FINAL DRAFT

SARASOTA COUNTY

"Dedicated to Quality Service"

Water Supply Master Plan Update

Technical Memorandum 5 - 10-Year Water CIP

April 2006

carollo engineers

SARASOTA COUNTY
"Dedicated to Quality Service"

WATER SUPPLY MASTER PLAN UPDATE

TECHNICAL MEMORANDUM 5

10-YEAR WATER CIP

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5.0 INTRODUCTION

Sarasota County (County) completed its most recent Water Supply Master Plan (WSMP) in 2001. The purpose of that document was to address the County's water supply needs through 2030 as part of their comprehensive water supply planning efforts. The report outlined future water demand projections, as well as current water supplies for the County. In addition, it described and evaluated several potential new ground and surface water sources, storage technologies and options, and associated costs.

Carollo Engineers was chosen to work with the County to review, update, and expand the 2001 WSMP. The primary goal of the WSMP Update (WSMPU) is to document the County's existing system and its performance and to provide a basis for the continuation of sustainable water supply development throughout Sarasota County.

The WSMPU is comprised of five technical memoranda and a comprehensive graphics-oriented Executive Summary. This document, Technical Memorandum 5 - 10-Year Water Capital Improvements Program (CIP) (TM5), identifies the projects and improvements necessary to implement the recommendations developed in the WSMPU.

The 10-year CIP is based on the evaluation of the County's water supply to best meet the County's future water supply needs. It has been prepared to assist the County in planning and constructing major water system improvements throughout the 10-year planning horizon. The 10-year CIP considers the asset information collected in TM2 - Water System Assets and the required improvements to upgrade or expand County facilities, primarily water treatment facilities (WTFs) and distribution system infrastructure. It also includes projects to implement new water supply development described in TM3 - Water Supply Projects. These projects will assist the County in achieving its new Water Supply Master Plan, as described in TM4 - 2050 Water Supply Scenarios.

All potential water improvement and expansion projects were first classified as critical, beneficial, or elective based on the merit and necessity of the project in the context of reliable water supply to the County's customers. Based on the financial analysis of the projects and the County's budget, the plan in TM5 will be programmed into the CIP.

5.1 PROJECT CATEGORIZATION

The project team worked with County staff to categorize all identified potential projects and programs associated with the WSMPU with respect to fiscal year (FY) impacts over the 10-year planning horizon (FY07 through FY16). Projects were prioritized based on their relative importance to mitigate existing water system deficiencies and to service anticipated growth. Projects were classified into one of three prioritization groups:

1) Critical - necessary to meet quantity and quality goals,

2) Beneficial - capital expenditures providing lifecycle cost or reliability benefits, and

3) Elective - investments with less tangible merit, such as sustainability benefits.

A summary of all identified projects and their classifications are included in Table 5.1. Projects identified as "critical" within the 10-year planning horizon were programmed into the CIP. Projects needed beyond the 10-year planning horizon or that were considered beneficial or elective were not included in the 10-year CIP. These projects can be included when fiscally possible based on their relative merit and on direction from County staff. The majority of these projects are pipelines that will be needed as the water distribution system grows and to increase reliability, improve water quality, and maintain equitable water pressure throughout the system. These projects are discussed further in Section 5.3.1.

Table 5.1 Project Classifications

Project ID	Project	Classification[1]		
		Critical	Beneficial	Elective
Expansion of the Sarasota County Water System				
Raw Water Development				
1-1	Dona Bay Preliminary Design Study	X		
1-2	Dona Bay Water Supply Project Phase 1	X		
1-3	Dona Bay Water Supply Project Phase 2	X		
1-4	Carlton Wellfield Expansion No. 1	X		
1-5	Carlton Wellfield Expansion No. 2	X		
Water Treatment Facilities				
1-6	Venice Gardens WTF Reverse Osmosis Rehabilitation and Miscellaneous Upgrades	X		
1-7	Carlton WTF Capacity Upgrade	X		
1-8	University Reverse Osmosis WTF	X		
Pumping Facilities				

Table 5.1 Project Classifications				
Project ID	**Project**	**Classification[1]**		
		Critical	**Beneficial**	**Elective**
1-9	Pump Station at Preymore Street Crossing (from Regional Loop)			X
1-10	Pump Station at Other Crossing (from Regional Loop)			X
1-11	Carlton High Service Pump Station	X		
Storage Facilities				
1-12	Carlton 5 MG Ground Storage Tank	X		
Transmission and Distribution				
1-13	Loop to North Port Interconnect (Carlton 42" to Stoneybrook)		X	
1-14	Loop to North Port Interconnect (Blackburn to Highway 41)		X	
1-15	North Extension from Carlton to Preymore Street (portion of Regional Loop)	X		
1-16	North Extension from Preymore Street to Fruitville Road (portion of Regional Loop)			X
1-17	Crossing along Preymore Street (from Regional Loop)	X		
1-18	Crossing along Clark Road (from Regional Loop)			X
1-19	Crossing along Bee Ridge Road (from Regional Loop)			X
1-20	Crossing along Fruitville Road (from Regional Loop)			X
1-21	Honore Extension			X
1-21	University Connection from Lockwood Ridge			X
1-22	University/PS4 Loop			X
1-23	Iona to Palmer Loop	X		
Water System Modifications and Improvements				
Water Treatment Facilities Modifications and Improvements				
2-1	Venice Gardens WTF Standby Generators	X		
2-2	Venice Gardens WTF Deep injection Well	X		

Table 5.1 Project Classifications				
Project ID	Project	Classification[1]		
		Critical	Beneficial	Elective
2-3	Carlton WTF Miscellaneous Upgrades	X		
2-4	University WTF Miscellaneous Upgrades	X		
Pumping Facilities Modifications and Improvements				
2-5	Pump Station 2 Modifications	X		
2-6	Pump Station 3 Modifications	X		
2-7	Pump Station 5 Modifications	X		
2-8	Standby Generator at Pump Station 3	X		
General Facilities Improvements				
2-9	Turnkey SCADA System Upgrade	X		
2-10	Venice Gardens WTF Onsite Wastewater Lift Station	X		
2-11	University WTF Remove Septic Tank/Connect to Sanitary Sewer/Construct Truck Turnaround	X		
Notes: 1. Project classifications were discussed with County staff and chosen based on project necessity, timing, and fiscal constraints.				

5.2 CAPITAL IMPROVEMENTS PROGRAM

The projects identified as critical in the 10-year planning horizon are included in the 10-year CIP. The timing of the projects was discussed with County staff, and the projects were included based on their relative necessity, fiscal constraints, and time required to bring new sources online to meet future demands. The CIP for the chosen improvements is presented in Table 5.2, which includes the projected capital cost to the County and the expected expenditure per year for each project. It should be noted that total "Cost to County" column indicates the estimated project cost incurred by the County after expected grant contributions and payments by other participating or partnering utilities. The total project capital cost along with additional information for each project is included in Appendix A under the corresponding project ID number. The project information sheets include a brief project description, a breakdown of the estimated capital cost, timing and cost schedule, and a general project justification. Figure 5.1 illustrates the approximate location of each CIP project, with projects identified based on the corresponding project ID listed in Table 5.2.

A summary of the estimated annual capital expenditure is provided in Figure 5.2.

Table 5.2 Capital Improvements Program (Thousands of Dollars)

ID	Description	Total Estimated Cost[1] (1000 $)	Grants and/or Outside Payment (%)	Cost to County (1000 $)	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
PART I - EXPANSION OF THE SARASOTA COUNTY WATER SYSTEM														
Raw Water Development														
1-1	Dona Bay Preliminary Design Study	1,500	50%	750	750	0	0	0	0	0	0	0	0	0
1-2	Dona Bay Water Supply Phase 1	60,000	75%	15,000	0	0	0	0	1,500	1,500	6,000	6,000	0	0
1-3	Dona Bay Water Supply Phase 2	40,000	75%	10,000	0	0	0	0	0	0	0	0	0	1,000
1-4	Carlton Wellfield Expansion No. 1	2,360	0%	2,360	2,360	0	0	0	0	0	0	0	0	0
1-5	Carlton Wellfield Expansion No. 2	3,610	0%	3,610	0	0	0	0	0	0	1,805	1,805	0	0
Water Treatment Facilities														
1-6	Venice Gardens RO Rehabilitation & Treatment Facility Upgrades	2,850	0%	2,850	2,850	0	0	0	0	0	0	0	0	0
1-7	Carlton WTF EDR Capacity Upgrade	14,000	0%	14,000	0	0	0	0	0	0	2,800	11,200	0	0
1-8	University RO Water Treatment Plant	4,950	0%	4,950	0	0	0	0	0	0	1,000	1,975	1,975	0
Pumping Facilities														
1-11	Carlton High Service Pump Station	3,050	0%	3,050	0	600	2,450	0	0	0	0	0	0	0
Storage Facilities														
1-12	Carlton 5 MG Ground Storage Tank	2,870	0%	2,870	2,870	0	0	0	0	0	0	0	0	0
Transmission and Distribution														
1-15	North Extension - Carlton to Preymore Street (Regional Loop)	35,000	50%	17,500	0	3,500	7,000	7,000	0	0	0	0	0	0
1-17	Crossing near Preymore Street	4,400	0%	4,400	0	900	1,750	1,750	0	0	0	0	0	0
1-23	Iona Road to Palmer Loop	500	0%	500	500	0	0	0	0	0	0	0	0	0
TOTAL PART I		**157,590**	**--**	**81,840**	**9,330**	**5,000**	**11,200**	**8,750**	**1,500**	**1,500**	**11,610**	**20,990**	**1,980**	**1,000**

Table 5.2 Capital Improvements Program (Thousands of Dollars)

ID	Description	Total Estimated Cost[1] (1000 $)	Grants and/or Outside Payment (%)	Cost to County (1000 $)	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
PART II - WATER SYSTEM MODIFICATIONS AND REPLACEMENTS														
Water Treatment Facilities Modifications and Replacements														
2-1	Venice Gardens WTF Generators	1,480	0%	1,480	0	1,480	0	0	0	0	0	0	0	0
2-2	Venice Gardens Deep Injection Wells	3,000	0%	3,000	0	1,500	1,500	0	0	0	0	0	0	0
2-3	Carlton WTF Upgrades	520	0%	520	0	520	0	0	0	0	0	0	0	0
2-4	University WTF Upgrades	670	0%	670	160	420	0	0	0	0	0	0	0	0
Pumping Facilities Modifications and Replacements														
2-5	Pump Station 2 Modifications	400	0%	400	0	50	350	0	0	0	0	0	0	0
2-6	Pump Station 3 Modifications	200	0%	200	0	50	150	0	0	0	0	0	0	0
2-7	Pump Station 5 Modifications	400	0%	400	0	50	350	0	0	0	0	0	0	0
2-8	Standby Generator at Pump Station 3	390	0%	390	0	0	390	0	0	0	0	0	0	0
General Facilities Improvements														
2-9	Turnkey SCADA System Upgrade	1,000	0%	1,000	500	500	0	0	0	0	0	0	0	0
2-10	Venice Gardens Onsite Wastewater Lift Station	290	0%	290	0	290	0	0	0	0	0	0	0	0
2-11	University Sewer Rehab / Truck Drive	200	0%	200	200	0	0	0	0	0	0	0	0	0
TOTAL PART II		**8,550**	**--**	**8,550**	**860**	**4,860**	**2,740**	**0**	**0**	**0**	**0**	**90**	**0**	**0**
TOTAL CAPITAL IMPROVEMENTS PROGRAM		**166,140**	**--**	**90,390**	**10,190**	**9,860**	**13,940**	**8,750**	**1,500**	**1,500**	**11,610**	**21,080**	**1,980**	**1,000**

Notes: 1) Breakdown of the total estimated capital costs is provided in project information sheets in Appendix A.

