

**TASK ORDER NO. 4**

**SCOPE OF SERVICES AND FEE PROPOSAL**

**UTILITY SYSTEM MASTER PLAN UPDATE – 2021**

**CITY OF NEW PORT RICHEY**

**I. PROJECT SCOPE**

**Description:**

The City of New Port Richey (CITY) provides and manages water, wastewater, and reclaimed water systems for its City residents. These utility systems rely on continual maintenance, improvements, and expansions to maintain the required level of service to the residents. A vital element the CITY uses for the planning, budgeting, and implementation of these changes to the utility systems is through the development of Water, Wastewater, and Reclaimed Water Master Planning. The most recent Master Planning efforts have not been updated for nearly 10 years. The purpose of this project is to update these utility plans in order to address growth, performance, age related infrastructure degradation, changing regulations, general improvements and upgrades, etc.

In order to continue the orderly evolution of the CITY's utility system, this updated master plan will address the extent and general condition of existing facilities, confirm the ability of these facilities to meet the current and future needs of the service area, and recommend upgrades and improvements as required. A specific emphasis will be placed on the continued use and integration of all existing facilities, to minimize cost, and to identify the extent, timing, and cost of future infrastructure needs.

In addition, a couple of new elements to this master plan update are (1) the investigation of potential interconnections with Pasco County's wastewater collection system to allow the CITY to divert wastewater flows in the event that the CITY's Wastewater Treatment Facility (WWTF) experiences temporary treatment limitations or disruptions, and (2) the evaluation of extending water and sewer service to communities within the CITY limits that are currently on individual septic treatment systems.

The CITY is requesting professional engineering assistance from Stroud Engineering Consultants, Inc. (ENGINEER) to provide an update to the current Master Plan (*Utility System Master Plan Update – 2011*, C&D Engineering, Inc.)

Mr. Kurt Heath, P.E. will serve as the ENGINEER's project manager on this task order for the duration of the scope of services. The ENGINEER will provide project management as part of this task order, which shall include: continuous management and coordination of the overall project; preparation of miscellaneous correspondence; coordination of subconsultant services; and attendance at monthly project meetings (as requested) with the CITY. The progress of the project will be discussed with the CITY's designated project manager as necessary throughout the remaining life of the project. A written summary of the project status and completed tasks will be provided with each invoice submitted by the ENGINEER.

Based on the above background discussion, the following specific tasks and services are anticipated for this project, and are included in this Scope of Services:

## 1.0 DATA ACQUISITION

In order to develop the above master plan and integrate it into the CITY's ongoing utility system program, the first and most important aspect of the project will be to meet with CITY staff to gather data, determine specific needs, document existing infrastructure conditions and issues, water and wastewater system performance, etc. In addition, we will make site visits to major CITY facilities to both examine and further our understanding of each. We will also obtain and review copies of all relevant plans, reports, studies, updated utility system maps, record drawings of previously-completed projects, and other data describing the CITY's existing and planned utility system. These documents will be evaluated with a specific emphasis on coordinating alternatives and recommendations of this updated master plan with those previously conceived and/or implemented.

The following is a tabulation of the relevant plans, reports, studies, records, maps, and other data we anticipate obtaining, reviewing, and incorporating into the updated utility system master plan:

- Previous Utility Master Plans
- Current Comprehensive Plan
- Existing and Future Population Data
- Updated Utility System Maps
- Treatment Plant Operating Reports
- Treatment Plant Water Quality Data
- Water Supply Well Flow and Water Quality Data
- Regulatory Agency Permits, Reports, and Correspondence
- Interlocal Agreements
- Regional Authority Plans

## 2.0 SERVICE AREA AND DEMAND PROJECTIONS

Beginning with the existing system, and its associated population and flow data, we will examine future population projections in order to estimate service area flows and demands. This information will help identify supply, treatment, storage, pumping, distribution, collection, disposal, and related needs. An analysis will be made of the probable impact these flows and demands will have on the size and configuration of CITY facilities. Based on this analysis alternative strategies will be developed to meet these projected needs of the system. These alternatives will be analyzed and recommendations will be made addressing both long and short term needs. Of specific interest will be the potential need for plant expansions and/or upgrades that may involve considerable planning, time, and cost to implement. The projections will include inclusions of specific neighborhoods within the CITY that are currently served by on-site septic systems to potentially be converted to centralized sewer collection systems that would then flow into the CITY's wastewater collection system.

