

RESOLUTION NO. 09-082

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF KEY WEST, FLORIDA, AUTHORIZING THE APPROVAL OF TASK ORDER NUMBER 2-09STM FOR THE DESIGN OF A PUMP-ASSISTED OUTFALL SYSTEM FOR THE GEORGE STREET BASIN AREA, IN AN AMOUNT NOT TO EXCEED \$311,821 TO CH2M HILL, INC; PROVIDING FOR AN EFFECTIVE DATE

NOW THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF KEY WEST, FLORIDA, AS FOLLOWS:

Section 1: That the attached task order 2-09STM for the design of a pump-assisted outfall system for the George Street basin area in an amount not to exceed \$311,821.00 to CH2M HILL is hereby approved.

Section 2: That this Resolution shall go into effect immediately upon its passage and adoption and authentication by the signature of the presiding officer and the Clerk of the Commission.

Passed and adopted by the City Commission at a meeting held this 7TH day of April, 2009.

Authenticated by the presiding officer and Clerk of the Commission on April 8, 2009.

Filed with the Clerk April 8, 2009.


MORGAN MCPHERSON, MAYOR


ATTEST:


CHERYL SMITH, CITY CLERK



GENERAL SERVICES DEPARTMENT MEMORANDUM
EXECUTIVE SUMMARY

TO: Jim Scholl , City Manager

FROM: Annalise Mannix, P.E. Manager of Engineering Services and Environmental Programs 

VIA: David Fernandez, Assistant City Manager
Gary Bowman, General Services Director

DATE: February 25, 2009

RE: Design Services for Patricia /Ashby Street Pump Station Outfall and George Street Pump Station and Outfall

ACTION STATEMENT

A resolution approving task order numbers 1-09STM and 2-09STM for the design of pump-assisted outfall systems for the intersection of Patricia & Ashby Streets and on George Street, in the amounts of \$134,816 and \$311,821 respectively, to CH2M Hill, Inc.

STRATEGIC PLAN INITIATIVES

The maintenance and improvement of our stormwater system is essential in protecting our near-shore water quality which is a key goal in the City's Strategic Plan. This project will place a sediment trap system on the George Street outfall which currently dumps untreated stormwater mixed with sediment, trash, and petroleum into the Garrison Bight. The Patricia/Ashby station already has a sediment trap.

The maintenance of our public infrastructure in a cost effective manner to serve the needs of our citizens and visitors and protect the local environment is one of our seven priorities outlined in the Strategic Plan. This project attempts to improve our current stormwater infrastructure to protect our citizens and visitors from flooded streets which often cause sewage spills. The project also removes contaminants from near-shore waters that would normally exit the island in untreated stormwater. Using a Federal Emergency Management Agency (FEMA) grant for 75% of the funds make the projects more cost effective for our ratepayers.

BACKGROUND

Mitigation is one of the cornerstones of emergency management. Its goal is to lessen the impact that disasters have on people's lives and property. Authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, the Hazard Mitigation Grant Program (HMGP) is administered by the Federal Emergency Management Agency and the Florida Division of Emergency Management (DEM). The City applied for two stormwater mitigation grant projects.

Flooding due to heavy rains has caused disruption of vehicular travel at the intersection of Ashby Street and Patricia Street and on both the 1600 block of United Street and 1000 block of George Street for years. The City Stormwater Utility applied for Hurricane Wilma HMGP funds in 2006 to implement two projects to reduce rain related flooding in those areas. The City has been awarded HMGP grants for the design and construction of these projects. The City Commission has already authorized the design phase grant contracts for both projects.

“Flooding” is a term that seems to be defined by each user differently, i.e. “my street is flooded” can mean there is a 3 inch deep puddle on one side of the road when it is in front of the orators home, or “my house was flooded” can mean water was up in the front yard to another speaker. With regard to streets, engineers speak more in terms of roadway overtopping. As a road becomes overtopped with water, the level of risk to drivers and the neighborhood increases. Roads are not designed to remove all water instantaneously from a local road and storm systems are not designed for huge rain events. Drainage systems for roads are designed, generally, to allow up to 6 inches of water on the road during a heavy rain event. Above that point we do consider a road “flooded”. This condition makes it difficult for emergency vehicles to pass across the road. If water stands in a roadway for any length of time the life span of the road tends to decrease and maintenance costs increase. Asphalt is “glued” to the ground so-to-speak and that bond can be disrupted when wear, and water mix.

