

**CCNA 2018 WORK ORDER 09**

**North County Inline Pump Station Evaluation**

This Work Order Number 09 is entered into as of this \_\_\_\_ day of \_\_\_\_\_, 202\_\_, pursuant to that certain Continuing Consulting Engineering Services Agreement for Professional Services entered into as of this 17<sup>th</sup> day of April, 2018 (collectively referred to as the "Agreement") and amended and renewed on the 18<sup>th</sup> day of May, 2021, by and between INDIAN RIVER COUNTY, a political subdivision of the State of Florida ("COUNTY") and Atkins ("Consultant").

The COUNTY has selected the Consultant to perform the professional services set forth on Exhibit A (Scope of Work) attached to this Work Order and made part hereof by this reference. The professional services will be performed by the Consultant for the fee schedule set forth in Exhibit B (Fee Schedule), attached to this Work Order and made a part hereof by this reference. The Consultant will perform the professional services within the timeframe more particularly set forth in Exhibit C (Time Schedule), attached to this Work Order all in accordance with the terms and provisions set forth in the Agreement. Pursuant to Paragraph 1.4 of the Agreement, nothing contained in any Work Order shall conflict with the terms of the Agreement and the terms of the Agreement shall be deemed to be incorporated in each individual Work Order as if fully set forth herein.

IN WITNESS WHEREOF, the parties hereto have executed this Work Order as of the date first written above.

**CONSULTANT:**

**BOARD OF COUNTY COMMISSIONERS  
OF INDIAN RIVER COUNTY**

By: \_\_\_\_\_

By: \_\_\_\_\_

**Joseph H. Earman, Chairman**

Print Name: Chris Rader, PE

Title: Sr. Division Manager

BCC Approved Date: \_\_\_\_\_

**Attest: Jeffrey R. Smith, Clerk of Court and Comptroller**

By: \_\_\_\_\_

**Deputy Clerk**

Approved: \_\_\_\_\_

**Michael C. Zito, Interim County Administrator**

Approved as to form and legal sufficiency: \_\_\_\_\_

**Dylan T. Reingold, County Attorney**

**EXHIBIT A**  
**INDIAN RIVER COUNTY UTILITIES DEPARTMENT**  
**WORK ORDER No. 9**  
**SCOPE OF SERVICES**  
**North County Inline Pump Station Evaluation**  
**IRCDUS PID 21-23010**

**Background**

Increases in current and anticipated future growth in the north end of the County’s service area have resulted in the need to address the replacement of the master lift station for this area, Lift Station 203. In October 2022, Indian River County Department of Utility Services (IRC) requested that Atkins provide technical services to evaluate the option of replacing the existing master pump station, Lift Station 203, with an above-ground booster pump station, Capital Improvement Project Identification Number (PID) 21-23010. Lift Station 203 is located at the decommissioned North Wastewater Treatment Facility (WWTF) and consists of two submersible pumps located in the equalization tank that was part of the abandoned North WWTF. The equalization tank is open to atmosphere, causing major odor issues, and there is concern about the structural integrity of the concrete tank. For these reasons, Lift Station 203 is considered unsuitable for expansion or rehabilitation. Figure 1 shows the existing pump station and tank configuration.



Figure 1. Lift Station 203 at the North WWTF

IRC would like to replace the deteriorating existing pump station with an in-line above-grade wastewater pump station similar to the configuration of IRC’s Lift Station 89. The new pump station will address the increase in pump station capacity as well as the odor issues associated with the current pump station.

Lift Station 203 functions as a master pump station, collecting flows from three areas. From the north, there are 59 lift stations that feed into a 24” force main which reduces to a 12” force main

just north of the EQ tank (to take advantage of an existing pipe at the abandoned North WWTF). The next area sending flow is a lift station located at the IRC's North Water Treatment Plant that transfers waste through a 6" force main that connects to the 12" force main just ahead of the EQ tank. From the west, flows from Fellsmere and SR 510 feed into a 12" force main that empties directly into the EQ tank. The total flow into the EQ tank is approximately 2 million gallons per day (mgd). Lift Station 203 transfers this wastewater directly to IRC's Central Wastewater Treatment Facility (WWTF).

The Atkins team will assist IRC Staff in the review of the hydraulics of the existing collection system, verify the design criteria for the master pump station, and determining a location best suited for efficient operations and maintenance of the facility. The results of the activities will be discussed in a series of Workshops with a goal of finalizing the path forward for meeting the requirements for the pump station.