## 3.0 HYDRAULIC ANALYSIS

**3.1 Hydraulic Modeling:** Once service area flows and demands have been examined, the next major work task will be to update existing computer models of the CITY's water distribution, wastewater collection, and reclaimed water distribution systems. These computer models will be digital representations of major elements of the City's water distribution, wastewater collection, and reclaimed water distribution systems such as pumps, pipes, junctions, tanks, flows, demands, etc. The ENGINEER will develop hydraulic models for each CITY system using InfoWater software by Innovyze, Inc.

Once the hydraulic model is completed and calibrated, alternative system scenarios of the existing and future conditions will be simulated to identify alternative infrastructure improvements to the system. The modeling results can be used to aid the CITY in the design of the wastewater pumping and force main system upgrades. While developing recommendations for the master plan, we can work closely with CITY staff to explore various scenarios of system growth, fire flows, system interconnections, new development and communities (e.g. septic conversions), and general system evolution. Once developed, these computer models can be used over time to examine changes to the CITY's systems. For example, in the recent past these computer models have been used to assist in the design of wastewater lift stations, force mains, and water distribution system upgrades.

**3.2 Interconnection Evaluation:** In addition to the evaluation of the CITY's wastewater collection system in Subtask 3.1, the ENGINEER will evaluate the potential options for the CITY to interconnect their wastewater force main system to the wastewater collection and force main systems of Pasco County. Should the CITY experience a catastrophic pipe failure at the WWTF, there currently are limited options to store or divert incoming wastewater flows. This project will investigate the ability for the CITY to divert incoming flows from the WWTF to Pasco County's wastewater collection/transmission system. Potential interconnection locations will be identified and evaluated to develop infrastructure improvement needs, estimated costs, and implementation recommendations. The evaluation will include coordination with the CITY and Pasco County to assess the conceptual interconnection locations and force main routes, and determine the ability or limitations of Pasco County's system to accept additional wastewater flows.

It is anticipated that Pasco County will provide the ENGINEER with electronic files of their current hydraulic model of their wastewater collection system, including the existing piping with their current and projected wastewater flow data, piping network configurations/extents, system pressure requirements, wastewater pump station data, etc. so an appropriate determination can be performed of the potential impacts at each interconnection location.

#### **4.0 WWTF AND WTP EVALUATION**

In combination with the CITY's current WWTF piping condition assessment project, this task would expand on the piping investigation and evaluate the existing facility infrastructure, including discussions with the facility operations staff, a review of the equipment/structure redundancy, regulatory considerations, structural integrity/joint leaks, operational limitations and proposed efficiency/control improvements. This task will include the evaluation of the Water Treatment Plant infrastructure.

#### **5.0 ALTERNATIVES ANALYSIS**

During this phase of the work, the ENGINEER will develop alternatives as potential solutions to any needs and deficiencies identified by the above tasks. Possible alternatives will be discussed with CITY staff to determine feasibility, suitability, practicability, and consistency with CITY interests. The following is a tabulation of the primary considerations anticipated:

- Adequacy of Existing Treatment Facilities (capacity, treatment processes, expandability, etc.)
- Water Distribution System Configuration (pipe sizes, age of infrastructure, fire protection, redundancy, etc.)

- Wastewater Collection System Configuration (pipe sizes, pump stations, re-pumping, age of infrastructure)
- Reclaimed Water System Configuration (storage, service area, wet weather backup, etc.)
- Design Criteria for various CITY facilities
- Advantages, Disadvantages, and Cost of Alternatives

## **6.0 FINAL PLAN PREPARATION**

At the conclusion of the above tasks, a final master plan will be prepared by the ENGINEER. The final plan will summarize the information collected, the alternatives considered, estimated costs of the various alternatives and potential projects, and provide recommendations for short-term and long-term projects. The ENGINEER will meet with CITY staff during the report preparation to review the information and gather input, so that any recommended improvements are consistent with current CITY plans and programs.

The following is a summary of the major elements the master plan is envisioned to include and/or address:

### General

- Development of a workable utility system master plan
- Upgrade system wide computer modeling
- Development of alternatives
- Analysis of alternatives
- Review of alternatives with the CITY staff
- Preparation of draft Report
- Review of draft Report with CITY staff
- Final report preparation

### Water Supply and Treatment System

- Capacity (adequacy, expandability)
- Condition of existing facilities (valves, piping, equipment, etc.)
- Use of existing dispersed CITY wells (consolidation, replacement, treatment, etc.)