The City applied for a stormwater mitigation grant to install outfall piping for the existing pump station at the intersection Ashby and Patricia Street to pump the water from the neighborhood to the ocean via Bertha Street. We also applied for a project to pump water from the United Street area (by Thompson Street) out through a pipe below George Street and into the Garrison Bight.

More specifically, the Ashby/Patricia project is to pump water from the existing well pump station to the ocean out-falling at the end of Bertha Street. During hurricane storm surge events the current pump station has to be shut down due to clogging of the wells, creating a need for bypass pumping to maintain the level of protection the pumps afford. Additionally, the generator for the station is trucked in after it is determined there is a need. This project installs the generator on site so it is available instantly. Currently, when the pumps are not available and it rains at high tide the street can be covered with more than 6 inches of water. The total project cost estimated in 2006 was \$1,669,560.

The George Street project consists of building a pump station to accept water from the drainage basin that encompasses the intersection of United and Thompson Streets through the intersection of Catherine and Thompson Streets and up to George Street. The rainwater will then be transferred through a sediment trap and pumped through pipes below George Street and out into the Garrison Bight. The rainwater currently flows through gravity piping down George Street and outfalls into the Garrison Bight, but with no pollutant removal system. The total project cost estimated in 2006 was \$3,000,000. At some high tides, even without rain, salt water backs up onto United Street and George Street. When a rain occurs at high tide the roads can flood well over 6 inches.

PURPOSE & JUSTIFICATION

FEMA has approved both of the grant applications in two phases. The phase one (design) grants were executed by the Commission and the State of Florida for these projects. The grant is for 75% of each project cost estimate which is \$103,950.00 for the Patricia/Ashby project and \$227,760.00 for the George Street project. If the design phase indicates a project will be a successful mitigation project (having demonstrated a good benefit to cost ratio) FEMA will pay for 75% of construction.

The engineers cost estimate of construction will be necessary to determine the final benefit-to-cost ratio and that will not be available until the design is complete. However, a preliminary estimate was made for both sites prior to applying for the grant. For the George Street outfall, 75 homes will be protected against a 50 year rain event for 50 years (the life of the equipment). The benefit-to-cost ratio is over 2.5, saving the taxpayers over \$10,000,000 for an estimated \$4,000,000 lifecycle cost (including maintenance). For Ashby and Patricia, 30 homes will be

protected against a 25 year rain event for 50 years. The benefit-to-cost ratio is over 2.0 saving the taxpayer an estimated \$4,000,000 for a \$2,000,000 lifecycle cost (including maintenance).

In order to implement each construction phase the project must be designed. The George Street project includes the design of a sediment and petroleum trap; a wet well with submerged pumps; a control station and emergency electric generator above ground; and an underground outfall pipe down George Street exiting into the Garrison Bight. During the design phase, engineers will carry out land surveys, modeling of storm events to determine potential volumes of water to be pumped, research the actual costs incurred by homeowners and insurance companies of previous storms, and estimate the cost and benefit of the designed project using a very specific benefit-to-cost analysis.

On completion of the design phase, the engineer will need to apply for environmental permits, attend consultation and feedback meetings with all agencies involved, and perform any necessary modifications to obtain the permits. Much of the same work has to be performed on the Ashby project, however, the pump station already exists so only the piping to the outfall and the generator needs to be installed.

Although both the City Commission and FEMA have approved the grants covering each design phase, FEMA will only authorize construction for projects with a benefit-to-cost ratio greater than 1.0 (which indicates a stipulated acceptable cost saving ratio to the government over a 50 year life span). In the unexpected event that either ratio is less than 1.0, each design grant is still reimbursable and so would remain intact. The City could of course choose to build the project with its own funds should FEMA find the ratio less than 1.0.

OPTIONS

There are three options for this request. The first is to approve the task orders for the project; the second is to reject the task orders and select a different firm; and the third is to choose not to perform the projects. Not performing the projects will neither improve the existing rain related flooding conditions nor relieve the distress of effected residents. Only completing the design of one project would result in a loss of economies of scale and will increase the design cost of the selected option.

Awarding the task orders to CH2M Hill is desirable because CH2M Hill, Inc. designed the Ashby/Patricia pump station and, therefore, already has the electronic modeling information, pump design information and is familiar with the specific design and construction issues found in that station. In addition they were tasked 2 years ago to develop conceptual plans for the pump assisted outfall at Ashby and met with City and South Florida Water Management District officials to negotiate the addition of an outfall. They have also successfully designed several other sewer pump stations for the City.