CIP Project Locations

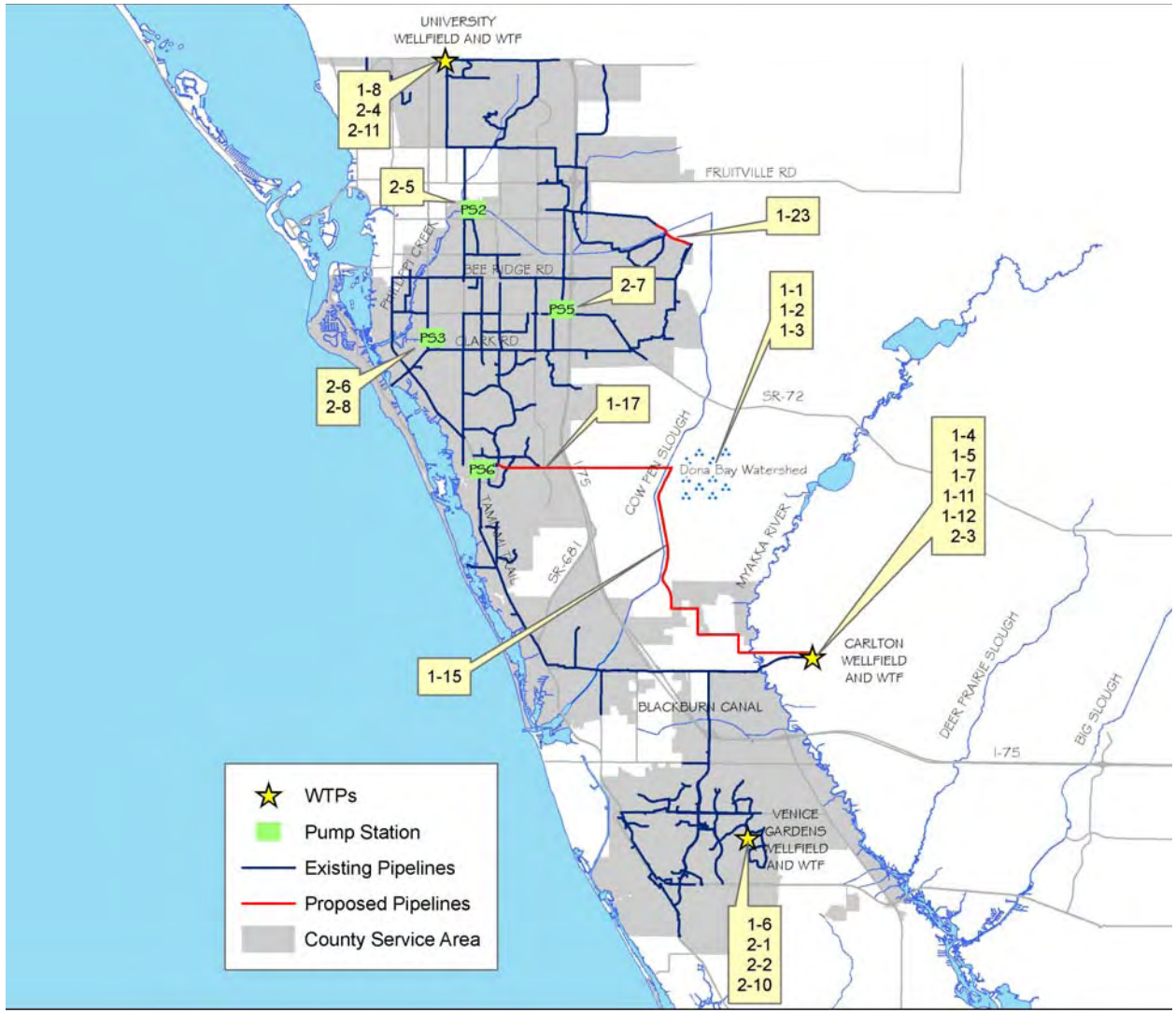


FIGURE 5.1

Estimated 10-Year Capital Expenditures

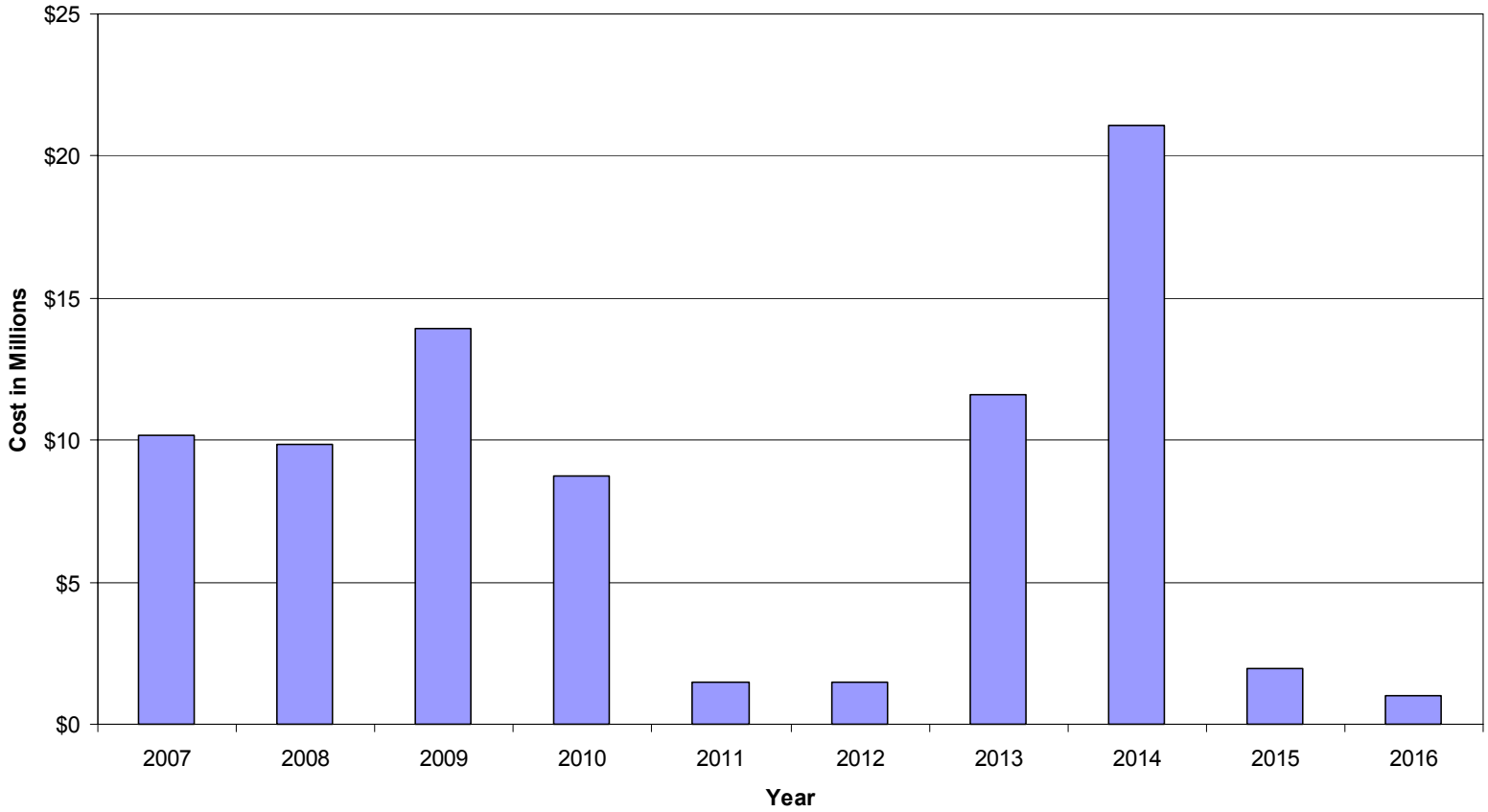


FIGURE 5.2

5.3 OTHER IDENTIFIED PROJECTS

As described in Section 5.1, all potential projects were classified based on their relative merit and required timing. Some projects were identified as beneficial or elective, indicating that their need is not critical in the 10-year planning horizon. In addition, some identified projects were considered to be operating budget items that should not be included in the CIP. The beneficial, elective, and operating projects are discussed in the following sections.

5.3.1 Beneficial and Elective Projects

Projects classified as beneficial or elective were not programmed into the 10-Year CIP; however, these projects should be retained and considered in future CIP updates. Beneficial projects are those projects that provide lifecycle cost or reliability benefits, while elective projects have less tangible merit in the near-term, but likely will be beneficial in the future. The beneficial and elective projects were listed in Table 5.1, and Appendix B provides an estimated capital cost for each beneficial and elective project.

The majority of these projects are pipelines and pumping facilities that will be needed as the distribution system grows and for increasing reliability, improving water quality, and maintaining equitable pressure throughout the system. Hydraulic modeling of the County's distribution system was completed to simulate future conditions in the system, and new pipeline projects selected for the 10-year CIP were chosen based on the modeling results. A Hydraulic Modeling Briefing Document will be prepared in conjunction with the WSMPU to document the hydraulic modeling analyses and provide the rationale that was used to select the various pipeline projects.

5.3.2 Operating Budget Projects

Throughout the course of the WSMPU, several items that were considered to be part of the regular operations and maintenance budget were identified. These projects are routine in nature and impact the continued operation of the County's water system. Although the project team and County staff determined that these projects are not part of a CIP, the County requested that these projects be documented in TM5 for future reference and other budgeting procedures. A list of the identified operating budget items and their estimated capital costs is included in Appendix C.

5.4 COST ESTIMATING CRITERIA

The cost estimates prepared for the CIP were developed based on information obtained from previous studies and documents and from experience on other projects. The costs for

each recommended project are engineering estimates and are intended to be used to facilitate revisions to the County's CIP, and ultimately to support determination of user rates and connection impact fees. Documentation for cost criteria of pipelines, pump stations, and reservoirs are also presented. It should be noted that in some cases, cost estimates have been modified since the cost opinions presented in TM3 - Water Supply Projects. Some changes in cost are a result of a more detailed cost investigation for various elements of the projects, such as pipelines, as well as increased contingencies for master planning and budgeting purposes. Cost estimates for each CIP project are included in the project summaries located in Appendix A.

5.4.1 Cost Estimating Accuracy

The CIP cost estimates have been prepared for general master planning purposes and for guidance in project evaluation and implementation. Final cost of a project will depend on actual labor and material costs, competitive market conditions, final project scope, implementation schedule, and other variable factors.

The American Association of Cost Engineers defines three types of cost estimates:

- Order of Magnitude Estimate - Used for master planning and studies. This is an approximate estimate made without detailed engineering data. It is normally expected that an estimate of this type would be accurate within +50 percent to -30 percent.

- Budget Estimate - Used for predesign studies. A budget estimate is prepared with the use of flow sheets, layouts, and equipment details. It is normally expected that an estimate of this type would be accurate to within +30 percent to -5 percent.