### Water Distribution System

- Data and results of computer modeling
- Fire protection
- Condition (age of some piping)
- Pipe materials (asbestos cement/galvanized steel/cast iron)
- Interconnections/redundancy
- Metering

### Wastewater Collection System

- Data and Results of Computer Modeling
- Capacity (adequacy, expandability)
- Condition (age of pumping stations and some piping)
- Infiltration/Inflow (Magnolia Valley/coastal areas)
- Interconnection with Pasco County
- Septic to sewer expansion

Wastewater Treatment System

- Capacity (adequacy, expandability)
- Treatment process upgrade (possible need for denitrification)
- Structural integrity (expansion joints aeration and post aeration)
- Headworks (hydrogen sulfide degradation)
- Energy efficiency
- RAS/WAS pump station (pumps, VFD, PLC control, etc.)
- Aeration/mixing (increase efficiency and controllability)
- Clarifiers (condition and possible replacement of mechanical equipment)

Reclaimed Water System

- Data and results of computer modeling
- High service pumping (capacity, pumping head, etc.)
- Expansion (Sea Forest, Golf Course)
- Storage
- Wet weather backup

**II. ENGINEER’S COMPENSATION**

For Tasks 1 – 6 described above, the CITY will compensate the ENGINEER on a fixed fee basis. Compensation to the ENGINEER for the services included in the above tasks shall not exceed the following:

1.	DATA ACQUISITION	\$ 26,080.00
2.	SERVICE AREA AND DEMAND PROJECTIONS	\$ 28,520.00
3.	HYDRAULIC ANALYSIS	\$ 57,860.00
4.	WWTF AND WTP EVALUATION	\$ 34,320.00
5.	ALTERNATIVES ANALYSIS	\$ 26,120.00
6.	FINAL PLAN PREPARATION	\$ 52,100.00
	TOTAL AUTHORIZATION	\$ 225,000.00

**III. ADDITIONAL SERVICES REQUIRING AUTHORIZATION IN ADVANCE**

If required by the ENGINEER and authorized by the CITY, additional services related to this Task Order shall be provided by the ENGINEER for additional professional fees negotiated with and agreed to by the CITY.

#### IV. PROJECT SCHEDULE

The ENGINEER will begin the activities described herein immediately upon receiving written notice to proceed. The estimated project schedule is outlined as follows:

<u>Task</u>	<u>Weeks to Complete After Notice to Proceed Issued</u>
Data Acquisition	8
Service Area and Demand Projections	12
Hydraulic Modeling	18
WWTF Evaluation	18
Alternatives Analysis	22
Draft Report	28
CITY Review	32
Final Report	36

TASK ORDER NO. 4

UTILITY SYSTEM MASTER PLAN UPDATE – 2021

Stroud Engineering Consultants, Inc.

A. SCOPE OF SERVICES – The City of New Port Richey hereby authorizes the firm of Stroud Engineering Consultants, Inc. to perform the specific services summarized on the attached statement entitled TASK ORDER NO. 4, SCOPE OF SERVICES AND FEE PROPOSAL.

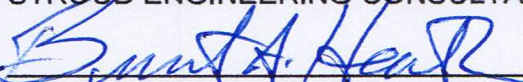
B. TIME OF COMPLETION – Work under this Authorization will begin upon Notice to Proceed from the City and will be completed within the schedule presented on the attached statement entitled TASK ORDER NO. 4, SCOPE OF SERVICES AND FEE PROPOSAL.

C. KEY PERSONNEL – Stroud Engineering Consultants, Inc. shall appoint a single representative with whom the City of New Port Richey shall coordinate. This representative shall have the authority to transmit instructions, receive information, interpret and deliver decisions, etc. Key personnel assigned to the project by Stroud Engineering Consultants, Inc. shall not be removed from the project without the prior written approval of the City of New Port Richey. For this authorization key personnel are as follows: Kurt Heath, P.E.

D. COMPENSATION – Professional fees for this authorization will be fixed fee in accordance with the AGREEMENT FOR GENERAL UTILITY ENGINEER, WATER-RESOURCE AND ENVIRONMENTAL CONTINUING SERVICES (GUE&WR&EC) with the City of New Port Richey, dated February 11, 2020.

E. ACCEPTANCE – By signature hereon, the parties each accept the provisions of this TASK ORDER NO. 4, and authorize the Consultant to proceed at the direction of the City's representative, in accordance with the SCOPE OF SERVICES AND FEE PROPOSAL.

Witness:   
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STROUD ENGINEERING CONSULTANTS, INC.  
  
\_\_\_\_\_

Brent A. Heath, President  
9/14/2020  
\_\_\_\_\_  
Date

Attest:  
\_\_\_\_\_  
City Clerk

CITY OF NEW PORT RICHEY, FLORIDA  
\_\_\_\_\_  
Mayor  
\_\_\_\_\_  
Date