



Peace River Manasota Regional Water Supply Authority

Regional Integrated Loop

Phase 1A Interconnect Preliminary Engineering Report

April 2008

Executive Summary



1. *Executive Summary*

The Peace River Manasota Regional Water Supply Authority (Authority) has been pursuing the Regional Loop Program to interconnect water resources on a regional basis. This interconnection will improve robustness and efficiency of the water transmission system and assure that customers have an adequate supply of water in the event of local plant disruptions. Phase 1A of this program will connect the City of Punta Gorda's Shell Creek Water Treatment Plant (WTP) with the Authority's Peace River WTP as shown in Figure 1-1. The proposed alignment of the interconnect pipeline is routed through Charlotte County near I-75, bringing it near several preliminarily identified connections to the Charlotte County Utilities (CCU) distribution system, a main user of the water. The pipeline will bi-directionally transfer up to 6 MGD between Punta Gorda, CCU and the Peace River WTP. A key element of the project is a 6,400 foot crossing under the Peace River. The preferred alignment for the 24-in pipeline has a total length of 12 miles including the River Crossing.

Initial work for the Loop Phase 1A Interconnect project including a conceptual design analysis and report, was previously completed on behalf of by Charlotte County. The conceptual interconnect evolved, and with the signing of the Regional Pipeline Project Agreement, it became a regional project administered by the Authority on July 11, 2007. This interlocal agreement between The Authority, The City of Punta Gorda, and Charlotte County utilities defines the hydraulic capacity and cost sharing for the project. Both the 2007 water supply contract between The Authority and The City of Punta Gorda and the Conjunctive Water Use Permit #20012926 from SWFWMD define the sources of water available for use in the pipeline. Together, these documents establish the framework for the Regional Integrated Loop Phase 1A project.

The Authority selected DMK Associates, Inc. (DMK) for the design of the Phase 1A Interconnect in September, 2007 and authorized work order number one for the detailed analysis and evaluation of the conceptual pipeline route.

DMK and their sub-consultants conducted a detailed study of the preferred route corridor recommended in the conceptual analysis. The corridor for the conceptual pipeline route as shown in Attachment A of the Regional Pipeline Project Agreement was divided into 9 segments for study purposes. A number of alternative alignments were determined for each segment and were examined in detail. The study included field observations, review of record drawings, evaluation of construction methods and materials, environmental review, archeological review, review of property acquisition costs and location of survey control points. Also, the existing pumping facilities at the Shell Creek Water Treatment Plant (WTP) were examined and a hydraulic analysis was performed to evaluate the impact of the Phase 1A Interconnect on the City's water system.

The study team recommended a 24 inch pipeline along an alignment that begins on Kings Highway at the Desoto County line and aligns with the north right of way (ROW) to Sandhill Boulevard. The pipeline would continue along the Sandhill Boulevard, Capricorn Boulevard and Luther Road ROW to an alignment just east of I-75 across from the CCU

Eastport Facility. The pipeline would continue south along I-75 to Harborview Boulevard, then south along a proposed Realignment of Discovery Drive to the Peace River.

The Peace River crossing is the most technically challenging, environmentally complex and the highest cost aspect of the project. The initial concept for this crossing was to implement it via Horizontal Directional Drilling (HDD) methods. The design team preferred a marine trench method over the HDD method for crossing the Peace River. This recommendation was based on cost, risk, long term reliability of the pipeline, and preliminary discussions with regulatory agencies. The proposed crossing follows a curved alignment across the river. This avoids the environmentally sensitive areas identified during the study.

The pipeline would follow the existing Holleyman Avenue ROW from the south shore of the river to US 17, where it would connect with an existing 30 inch water main owned by the City of Punta Gorda. The hydraulic analysis shows that utilization of available capacity in this existing pipeline could save \$3 Million in construction costs. The City of Punta Gorda's consultant is running scenarios to evaluate the viability of supply to the region through this line. A new section of 24 inch water main would be constructed from the intersection of US 17 and Washington Loop Road to complete the connection to the Shell Creek WTP. The project also would include additional pumps and a storage tank which would be located either at the Shell Creek WTP, at a point south of the Peace River near US 17, or at the CCU Eastport facility. This equipment will pressurize the pipeline and isolate the Punta Gorda, CCU, and Authority water systems from localized flow variations. Table 1-1 summarizes key characteristics of the preferred alignment.