- Definite Estimate (Engineer's Estimate) - Used at the time of contract bidding. This estimate is prepared from very defined engineering data. The data includes fairly complete plans and elevations, soil data, and a complete set of specifications. It is expected that a definite estimate would be accurate to within +15 percent to -5 percent.

Costs developed for the WSMPU and the CIP should be considered "order of magnitude" estimates and have an expected accuracy range of +50 percent to -30 percent. One purpose of this TM is to present the assumptions used in developing the order of magnitude cost estimates of the recommended projects of this WSMPU. Recommended facility improvements, which address current deficiencies and suggested upgrades, as well as new projects to meet future water demands, are presented within this TM.

5.4.2 Pipelines

Major pipeline improvements in the County range in size from approximately 24 to 48 inches in diameter; however, some pipe sizes may be modified based on additional hydraulic modeling analyses, especially for pipelines that may be used for regional water transmission. Costs associated with ductile iron pipelines ranging in size from 12 to 60 inches are provided in Table 5.3. Pipeline costs are estimated based on recent pipeline projects bid by local contractors, cost estimates from a ductile iron pipe manufacturer, past projects, and engineering judgment. Costs for PVC pipe will vary depending on pipe size and other project-specific factors.

Table 5.3 Pipeline Costs

Pipe Size (inches)	$/Linear Foot
12”	$85
16”	$110
24”	$140
30”	$210
36”	$270
42”	$340
48”	$430
60”	$600

Note: Pipeline costs include pipe material, installation, and an estimate for mobilization, traffic control, lighting, etc.

5.4.3 Pump Stations

Costs associated with new pump station facilities include electrical, instrumentation, pumps, piping, pump station building, and other appurtenances required for a finished pump station. Costs not included are fencing, landscaping, and roadwork. These items are not known at this time and may be considered a part of the contingency.

5.4.4 Storage Tanks

Estimated storage tank costs include the foundation, site preparation, inlet and outlet piping, tank materials, construction, and mechanical controls.

5.4.5 New Water Supply Projects

Estimated costs for new water supply projects, including upgrades and expansions to existing facilities as well as new supply sources, were presented in TM3. These costs were developed based on previous studies and various cost data collected. The costs presented in the 10-year CIP have been investigated further and are included in the project summary sheets in Appendix A. It should be noted that some cost estimates have been modified from the cost opinions presented in TM3 - Water Supply Projects. Some changes in cost are a result of a more detailed investigation of various elements of the projects, such as pipelines, as well as increased contingencies for master planning and budgeting purposes.

5.4.6 Land Acquisition

Acquisition of property, easements, and right-of-way may be required for some of the recommended projects, such as pipelines and potentially for new facilities associated with the Dona Bay projects. The capital costs presented in this TM do not include pipeline corridor purchases or easement costs because it was assumed that public right-of-way will be utilized whenever possible. Land costs in the County are not easily determined, particularly in the master planning phase, and variables affecting properties can result in widely varying land prices. Since land acquisition costs are not included in the CIP cost estimates, the final capital costs may vary from the estimates presented in this TM.

5.5 COST ESTIMATE COMPONENTS

The various components of the CIP project costs are discussed below.

5.5.1 Baseline Construction Cost

The baseline construction cost is the total estimated construction cost of the proposed improvements. Baseline construction costs were developed based on the following criteria:

- Pipe Unit Cost: Estimated unit cost of pipeline is based on the pipe's present day material cost and is expressed in dollars per linear foot ($/LF) of pipe length.
- Pipe Cost: Estimated cost of the pipeline calculated by multiplying the estimated length by the unit cost.
- Other Infrastructure Facilities Cost: Estimated lump sum costs in dollars for the construction of infrastructure utilities other than pipes. This includes wells, storage tanks, booster pump stations, emergency generators, new water supply project costs, and equipment for expansions or upgrades to existing treatment facilities.

These costs were summed to determine the baseline construction cost, which corresponds to the “subtotal” amount in the cost estimate tables in each project information sheet located in Appendix A.

5.5.2 Estimated Construction Cost

Since knowledge about site-specific conditions of each proposed project is limited in the master planning stage, a 30 percent contingency was applied to the baseline construction costs to account for unforeseen events and unknown conditions.

The estimated construction cost for the proposed projects and improvements consists of the baseline construction cost plus the construction contingency.

5.5.3 Total Cost

Other project-related costs have been identified and are estimated at 25 percent of the estimated construction costs. These costs include engineering and construction inspection fees (15 percent) and administration and legal fees (10 percent). The capital improvement cost for each proposed improvement or project is the total of the estimated construction cost (including contingency) plus these other costs.

5.6 FUNDING AND FINANCING OPTIONS

Utility rates and connection fees are typically collected to pay off debt financing, to fund capital improvements, and to pay operations and maintenance costs. Connection fees are charges, imposed by local agencies on new developments, for recovering the capital costs of public facilities needed to service those developments. Further analysis by County Staff will determine funding strategies and impacts on customer rates and/or connection fees.

5.7 SUMMARY AND CONCLUSIONS

The County’s WSMPU has developed updated water demand projections through 2050 and identified key distribution system factors that will affect future supply to their water customers. The water demand projections will continue to be updated on a regular basis to determine additional needs and modifications in the water system. It should be noted that based on discussions with County staff in October 2005, the water demand projections presented in TM1 - Water Demand Projections were modified due to recent permit and zoning changes. These updated demand projections are provided in Appendix D.

The water distribution system and major County water assets were identified and cataloged in TM2 - Water System Assets. This information was evaluated to determine key issues for

providing a reliable water source to the County's customers. Potential new sources and expansions to existing sources were analyzed in TM3 - Water Supply Sources. The most feasible projects were presented in TM4 - 2050 Water Supply Scenarios, which outlines the County's new Water Supply Master Plan. The projects required to improve and expand the water system through the year 2016 including distribution pipelines are documented and summarized in this TM. The most critical projects were programmed into the County's CIP and the remaining projects will continue to be investigated and updated throughout future Water Supply Master Plan Updates.

Appendix A

PROJECT INFORMATION SHEETS

RAW WATER DEVELOPMENT

Project ID: 1-1

Project Name: Dona Bay Preliminary Design Study

Description: The preliminary design study for the Dona Bay water supply project will be completed to develop design criteria for the water treatment plant and raw water storage reservoir.

Cost Schedule (Cost to County) in Thousands of Dollars:

FY07	FY08	FY09	FY10	FY11	
750	0	0	0	0	
FY12	**FY13**	**FY14**	**FY15**	**FY16**	**Total**
0	0	0	0	0	750

Outside Funding: The County expects 50% funding by the Southwest Florida Water Management District and/or other agencies. This is expected to be a regional project.

Date Required: Completed in FY 2007.

Project Justification: New water supplies are needed to meet the County's future water demand projections. The Dona Bay project will provide supply to the County, as well as to other area utilities who also need additional supplies to meet future growth. This project will also alleviate some downstream flooding of the Dona Bay and will help to restore the natural estuary system. The County currently is completing a Dona Bay Watershed Management Plan being completed by others, and the knowledge gained from that study could be utilized in the preliminary design.

Cost Estimate: Based on discussions with County staff, the expected cost for a preliminary design for the Dona Bay water treatment plant and raw water storage reservoir is $1,500,000. As discussed above, the County expects 50% monetary contributions by other agencies to complete this project.

RAW WATER DEVELOPMENT

Project ID: 1-2

Project Name: Dona Bay Water Supply Project Phase 1

Description: Phase 1 of the Dona Bay Water Supply Project entails construction of a water treatment plant and raw water storage reservoir to treat water from the Cow Pen Slough to deliver 5 mgd annual average yield. Project details will be somewhat undefined until the Dona Bay Preliminary Design Study (Project ID 1-1) is complete.

Cost Schedule (Cost to County) in Thousands of Dollars:

FY07	FY08	FY09	FY10	FY11	
0	0	0	0	1,500	
FY12	**FY13**	**FY14**	**FY15**	**FY16**	**Total**
1,500	6,000	6,000	0	0	15,000

Outside Funding: The County expects 75% funding from the Southwest Florida Water Management District, the Peace River Regional Water Supply Authority, and/or other participating utilities. This is expected to be a regional project.

Date Required: Completed by 2014.

Project Justification: New water supplies are needed to meet the County's future water demand projections. The Dona Bay project will provide supply to the County, as well as to other area utilities who also need additional supplies to meet future growth. This project will also alleviate some downstream flooding of the Dona Bay and will help to restore the natural estuary system.

Cost Estimate:

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	Conventional WTF	5,000,000	gpd	3.00	15,000,000	1.00	$15,000,000
2	Finished Water Storage & Pumping	5,000,000	gpd	0.70	3,500,000	1.00	$3,500,000
3	4,000 Ac-ft Reservoir	4,000	Ac-ft	3,000	12,000,000	1.00	$12,000,000
						SUBTOTAL	**$30,500,000**
	CONTINGENCY (30%)						$9,150,000
						ESTIMATED CONSTRUCTION COST	$39,650,000
	ENGINEERING, ADMIN (25%)						$9,912,500
						TOTAL	$49,562,500
	RISK FACTOR (20%)						$9,912,500
						TOTAL WITH RISK FACTOR	**$59,475,000**

Note: A 20% risk factor was added due to project unknowns such as raw water quality fluctuations and resulting treatment goals and process requirements. These unknowns are considered in excess of the typical unknowns accounted for in a contingency.

RAW WATER DEVELOPMENT

Project ID: 1-3

Project Name: Dona Bay Water Supply Project Phase 2

Description: Phase 2 of the Dona Bay Water Supply Project entails expansion of the water treatment plant and additional raw water storage to increase this water supply to 10 mgd annual average yield. Project details will be somewhat undefined until the Dona Bay Preliminary Design Study (Project ID 1-1) is complete.

Cost Schedule (Cost to County) in Thousands of Dollars:

FY07	FY08	FY09	FY10	FY11	
0	0	0	0	0	
FY12	**FY13**	**FY14**	**FY15**	**FY16**	**Total***
0	0	0	0	1,000	1,000

*Remaining cost will be paid in FY17-FY20. The total expected cost to County is $10M.

Outside Funding: The County expects 75% funding from the Southwest Florida Water Management District, the Peace River Regional Water Supply Authority, and/or other participating utilities. This is expected to be a regional project.

Date Required: Completed by 2020.

Project Justification: Expansion of the Dona Bay project will provide additional water supply to the County and other regional utilities in need of new water supply to meet future demand projections. It is expected that this project will continue to alleviate downstream flooding of the Dona Bay to help to restore the natural estuary system.

Cost Estimate:

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	WTF Expansion	5,000,000	gpd	2.00	10,000,000	1.00	$10,000,000
2	Raw Water Storage	LS	--	--	10,500,000	1.00	$10,500,000
						SUBTOTAL	**$20,500,000**
	CONTINGENCY (30%)						$6,200,000
						ESTIMATED CONSTRUCTION COST	$26,700,000
	ENGINEERING, ADMIN (25%)						$6,600,000
						TOTAL	$33,300,000
	RISK FACTOR (20%)						$6,700,000
						TOTAL WITH RISK FACTOR	**$40,000,000**

Note: A 20% risk factor was added due to project unknowns such as raw water quality fluctuations and resulting treatment goals and process requirements. These unknowns are considered in excess of the typical unknowns accounted for in a contingency.

RAW WATER DEVELOPMENT

Project ID: 1-4

Project Name: Carlton Wellfield Expansion No.1

Description: The first Carlton Wellfield expansion will modify the existing water use permit (WUP) and construct two additional raw water wells at the Carlton WTF to allow the plant to withdraw more water and operate at its design capacity.

