570	-		
2018		430,833	1,160,050	1,099,050	228,558			3,093,423	262,842		
2019		430,340	1,157,350	1,100,375	228,558			3,091,275	262,842		
2020		430,740	1,158,950	1,100,450	228,558			3,093,661	262,842		
2021		431,033	1,157,300	1,096,575	228,558			3,087,644	262,842		
2022		430,210	1,155,550	1,096,325	228,558			3,084,398	262,842		
2023		431,280	1,157,675	1,099,375	228,558			3,091,580	262,842		
2024			1,455,300	1,096,300	228,558			2,934,340	262,842		
2025			1,156,550	1,097,175	228,558			2,591,784	262,842		
2026			1,157,575	1,101,175	228,558			2,597,563	262,842		
2027			1,158,428	1,098,300	228,558			2,595,237	262,842		
2028			1,158,272	1,096,850	228,558			2,593,390	262,842		
2029			1,157,491	1,098,775	228,558			2,594,706	262,842		
2030			1,156,084	1,100,650	228,558			2,595,244	262,842		
2031			1,157,625	1,099,725	228,558			2,595,953	262,842		
2032			1,156,988	1,096,159	228,558			2,591,119	262,842		
2033			1,155,475	1,100,469	228,558			2,594,336	262,842		
2034			1,158,000	1,098,131	228,558			2,594,551	262,842		
2035			1,159,475	1,099,084	228,558			2,597,343	262,842		
2036			1,158,325	1,098,225	228,558			2,595,033	262,842		
2037			1,158,950		228,558			1,332,793	262,842		
2038			1,158,981					1,332,828	-		
2039			1,158,909					1,332,745	-		
2040			1,157,569					1,331,204	-		
2041			1,154,959					1,328,203	-		
2042			1,155,991					1,329,390	-		
2043			1,155,572					1,328,908	-		

**SCHEDULE OF ACTUAL REVENUES AND DEBT COVERAGE
FOR PLEDGED REVENUE**

(Provide information for the two fiscal years preceding the anticipated date of the SRF loan agreement)

	FY13	FY14
(a) Operating Revenues (Identify)		
<u>Charges for Service</u>	<u>20,256,659</u>	<u>20,746,517</u>
(b) Interest Income	<u>(20,078)</u>	<u>234,395</u>
(c) Other Incomes or Revenues (Identify)		
(d) Total Revenues	<u>20,236,571</u>	<u>20,980,912</u>
(e) Operating Expenses (excluding interest on debt, depreciation, and other non-cash items)	<u>8,967,225</u>	<u>9,228,925</u>
(f) Net Revenues (f = d – e)	<u>11,269,346</u>	<u>11,751,987</u>
(g) Debt Service (including coverage) Excluding SRF Loans	<u>3,594,225</u>	<u>4,759,135</u>
(h) Debt Service (including coverage) for Outstanding SRF Loans		
(i) Net Revenues After Debt Service (i = f – g – h)	<u>7,675,121</u>	<u>6,992,852</u>

Source: 2013/2014 CAFR

Notes:

**SCHEDULE OF PROJECTED REVENUES AND DEBT COVERAGE
FOR RATE-BASED SYSTEM PLEDGED REVENUE**

(Begin with the fiscal year preceding first anticipated semiannual loan payment.)