Table 1-1 Preferred Alignment for the Phase 1A Interconnect Pipeline

Segment	Description	Length	ROW	Easement	% ROW
1A	From Desoto County Line along NW side of Kings Highway to SandHill Blvd	3305	3305	0	100%
2C	SandHill Blvd ROW to Capricorn	4820	4820	0	100%
3A	Capricorn to the existing end of Luther Road	10434	10434	0	100%
4B	East edge of I-75 ROW from Luther Road to Harbor View Drive	7320	2838	4482	39%
5B	Harborview at RioDeJaneiro along realigned Discovery Dr. to Peace River	4440	0	4440	0%
6A1-1	Marine Trench Installation of HDPE from View Drive to Holleyman Ave.	8000*	8000	0	100%
7A	Holleyman Ave to Hwy 17	2025	1512	513	75%
8A	Utilize capacity in existing 30" WM	14000	14000	0	100%
9	North side of Washington Loop Rd to Shell Creek WTP	9040	9040	0	100%
	Sub Total Pipeline Construction	63384	53949	9435	85%
	Sub Total Upland Pipeline	56984	47549	3035	83%
	Total Pipeline (mi)	12.0	9.0	0.6	75%

*8,000 Ft include 6,400 Ft river crossing and 1,600 Ft of upland trench

The estimated cost for this project is \$18,000,000, excluding the section of pipe between Sandhill Blvd the Authority's Regional Transmission System at the Desoto County Line. This section of pipeline was not included in the original project cost estimate attached as exhibit

D of the Regional Pipeline Agreement. However, it is a vital portion of the regional system. Charlotte County is in the process of constructing this pipeline section and expects to have it completed by the end of 2008. The preferred route includes sharing the capacity in this pipeline for the Phase 1A project. Therefore, if this alignment is chosen, the Authority and Charlotte County will need to reach an agreement regarding the use and cost of that pipeline segment. The estimated cost for Segment Alternative 1A is \$779,000. If the full cost for this segment is included in the Phase 1A project estimate, the total would be \$18,779,000.

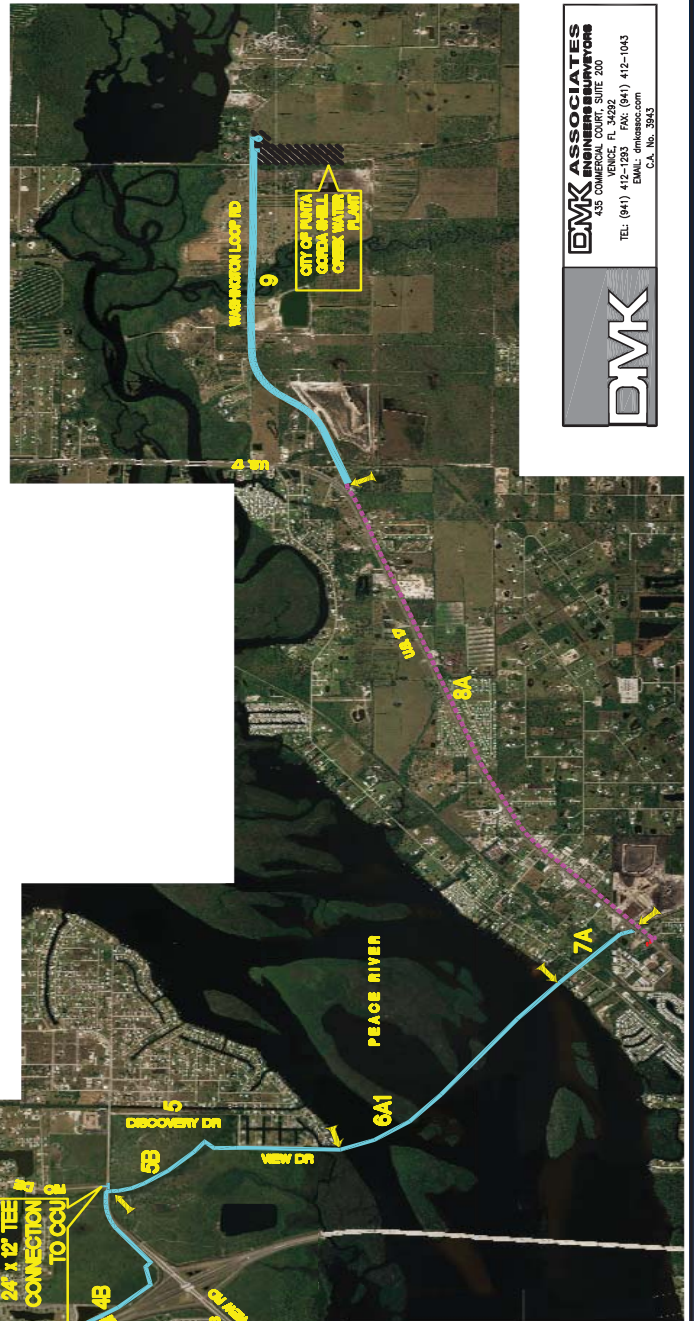
Design could be completed within 12 months of the Authority's approval to proceed. Environmental permitting of the project is expected to take 12 to 18 months and would be initiated with the start of the design process. Construction of the pipeline would require 16 months, and could be completed within 32 months of approval to continue the design.

PHASE 1A INTERCONNECT

PREFERRED ROUTE (KINGS HIGHWAY / SHELL CREEK)



- LEGEND:**
- PROPOSED 24" WATER MAIN
 - - - EXISTING 30" WATER MAIN
 - ← START TO END SEGMENT ARROW
 - 3 SEGMENT NUMBER
 - PROPOSED TEE CONNECTION TO EXISTING CCU WATER MAIN




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