Cost Schedule (Cost to County) in Thousands of Dollars:

FY07	FY08	FY09	FY10	FY11	
2,360	0	0	0	0	
FY12	**FY13**	**FY14**	**FY15**	**FY16**	**Total**
0	0	0	0	0	2,360

Outside Funding: The County will fund this project internally; however, they anticipate some repayment from the Southwest Florida Water Management District, as the project will be utilized as a backup regional supply until the Peace River expansion in online.

Date Required: Completed in FY 2007.

Project Justification: The existing facility can produce an annual average of 9 mgd, with a peak treatment capacity of 12 mgd. The current WUP allows withdrawal quantities that limit production to approximately 5.85 mgd annually. Increasing the WUP and producing more wells for rotational capacity will allow the WTF to operate at its full capacity.

Cost Estimate:

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	**CIVIL / SITE WORK**						
	Roads and Power Supply	LS	--	--	500,000	1.00	$500,000
2	**PROCESS / MECHANICAL / ELECTRICAL**						
	8-inch Piping	2,000	LF	75	150,000	1.00	$150,000
	12-inch Piping	300	LF	85	25,500	1.00	$25,500
	16-inch Piping	300	LF	110	33,000	1.00	$33,000
	20-inch Piping	2000	LF	125	250,000	1.00	$250,000
	Monitoring Wells	1	EA	60,000	60,000	1.00	$60,000
	Production Wells	2	EA	200,000	400,000	1.00	$400,000
	Misc. Mechanical & Electrical	LS	--	--	35,000	1.00	$35,000
						SUBTOTAL	$1,454,000
	CONTINGENCY (30%)						$436,000
					ESTIMATED CONSTRUCTION COST		$1,890,000
	ENGINEERING, ADMIN (25%)						$473,000
						TOTAL	**$2,363,000**

Note: Modified from wellfield expansion cost estimate provided in Alliance Regional Planning & Engineering Study.

RAW WATER DEVELOPMENT

Project ID: 1-5

Project Name: Carlton Wellfield Expansion No. 2

Description: The second Carlton Wellfield expansion will construct 4 additional raw water wells to provide raw water for the Carlton WTF expansion. Construction of these wells will provide enough raw water to increase the plant capacity to 11 and 15 mgd for annual average and peak capacity, respectively. This project also includes a WUP modification.

Cost Schedule (Cost to County) in Thousands of Dollars:

FY07	FY08	FY09	FY10	FY11	
0	0	0	0	0	
FY12	**FY13**	**FY14**	**FY15**	**FY16**	**Total**
0	1,805	1,805	0	0	3,610

Outside Funding: None.

Date Required: Completed by 2014.

Project Justification: Construction of four additional wells will provide the raw water required to increase the Carlton WTF capacity to 11 and 15 mgd annual average and peak capacity, respectively.

Cost Estimate:

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	**CIVIL / SITE WORK**						
	Roads and Power Supply	LS	--	--	400,000	1.00	$400,000
2	**PROCESS / MECHANICAL / ELECTRICAL**						
	8-inch Piping	4,000	LF	75	300,000	1.00	$300,000
	12-inch Piping	500	LF	85	42,500	1.00	$42,500
	16-inch Piping	500	LF	110	55,000	1.00	$55,000
	20-inch Piping	4000	LF	125	500,000	1.00	$500,000
	Monitoring Wells	1	EA	60,000	60,000	1.00	$60,000
	Production Wells	4	EA	200,000	800,000	1.00	$800,000
	Misc. Mechanical & Electrical	LS	--	--	65,000	1.00	$65,000
						SUBTOTAL	**$2,223,000**
	CONTINGENCY (30%)						$667,000
						ESTIMATED CONSTRUCTION COST	$2,890,000
	ENGINEERING, ADMIN (25%)						$723,000
						TOTAL	**$3,613,000**
Note: Modified from wellfield expansion cost estimate provided in Alliance Regional Planning & Engineering Study.							

WATER TREATMENT FACILITIES

Project ID: 1-6

Project Name: Venice Gardens WTF RO Rehabilitation and Miscellaneous Upgrades

Description: This project includes a rehabilitation of the reverse osmosis (RO) system in Building 2 of the Venice Gardens WTF, as well as several miscellaneous upgrades. Key items in this project include replacement of RO membranes and cartridge filters, modifications to the degasification system, a backup reject transfer station, and additional chemical feed systems. This project will allow the Venice Gardens capacity to be increased to 2.75 mgd.

Cost Schedule (Cost to County) in Thousands of Dollars:

FY07	FY08	FY09	FY10	FY11	
2,850	0	0	0	0	
FY12	**FY13**	**FY14**	**FY15**	**FY16**	**Total**
0	0	0	0	0	2,850

Outside Funding: None.

Date Required: Completed by FY07.

Project Justification: The existing facility does not utilize the maximum withdrawal allowed in the current WUP due to limited production capacity. Upgrading the RO facility to provide 75% recovery instead of the present recovery of 50% will yield additional treated water. The chemical feed modifications will enhance finished water stability and corrosion protection. The reject transfer station will provide a backup method of disposal of RO concentrate.

Cost Estimate:

This project includes four major items. The following table summarizes these project costs, and additional breakdown of each item is provided in the subsequent tables.

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
A	Reverse Osmosis Rehabilitation	LS	--	--	2,130,000	1.00	$2,130,000
B	Backup Reject Transfer Station	LS	--	--	360,000	1.00	$360,000
C	Carbonic Acid Chemical Feed System	LS	--	--	270,000	1.00	$270,000
D	Corrosion Inhibitor Feed System	LS	--	--	90,000	1.00	$90,000
						TOTAL	**$2,850,000**

Project ID: 1-6

Project Items - Cost Estimates

A. Reverse Osmosis Rehabilitation

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	**CIVIL / SITE WORK**						
	General Site Work	LS	--	--	20,000	1.00	$20,000
2	**PROCESS / MECHANICAL**						
	Reverse Osmosis Equipment	LS	--	--	600,000	1.20	$720,000
	Cartridge Filters Replacements	LS	--	--	300,000	1.10	$330,000
	Degasification System Improvements	LS	--	--	100,000	1.20	$120,000
	Misc. Mechanical (10% of equipment)	LS	--	--	100,000	1.00	$100,000
3	**ELECTRICAL / INSTRUMENTATION**						
	Misc. Electrical / I&C	LS	--	--	20,000	1.00	$20,000
						SUBTOTAL	$1,310,000
	CONTINGENCY (30%)						$393,000
					ESTIMATED CONSTRUCTION COST		$1,703,000
	ENGINEERING, ADMIN (25%)						$426,000
						TOTAL	**$2,129,000**
Notes: The preliminary design report will clarify additional needs for the RO rehabilitation							

B. Backup Reject Transfer Station

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	**CIVIL / SITE WORK**						
	General Site Work	LS	--	--	20,000	1.00	$20,000
2	**PROCESS / MECHANICAL**						
	Concrete Reject Storage Vault	LS	--	--	50,000	1.00	$50,000
	Reject Transfer Pumps	2	EA	40,000	80,000	1.20	$96,000
	Misc. Mechanical (10% of equipment)	LS	--	--	8,000	1.00	$8,000
3	**ELECTRICAL / INSTRUMENTATION**						
	Electrical / I&C	LS	--	--	50,000	1.00	$50,000
						SUBTOTAL	$224,000
	CONTINGENCY (30%)						$67,000
					ESTIMATED CONSTRUCTION COST		$291,000
	ENGINEERING, ADMIN (25%)						$73,000
						TOTAL	**$364,000**

Project ID: 1-6

Project Items - Cost Estimates

C. Carbonic Acid Chemical Feed System

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	**CIVIL / SITE WORK**						
	General Site Work	LS	--	--	10,000	1.00	$10,000
2	**PROCESS / MECHANICAL**						
	Carbonic Acid Feed System	LS	--	--	110,000	1.20	$132,000
3	**ELECTRICAL / INSTRUMENTATION**						
	Electrical / I&C (20% of equipment)	LS	--	--	22,000	1.00	$22,000
						SUBTOTAL	$164,000
	CONTINGENCY (30%)						$49,000
						ESTIMATED CONSTRUCTION COST	$213,000
	ENGINEERING, ADMIN (25%)						$53,000
						TOTAL	**$266,000**

Notes: Cost estimate based on information provided in the Water Treatment Operations Assessment Report (January, 2006). Chemical feed system size increased from that listed in the Water Treatment Operations Assessment Report to meet future plant capacity.

D. Corrosion Inhibitor Feed System

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	**CIVIL / SITE WORK**						
	General Site Work	LS	--	--	8,000	1.00	$8,000
2	**PROCESS / MECHANICAL**						
	Corrosion Inhibitor Feed System	LS	--	--	25,000	1.20	$30,000
	Misc. Mechanical (20% of equipment)	LS	--	--	5,000	1.00	$5,000
3	**ELECTRICAL / INSTRUMENTATION**						
	Electrical / I&C	LS	--	--	10,000	1.00	$10,000
						SUBTOTAL	**$53,000**
	CONTINGENCY (30%)						$16,000
						ESTIMATED CONSTRUCTION COST	$69,000
	ENGINEERING, ADMIN (25%)						$17,000
						TOTAL	**$86,000**

WATER TREATMENT FACILITIES

Project ID: 1-7

Project Name: Carlton WTF Capacity Upgrade

Description: The current electrodialysis reversal (EDR) equipment at the Carlton WTF will be upgraded to allow for production of additional finished water. This project also includes improvements to EDR instrumentation and controls. This project will increase production at the Carlton WTF to 11 and 15 mgd for annual average and peak capacity, respectively.

Cost Schedule (Cost to County) in Thousands of Dollars:

FY07	FY08	FY09	FY10	FY11	
0	0	0	0	0	
FY12	**FY13**	**FY14**	**FY15**	**FY16**	**Total**
0	2,800	11,200	0	0	14,000

Outside Funding: None.

Date Required: Complete by 2014.

Project Justification: Since the construction of the existing facility, significant improvements have been made in the EDR treatment process. Upgrading the current equipment will enable the plant to produce more finished water, with water quality improvements likely as well. This project will provide additional water supply to meet the County's future water demand projections.

Cost Estimate:

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	**CIVIL / SITE WORK**						
	Roads and Power Supply	LS	--	--	0	1.00	0
2	**PROCESS / MECHANICAL**						
	EDR Stacks / Spacers	10	EA	700,000	7,000,000	1.20	$8,400,000
	Misc. Mechanical	LS	--	--	100,000	1.00	$100,000
3	**ELECTRICAL / INSTRUMENTATION**						
	EDR Electrical / I&C Improvements	LS	--	--	100,000	1.00	$100,000
	Misc. Electrical / I&C	LS	--	--	25,000	1.00	$25,000
						SUBTOTAL	$8,625,000
	CONTINGENCY (30%)						$2,588,000
						ESTIMATED CONSTRUCTION COST	$11,213,000
	ENGINEERING, ADMIN (25%)						$2,803,000
						TOTAL	**$14,016,000**

WATER TREATMENT FACILITIES

Project ID: 1-8

Project Name: University Reverse Osmosis WTF

Description: A reverse osmosis treatment facility will be constructed at the University Wellfield site to decrease total dissolved solids (TDS) in the raw water.