	<u>FY2015</u>	<u>FY2016</u>	<u>FY2017</u>	<u>FY2018</u>	<u>FY2019</u>
Operating Revenues					
(a) (Identify)					
<u>Water/Sewer</u>	<u>20,024,301</u>	<u>20,674,357</u>	<u>22,139,287</u>	<u>23,670,836</u>	<u>25,271,613</u>
(b) Interest Income	<u>94,416</u>	<u>108,438</u>	<u>146,679</u>	<u>265,185</u>	<u>503,354</u>
Other Incomes or					
(c) Revenues (Identify)					
<u>Other Operating Income</u>	<u>416,016</u>	<u>414,591</u>	<u>427,968</u>	<u>441,367</u>	<u>454,790</u>
Capacity					
<u>Charges/Infrastructure</u>					
<u>Surtax only FY2015</u>	<u>1,536,924</u>	<u>414,801</u>	<u>2,356,440</u>	<u>2,363,279</u>	<u>2,370,322</u>
(d) Total Revenues	<u>22,071,657</u>	<u>21,612,187</u>	<u>25,070,374</u>	<u>26,740,667</u>	<u>28,600,079</u>
(e) Operating Expenses	<u>12,756,081</u>	<u>13,170,359</u>	<u>13,602,918</u>	<u>14,054,653</u>	<u>14,526,502</u>
(f) Net Revenues (f = d - e)	<u>9,315,576</u>	<u>8,441,828</u>	<u>11,467,456</u>	<u>12,686,014</u>	<u>14,073,577</u>
Existing Debt Service					
on Non-SRF Projects					
(g) (including coverage)	<u>4,761,667</u>	<u>5,626,569</u>	<u>3,090,570</u>	<u>3,093,423</u>	<u>3,091,275</u>
Existing SRF Loan Debt					
(h) (including coverage)	<u>0</u>	<u>0</u>	<u>0</u>	<u>262,842</u>	<u>262,842</u>
Total Existing Debt					
(i) Service (i = g + h)	<u>4,761,667</u>	<u>5,626,569</u>	<u>3,090,570</u>	<u>3,356,265</u>	<u>3,354,116</u>
Projected Debt Service					
on Non-SRF Future					
Projects (including					
(j) coverage)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Projected SRF Loan					
Debt Service (including					
(k) coverage)	<u>0</u>	<u>0</u>	<u>0</u>	<u>1,110,835</u>	<u>1,110,835</u>
Total Debt Service					
(Existing and					
(l) Projected) (l = i + j + k)	<u>4,761,667</u>	<u>5,626,569</u>	<u>3,090,570</u>	<u>4,467,100</u>	<u>4,464,951</u>
Net Revenues After					
(m) Debt (m = f - l)	<u>4,553,909</u>	<u>2,815,259</u>	<u>8,376,886</u>	<u>8,218,914</u>	<u>9,608,626</u>

Source: Projection outlined is from the Burton & Associates Utility System Revenue Bonds, Series 2015.

Notes (i.e. rate increases, explanations, etc.)

CERTIFICATION

I, Linda Senne, Interim Finance Director, certify that I have reviewed the information
Chief Financial Officer (please print)

included in the preceding capital financing plan worksheets, and to the best of my knowledge, this
information accurately reflects the financial capability of City of Venice

Project Sponsor

I further certify that City of Venice has the financial capability to ensure
Project Sponsor

adequate construction, operation, and maintenance of the system, including this SRF project.

Linda Senne
Signature

4/29/16
Date

City of Venice, Florida
(Project Sponsor)
John Holic, Mayor
(Authorized Representative and Title)
Venice, Florida 34285
(City, State, and Zip Code)

Linda Senne, Interim Finance Director 941-882-7421
(Capital Financing Plan Contact, Title and Telephone Number)
401 W. Venice Ave
(Mailing Address)
Venice FL, 34285
(City, State, and Zip Code)

The Department needs to know about the financial capabilities of potential State Revolving Fund (SRF) loan applicants. Therefore, a financial capability demonstration (and certification) is required well before the evaluation of the actual loan application.

The sources of revenues being dedicated to repayment of the SRF loan are Stormwater Net Operating Revenues
(Note: Projects pledging utility operating revenues should attach a copy of the existing/proposed rate ordinance)

Estimate of Proposed SRF Loan Debt Service

Capital Cost*	<u>3,720,000</u>
Loan Service Fee (2% of capital cost)	<u>75,159</u>
Subtotal	<u>3,795,159</u>
Capitalized Interest**	<u>37,944</u>
Total Cost to be Amortized	<u>3,833,103</u>
Interest Rate***	<u>1.00</u>
Annual Debt Service	<u>212,371</u>
Annual Debt Service Including Coverage Factor****	<u>244,226</u>

* Capital Cost = Allowance + Construction Cost (including a 10% contingency) + Technical Services after Bid Opening.

** Estimated Capitalized Interest = Subtotal times Interest Rate times construction time in years divided by two.

***20 GO Bond Rate times Affordability Index divided by 200.

**** Coverage Factor is generally 15%. However, it may be higher if other than utility operating revenues are pledged.

SCHEDULE OF PRIOR AND PARITY LIENS

List annual debt service beginning two years before the anticipated loan agreement date and continuing at least fifteen fiscal years. Use additional pages as necessary.

Identify Each Obligation

#1 2010 Stormwater Refunding Revenue bond \$944,000 Coverage % 115% Insured (Yes/No) No			

Fiscal Year	<u>Annual Debt Service (Principal + Interest)</u>							Total Non-SRF Debt Service w/coverage	Total SRF Debt Service w/coverage
	#1	#2	#3	#4	#5	#6	#7		
2013	172,767							198,682	
2014	172,399							198,259	-
2015	170,968							196,613	-
2016	168,495							193,769	-
2017								-	-
2018								-	-
2019								-	-
2020								-	-
2021								-	-
2022								-	-
2023								-	-
2024								-	-
2025								-	-
2026								-	-
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2035								-	-
2036								-	-
2037								-	-
2038								-	-
2039								-	-
2040								-	-
2041								-	-
2042								-	-
2043								-	-