We are confident that the cost of engineering for this project is not excessive. In addition, care was taken during the task order negotiation to avoid duplication of effort by reducing unnecessary administrative burdens, and associated costs, and by scheduling meetings to monitor progress of both projects with the same essential or key staff at the same time.

The second option of selecting a different engineering firm to design the pump stations gives no guarantee of a lower cost since the work is subject to the State's Consultants Competitive Negotiation Act which does not allow selecting engineers based on low bids. However, if the Commission so wishes, we could invite alternative contracted firms that also specialize in stormwater pump stations to prepare and submit a task order for the required work though there would be a loss of economies of scale, insight, and time. The price may be higher than the one

we have now. It may also be less, but since the initial task orders are public record the prices are unlikely to be much less than that offered by CH2M Hill.

The option of not designing the stations is always available. That would cause distress to the citizens of the affected areas. Many are aware the projects were considered, placed in the utility rate study, and remain hopeful they will provide them with much needed relief.

FINANCIAL IMPACT

The total design cost for the two projects will be \$446,637, with the City providing matched funding for 25% (\$111,660). FEMA will fund 75% (\$334,977). The City's match is listed as line items in the Stormwater Utility rate study/budget for 2009 and 2010. The Ashby project is fully funded in 2010 at the rate of \$135,000, with the proposed cost being \$134,816. The George Street project is funded partly in 2009 (\$237,000) and the remainder in 2010 (\$75,000) totaling \$312,000 with the actual cost being \$311,821. The City may request from FEMA 50% of the funding up front so our funds do not have to be dispersed until more than 50% of the design is complete. That may take the project right into the 2010 fiscal year where most of the funds are budgeted. These funds are funded through line item # 402-802-535-65-00.

RECOMMENDATION

Authorize execution of these task orders to CH2M Hill.

TASK ORDER 2-09 STM

**ENGINEERING SERVICES FOR THE STUDY, DESIGN, AND PERMITTING OF
A STORMWATER PUMP STATION AND OUTFALL SYSTEM FOR GEORGE
STREET DRAINAGE AREA**

This TASK ORDER 2-09 STM is issued under the terms and conditions of the MASTER AGREEMENT TO FURNISH GENERAL ENGINEERING SERVICES TO THE CITY OF KEY WEST ("AGREEMENT") between the City of Key West ("CITY") and CH2M HILL, Inc. ("ENGINEER") executed on September 18, 2007, which is incorporated herein by this reference.

A. SCOPE OF SERVICES

Specific services which the ENGINEER agrees to furnish are summarized on the attached statement entitled TASK ORDER NO. 2-09 STM "SCOPE OF SERVICES." The "Scope of Services" defines the work effort anticipated for the Task Order. This Task Order, when executed, shall be incorporated in and shall become an integral part of the September 18, 2007, Master Agreement.

B. TIME OF COMPLETION

Work under this Task Order will begin immediately following acceptance and completed expeditiously subject to coordination with the City of Key West staff. Work may be performed at any time as requested by the CITY within 12 months after the date of execution of this Task Order, at which time the Task Order will expire.

C. COMPENSATION

Compensation for TASK ORDER NO. 2-09 STM, Tasks A and B will be on a lump sum fee basis as stipulated in Article 2, Paragraph 2.1 of the AGREEMENT. Compensation for Task C and all expenses will be on a Cost Reimbursable-Per Diem basis as stipulated in Article 2, Paragraph 2.2 of the AGREEMENT. The estimated compensation is shown on the attached statement entitled TASK ORDER NO. 2-09 STM COMPENSATION.

D. ACCEPTANCE

By signature, the parties each accept the provisions of this TASK ORDER NO. 2-09 STM, and authorize the ENGINEER to proceed at the direction of the CITY's representative in accordance with the "SCOPE OF SERVICES." Start date for this project will be no later than ten (10) days after execution of this authorization.

For CH2M HILL, INC.