Cost Schedule (Cost to County) in Thousands of Dollars:

FY07	FY08	FY09	FY10	FY11	
0	0	0	0	0	
FY12	**FY13**	**FY14**	**FY15**	**FY16**	**Total**
0	1,000	1,975	1,975	0	4,950

Outside Funding: None.

Date Required: Complete by 2015.

Project Justification: Currently, high TDS water from the University Wells is blended with water purchased from Manatee County before being sent to the distribution system. Water purchases from Manatee County will decrease until the contract expires in 2025. A new treatment facility will allow the County to continue to utilize the permitted quantity of water from the University Wellfields.

Cost Estimate:

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	**CIVIL / SITE WORK**						
	General Site Work	LS	--	--	200,000	1.00	$200,000
2	**PROCESS / MECHANICAL**						
	Reverse Osmosis Equipment	1,700,000	gpd	0.85	1,445,000	1.20	$1,734,000
	Reverse Osmosis Building	2,800	SF	150	420,000	1.00	$420,000
	Degasification Improvements	LS	--	--	100,000	1.00	$100,000
	Misc. Mechanical (20% of equipment)	LS	--	--	289,000	1.00	$289,000
3	**ELECTRICAL / INSTRUMENTATION**						
	Misc. Electrical / I&C	LS	--	--	300,000	1.00	$300,000
						SUBTOTAL	$3,043,000
	CONTINGENCY (30%)						$913,000
						ESTIMATED CONSTRUCTION COST	$3,956,000
	ENGINEERING, ADMIN (25%)						$989,000
						TOTAL	**$4,945,000**
Note: This cost estimate assumes that RO concentrate can be discharged to the sanitary sewer system; therefore, it does not include a cost for concentrate disposal.							

PUMPING FACILITIES

Project ID: 1-11

Project Name: Carlton WTF High Service Pump Station

Description: This project will expand the high service pump station at the Carlton WTF to continue to meet system water demands, especially peaks during times of high demand.

Cost Schedule (Cost to County) in Thousands of Dollars:

FY07	FY08	FY09	FY10	FY11	
0	600	2,450	0	0	
FY12	**FY13**	**FY14**	**FY15**	**FY16**	**Total**
0	0	0	0	0	3,050

Date Required: Complete by 2009.

Project Justification: The high service pump station at the Carlton WTF must be expanded to meet future peak demands in the distribution system. The pump station will also be used to transfer additional quantities of water from the Peace River Authority to the County's distribution system when the Regional Expansion Project is brought online.

Cost Estimate:

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	**CIVIL / SITE WORK**						
	Pump Station Building	2,500	SF	150	375,000	1.00	$375,000
	General Site Work	LS	--	--	75,000	1.00	$75,000
2	**PROCESS / MECHANICAL**						
	Horizontal Split Case Pumps	8	EA	60,000	480,000	1.20	$576,000
	Misc. Mechanical	LS	--	--	100,000	1.00	$100,000
3	**ELECTRICAL / INSTRUMENTATION**						
	Electrical / I&C	LS	--	--	750,000	1.00	$750,000
						SUBTOTAL	$1,876,000
	CONTINGENCY (30%)						$563,000
						ESTIMATED CONSTRUCTION COST	$2,439,000
	ENGINEERING, ADMIN (25%)						$610,000
						TOTAL	**$3,049,000**

Notes: Cost estimate assumes that a new pump station will be constructed due to the difficulty in expanding the existing facility. The new building is estimated to be 50' by 50' (approximately 25% larger than the existing pump station room). The pumps are assumed to have a capacity of 6-mgd, which will allow all water received from Peace River to be pumped through the Carlton WTF. The actual number of pumps required will depend on the portions of Peace River water received through the Carlton WTF and the Regional Loop.

STORAGE FACILITIES

Project ID: 1-12

Project Name: Carlton 5 MG Ground Storage Tank

Description: This project includes the design and construction of an additional 5 MG ground storage tank at the Carlton WTF.

Cost Schedule (Cost to County) in Thousands of Dollars:

FY07	FY08	FY09	FY10	FY11	
2,870	0	0	0	0	
FY12	**FY13**	**FY14**	**FY15**	**FY16**	**Total**
0	0	0	0	0	2,870

Outside Funding: None.

Date Required: Completed in FY07.

Project Justification: The finished water storage capacity is undersized for the Carlton WTF production and water received from the Peace River Authority. Additional capacity will provide storage to help to meet peak hourly demands. The tank may also assist in the delivery/storage of additional quantities of water from the Peace River Authority when the Regional Expansion Project comes online.

Cost Estimate:

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	**CIVIL / SITE WORK**						
	General Site Work	LS	--	--	320,000	1.00	$320,000
	Yard Piping	LS	--	--	160,000	1.00	$160,000
2	**PROCESS / MECHANICAL**						
	Prestressed Ground Storage Tank	1	EA	1,320,000	1,320,000	1.10	$1,452,000
	Misc. Mechanical	LS	--	--	25,000	1.00	$25,000
3	**ELECTRICAL / INSTRUMENTATION**						
	Misc. Electrical / I&C	LS	--	--	250,000	1.00	$250,000
						SUBTOTAL	$2,207,000
	CONTINGENCY (30%)						$662,000
						ESTIMATED CONSTRUCTION COST	$2,869,000
	ENGINEERING, ADMIN (25%)						$717,000
						TOTAL	**$3,586,000**
Notes: Cost estimate modified from the estimate provided in the Carlton Finished Water Storage Capacity Analysis Report (May, 2004).							

TRANSMISSION AND DISTRIBUTION

Project ID: 1-15

Project Name: North Extension from Carlton to Preymore Street (Regional Loop)

Description: This pipeline will be constructed from Carlton WTF to a point east of approximately Preymore Street along the anticipated location of the Regional Loop. The exact alignment of the Regional Loop is being evaluated by the Peace River Authority.

Cost Schedule (Cost to County) in Thousands of Dollars:

FY07	FY08	FY09	FY10	FY11	
0	3,500	7,000	1,750	0	
FY12	**FY13**	**FY14**	**FY15**	**FY16**	**Total**
0	0	0	0	0	17,500

Outside Funding: The County expects 50% funding by the Southwest Florida Water Management District, the Peace River Authority, and/or other agencies or utilities. This pipeline is part of the Regional Loop that will provide a means for transmission of water throughout Charlotte, DeSoto, Manatee, and Sarasota Counties.

Date Required: Complete by 2010.

Project Justification: This project is required to expand the County's distribution system. Currently, the County's system has few large diameter distribution mains, which limits capacity, increases headloss, and causes low pressures in some areas of the distribution system. This pipeline will enhance the County's distribution system, making pressures more consistent in all areas. The pipeline is also part of a regional interconnection project to provide water to and from the Peace River Authority and its members.

Cost Estimate:

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	48-inch Piping	50,000	ft	430	21,500,000	1.00	$21,500,000
						SUBTOTAL	$21,500,000
	CONTINGENCY (30%)						$6,500,000
					ESTIMATED CONSTRUCTION COST		$28,000,000
	ENGINEERING, ADMIN (25%)						$7,000,000
						TOTAL	**$35,000,000**

Notes: Pipeline costs include pipe material, installation, and an estimate for mobilization, traffic control, lighting, etc. The pipeline was estimated to be 48 inches in diameter; however, depending on the needs of other Counties, the size of the pipeline may change. Additionally, the length of the pipeline was estimated based on the anticipated alignment of the Loop. The Peace River Authority currently is evaluating the size requirements and alignment of the Regional Loop.

TRANSMISSION AND DISTRIBUTION

Project ID: 1-17

Project Name: Crossing along Preymore Street (from Regional Loop)

Description: This pipeline will be constructed from the Regional Loop (North Extension) to the County's distribution system in the approximate location of Preymore Street. The exact alignment of the Crossing will depend on the location of the Regional Loop, easement requirements, and potential future hydraulic modeling of the distribution system.

Cost Schedule (Cost to County) in Thousands of Dollars:

FY07	FY08	FY09	FY10	FY11	
0	900	1,750	1,750	0	
FY12	**FY13**	**FY14**	**FY15**	**FY16**	**Total**
0	0	0	0	0	4,400

Outside Funding: None.

Date Required: Complete by 2010.

Project Justification: This project is required to expand the County's distribution system. Currently, the County's system has few large diameter distribution mains, which limits capacity, increases headloss, and causes low pressures in some areas of the distribution system. This pipeline will enhance the County's distribution system, making pressures more consistent in all areas. The pipeline also will connect the County to the Regional Loop providing additional reliability and redundancy in the regional water system.

Cost Estimate:

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	24-inch Piping	17,200	ft	140	2,408,000	1.10	$2,700,000
						SUBTOTAL	$2,700,000
	CONTINGENCY (30%)						$800,000
						ESTIMATED CONSTRUCTION COST	$3,500,000
	ENGINEERING, ADMIN (25%)						$900,000
						TOTAL	**$4,400,000**

Notes: Pipeline costs include pipe material, installation, and an estimate for mobilization, traffic control, lighting, etc. An additional installation factor was added to this pipeline to account for some urban and suburban pipe installation, which increases cost. The pipeline was estimated to be 24 inches in diameter; however, further hydraulic modeling analyses may alter the size of the pipeline.

TRANSMISSION AND DISTRIBUTION

Project ID: 1-23

Project Name: Iona to Palmer Loop

Description: This pipeline will close a "gap" in the County's water distribution system along Palmer Road between approximately Iona Road and Gerry Road. Connecting this portion of the distribution system will improve water quality and pressure in this area of the distribution system.

Cost Schedule (Cost to County) in Thousands of Dollars:

FY07	FY08	FY09	FY10	FY11	
500	0	0	0	0	
FY12	**FY13**	**FY14**	**FY15**	**FY16**	**Total**
0	0	0	0	0	500

Outside Funding: None.

Date Required: Completed in FY07.

Project Justification: This area of the distribution system experiences water quality problems due to high water age, as well as occasional low pressure. This project will provide a connection or "loop" in the distribution system to alleviate these problems.

Cost Estimate:

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	12-inch Piping	3,800	ft	85	300,000	1.00	$300,000
						SUBTOTAL	$300,000
	CONTINGENCY (30%)						$100,000
					ESTIMATED CONSTRUCTION COST		$400,000
	ENGINEERING, ADMIN (25%)						$100,000
						TOTAL	**$500,000**
Notes: Pipeline costs include pipe material, installation, and an estimate for mobilization, traffic control, lighting, etc.							

WATER SYSTEM FACILITIES MODIFICATIONS AND REPLACEMENTS

Project ID: 2-1

Project Name: Venice Gardens WTF & Wellfields Standby Generators

Description: This project will increase the size of the standby generator at the Venice Gardens WTF to provide enough power to maintain operation of the entire plant during times of power outages. It also provides generators for the raw water wells.

Cost Schedule (Cost to County) in Thousands of Dollars:

FY07	FY08	FY09	FY10	FY11	
0	1,480	0	0	0	
FY12	**FY13**	**FY14**	**FY15**	**FY16**	**Total**
0	0	0	0	0	1,480

Outside Funding: None.

Date Required: Completed in FY08.

Project Justification: Currently, the Venice Gardens WTF has a generator that is sized to operate only a portion of the facility. During a power outage, the facility can continue to pump water from the storage tanks; however, it cannot operate the treatment plant at its full capacity. Completion of this project will enable the County to treat and distribute this water source during times of power outages.

