

## City of Palm Coast, Florida Agenda Item

**Agenda Date:** June 16, 2026

**Agenda Item:** G.5

<p><b>Department</b> STORMWATER AND ENGINEERING  <b>Division</b> CONSTRUCTION MGT AND ENGINEERING</p>	<p><b>Amount</b> \$142,834.00  <b>Org/Account #</b> 54205509-063000-SW55011</p>
<p><b>Subject:</b> RESOLUTION 2026-XX APPROVING A WORK ORDER WITH FREESE AND NICHOLS FOR THE LEHIGH CANAL EXTENSION FEASIBILITY STUDY</p>	
<p><b>Presenter:</b> Carmelo Morales, Stormwater Engineer</p>	
<p><b>Attachments:</b></p> <ul style="list-style-type: none"> <li>1. Resolution</li> <li>2. WO Scope</li> </ul>	
<p><b>Background:</b></p> <p>Staff recommend initiating a feasibility study for the Lehigh Canal Diversion project. Currently, the Lehigh Canal terminates abruptly, causing stormwater to discharge into a marsh area. This water then flows downstream to a constriction point at Colvert West before ultimately discharging into the Matanzas River. This configuration presents challenges in stormwater management and flow efficiency. The city has an existing ICPR 1D-only model and is seeking to evaluate the feasibility of extending the canal. The proposed extension would allow the canal to discharge through Marina de Palma and into the Matanzas River further downstream, potentially improving water flow and reducing flood risks.</p> <p>Under the existing contract RFSQ-SWE-24-12, staff negotiated a scope and fee not-to-exceed \$142,834.00 for a feasibility study of the Lehigh Canal Expansion. City staff have determined that the cost for the services is reasonable and fair and is consistent with these types of services for a project of this size and scope.</p> <p>Funds for this project are budgeted for out of the FY 2026 Stormwater Engineering Fund.</p> <p><b>Source of Funds Worksheet</b>  Original Budget: \$13,478,841.00  Total Expended/Encumbered to Date: \$9,796,200.25  Pending Work Orders.Contracts:  Current (WO/Contract): \$142,834.00  Balance: \$3,539,806.75</p>	

**Recommended Action:**

**ADOPT RESOLUTION 2026-XX APPROVING A WORK ORDER WITH FREESE AND NICHOLS FOR THE LEHIGH CANAL EXTENSION FEASIBILITY STUDY**

**RESOLUTION 2026-\_\_**  
**LEHIGH CANAL EXTENSION FEASIBILITY STUDY**

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PALM COAST, FLORIDA APPROVING A WORK ORDER WITH FREESE AND NICHOLS FOR THE LEHIGH CANAL EXTENSION FEASIBILITY STUDY; AUTHORIZING THE CITY MANAGER, OR DESIGNEE, TO EXECUTE THE NECESSARY DOCUMENTS; PROVIDING FOR FUTURE AMENDMENTS, PROVIDING FOR SEVERABILITY, PROVIDING FOR CONFLICTS; PROVIDING FOR IMPLEMENTING ACTIONS AND PROVIDING FOR AN EFFECTIVE DATE.**

**WHEREAS**, the City of Palm Coast desires to utilize Freese and Nichols for a feasibility study of the Lehigh Canal Extension project; and

**WHEREAS**, Freese and Nichols desire to provide engineering services for an evaluation and feasibility study of the above-mentioned project; and

**WHEREAS**, City Council desires to approve above-mentioned services for the above-mentioned project; and

**WHEREAS**, in accordance with Chapter 2, Article 1, Division 3 – Purchase and Contractual Services Sections, 2-26- Approval Requirements- Subsection A, City Council desires to grant authority for the City Manager to enter into or increase any necessary contracts including those that are equal to or exceed \$100,000 associated with the expenses related to the above-mentioned services.

**NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF PALM COAST, FLORIDA, AS FOLLOWS:**

**SECTION 1. LEGISLATIVE AND ADMINISTRATIVE FINDINGS.** The above recitals (whereas clauses) are hereby adopted as the findings of the City Council of the City of Palm Coast.

**SECTION 2. APPROVAL OF A WORK ORDER.** The City Council of the City of Palm Coast hereby approves the terms and conditions of a work order with Freese and Nichols for the Lehigh Canal Extension Feasibility Study as attached hereto and incorporated herein by reference as Exhibit “A.”

**SECTION 3. AUTHORIZATION TO NEGOTIATE, FINALIZE AND EXECUTE.** The City Manager, or designee, is hereby authorized to execute the necessary documents.