By: Richard Morales
Rick Morales, P.E.
South Florida Area Manager
Andrew H. Smyth
Andrew H. Smyth, P.E.
Key West Office Manager

For CITY OF KEY WEST

By: Jim Scholl
Jim Scholl
City Manager
Dated the 13th day of APRIL, 2009
ATTEST: Cheryl Smith

TASK ORDER 2-09 STM
**ENGINEERING SERVICES FOR THE STUDY, DESIGN,
AND PERMITTING OF A STORMWATER PUMP
STATION AND OUTFALL SYSTEM FOR GEORGE
STREET DRAINAGE AREA**

SCOPE OF SERVICES

Project Description

The City of Key West (CITY) has received Federal Emergency Management Agency (FEMA) hazard mitigation grant program (HMGP) funding (HMGP DR-1609-110-R) to address stormwater flooding in the George Street basin area in Key West, Florida. There are multiple low lying areas within the existing gravity drainage system that flood during rain events. The CITY would like to construct a pump station that would alleviate flooding during these rain events. The pump station would be connected to the existing gravity system and would operate when stormwater reaches a predetermined elevation in the existing gravity system. The pump station discharge would utilize the existing gravity outfall by connecting downstream of the furthest catch basin. The existing outfall and outfall pipe will be modified to allow a pressurized flow. Additionally, up to 500 linear feet of collection system piping may be modified if required for the collection system or pump station to operate correctly. The actual modifications will be based on the outcome of the modeling task.

The new stormwater pump station would include an upstream sediment removal structure and a permanent stand-by generator elevated above the 100 year flood elevation. After discussions with the City it was determined that the stormwater improvements will not include two (2) 90 foot injection wells as stated in the FEMA grant document. This determination is due to the grant being based on elevating flooding issues in the area and the current scope of the project will be able to address these issues without the construction of the wells. It is assumed that the City will obtain a modification to the current FEMA grant scope of work to delete the requirement for the two (2) 90 foot injection wells and include a permanent stand-by generator and appurtenances. The location of the new pump station is assumed to be in the northeast corner of the existing school property and is assumed the City will obtain an easement from Monroe County School District for the construction.

Purpose

The CITY has requested that the ENGINEER provide engineering services for the study, design and permitting of a stormwater pump station and outfall system for the George Street drainage basin.

Scope of Services

The scope of services provided below addresses the work to be completed for the project; and includes Task A (Hydrologic Evaluation), Task B (Detailed Design), and Task C (Permitting). The scope of work for this project will result in the following deliverables:

- A complete set of signed and sealed construction drawings and specifications
- An Engineering Report that addresses the hydraulic analysis of storm water modifications for the George Street basin area will be generated and will include the following elements:
 - A site map clearly showing the location of proposed project components and their location relative to the areas of historic damage within the contributing watershed.
 - Hydrologic and/or hydraulic calculations or models including surge effects that support the proposed mitigation by clearly demonstrating the decrease in future flood levels and associated future flood damages.
 - A detailed narrative of the actual problem with the frequency of event causing the flooding, and an estimate of the damages (in dollars) due to flooding. The narrative will include a description of how the modified stormwater system will solve the problem and how much residual damage (in dollars) will occur after the new proposed level of protection.
- Copies of any completed U.S. Fish and Wildlife (USFW) Consultation
- Documentation of public notice, including an explanation of how public comments (if received) were addressed.
- A copy of the South Florida Water Management District (SFWMD) Environmental Resource Permit (ERP) and correspondence regarding applicable United States Army Corps of Engineers (USACE) permits.
- An updated project cost estimate including mobilization, demolition, permit fees, erosion and sediment control Best Management Practices (BMPs), environmental remediation, and construction easement cost will be prepared and submitted separately.

Task A – Hydrologic Evaluation and Report

The Engineer will provide data collection, field investigations, and hydraulic modeling and evaluations sufficient to provide a detailed report to be used to meet the requirements of the FEMA grant.

The following activities will be conducted as part of the Task A.

- **Kickoff Meeting:** Attend a kickoff meeting with City staff to obtain/discuss background information pertaining to the study area. This information may include copies of relevant planning and engineering reports, previous modeling by others, stormwater facility survey data, first floor elevation of buildings, drainage area maps, topographic maps, and land use maps, as appropriate.
- **Field Investigation:** The Engineer and City staff shall complete a walking review of the study area to observe land use and drainage characteristics of the area. This field investigation shall also be used to identify existing drainage problem areas, as observed by City staff and potential locations for future stormwater facilities.