Cost Estimate:

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	**CIVIL / SITE WORK**						
	General Site Work	LS	--	--	20,000	1.00	$20,000
2	**PROCESS / MECHANICAL**						
	Generator at WTF	1	EA	200,000	200,000	1.20	$240,000
	Generator in Wellfield	1	EA	100,000	500,000	1.20	$600,000
3	**ELECTRICAL / INSTRUMENTATION**						
	Misc. Electrical / I&C	LS	--	--	50,000	1.00	$50,000
						SUBTOTAL	$910,000
	CONTINGENCY (30%)						$273,000
					ESTIMATED CONSTRUCTION COST		$1,183,000
	ENGINEERING, ADMIN (25%)						$296,000
						TOTAL	**$1,479,000**

Notes: Cost estimate assumes that the existing generator will be relocated to a well site. Wells 1, 2, and 3 are provided power by the WTF, Wells 4 and 5 require a separate generator, and Wells 6, 7, and future 8 require a separate generator.

WATER TREATMENT FACILITIES MODIFICATIONS AND REPLACEMENTS

Project ID: 2-2

Project Name: Venice Gardens WTF Deep Injection Well

Description: The existing deep injection well at the Venice Gardens WTF is reaching the end of its useful life. This project consists of the permitting, design, and construction of a new deep injection well for reverse osmosis concentrate disposal.

Cost Schedule (Cost to County) in Thousands of Dollars:

FY07	FY08	FY09	FY10	FY11	
0	1,500	1,500	0	0	
FY12	**FY13**	**FY14**	**FY15**	**FY16**	**Total**
0	0	0	0	0	3,000

Outside Funding: None.

Date Required: Complete by 2009.

Project Justification: A new deep injection well is needed for disposal of reverse osmosis concentrate. County staff has indicated that the existing well is nearing the end of its useful life.

Cost Estimate: Based on discussions with County staff, the expected cost for a new deep injection well is approximately $3,000,000 based on past experience.

WATER TREATMENT FACILITIES MODIFICATIONS AND REPLACEMENTS

Project ID: 2-3

Project Name: Carlton Water Treatment Facility Upgrades

Description: This project includes several miscellaneous upgrades to the Carlton WTF including a carbonic acid chemical feed system, disinfection chemical feed modifications and equipment upgrades, and an enclosure for the pressure filter programmable logic controllers (PLCs).

Cost Schedule (Cost to County) in Thousands of Dollars:

FY07	FY08	FY09	FY10	FY11	
0	520	0	0	0	
FY12	**FY13**	**FY14**	**FY15**	**FY16**	**Total**
0	0	0	0	0	520

Outside Funding: None.

Date Required: Completed in FY08.

Project Justification: These projects are necessary to meet disinfection and water quality goals at the Carlton WTF. These projects are expected to improve disinfection chemical feed strategies and will provide a more stable water entering the distribution system.

Cost Estimate:

This project includes three major items. The following table summarizes these project costs, and additional breakdown of each item is provided in the subsequent tables.

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
A	Carbonic Acid Chemical Feed System	LS	--	--	280,000	1.00	$280,000
B	Pressure Filter PLC Enclosure	LS	--	--	165,000	1.00	$165,000
C	Disinfection Chemical Feed Mods.	LS	--	--	75,000	1.00	$75,000
						TOTAL	**$520,000**

Project ID: 2-3

Project Items - Cost Estimates

A. Carbonic Acid Chemical Feed System

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	**CIVIL / SITE WORK**						
	General Site Work & Yard Piping	LS	--	--	20,000	1.00	$20,000
2	**PROCESS / MECHANICAL**						
	Carbonic Acid Feed System	LS	--	--	110,000	1.20	$132,000
3	**ELECTRICAL / INSTRUMENTATION**						
	Electrical / I&C (20% of equipment)	LS	--	--	22,000	1.00	$22,000
						SUBTOTAL	$174,000
	CONTINGENCY (30%)						$52,000
						ESTIMATED CONSTRUCTION COST	$226,000
	ENGINEERING, ADMIN (25%)						$57,000
						TOTAL	**$283,000**
Notes: Cost estimate based on information provided in Water Treatment Operations Assessment Report (January, 2006).							

B. Pressure Filter PLC Enclosure

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	**CIVIL / SITE WORK**						
	General Site Work & Yard Piping	LS	--	--	10,000	1.00	$10,000
2	**PROCESS / MECHANICAL**						
	Enclosure	1	EA	70,000	75,000	1.00	$70,000
	HVAC Ductwork	LS	--	--	10,000	1.00	$10,000
	Misc. Mechanical	LS	--	--	10,000	1.00	$10,000
						SUBTOTAL	$100,000
	CONTINGENCY (30%)						$30,000
						ESTIMATED CONSTRUCTION COST	$130,000
	ENGINEERING, ADMIN (25%)						$35,000
						TOTAL	**$165,000**

Project ID: 2-3

Project Items - Cost Estimates

C. Disinfection Chemical Modifications and Equipment Upgrade

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	**CIVIL / SITE WORK**						
	General Site Work & Yard Piping	LS	--	--	4,000	1.00	$4,000
2	**PROCESS / MECHANICAL**						
	16" Flowmeter	2	EA	10,000	20,000	1.20	$24,000
	Magmeters	3	EA	500	1,500	1.20	$1,800
	Misc. Mechanical	LS	--	--	10,000	1.00	$10,000
3	**ELECTRICAL / INSTRUMENTATION**						
	Electrical / I&C	LS	--	--	6,000	1.00	$6,000
						SUBTOTAL	$46,000
	CONTINGENCY (30%)						$14,000
						ESTIMATED CONSTRUCTION COST	$60,000
	ENGINEERING, ADMIN (25%)						$15,000
						TOTAL	**$75,000**
Notes: Cost estimate based on information provided in Water Treatment Operations Assessment Report (January, 2006).							

WATER TREATMENT FACILITIES MODIFICATIONS AND REPLACEMENTS

Project ID: 2-4

Project Name: University Water Treatment Facility Upgrades

Description: This project includes several miscellaneous upgrades to the University WTF including a carbonic acid chemical feed system, degasification system improvements, and a corrosion inhibitor chemical feed system.

Cost Schedule (Cost to County) in Thousands of Dollars:

FY07	FY08	FY09	FY10	FY11	
160	420	0	0	0	
FY12	**FY13**	**FY14**	**FY15**	**FY16**	**Total**
0	0	90	0	0	670

Outside Funding: None.

Date Required: Individual projects completed in 2007, 2008, and 2014.

Project Justification: These projects are necessary to meet water quality goals at the University WTF. These projects are expected to improve water quality and mitigate operational difficulties with the degasification system. The corrosion inhibitor is not needed until the new reverse osmosis facility at the University site (Project ID 1-8) comes online.

Cost Estimate:

This project includes three main items. The following table summarizes these project costs, and additional breakdown of each item is provided in the subsequent tables.

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
A	Carbonic Acid/Caustic Feed Systems	LS	--	--	420,000	1.00	$420,000
B	Degasification Improvements	LS	--	--	160,000	1.00	$160,000
C	Corrosion Inhibitor Feed System	LS	--	--	90,000	1.00	$90,000
						TOTAL	**$670,000**

Project ID: 2-4

Project Items - Cost Estimates

A. Carbonic Acid and Caustic Soda Chemical Feed Systems

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	**CIVIL / SITE WORK**						
	General Site Work & Yard Piping	LS	--	--	20,000	1.00	$20,000
2	**PROCESS / MECHANICAL**						
	Carbonic Acid Feed System	LS	--	--	110,000	1.20	$132,000
	Caustic Soda Feed System	LS	--	--	60,000	1.20	$72,000
3	**ELECTRICAL / INSTRUMENTATION**						
	Electrical / I&C (20% of equipment)	LS	--	--	34,000	1.00	$34,000
						SUBTOTAL	$258,000
	CONTINGENCY (30%)						$77,000
						ESTIMATED CONSTRUCTION COST	$335,000
	ENGINEERING, ADMIN (25%)						$84,000
						TOTAL	**$419,000**
Notes: Cost estimate based on information provided in Water Treatment Operations Assessment Report (January, 2006).							

B. Degasification System Improvements

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	**CIVIL / SITE WORK**						
	General Site Work & Yard Piping	LS	--	--	15,000	1.00	$15,000
2	**PROCESS / MECHANICAL**						
	Degasification Tower	LS	--	--	75,000	1.00	$75,000
	Misc. Mechanical	LS	--	--	10,000	1.00	$10,000
						SUBTOTAL	$100,000
	CONTINGENCY (30%)						$30,000
						ESTIMATED CONSTRUCTION COST	$130,000
	ENGINEERING, ADMIN (25%)						$33,000
						TOTAL	**$163,000**
Notes: Based on degasification tower replacement cost provided by the County.							

Project ID: 2-4

Project Items - Cost Estimates

C. Corrosion Inhibitor Chemical Feed System

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	**CIVIL / SITE WORK**						
	General Site Work & Yard Piping	LS	--	--	8,000	1.00	$8,000
2	**PROCESS / MECHANICAL**						
	Corrosion Inhibitor Feed System	LS	--	--	25,000	1.20	$30,000
	Misc. Mechanical (20% of equipment)	LS	--	--	5,000	1.00	$5,000
3	**ELECTRICAL / INSTRUMENTATION**						
	Electrical / I&C	LS	--	--	10,000	1.00	$10,000
						SUBTOTAL	$53,000
	CONTINGENCY (30%)						$16,000
						ESTIMATED CONSTRUCTION COST	$69,000
	ENGINEERING, ADMIN (25%)						$17,000
						TOTAL	**$86,000**
Notes: Cost estimate based on information provided in Water Treatment Operations Assessment Report (January, 2006).							

PUMPING FACILITIES MODIFICATIONS AND REPLACEMENTS

Project ID: 2-5

Project Name: Pump Station No. 2 Modifications

Description: This project includes improvements to Pump Station No. 2 including piping, pumps, and/or other items. Upgrades to this pump station are required to meet anticipated peak demands in the distribution system. The specific improvements required must be determined by a detailed investigation.

Cost Schedule (Cost to County) in Thousands of Dollars:

FY07	FY08	FY09	FY10	FY11	
0	50	350	0	0	
FY12	**FY13**	**FY14**	**FY15**	**FY16**	**Total**
0	0	0	0	0	400

Outside Funding: None.

Date Required: Complete by 2009.

Project Justification: Currently, Pump Station No. 2 and its onsite ground storage tank normally are not utilized in the distribution system. Future water demand growth will require the use of this pump station for storage and to meet peak water demands. This project will modify the pump station to meet future demand requirements.

Cost Estimate:

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	**CIVIL / SITE WORK**						
	General Site Work & Yard Piping	LS	--	--	50,000	1.00	$50,000
2	**PROCESS / MECHANICAL**						
	Horizontal Split-Case Pumps	2	EA	50,000	100,000	1.20	$120,000
	Misc. Mechanical	LS	--	--	50,000	1.00	$50,000
3	**ELECTRICAL / INSTRUMENTATION**						
	Electrical / I&C	LS	--	--	25,000	1.00	$25,000
						SUBTOTAL	$245,000
	CONTINGENCY (30%)						$75,000
						ESTIMATED CONSTRUCTION COST	$320,000
	ENGINEERING, ADMIN (25%)						$80,000
						TOTAL	**$400,000**
Note: Specific piping modifications and other improvements must be determined by a detailed investigation.							

