



WORK ORDER INITIATION FORM for the CITY OF CLEARWATER

Date: 05/15/2018

Project Number: _____

City Project Number: 18-0009 EN

1. PROJECT TITLE:

Cooper's Point Circulation Study

2. SCOPE OF SERVICES:

Atkins has prepared this proposal for the City of Clearwater (City) to support the City of Clearwater with the evaluation of the potential for improved ecological and recreational values of Cooper's Bayou, including potential improvement of seagrass growth.

The project area is at Cooper's Point which is north of Courtney Campbell Causeway on the west side of Old Tampa Bay. The Coopers Point Master Plan evaluates several options for improving the ecological and recreational values of Coopers Bayou, including a widened culvert and kayak/canoe path under Damascus Road, cleaning out/widening mosquito ditches, and a large tidal-flushing culvert under the Courtney Campbell Causeway. Atkins coastal engineers will evaluate several alternatives to enhance tidal flushing, in tandem with Atkins environmental scientists to determine anticipated ecological benefits. Atkins coastal engineers will perform a flushing analysis of the Bayou and surrounding areas using a state-of-the-art coastal circulation model (Delft3D). The environmental evaluation will consist of two basic assessments: the ecological value of existing conditions, and the anticipated ecological improvements associated with the recommended alternative for enhanced tidal flushing. Each scenario will be evaluated qualitatively as well as quantitatively via the Uniform Mitigation Assessment Method (UMAM) to determine mitigation value to compensate for other regional seagrass and/or mangrove impacts. The environmental evaluation will also include analysis of the regulatory rules and criteria, including permissibility and strategy to best assure environmental agencies' approval.

The proposed scope of work for this Work Order is as follows:

1.0 Project Management, Coordination & Meetings, QA/QC: Atkins will assign a Project Manager to manage the technical tasks, communicate, and coordinate with the City staff and others. Atkins' Project Manager will be responsible for overall client satisfaction in all aspects of this Work Order including the schedule, deliverables, and quality control.

2.0 Existing Data Review and Compilation Atkins will compile and review existing data for the purposes of assessing the existing conditions of Cooper's Bayou. These data in combination with hydrodynamic modeling will correlate hydrological flushing with ecological value, as a baseline with which to estimate the potential ecological value of potential restoration and/or enhancement opportunities. The data synthesis and analysis will include the following:

- Obtain and review seagrass and mangrove coverage, species composition and density from TBEP, Hillsborough County EPC, City of Clearwater, SWFWMD, and existing permits (e.g. Easter Mitigation Bank, permits and applications for previous restoration projects)
- Review of historic aerials to determine historic conditions, including (if available) pre-Causeway conditions
- Potential areas for seagrass expansion based on sediment conditions (seagrass presence/absence based on sediment data from TBEP, EPC, etc.)
- Coordination with coastal modeling to evaluate relationship between tidal flushing and the coverage, species and density of seagrass and mangroves
- Effect of *Pyrodinium* on seagrass coverage and density, per literature and data review

Deliverables

Atkins will provide a technical memorandum to synthesize the existing data available described above.

3.0 Hydrodynamic Modeling: A nested grid modeling approach will be employed, with an existing regional-scale model representing all of Tampa Bay being used to generate boundary conditions for a local, high-resolution model of Cooper's Bayou and western Old Tampa Bay. This nested model framework allows for Gulf-to-Bay circulation processes to be represented in the model, while saving most of the computational expense for the area of interest. The local, high-resolution model will include the western portion of Old Tampa Bay (extending both north and south of the Courtney Campbell Causeway) and Cooper's Bayou, with sufficient resolution provided to simulate flow through the mosquito ditches in the southern portion of the Bayou.

To the extent possible, model data from previous studies of Cooper's Bayou and surrounding areas will be leveraged for this project. This includes, but is not limited to: bathymetric and topographic data, existing structure locations, dimensions and invert elevations, model validation data and physical parameters, stormwater inflows, etc. It's assumed that this data is sufficiently accurate to support the proposed flushing analysis and will be carried forward as appropriate.

Up to five (5) potential alternatives will be evaluated, with the model setup adjusted to conceptually represent the hypothetical elements for each alternative (channel dimensions, inlet opening, etc.). Each alternative will be selected through coordination with Atkins' team of scientists/engineers and City staff. It is likely that this will be an iterative process, with model results for one alternative informing the conceptual elements of subsequent alternatives. Each conceptual alternative will be simulated using typical astronomic tide and stormwater inflows as defined in previous studies (additional stormwater modeling will not be performed as part of this task). Extreme event scenarios will not be considered part of this scope of work. In the end, each conceptual alternative will be evaluated in terms of improved residence times and the associated potential for improved seagrass growth within Cooper's Bayou.

Assumptions/Limitations

- Data available from previous model studies of Cooper's Bayou and surrounding areas is sufficiently accurate to support the proposed flushing analysis described above.

- Up to 5 alternatives will be evaluated as part of this analysis,
- The modeling proposed herein does not consider the long-term erosion/deposition of sediments as a result of project impacts. Sediment transport potential can be evaluated as part of the permitting phase if necessary for permit.
- Each alternative will be simulated for typical tide and inflow conditions; extreme event scenarios are not considered part of this scope.
- Additional stormwater modeling/analysis will not be performed as part of this effort.

Deliverables

- A Cooper's Point hydraulic model to analyze circulation possibilities in Cooper's Bayou (including input/output files).
- Technical memorandum that summarizes the master plan model update and relevant results

4.0 Permitting Feasibility Assessment / Agency Coordination: Atkins will conduct conference calls and/or pre-application meetings with the SWFWMD, NMFS, USACE, and TBEP to determine permissibility of restoration options identified in collaboration with Atkins modelers. This permitting feasibility assessment will include applicable permit mechanisms, permitting timeframes and associated fees.