- Review Background Information: The Engineer shall review the background information provided by the City, and complete a preliminary evaluation of the potential usefulness for this project. Readily available additional mapping data will be obtained and assessed for its usefulness in developing updated maps. The state has recently obtained aerial LiDAR survey of Key West. These maps are available from the state and it is assumed that they will be available to help generate new base maps.
- The ICPR model (i.e., based on the one previously completed by others) will be updated using the new LiDAR data. Contributing areas and stage-area curves will be generated using GIS tools. These data are necessary to map flooding later.
- Using the ICPR model, estimate the flood potential of the contributing basins, without the proposed pump station and with the pump station and modified outfall. The pump station and outfall system will also be modeled using the AFT Fathom model as part of the design process, but this model does not simulate storm flows. A Fathom model will be developed and used to assess the detailed head losses in the system under peak storm flows given three different tailwater conditions (mean high tide, high tide, and one storm surge condition which will be somewhat higher than the street level).
- The flooding levels will be estimated based on ponding in the streets. Areas with standing water will be mapped on the base maps for the following design storms: 10-year, 24-hour; 25-year, 72-hour; and 100-year, 72-hour. No hurricane surge mapping will be conducted, however, maps with this information are available from the state and will be included as part of the background data.
- Using the 100-year flooding estimates, properties that will likely be flooded without the project will be identified on an aerial photograph. A visual survey will be made to verify which houses may be on a raised foundation. A sampling of the homes will be selected and their value determined by querying the county property appraiser's database. Commercial properties will be queried separately. Based on the relative value a sampling of homes in the flooded areas an overall estimate of the potential damages will be prepared.
- A detailed cost estimate of the project will not be available until after the design. A parametric cost estimate based on typical costs for the pump station and outfall pipeline will be developed and used for the report. Additional fees for erosion control and permitting will be included.
- A draft report will be completed and submitted to the City for review. Upon completion of the City review a meeting will be conducted to incorporate comments into final report.

Deliverables

The deliverable for Task A shall consist of an Engineering Report. The Engineering Report shall include a detailed narrative of the frequency of the storm event causing the flooding and a dollar estimate of the damages due to flood. The report will include a discussion of how the stormwater discharge system will reduce the flooding impacts and quantify the residual damage (in dollars) after the stormwater discharge system is constructed.

The following deliverables will be provided under this Task:

- Two (2) copies of kick-off meeting minutes

- One (1) electronic copy of base map
- Two (2) copies of draft report.
- Two (2) copies of review meeting minutes
- Five (5) copies of the final report and 1 electronic copy (PDF format).

Task B – Detailed Design

This task entails activities related to the design of a new stormwater pump station and permanent standby generator including all structural, mechanical, and electrical components as well as an upstream sediment removal structure, approximately 500 lineal feet of new stormwater pipeline and outfall. The task is divided into three subtasks- B.1 Field Survey and Geotechnical, B.2 Preliminary Design and B.3 Final Design.

B.1 Field Survey and Geotechnical

The Engineer shall retain a professional land surveyor to conduct a survey of the proposed stormwater pump station site and along the modified stormwater pipeline route.

The surveyor will provide a detailed survey of the proposed location of the new pump station in the northeast corner of Horace O'Bryant Middle School field. The surveyor will also provide a detailed route survey for the modified outfall piping which is assumed to start at the intersection of George Street and Vivian Street, then along George Street to existing outfall on North Roosevelt. The surveyor will obtain detailed information on the invert and size of the existing outfall. The surveying shall be based on a maximum of 600 feet.

Ground surveying shall be obtained and shall show physical features within and immediately adjacent to the street rights-of-way, as well as rights-of-way lines and elevations of accessible storm water and sanitary sewers. All horizontal coordinates shall be in U.S. Survey feet and reflect a projection of grid coordinates in the State of Florida Plane coordinate System Transverse Mercator-West Zone, NAD 1983-1990. All vertical elevations shall be in feet referenced to NGVD 29.

The Engineer will also obtain the services of a geotechnical subconsultant to conduct a geotechnical investigation of the proposed site and along the proposed route. The investigation will include the installation of eight (8) Standard Penetration Test (SPT) (ASTM D-1586) borings; two (2) to twenty (20) feet below land surface (bls), two (2) to twelve (12) feet bls and four (4) to eight (8) feet bls. The boring will not be terminated in very loose or deleterious material. Sieve analyses will be conducted on up to eight (8) soil samples collected from split spoon samples taken from the borings.