PUMPING FACILITIES MODIFICATIONS AND REPLACEMENTS

Project ID: 2-6

Project Name: Pump Station No. 3 Modifications

Description: This project includes improvements to Pump Station No. 3 including piping and/or other items. Based on hydraulic modeling, the existing pumps have the capacity to meet the anticipated future peak demands. Upgrades to this pump station are required to meet anticipated peak demands in the distribution system. The specific improvements required must be determined by a detailed investigation.

Cost Schedule (Cost to County) in Thousands of Dollars:

FY07	FY08	FY09	FY10	FY11	
0	50	150	0	0	
FY12	**FY13**	**FY14**	**FY15**	**FY16**	**Total**
0	0	0	0	0	200

Outside Funding: None.

Date Required: Complete by 2009.

Project Justification: Currently, Pump Station No. 3 and its onsite ground storage tank normally are not utilized in the distribution system. Future water demand growth will require the use of this pump station for storage and to meet peak water demands. This project will modify the pump station to meet future demand requirements.

Cost Estimate:

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	**CIVIL / SITE WORK**						
	General Site Work & Yard Piping	LS	--	--	50,000	1.00	$50,000
2	**PROCESS / MECHANICAL**						
	Misc. Mechanical	LS	--	--	50,000	1.00	$50,000
3	**ELECTRICAL / INSTRUMENTATION**						
	Electrical / I&C	LS	--	--	25,000	1.00	$25,000
						SUBTOTAL	$125,000
	CONTINGENCY (30%)						$38,000
						ESTIMATED CONSTRUCTION COST	$163,000
	ENGINEERING, ADMIN (25%)						$40,000
						TOTAL	**$203,000**
Note: Specific piping modifications and other improvements must be determined by a detailed investigation.							

PUMPING FACILITIES MODIFICATIONS AND REPLACEMENTS

Project ID: 2-7

Project Name: Pump Station No. 5 Modifications

Description: This project includes improvements to Pump Station No. 5 including piping, pumps, and/or other items. Upgrades to this pump station are required to meet anticipated peak demands in the distribution system. The specific improvements required must be determined by a detailed investigation.

Cost Schedule (Cost to County) in Thousands of Dollars:

FY07	FY08	FY09	FY10	FY11	
0	50	350	0	0	
FY12	**FY13**	**FY14**	**FY15**	**FY16**	**Total**
0	0	0	0	0	400

Outside Funding: None.

Date Required: Complete by 2009.

Project Justification: Currently, Pump Station No. 5 and its onsite ground storage tank normally are not utilized in the distribution system. Future water demand growth will require the use of this pump station for storage and to meet peak water demands. This project will modify the pump station to meet future demand requirements.

Cost Estimate:

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	**CIVIL / SITE WORK**						
	General Site Work & Yard Piping	LS	--	--	50,000	1.00	$50,000
2	**PROCESS / MECHANICAL**						
	Horizontal Split-Case Pumps	2	EA	50,000	100,000	1.20	$120,000
	Misc. Mechanical	LS	--	--	50,000	1.00	$50,000
3	**ELECTRICAL / INSTRUMENTATION**						
	Electrical / I&C	LS	--	--	25,000	1.00	$25,000
						SUBTOTAL	$245,000
	CONTINGENCY (30%)						$75,000
						ESTIMATED CONSTRUCTION COST	$320,000
	ENGINEERING, ADMIN (25%)						$80,000
						TOTAL	**$400,000**
Note: Specific piping modifications and other improvements must be determined by a detailed investigation.							

PUMPING FACILITIES MODIFICATIONS AND REPLACEMENTS

Project ID: 2-8

Project Name: Standby Generator at Pump Station No. 3

Description: A standby generator will be installed at Pump Station No. 3 to provide backup power to this pumping facility. Although this pump station has an existing diesel pump, it is not sized to meet anticipated peak flows in the future.

Cost Schedule (Cost to County) in Thousands of Dollars:

FY07	FY08	FY09	FY10	FY11	
0	0	390	0	0	
FY12	**FY13**	**FY14**	**FY15**	**FY16**	**Total**
0	0	0	0	0	390

Outside Funding: None.

Date Required: Completed in FY09.

Project Justification: Currently, Pump Station No. 3 and its onsite ground storage tank normally are not utilized in the distribution system. Future water demands will require the use of this pump station for storage and to meet peak water demands. The standby generator is required to provide backup power during times of power outages.

Cost Estimate:

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	**CIVIL / SITE WORK**						
	General Site Work	LS	--	--	10,000	1.00	$10,000
2	**PROCESS / MECHANICAL**						
	Generator at Pump Station 3	1	EA	150,000	150,000	1.20	$180,000
3	**ELECTRICAL / INSTRUMENTATION**						
	Electrical / I&C	LS	--	--	50,000	1.00	$50,000
						SUBTOTAL	$240,000
	CONTINGENCY (30%)						$72,000
					ESTIMATED CONSTRUCTION COST		$312,000
	ENGINEERING, ADMIN (25%)						$78,000
						TOTAL	**$390,000**

GENERAL FACILITIES IMPROVEMENTS

Project ID: 2-9

Project Name: Turnkey SCADA System Upgrade

Description: This project includes new instrumentation and control systems for the water distribution system, including the Carlton WTF and all pump stations. The Venice Gardens WTF is already equipped with the upgraded SCADA software.

Cost Schedule (Cost to County) in Thousands of Dollars:

FY07	FY08	FY09	FY10	FY11	
500	500	0	0	0	
FY12	**FY13**	**FY14**	**FY15**	**FY16**	**Total**
0	0	0	0	0	1,000

Outside Funding: None.

Date Required: Complete by 2008.

Project Justification: This project is required to improve the instrumentation and controls of the Carlton WTF and the water distribution system. The existing SCADA system is limited in its control strategies, online water quality analysis capabilities, and data collection and retrieval capacity.

Cost Estimate: Based on discussions with County staff, the expected cost for the new SCADA system is approximately $1,000,000.

GENERAL FACILITIES IMPROVEMENTS

Project ID: 2-10

Project Name: Venice Gardens Onsite Wastewater Lift Station

Description: This project includes construction of a new wastewater lift station at the Venice Gardens WTF. The lift station includes new pumps, electrical/controls, and piping to the nearest community sewer manhole or lift station.

Cost Schedule (Cost to County) in Thousands of Dollars:

FY07	FY08	FY09	FY10	FY11	
0	290	0	0	0	
FY12	**FY13**	**FY14**	**FY15**	**FY16**	**Total**
0	0	0	0	0	290

Outside Funding: None.

Date Required: Completed in FY08.

Project Justification: Venice Gardens WTF staff has indicated that this lift station is undersized for flows generated at the WTF, including the lab, lavatory, and stormwater that infiltrates and inflows to the wastewater lift station. This project will increase the size of the lift station and provide a reliable connection to the sanitary sewer system.

Cost Estimate:

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	**CIVIL / SITE WORK**						
	General Site Work	LS	--	--	20,000	1.00	$20,000
	4-inch piping	800	LF	40	32,000	1.00	$32,000
2	**PROCESS / MECHANICAL**						
	Package wastewater lift station	LS	--	--	75,000	1.20	$90,000
	Misc. Mechanical (10% of equipment)	LS	--	--	7,500	1.00	$7,500
3	**ELECTRICAL / INSTRUMENTATION**						
	Misc. Electrical / I&C	LS	--	--	25,000	1.00	$25,000
						SUBTOTAL	$175,000
	CONTINGENCY (30%)						$53,000
						ESTIMATED CONSTRUCTION COST	$228,000
	ENGINEERING, ADMIN (25%)						$57,000
						TOTAL	**$285,000**

GENERAL FACILITIES IMPROVEMENTS

Project ID: 2-11

Project Name: University WTF Remove Septic/Connect to Sewer/ Truck Turnaround

Description: This project includes three main items at the University WTF: removal of the existing septic tank, a small lift station to connect to the sanitary sewer system, and construction of a truck turnaround in the area of the existing septic tank after it is removed.

Cost Schedule (Cost to County) in Thousands of Dollars:

FY07	FY08	FY09	FY10	FY11	
200	0	0	0	0	
FY12	**FY13**	**FY14**	**FY15**	**FY16**	**Total**
0	0	0	0	0	200

Outside Funding: None.

Date Required: Completed in FY07.

Project Justification: Currently, wastewater from the University WTF flows to an onsite septic tank, and wash down water for the degasification system is deposed of on top of the biofilter. This project is necessary to properly dispose of these wastes into the sanitary sewer system. The space over the existing septic tank will be used to construct a delivery truck turnaround. Current delivery conditions present a hazard on University Parkway, as the delivery trucks must stop on this busy thoroughfare and back into the University facility.

Cost Estimate:

Item No.	Description	Unit Qty.	Std. Unit	Unit Price	Item Total	Install. Factor	Subtotal Cost
1	**CIVIL / SITE WORK**						
	6-inch Piping	270	LF	55	14,850	1.00	$14,850
	Asphalt Drive Area	5,000	SF	5	25,000	1.00	$25,000
	General Site Work	LS	--	--	5,000	1.00	$5,000
2	**PROCESS / MECHANICAL**						
	Package Lift Station	LS	--	--	60,000	1.00	$60,000
	Misc. Mechanical (10% of equipment)	LS	--	--	6,000	1.00	$6,000
3	**ELECTRICAL / INSTRUMENTATION**						
	Electrical / I&C	LS	--	--	15,000	1.00	$15,000
						SUBTOTAL	$125,000
	CONTINGENCY (30%)						$37,000
					ESTIMATED CONSTRUCTION COST		$160,000
	ENGINEERING, ADMIN (25%)						$40,000
						TOTAL	**$200,000**
Note: Removal of the septic tank is expected to be completed with 2006 budget dollars and therefore is not included in this estimate.							