## Scope of Services

This Scope of Services is for technical services associated with determining the replacement options for Lift Station 203. Upon Notice to Proceed, the Atkins Team will provide professional services associated with the investigation into replacement options, culminating in a series of Workshops to document the recommendations and decision processes.

### Task 01 Project Management

This task consists of overall management of the Project including contract administration, budget management, invoicing, monthly status reports, project scheduling, facilitating and coordinating internal design meetings, and coordination with the Atkins's subconsultants. It is anticipated that Atkins will facilitate three in-person meetings with Staff to conduct field visits, review draft concepts and to receive review comments. In addition, the Atkins Team will facilitate up to four monthly project progress meetings with the County, including scheduling, preparing agendas and distributing meeting minutes.

*Deliverables:* Invoices, meeting and Workshop coordination, facilitation of meetings and Workshops, meeting agendas and summaries.

### Task 02 Data Collection

The Atkins Team will collect and review data and information provided by the County for the work to be completed and request any information that may be missing. Any information provided by IRC in hard copy will be scanned for project use. The hard copy along with an electronic version will be returned to the County for their records. A summary of the anticipated data is listed below.

- Existing In-Line Booster Station As-Builts, including wetwell and float settings
- Existing Pump O&M Manuals, including pump curves
- Existing Force Main As-Builts
- Roadways and Utility Data in Proximity

- New infrastructure added since the 2015 Wastewater Hydraulic Model update, including pipe and valves
- GIS shapefiles of the collection system
- Projected wastewater flows that are anticipated in the LS 203 basin such as planned unit developments, commercial/industrial developments and/or populations projections.
- New lift station operations (pumps on/off)
- Previous Geotechnical Reports, Condition Assessments, or other studies performed within the abandoned North WWTF site.
- Operational SCADA data for all lift stations in Lift Station 203 basin showing pumping start times, durations, and flow rates (15-minute intervals).

*Deliverables:* Data request memo.

### **Task 03 Hydraulic Evaluation**

The hydraulic model of the existing collection system will be updated to the latest software version and any new lift stations and piping will be added. Existing flows will be updated in the model based on geocoded water demands, pump station flows, and influent flows at the Central WWTF. Current peaking factors will be determined through evaluation of SCADA data. Future flows through 2045 for Lift Station 203 will be determined by review of anticipated future development and anticipated land use plans.

The results of the modeling effort will be summarized and presented in a Workshop with the County for verification of results with actual field operations. Following the meeting, the model will be updated to address County comments. The model will then be utilized to determine the anticipated range of flows and pressures required for the new pump station. System curves will be created for use in pump selection. Along with Workshop meeting notes, tables and figures summarizing the results from the finalized model will be submitted to the County for their records.

*Deliverables:* Workshop with County Staff to discuss and verify the results of the updated model. Workshop summary, including final model tables and figures.

### **Task 04 Equipment Selection and Operations**

The Atkins Team will utilize the results of the hydraulic model to determine the capacity of the proposed lift station and determine if an emergency wet weather bypass system is required. To meet the anticipated need for bypass during extreme weather, a bypass to the equalization tank has been considered. Pending hydraulic model results, the volume and frequency of bypass operations will be better understood and the potential operations for bypass and recovery can be addressed. Atkins will facilitate a Workshop to discuss options with County Staff and finalize pump station operations. The results of the Workshop will be documented in a meeting summary. Atkins will contact pump vendors to discuss the intended

operation of the pumps and verify pump, motor and drive selections. Preliminary Cost Proposals from vendors will be requested and provided to the County

*Deliverables:* Workshop with the County to review pump station design criteria, including bypass capacity and operations. Workshop summary and vendor cost proposals.

**Task 05 Pump Station Siting and Preliminary Layout**

Atkins will determine pump station components, including booster pumps, drive types, piping configurations, backup generator and fuel tank, and control room based on the decisions made at the Pump Operations Workshop. Atkins will review options for utilizing portions of the abandoned North WWTF to house components of the pump station such as the electrical room and control room. A draft layout will be discussed with IRC Staff in a virtual meeting prior to creating a preliminary site plan that includes the proposed yard piping, new pump station and associated components including bypass operations. A conceptual site plan will be submitted to the County via email.

*Deliverables:* Submittal of a draft conceptual site plan, followed by a virtual meeting to discuss County comments. An updated site plan will be submitted to the County via email.