The Engineer and geotechnical sub consultant will prepare a draft geotechnical report documenting the results of the geotechnical field investigation. The report will include a discussion of field procedures, boring logs, soil test data, and maps indicating the locations of all borings.

Deliverables

- Four (4) signed and sealed copies of the topographic map for distribution to City staff.
- Four (4) signed and sealed copies of the geotechnical report for distribution to City staff.

B.2 Preliminary Design (40% Design)

The ENGINEER will perform the work to develop the preliminary project design documents, based on the approved recommendation of the preliminary report, for the purpose of constructing a new stormwater pump station, sediment removal structure, permanent stand-by generator, modifications to existing discharge piping and outfall and up to 500 lineal feet of stormwater collection pipe.

The objectives of this task are to define the design approach and intent and to communicate the design assumptions to the CITY. The ENGINEER will conduct a design review meeting with the CITY prior to the conclusion of this task.

Specific work activities in this task are identified below:

- Develop plan and profile drawings showing the proposed stormwater pump station location and layout, sediment removal structure, stand-by generator, connections to the existing gravity system and modifications of discharge piping, collection piping and outfall.
- Prepare outline of required technical specifications.
- Identify any potential constructability issues.
- Prepare budget-level cost estimate.
- 40 % Design Review Meeting.

Deliverables

The following deliverables will be provided under this Task:

- Three (3) copies: Preliminary (40%) drawings
- Three (3) copies: Specification outline
- Three (3) copies: Design Calculations and data
- Three (3) copies: Preliminary Construction cost estimate
- Two (2) copies of 40% review meeting minutes

B.3 Final Design

During this subtask, the ENGINEER will complete the technical design based on the outcome of the 40% Review Meeting. At the end of this subtask the design documents will be considered complete and ready for bidding.

Specific work activities in this task are identified below:

- Finalize technical design

- Prepare legal and technical specifications, contract documents, including Bid Form, Notice to Bidders, General and Supplemental Conditions, Bond Forms, etc.
- Prepare 90% Drawings
- Based on 90% documents, prepare updated final construction cost estimate
- Conduct 90% review meeting and incorporate review comments from City into design documents, and submit final contract documents to the CITY

Deliverables

The following deliverables will be provided under this Task:

- Five (5) copies: 90% review documents (Drawings and Specifications)
- Two (2) copies: Final construction cost estimate
- Two (2) copies of 90% review meeting minutes
- Eight (8) copies: Final Contract Documents, including drawings and specifications and one (1) CD of Contract Documents in PDF format for uploading to DemandStar.

Task C – Permitting

The ENGINEER will provide to the CITY documentation, permits or correspondence letters from the following State, Federal and Local agencies, as applicable:

- Environmental Resource Permit from the South Florida Water Management District (SFWMD).
- US Army Corps of Engineers (USACE)- copy of letter submitted to the USACE or a permit, or a letter stating that a permit is not required.
- US Fish and Wildlife (USFWS)- ENGINEER will provide correspondence letter.
- Copy of Public Notice with documentation that is published as well as documentation regarding whether any comments were received in response to the Public Notice.
- Florida Department of Transportation (FDOT) permit
- ENGINEER will provide signed and sealed plans, specifications and calculations for each permit

For purposes of budgeting, it is assumed that the USACE will allow a Nationwide permit to be utilized because of the limited dredge and fill area. One Request for Information from the SFWMD will be addressed.

Deliverables

The following deliverables will be provided under this Task:

- Two (2) copies: Final permit applications with attachments
- Two (2) copies: correspondence letters, USACE, NFWS.
- Two (2) copies of Public Notice documentation