Appendix B

POTENTIAL PROJECT COST ESTIMATES

Water Supply Master Plan Update
Potential CIP Projects

Project ID	Description	Total Cost ($)	Grants and/or Outside Participation (%)	Cost to County ($)	Duration (Years)	10-Year CIP Classificaiton											
						Critical										Beneficial	Elective
						FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16		
PART I - EXPANSION OF THE SARASOTA COUNTY WATER SYSTEM																	
Raw Water Development																	
1-1	Dona Bay Preliminary Design Study	1,500,000	50%	750,000	1	750,000	0	0	0	0	0	0	0	0	0	0	0
1-2	Dona Bay Water Supply Project Phase 1	60,000,000	75%	15,000,000	4	0	0	0	0	1,500,000	1,500,000	6,000,000	6,000,000	0	0	0	0
1-3	Dona Bay Water Supply Project Phase 2	40,000,000	75%	10,000,000	4	0	0	0	0	0	0	0	0	0	1,000,000	0	0
1-4	Carlton Wellfield Expansion No. 1	2,360,000	0%	2,360,000	1	2,360,000	0	0	0	0	0	0	0	0	0	0	0
1-5	Carlton Wellfield Expansion No. 2	3,610,000	0%	3,610,000	2	0	0	0	0	0	0	1,810,000	1,810,000	0	0	0	0
Water Treatment Facilities																	
1-6	Venice Gardens Building 2 RO Rehabilitation & Misc Upgrades	2,847,000	0%	2,847,000	1	2,850,000	0	0	0	0	0	0	0	0	0	0	0
1-7	Carlton WTF Capacity Upgrade - EDR	14,000,000	0%	14,000,000	2	0	0	0	0	0	0	2,800,000	11,200,000	0	0	0	0
1-8	University Reverse Osmosis WTF	4,950,000	0%	4,950,000	3	0	0	0	0	0	0	1,000,000	1,980,000	1,980,000	0	0	0
Pumping Facilties																	
1-9	Pump Station at Preymore Street Crossing (from Regional Loop)	4,880,000	0%	4,880,000	2	0	0	0	0	0	0	0	0	0	0	0	4,880,000
1-10	Pump Station at Other Crossing (from Regional Loop)	4,880,000	0%	4,880,000	2	0	0	0	0	0	0	0	0	0	0	0	4,880,000
1-11	Carlton High Service Pump Station	3,050,000	0%	3,050,000	2	0	600,000	2,450,000	0	0	0	0	0	0	0	0	0
Storage Facilities																	
1-12	Carlton 5 MG Ground Storage Tank	2,870,000	0%	2,870,000	1	2,870,000	0	0	0	0	0	0	0	0	0	0	0
Transmission and Distribution																	
1-13	Loop to North Port Interconnect (42" to Stoneybrook)	7,100,000	0%	7,100,000	0	0	0	0	0	0	0	0	0	0	0	7,100,000	0
1-14	Loop to North Port Interconnect (Blackburn to HW41)	1,300,000	0%	1,300,000	0	0	0	0	0	0	0	0	0	0	0	1,300,000	0
1-15	North Extension from Carlton to Preymore Street (Regional Loop)	35,000,000	50%	17,500,000	3	0	3,500,000	7,000,000	7,000,000	0	0	0	0	0	0	0	0
1-16	North Extension from Preymore Street to Fruitville Road (Regional Loop)	44,300,000	75%	11,075,000	0	0	0	0	0	0	0	0	0	0	0	0	11,075,000
1-17	Crossing along Preymore Street (from Regional Loop)	4,400,000	0%	4,400,000	3	0	900,000	1,750,000	1,750,000	0	0	0	0	0	0	0	0
1-18	Crossing along Clark Road (from Regional Loop)	2,600,000	0%	2,600,000	0	0	0	0	0	0	0	0	0	0	0	0	2,600,000
1-19	Crossing along Bee Ridge Road (from Regional Loop)	1,300,000	0%	1,300,000	0	0	0	0	0	0	0	0	0	0	0	0	1,300,000
1-20	Crossing along Fruitville Road (from Regional Loop)	9,300,000	0%	9,300,000	0	0	0	0	0	0	0	0	0	0	0	0	9,300,000
1-21	Honore Extention	12,500,000	0%	12,500,000	0	0	0	0	0	0	0	0	0	0	0	0	12,500,000
1-21	University Connection from Lockwood Ridge	1,800,000	0%	1,800,000	0	0	0	0	0	0	0	0	0	0	0	0	1,800,000
1-22	University/PS4 Loop	500,000	0%	500,000	0	0	0	0	0	0	0	0	0	0	0	0	500,000
1-23	Iona to Palmer Loop	500,000	0%	500,000	1	500,000	0	0	0	0	0	0	0	0	0	0	0
TOTAL PART I		**265,547,000**		**139,072,000**		**9,330,000**	**5,000,000**	**11,200,000**	**8,750,000**	**1,500,000**	**1,500,000**	**11,610,000**	**20,990,000**	**1,980,000**	**1,000,000**	**8,400,000**	**48,835,000**
PART II - WATER SYSTEM MODIFICATIONS AND IMPROVEMENTS																	
Water Treatment Facilities Modifications and Replacements																	
2-1	Venice Gardens WTF & Wellfield Standby Generators	1,480,000	0%	1,480,000	1	0	1,480,000	0	0	0	0	0	0	0	0	0	0
2-2	Venice Gardens WTF Deep Injection Well	3,000,000	0%	3,000,000	2	0	1,500,000	1,500,000	0	0	0	0	0	0	0	0	0
2-3	Carlton WTF Upgrades	520,000	0%	520,000	1	0	520,000	0	0	0	0	0	0	0	0	0	0
2-4	University WTF Upgrades	670,000	0%	670,000	3	160,000	420,000	0	0	0	0	0	90,000	0	0	0	0
Pumping Facilities Modifications and Replacements																	
2-5	Pump Station 2 Modifications	400,000	0%	400,000	2	0	50,000	350,000	0	0	0	0	0	0	0	0	0
2-6	Pump Station 3 Modifications	200,000	0%	200,000	2	0	50,000	150,000	0	0	0	0	0	0	0	0	0
2-7	Pump Station 5 Modifications	400,000	0%	400,000	2	0	50,000	350,000	0	0	0	0	0	0	0	0	0
2-8	Standby Generator at Pump Station 3	390,000	0%	390,000	1	0	0	390,000	0	0	0	0	0	0	0	0	0
General Facilities Improvements																	
2-9	Turn-key SCADA System Upgrade	1,000,000	0%	1,000,000	2	500,000	500,000	0	0	0	0	0	0	0	0	0	0
2-10	Venice Gardens Onsite Wastewater Lift Station	290,000	0%	290,000	1	0	290,000	0	0	0	0	0	0	0	0	0	0
2-11	University Remove Septic,/Connect to Sewer/Truck Turnaround	200,000	0%	200,000	1	200,000	0	0	0	0	0	0	0	0	0	0	0
TOTAL PART II		**8,550,000**		**8,550,000**		**860,000**	**4,860,000**	**2,740,000**	**0**	**0**	**0**	**0**	**90,000**	**0**	**0**	**0**	**0**
TOTAL 10-YEAR CAPITAL IMPROVEMENTS		**274,097,000**		**147,620,000**		**10,190,000**	**9,860,000**	**13,940,000**	**8,750,000**	**1,500,000**	**1,500,000**	**11,610,000**	**21,080,000**	**1,980,000**	**1,000,000**	**8,400,000**	**48,835,000**
TOTAL 10-YEAR CRITICAL PROJECTS (COST TO COUNTY)				**81,410,000**													

Appendix C

OPERATING BUDGET PROJECTS

Table C.1 Operating Budget Items Identified in WSMPU[1]

Project ID	Description	Estimated 10-Year Cost (1000 $)	Cost per Year									
			2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
O-1	Water Supply Master Plan Updates	400				200					200	
O-2	Conservation Initiatives	1,000	100	100	100	100	100	100	100	100	100	100
O-3	Interconnects Rehabilitation and Maintenance	260	50	50	20	20	20	20	20	20	20	20
O-4	Carlton WTF Chemical Trench Covers	50	50									
O-5	Carlton Master Plan and EDR/RO Pilot Study	190	190									
O-6	Venice Gardens Building 1 Membrane Replacement	100				100						
TOTAL OPERATING BUDGET ITEMS IDENTIFIED IN WSMPU[2]		**2,000**	**390**	**150**	**120**	**420**	**120**	**120**	**120**	**120**	**320**	**120**

Notes: 1) These items were identified throughout the WSMPU project; however, they are considered part of regular operations and maintenance. County staff determined that these projects should not be part of the Water CIP, but requested that the projects be documented for future reference.
2) Not an all-inclusive list of operations and maintenance budget items.

Appendix D

WATER DEMAND PROJECTIONS ADDENDUM

ADDENDUM

TO

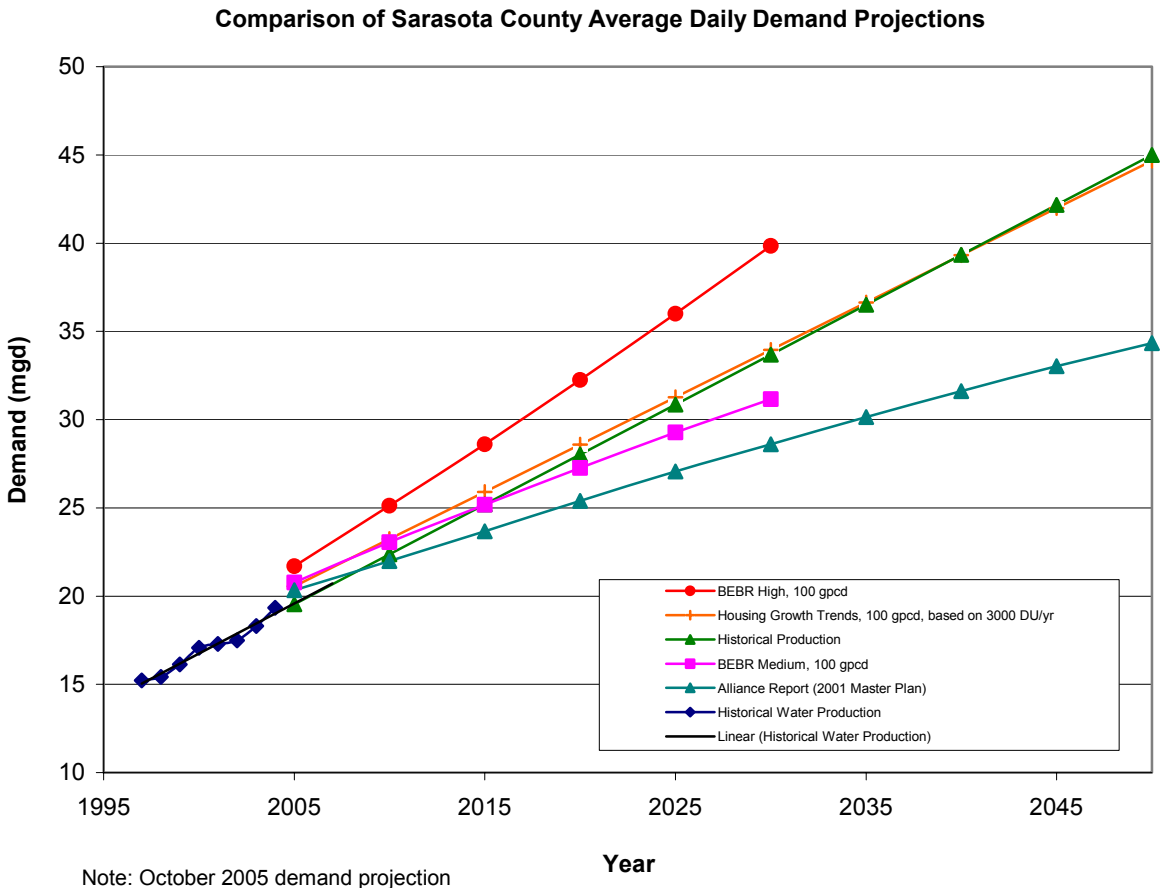
Technical Memorandum No. 1 - Water Demand Projections

Sarasota County

November 4, 2005

Based on discussions with County staff in October 2005, the water demand projections presented in Technical Memorandum No. 1 - Water Demand Projections were modified due to recent permit and zoning changes. The housing growth demand projection methodology will still be used for remaining master planning activities; however, the number of housing units added per year was increased from 2,341 units per year to 3,000 units per year. This resulted in an increase in water demand of approximately 5 mgd in 2050. The updated demand projections that will be used for remaining master planning activities are as follows:

Year	Annual Average Daily Demand (mgd)	Peak Month Demand (mgd)
2010	23.2	27.9
2015	25.9	31.1
2020	28.6	34.3
2025	31.3	37.5
2030	34.0	40.7
2035	36.6	44.0
2040	39.3	47.2
2045	42.0	50.4
2050	44.7	53.6



Note: October 2005 demand projection