**SCHEDULE OF ACTUAL REVENUES AND DEBT COVERAGE
FOR PLEDGED REVENUE**

(Provide information for the two fiscal years preceding the anticipated date of the SRF loan agreement)

	FY13	FY14
(a) Operating Revenues (Identify)		
<u>Charges for Service</u>	<u>1,395,074</u>	<u>1,369,919</u>
(b) Interest Income	<u>4,824</u>	<u>15,832</u>
(c) Other Incomes or Revenues (Identify)		
<u>Non-Operating Revenue/Capital Contributions</u>	<u>47,423</u>	<u>339,078</u>
<u>Miscellaneous</u>	<u>59,027</u>	<u>89</u>
(d) Total Revenues	<u>1,506,348</u>	<u>1,724,918</u>
(e) Operating Expenses (excluding interest on debt, depreciation, and other non-cash items)	<u>984,660</u>	<u>1,126,070</u>
(f) Net Revenues (f = d – e)	<u>521,688</u>	<u>598,848</u>
(g) Debt Service (including coverage) Excluding SRF Loans	<u>198,682</u>	<u>198,259</u>
(h) Debt Service (including coverage) for Outstanding SRF Loans		
(i) Net Revenues After Debt Service (i = f – g – h)	<u>323,006</u>	<u>400,589</u>

Source: 2013/2014 CAFR

Notes:

**SCHEDULE OF PROJECTED REVENUES AND DEBT COVERAGE
FOR RATE-BASED SYSTEM PLEDGED REVENUE**

(Begin with the fiscal year preceding first anticipated semiannual loan payment.)

	<u>FY2015</u>	<u>FY2016</u>	<u>FY2017</u>	<u>FY2018</u>	<u>FY2019</u>
Operating Revenues					
(a) (Identify)					
Stormwater Charges for Service	<u>1,438,415</u>	<u>1,510,336</u>	<u>1,585,852</u>	<u>1,665,145</u>	<u>1,748,402</u>
(b) Interest Income	<u>25,266</u>	<u>25,519</u>	<u>25,774</u>	<u>25,774</u>	<u>25,774</u>
Other Incomes or					
(c) Revenues (Identify)					
Miscellaneous	<u>11,474</u>	<u>11,589</u>	<u>11,705</u>	<u>11,822</u>	<u>11,940</u>
	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
(d) Total Revenues	<u>1,475,155</u>	<u>1,547,444</u>	<u>1,623,331</u>	<u>1,702,741</u>	<u>1,786,116</u>
(e) Operating Expenses	<u>693,000</u>	<u>727,050</u>	<u>762,803</u>	<u>800,343</u>	<u>839,760</u>
(f) Net Revenues (f = d - e)	<u>782,155</u>	<u>820,394</u>	<u>860,529</u>	<u>902,398</u>	<u>946,357</u>
Existing Debt Service					
on Non-SRF Projects					
(g) (including coverage)	<u>196,613</u>	<u>193,769</u>	<u>0</u>	<u>0</u>	<u>0</u>
Existing SRF Loan Debt					
(h) (including coverage)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total Existing Debt					
(i) Service (I = g + h)	<u>196,613</u>	<u>193,769</u>	<u>0</u>	<u>0</u>	<u>0</u>
Projected Debt Service					
on Non-SRF Future					
Projects (including					
(j) coverage)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Projected SRF Loan					
Debt Service (including					
(k) coverage)	<u>0</u>	<u>0</u>	<u>0</u>	<u>244,767</u>	<u>244,767</u>
Total Debt Service					
(Existing and					
(l) Projected) (I = I + j + k)	<u>196,613</u>	<u>193,769</u>	<u>0</u>	<u>244,767</u>	<u>244,767</u>
Net Revenues After					
(m) Debt (m = f - I)	<u>585,542</u>	<u>626,624</u>	<u>860,529</u>	<u>657,632</u>	<u>701,590</u>

Source: .05% increase projected for Charges for Service and average on other revenues and increase of .05% for operating expenses. This is a

Notes: (i.e. rate increases, explanations, etc.)

1. Rates are currently being reviewed however the current rate structure with SRF debt would not require an increase in the City's Stormwater rates.

CERTIFICATION

I, Linda Senne, Interim Finance Director, certify that I have reviewed the information
Chief Financial Officer (please print)

included in the preceding capital financing plan worksheets, and to the best of my knowledge, this
information accurately reflects the financial capability of City of Venice
Project Sponsor

I further certify that City of Venice has the financial capability to ensure
Project Sponsor

adequate construction, operation, and maintenance of the system, including this SRF project.

Linda Senne
Signature

4/29/16
Date