Assumptions

The following assumptions were used in the development of this Task Order

- Work on this project will be completed by the end of August, 2009 (except for permits that may have been applied for but not yet obtained).
- Meetings will be held in Key West and attended by up to two (2) consultants staff, additional consultants staff may attend via conference call.
- Consultants and City's QC reviews will occur concurrently in order to meet schedule.
- The design work included in this Task Order is for the study and design of one stormwater pump station and discharge system serving the George Street drainage area. Additions to the scope will require an amendment to this Task Order.
- Only existing land use shall be used in the hydrologic/hydraulic evaluation of the study area as it is a mature development.
- Assumptions about ponding into lots/parcels will be made on each block.
- The design will be based on the federal, state and local codes and standards in effect at the start of the project. Any changes in these codes may necessitate a change in scope.
- The design documents will be prepared for a single construction contract.
- Attachment B lists the anticipated design drawings to be included in the contract documents.
- Geotechnical report will be delivered as one single report for both task orders 1-09 STM and task order 2-09 STM.
- No land costs shall be included in cost estimating for the project. It will be assumed that all projects can be located in City rights of way.
- Legal, easement, or plat survey or acquisitions will be the responsibility of CITY, it is assumed that the City will acquire an easement from Monroe County School District for the stormwater pump station site.
- The CITY will pay for all permit application fees.
- Concepts will be frozen at the end of each design phase and any redesigns after those points will be additional services.
- LiDAR surveys will be available for base maps and modeling.
- Pre-permitting meetings will occur at the end of the report phase (Task A)
- All field investigations, data gathering, QC reviews, meetings and other activities shall be scheduled to occur concurrently with task Order 1-09 STM in order to minimize travel and duplication of efforts.
- Consultant assumes permitting activities can be completed in 90 days. If major design changes are required based on revised permitting requirements additional funds may be required.
- The City will coordinate and implement all Public involvement and FEMA activities.

- This Task Order 1-09 STM shall be approved and work shall be started concurrently with Task Oder 2-09 STM so that similar work activities on each project may be performed at the same time.

Obligations of the CITY

To assist meeting schedule and budget estimates contained in this proposal, the CITY will provide the following:

- The City will modify the current FEMA grant, scope of work to include a permanent stand-by generator and modifications to collection system (as required by modeling) and the deletion of two (2) 90 foot injection wells.
- The CITY will obtain aerial LiDAR survey from state.
- Prompt review and comment on all deliverables. Review comments shall be submitted back to the Consultant within one week of deliverable.
- Facilitate access to any required facilities.
- Attendance of key personnel at meeting as requested.
- Payment of all permit application fees.
- City will assist in obtaining specific information from affected parties; else typical values will be used.
- Obtain easement from Monroe County School District for stormwater pump station and generator.
- Detailed surveying is being performed for the design portion only.
- CITY to provide existing topographic maps, data or existing subsurface investigation information , home flooding complaints, maintenance or recent changes to the drainage pipes in the basin, or other relevant supporting information required to construct a damage and remedial assessment report.
- The City will coordinate and implement all Public involvement and FEMA activities.
- Task Order 1-09 STM and Task Order 2-09 STM shall be approved concurrently.

Additional Services

The ENGINEER will, as directed, provide additional services that are related to the project but not included within this Scope of Services. These and other services can be provided, if desired by the CITY, as an amendment to the Task Order. Work will begin for the Additional Services after receipt of a written notice to proceed from the CITY. Additional services may include, but are not limited to, the following:

- Additional data collection
- Additional design services if requested by the City
- Bid or construction phase services
- Additional permitting involving agencies other than the those listed under Task C

Compensation

The estimated compensation for TASK ORDER NO. 2-09 STM is shown on Attachment A entitled TASK ORDER NO. 2-09 STM, COMPENSATION.

Attachment A
COMPENSATION

TASK ORDER 2-09 STM COMPENSATION

Engineering Services for the Study, Design and Permitting of a Stormwater Pump Station and Outfall System for the George Street Drainage Area

Task	Hours	Labor	Expenses	Total Cost
Task A - Hydrologic Evaluation and Report	473	\$52,471	\$3,250	\$55,721
Task B - Design	1813	\$221,638	\$11,710	\$233,348
Task C - Permitting	172	\$20,202	\$2,550	\$22,752
Total	2458	\$294,311	\$17,510	\$311,821