## Deliverables

Task	Deliverable
1	Invoices, Status Reports, Meeting Agendas and Summaries
2	Data Request Memo
3	Hydraulic Model Workshop Presentation and Meeting Summary
4	Pump Station Operations Workshop Presentation and Meeting Summary
5	Draft Preliminary Site Plan and Review Meeting Agenda and Summary

## Schedule

The anticipated schedule shown below is based on the weeks after the formal issuance of the signed Work Order and a Notice to Proceed by the County:

Task	Duration from NTP
Project Kick-Off Meeting and Site Visit	2 weeks
Begin Data Collection	2 weeks
Hydraulic Modeling Workshop	8 weeks
Pump Station Operations Workshop	10 weeks
Draft Preliminary Site Plan Virtual Meeting	12 weeks
Finalize Site Plan	16 weeks

## Quality Control

Atkins will be responsible for the professional quality of all deliverables. This shall include an internal Quality Assurance Plan that, as a minimum, provides review of all deliverables and significant calculations by another qualified professional that was not responsible for preparing the deliverable or calculation.

## Assumptions

The following assumptions have been made in the development of this scope of work, schedule, and fee:

### General

- No survey or geotechnical services are required as part of this conceptual design.
- The record drawings, “as-builts,” calculations, operational data, and information pipeline, booster station and I&C system are available and will be furnished to Atkins.
- 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 drawings will follow Atkins CAD standards.
- Attendees of the review meetings are designated as decision makers.
- Data requests will be addressed within five (5) calendar days.
- FDEP permitting is not required for this conceptual design. No permitting support or fees are included in this scope.
- No architectural or structural design efforts are required for this evaluation.
- No electrical or controls design efforts are required for this evaluation.
- No technical memorandum or evaluation summary will be provided beyond a summary of each Workshop.

### Existing Conditions/ Scope of Work

- The existing electrical feed to the pump station will be sufficient for any increase in power required for the new pump station equipment. This will be verified during the next phase of this project to allow adequate time for external coordination, if required.
- Landscaping will not be included in this project.
- Right-of-way engineering and acquisition services are excluded.
- Neighborhood or community meetings are excluded.
- Additional meetings not described or accounted for in the Services identified above.
- The location of subsurface improvements such as underground utilities are not included in this proposal.

### Technical

- An overall hydraulic profile is not required for this project.

- Updates to the 2015 wastewater hydraulic model will be required for Lift Station 203 Basin. Other updates to the hydraulic model are not included in this scope but may be recommended for future phases.
- The hydraulic capacity of Lift Station 203 will be verified for current operation. Future capacities will be determined for the 2030 and 2045. Capacities between these modeled scenarios will be extrapolated from the model results for those years.
- Field calibration of the hydraulic model is not included in this scope but may be recommended for future phases.
- No site civil work beyond conceptual connections to the on-site force mains will be required as part of this phase of the project. No survey activities are included in this scope.

## Exclusions

With the exception of the update to the hydraulic model of the Lift Station 203 Basin, the activities associated with this Work Order are conceptual in nature, intended to clarify the ability to create an in-line wastewater booster pump station and potential bypass operation at this location. Information created and provided under this Work Order is intended as a guide for use in performing the design and construction of the new master pump station.

## Compensation

Atkins proposes to perform the work described in Tasks 1 – 6 on a Fixed Fee basis with budgets between the sub-tasks and expenses being interchangeable as needed. The estimated total engineering fee including labor and expenses associated with the scope of work is not to exceed \$83,433 as summarized in the table below and presented in detail in Exhibit B.

<b>Task No.</b>	<b>Task</b>	<b>Fee</b>
1	Project Management	\$ 17,030
2	Data Collection	\$ 8,500
3	Hydraulic Evaluation, Tables & Figures	\$ 25,800
4	Equipment Selection and Operations	\$ 14,580
5	Pump Station Siting and Preliminary Layout	\$ 16,192
6	Expenses	\$ 1,331
	Total Fee	\$ 83,433

Exhibit B

Cost Detail



Member of the SNC-Lavalin Group

### Cost Proposal - Detail

IRC LS 203 Replacement Eval  
Indian River County

Submittal Date:

Task#	Resource Category	Description	O/H Pool	Rate	Unit	Qty	Extended Price
<b>1</b>	<b>Project Management and Meetings</b>						

**Labor**

Sr. Project Manager	Home	220.00	Hr	44.0	9,680.00
Sr Engineer II	Home	165.00	Hr	22.0	3,630.00
Project Controls Manager	Home	150.00	Hr	12.0	1,800.00