**SECTION 4. FUTURE AMENDMENTS.** The City Manager, or designee is hereby authorized to approve any future amendment to Contract Agreements for changes totaling less than \$100,000.00 as long as this amount does not exceed the line-item limit for the budgeted purchase. Further, the City Manager has the authority to execute amendments to the Contract Agreements on behalf of the City for any other changes that may be necessary.

**SECTION 5. SEVERABILITY.** If any section or portion of a section of this Resolution proves to be invalid, unlawful, or unconstitutional, it shall not be held to invalidate or impair the validity, force, or effect of any other section or part of this Resolution.

**SECTION 6. CONFLICTS.** All resolutions or parts of resolutions in conflict with any of the provisions of this Resolution are hereby repealed.

**SECTION 7. IMPLEMENTING ACTIONS.** The City Manager is hereby authorized to take any actions necessary to implement the action taken in this Resolution.

**SECTION 8. EFFECTIVE DATE.** This Resolution shall take effect immediately upon adoption by the City Council.

**DULY PASSED AND ADOPTED** by the City Council of the City of Palm Coast, Florida, on this 16<sup>th</sup> day of June 2026.

ATTEST:

CITY OF PALM COAST

\_\_\_\_\_  
KALEY COOK, CITY CLERK

\_\_\_\_\_  
MICHAEL NORRIS, MAYOR

APPROVED AS TO FORM AND LEGALITY

\_\_\_\_\_  
MARCUS DUFFY, CITY ATTORNEY

Attachment: Exhibit "A" Work Order

May 13<sup>th</sup>, 2026

Carmelo Morales, P.E., C.F.M  
 City of Palm Coast  
 160 Lake Avenue  
 Palm Coast, FL 32164



**CITY OF PALM COAST**  
**LEHIGH CANAL EXPANSION FEASIBILITY STUDY PROPOSAL**

**1. PROJECT BACKGROUND**

The City of Palm Coast is initiating a feasibility study for the Lehigh Canal Diversion project. Currently, the Lehigh Canal terminates abruptly, causing stormwater to discharge into a marsh area. This water then flows downstream to a constriction point at Colvert West before ultimately discharging into the Matanzas River. This configuration presents challenges in stormwater management and flow efficiency. The City has an existing ICPR 1D-only model and is seeking to evaluate the feasibility of extending the canal. The proposed extension would allow the canal to discharge through Marina de Palma and into the Matanzas River further downstream, potentially improving water flow and reducing flood risks.

**2. INTRODUCTION TO THE APPROACH**

Freese and Nichols will undertake a comprehensive feasibility study to assess the viability of the Lehigh Canal Expansion. The study will leverage the existing ICPR 1D model to simulate current and proposed conditions. The approach will include data collection, hydrologic and hydraulic modeling, evaluation of environmental and regulatory constraints, and stakeholder engagement. The goal is to provide the City with a clear understanding of the potential benefits, challenges, and costs associated with the canal extension.

A breakdown of the tasks that FNI will conduct as part of this project is shown in **Table 1**. Details of each task are included in the following sections.

**Table 1: Project Tasks**

TASK	DESCRIPTION
<b>1</b>	Project Management
<b>2</b>	Data Collection
<b>3</b>	Existing Conditions Hydrologic and Hydraulic Analysis
<b>4</b>	Proposed Conditions Hydrologic and Hydraulic Analysis
<b>5</b>	Capital Project Opinion of Probable Cost
<b>6</b>	Documentation

## **TASK 1 | PROJECT MANAGEMENT**

1. Project Kick-Off Meetings - FNI will conduct a project kickoff meeting with the City to review project scope, schedule, and critical milestones. This meeting will be in-person with a virtual option. FNI will provide the City with a data request memorandum listing data and information received to date and identifying data needs. FNI will also hold a similar project kickoff meeting internal for the project team to review project scope, schedule, and critical milestones.
2. Overall Project Management - FNI Project Manager (PM) will provide overall project management of the project throughout including file management, scheduling management, financial management as well as team coordination and monthly client updates. The PM will schedule and coordinate all necessary meetings both internally and client-related. Subconsultant management will also be provided with this task should it become necessary as part of this contract. The task will run continuously throughout the project life cycle.
3. Project Communication - Throughout the project, monthly status reports will be submitted with invoices that summarize the progress and document upcoming tasks. The monthly status updates will outline any upcoming key decisions that require input from our discussion with the City staff.