5.0 Report: Atkins will compile the data obtained and analyzed including the meetings with applicable permitting agencies to synthesize a recommended approach for Cooper's Bayou. Specifically, the report will provide documentation of the results analyzed as part of the alternatives analysis portion of this work order (Task 3.0 – Hydrodynamic Modeling) in correlation with the potential growth of seagrass. The report will include an overall permitting strategy to best assure environmental agencies' approval.

3. PROJECT GOALS:

The goal of this Work Order is to provide an evaluation of several alternatives to enhance tidal flushing within Cooper's Bayou in order to improve the ecological and recreational values of the bayou, as well as potential improvement of seagrass growth.

4. BUDGET:

See Attachment "B"

This price includes all labor and expenses anticipated to be incurred by Atkins for the completion of these tasks in accordance with Professional Services Method "B" – Lump Sum – Percentage of Completion by Task, **for a fee not to exceed** One hundred fifteen thousand seven dollars (\$115,007).

5. SCHEDULE:

Atkins will submit the report for the Cooper's Point Circulation study within 6 months from the notice to proceed.

6. STAFF ASSIGNMENT (Consultant):

Atkins Team's Key Staff:

Daniel Parsons, PE, CFM, ENV SP

Project Manager

Shayne Paynter, PhD, PE, PG
Todd DeMunda, PE
David Loy

Senior Engineer
Senior Engineer
Senior Scientist

7. CORRESPONDENCE/REPORTING PROCEDURES:

ENGINEER's project correspondence shall be directed to:

Daniel Parsons, PE, CFM, ENV SP (813) 281-4856, daniel.parsons2@atkinsglobal.com

All City project correspondence shall be directed to:

Sarah Kessler, CFM (727) 562-4897, sarah.kessler@myclearwater.com with copies to others as may be appropriate.

8. INVOICING/FUNDING PROCEDURES:

For work performed, invoices shall be submitted monthly to the:

City of Clearwater, Engineering Department
Attention: Veronica Josef, Senior Staff Assistant
PO Box 4748
Clearwater, Florida 33758-4748

City Invoicing Code: ENST180005-STDY-PROSVC

9. INVOICING PROCEEDURES

At a minimum, in addition to the invoice amount(s) the following information shall be provided on all invoices submitted on the Work Order:

- A. Purchase Order Number and Contract Amount.
- B. The time period (begin and end date) covered by the invoice.
- C. A short narrative summary of activities completed in the time period
- D. Contract billing method – Lump Sum or Cost Times Multiplier
- E. If Lump Sum, the percent completion, amount due, previous amount earned and total earned to date for all tasks (direct costs, if any, shall be included in lump sum amount).
- F. If Cost Times Multiplier, hours, hourly rates, names of individuals being billed, amount due, previous amount earned, total earned to date for each task and other direct costs (receipts will be required for any single item with a cost of \$50 or greater or cumulative monthly expenses greater than \$100).
- G. If the Work Order is funded by multiple funding codes, an itemization of tasks and invoice amounts by funding code.

10. SPECIAL CONSIDERATIONS:

The consultant named above is required to comply with Section 119.0701, Florida Statutes (2013) where applicable.

PREPARED BY:

**Charlotte Maddox, PE
Vice President
Atkins North America**

Date

APPROVED BY:

**D. Scott Rice, PE
City Engineer
City of Clearwater**

Date



CITY OF CLEARWATER ENGINEERING DEPARTMENT

WORK ORDER INITIATION FORM CITY DELIVERABLES

1. FORMAT

The design plans shall be compiled utilizing the following methods:

1. City of Clearwater CAD standards.
2. Datum: Horizontal and Vertical datum shall be referenced to North American Vertical Datum of 1988 (vertical) and North American Datum of 1983/90 (horizontal). The unit of measurement shall be the United States Foot. Any deviation from this datum will not be accepted unless reviewed by City of Clearwater Engineering/Geographic Technology Division.

2. DELIVERABLES

The design plans shall be produced on bond material, 24" x 36" at a scale of 1" = 20' unless approved otherwise. Upon completion the consultant shall deliver all drawing files in digital format with all project data in Autodesk Civil 3D file format. If not available Land Desktop files are still acceptable, however the City or Clearwater is currently phasing out Land Desktop.

NOTE: If approved deviation from Clearwater CAD standards are used the Consultant shall include all necessary information to aid in manipulating the drawings including either PCP, CTB file or pen schedule for plotting. The drawing file shall include only authorized fonts, shapes, line types or other attributes contained in the standard release of Autodesk, Inc. software. All block references and references contained within the drawing file shall be included. Please address any questions regarding format to Mr. Tom Mahony, at (727) 562 4762 or email address Tom.Mahony@myClearwater.com.

All electronic files (CAD and Specification files) must be delivered upon completion of project or with 100% plan submittal to City of Clearwater.

Cooper's Point Master Plan – Conveyance Improvements



**WORK ORDER INITIATION FORM
PROJECT BUDGET**

Task	Description	Subconsultant Services	Labor	Total
1.0	Project Management, Coordination & Meetings, QA/QC		\$15,240	\$15,240
2.0	Existing Data Review & Compilation		\$21,036	\$21,036
3.0	Hydrodynamic Modeling		\$50,322	\$50,322
4.0	Permitting Feasibility Assessment / Agency Coordination		\$10,328	\$10,328
5.0	Report		\$18,081	\$18,081
			Grand Total	\$115,007