<b>Labor Total</b>						<b>78</b>	<b>15,110.00</b>
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<b>Subcontract &amp; Consultants</b>						<b>1,920.0</b>	<b>1,920.00</b>
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KMAC Consulting		1.0	-	1,920.0	1,920.00
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<b>Subcontract and Expenses Total</b>							<b>1,920.00</b>
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<b>1</b>	<b>Project Management and Meetings Total</b>						<b>17,030.00</b>
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<b>2</b>	<b>Data Collection</b>						
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**Labor**

Sr. Project Manager	Home	220.00	Hr	12.0	2,640.00
Sr Engineer II	Home	165.00	Hr	20.0	3,300.00

<b>Labor Total</b>						<b>32</b>	<b>5,940.00</b>
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<b>Subcontract &amp; Consultants</b>						<b>2,560.0</b>	<b>2,560.00</b>
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KMAC Consulting		1.0	-	2,560.0	2,560.00
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<b>Subcontract and Expenses Total</b>							<b>2,560.00</b>
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<b>2</b>	<b>Data Collection Total</b>						<b>8,500.00</b>
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<b>3</b>	<b>Hydraulic Evaluation</b>						
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**Labor**

Sr. Project Manager	Home	220.00	Hr	16.0	3,520.00
Sr Engineer II	Home	165.00	Hr	40.0	6,600.00



Member of the SNC-Lavalin Group

### Cost Proposal - Detail

IRC LS 203 Replacement Eval  
Indian River County

Submittal Date:

Task#	Resource Category	Description	O/H Pool	Rate	Unit	Qty	Extended Price
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<b>Labor Total</b>						<b>56</b>	<b>10,120.00</b>
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<b>Subcontract &amp; Consultants</b>							<b>15,680.00</b>
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		KMAC Consulting		1.0	-	15,680.0	15,680.00
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<b>Subcontract and Expenses Total</b>							<b>15,680.00</b>
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<b>3</b>	<b>Hydraulic Evaluation Total</b>						<b>25,800.00</b>
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<b>4</b>	<b>Equip Select and Oper.</b>						
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<b>Labor</b>							
		Sr. Project Manager	Home	220.00	Hr	26.0	5,720.00
		Sr Engineer II	Home	165.00	Hr	44.0	7,260.00

<b>Labor Total</b>						<b>70</b>	<b>12,980.00</b>
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<b>Subcontract &amp; Consultants</b>							<b>1,600.00</b>
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		KMAC Consulting		1.0	-	1,600.0	1,600.00
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<b>Subcontract and Expenses Total</b>							<b>1,600.00</b>
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<b>4</b>	<b>Equip Select and Oper. Total</b>						<b>14,580.00</b>
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<b>5</b>	<b>PS Siting and Layout</b>						
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<b>Labor</b>							
		Sr. Project Manager	Home	220.00	Hr	16.0	3,520.00
		Sr Engineer II	Home	165.00	Hr	32.0	5,280.00
		Sr Designer II	Home	154.00	Hr	48.0	7,392.00

<b>Labor Total</b>						<b>96</b>	<b>16,192.00</b>
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<b>5</b>	<b>PS Siting and Layout Total</b>						<b>16,192.00</b>
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# ATKINS

Member of the SNC-Lavalin Group

## Cost Proposal - Detail

IRC LS 203 Replacement Eval  
Indian River County

Submittal Date: Mar-08-2023

Task#	Resource Category	Description	O/H Pool	Rate	Unit	Qty	Extended Price
6	Expenses						
		<b>Subcontract &amp; Consultants</b>					<b>250.00</b>
		KMAC Consulting		1.0		250.0	250.00
		<b>Travel</b>					<b>981.00</b>
		Mileage		0.665		1,400.0	931.00
		Tolls		1.0		50.0	50.00
		<b>ODCs</b>				<b>1,100.0</b>	<b>100.00</b>
		Copies & Prints		1.0		100.0	100.00
		<b>Subcontract and Expenses Total</b>					<b>1,331.00</b>
6	Expenses Total						<b>1,331.00</b>
		<b>Total Extended Price</b>					<b>83,433.00</b>

Exhibit C

Time Schedule

## Schedule

The anticipated schedule shown below is based on the weeks after the formal issuance of the notice to proceed by County:

<b>Task</b>	<b>Duration from NTP</b>
Project Kick-Off Meeting and Site Visit	2 weeks
Begin Data Collection	2 weeks
Hydraulic Modeling Workshop	8 weeks
Pump Station Operations Workshop	10 weeks
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