## **TASK 2 | DATA COLLECTION**

FNI will coordinate with City staff on obtaining data required for the development of the feasibility analysis. The following information will be gathered and analyzed during this project task:

1. Site Visit – Visit site to observe existing conditions and to ground-truth the City GIS data and other information provided by the City of Palm Coast.
2. Gather existing GIS information from City of Palm Coast/LiDAR data/open-source data.
3. Gather proposed/existing site development information within the project limits.
4. Field verification on the existing infrastructure of the Lehigh Canal to the extent possible via sight observations and limited field measurements. (No formal survey is included within this proposal).

## **TASK 3 | EXISTING CONDITIONS HYDROLOGIC AND HYDRAULIC ANALYSIS**

1. Existing Conditions
  - a. Develop project boundary based on topographic information and data collection noted above.
  - b. Create a truncated 2D ICPR hydraulic model of the project area leveraging elements from the City-wide 1D model.
  - c. Generate flow hydrographs from the City-wide model at key locations to establish

- the 2D model's boundary conditions.
- d. Establish tailwater conditions for the existing system at Colbert Ln crossing.
  - e. Include other pertinent existing 1D components in project area (pipes/culverts, drop structures), utilizing 1D node interfaces where mesh is to interact with 1D components not already associated with the channel control volumes.
  - f. Execute model for the 10-, 25-, 100-, and 500-yr storm events.
  - g. Document existing conditions results, including observed flow restrictions and the existing level of service.

#### **TASK 4 | PROPOSED CONDITIONS HYDROLOGIC AND HYDRAULIC ANALYSIS**

1. Proposed Conditions
  - a. Evaluate (3) configurations for canal extension within the proposed right-of-way using the newly created 2D ICPR model.
  - b. Execute model for the 10-, 25-, 100-, and 500-yr storm events.
  - c. Assess impact on existing flow conditions and identify potential mitigation option for each alternative.
  - d. Conduct a desktop-based preliminary assessment to identify environmental constraints and permitting requirements.
  - e. Present results to City of Palm Coast and gather feedback.
  - f. Update city-wide 1D model with the final recommended configuration.
  - g. Execute and troubleshoot city-wide 1D ICPR model.

#### **TASK 5 | CAPITAL PROJECT OPINION OF PROBABLE COST**

Once the alternative analysis project concepts have been completed, FNI will provide a concept-level Opinion of Probable Cost (OPCC) for the recommended project configuration.

#### **TASK 6 | DOCUMENTATION**

FNI will document Tasks 1 – 5 to summarize the modeling efforts, results, and analysis for the existing conditions for the drainage basin. FNI will then identify possible solutions to address these concerns based on the results of the post-condition modeling efforts. The three configurations will be described and the final recommended configuration will be further analyzed. An OPCC will be created for the recommended configuration. This will be summarized in a Technical Memorandum (TM) outlining the findings.

**ADDITIONAL SERVICES:** Any services performed by FNI that are not included in the services described above are considered Additional Services. Additional Services will only be performed if requested and authorized by the City as set forth in the Continuing Contracts Agreement.

#### **SCHEDULE:**

FNI is authorized to commence work on the Project upon execution of this Task Order and estimates the work included in this task order will be completed in accordance with schedule shown in **Table 2**.

**Table 2: Project Schedule**

Task	Description	Calendar Days
Task 1	Project Management	Ongoing throughout the project
Task 2	Data Collection	30 Days from the kick-off meeting with City's staff and receipt of all existing data
Task 3	Existing Conditions Hydrologic and Hydraulic Analysis	60 Days from completion of Task 2
Task 4	Proposed Conditions Hydrologic and Hydraulic Analysis	45 Days from completion of Task 3
Task 5	Capital Project Opinion of Probable Cost	45 Days from completion of Task 4
Task 6	Documentation	30 Days from completion of Task 5

**COMPENSATION:**

For performance of the services described in this Scope of Services, the City will compensate FNI in the lump sum amount of **\$142,834.00** for Tasks 1 through 6 as shown in **Table 3**. FNI will be paid for services performed per task as set forth herein, covering the work-in-progress expressed as a percentage of the total cost of the service and work required for each task involved.

**Table 3: Compensation for Basic Services**

Task No.	Description	LS Fee
<b>1</b>	Project Management	<b>\$22,808.00</b>
<b>2</b>	Data Collection	<b>\$12,582.00</b>
<b>3</b>	Existing Conditions Hydrologic and Hydraulic Analysis	<b>\$27,254.00</b>
<b>4</b>	Proposed Conditions Hydrologic and Hydraulic Analysis	<b>\$49,368.00</b>
<b>5</b>	Capital Project Opinion of Probable Cost	<b>\$ 8,014.00</b>
<b>6</b>	Documentation	<b>\$22,808.00</b>
<b>Lump Sum Total</b>		<b>\$142,834.00</b>