COMPENSATION BREAKDOWN						
Task Order 2-09 STM						
TASK NO.	TASK DESCRIPTION	HOURLY RATE	TOTAL HOURS	LABOR	EXPENSES	TOTAL COST
A Hydraulic Evaluation and Report						
	Principal PM/Technologist	\$ 177.00	11	\$1,947		\$1,947
	Sr. Project Manager	\$ 163.00	32	\$5,216		\$5,216
	Project Manager	\$ 153.00	20	\$3,060		\$3,060
	Project Engineer	\$ 126.00	112	\$14,112		\$14,112
	Associate Engineer	\$ 113.00	66	\$7,458		\$7,458
	Staff Engineer	\$ 101.00	142	\$14,342		\$14,342
	Tech 5	\$ 113.00	0	\$0		\$0
	Tech 4	\$ 96.00	0	\$0		\$0
	Tech 3	\$ 76.00	54	\$4,104		\$4,104
	Editor	\$ 87.00	6	\$522		\$522
	Clerical	\$ 57.00	30	\$1,710		\$1,710
	TRAVEL (3) - 2 Day trips to KWF				\$2,850	\$2,850
	PRINTING/REPROGRAPHICS/PHONE				\$400	\$400
Hydraulic Evaluation and Report SUBTOTAL			473	\$52,471	\$3,250	\$55,721
B Design						
	Principal PM/Technologist	\$ 177.00	186	\$32,922		\$32,922
	Sr. Project Manager	\$ 163.00	166	\$27,058		\$27,058
	Project Manager	\$ 153.00	218	\$33,354		\$33,354
	Project Engineer	\$ 126.00	284	\$35,784		\$35,784
	Associate Engineer	\$ 113.00	288	\$32,544		\$32,544
	Staff Engineer	\$ 101.00	24	\$2,424		\$2,424
	Tech 5	\$ 113.00	30	\$3,390		\$3,390
	Tech 4	\$ 96.00	423	\$40,608		\$40,608
	Tech 3	\$ 76.00	24	\$1,824		\$1,824
	Editor	\$ 87.00	68	\$5,916		\$5,916
	Clerical	\$ 57.00	102	\$5,814		\$5,814
	TRAVEL (2)-1 Week and (3)-2 Day trips to KWF				\$4,600	\$4,600
	Sub-Consultant				\$4,710	\$4,710
	PRINTING/REPROGRAPHICS/PHONE				\$2,400	\$2,400
Detailed Design SUBTOTAL			1813	\$221,638	\$11,710	\$233,348
C Permitting						
	Principal PM/Technologist	\$ 177.00	14	\$2,478		\$2,478
	Sr. Project Manager	\$ 163.00	0	\$0		\$0
	Project Manager	\$ 153.00	28	\$4,284		\$4,284
	Project Engineer	\$ 126.00	12	\$1,512		\$1,512
	Associate Engineer	\$ 113.00	72	\$8,136		\$8,136
	Staff Engineer	\$ 101.00	24	\$2,424		\$2,424
	Tech 3	\$ 76.00	6	\$456		\$456
	Technical Editor/Spec Processor	\$ 87.00	0	\$0		\$0
	Clerical	\$ 57.00	16	\$912		\$912
	(2) - 1 Day trip to Permitting Agency				\$2,000	\$2,000
	PRINTING/REPROGRAPHICS/PHONE				\$550	\$550
Permitting SUBTOTAL			172	\$20,202	\$2,550	\$22,752
PROJECT TOTALS						
	TOTAL HOURS		2,458			
	TOTAL FEE ESTIMATE			\$294,311	\$17,510	\$311,821

Attachment B
DRAWING LIST

TASK ORDER 2-09 STM DRAWING LIST

Engineering Services for the George Street Pump Station and Stormwater Outfall

General

1. Cover & Drawing Index

Civil

2. Civil Legend
3. Site Plan
4. George Street Connections Plan 7 Sections
5. Connection Details
6. Outfall Plan and Sections
7. Outfall Details
8. Revised Stormwater Piping on George Street
9. Piping Details
10. Sedimentation and Erosion Control
11. Erosion Control Details
12. Communication Tower Plan, Sections & Details
13. Fence Plan, Sections & Details
14. Civil Standard Details

Structural

15. Structural Legend
16. Pump Station Plan and Sections
17. Pump Station Details
18. Sediment Removal Structure Plan and Sections
19. Sediment Removal Structure Details
20. Generator Platform Plan and Sections
21. Platform Details
22. Stairs, Handrails Plan, Sections and Details
23. Standard Details

Process Mechanical

24. Mechanical Legend
25. Pump Station Piping Plan and Sections
26. Valve Vault Plan and Sections
27. Discharge Vault Plan, Sections and Details
28. Standard Details

Electrical

29. Electrical Legend
30. Site Plan and One-Line Diagram
31. Generator Plan and Details
32. Pump Station Control Panel
33. Standard Details
34. Standard Details

I&C

35. I&C Legend

36. Pump Station PID

37. SCADA Communications

38. Standard Details

39. Standard Details

Attachment C
SCHEDULE

