




Memorandum



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To: The Honorable Carlos A. Gimenez, Mayor, Miami-Dade County
The Honorable Audrey M. Edmonson, Chairwoman
and Members, Board of County Commissioners, Miami-Dade County

From: Mary T. Cagle, Inspector General 

Date: September 21, 2020

Subject: *OIG Final Audit Report Re: Audit of WASD's Pump Station Improvement Program, Professional Services Agreement No. 13NCI001 for Task Authorization Proposal and Approvals, Ref. IG16-0033-A*

Attached please find the above-captioned final audit report issued by the Office of the Inspector General (OIG). The audit reviewed the Water and Sewer Department's (WASD) Professional Services Agreement (PSA) for its Pump Station Improvement Program (PSIP). The scope of the PSA covers program management services, including the coordination of planning, scheduling, and design, and construction management services to meet the needs of WASD and its envisioned goals for the PSIP. This contract, PSA No. 13NCI001, was awarded to Nova Consulting, Inc. (Nova). Nova is a Miami-Dade County certified Small Business Enterprise.

This Final Audit Report contains three observations and two recommendations. One of the two recommendations has been accepted by WASD and its response is included in the Final Audit Report as Appendix A. Nova also submitted a response to the Draft Report and its response is attached in Appendix B. The OIG requests that WASD provide the OIG with a 90-day status report on or before December 21, 2020, regarding the implementation of the accepted recommendation addressed in this report.

The OIG would like to thank the staffs of WASD and Nova for their cooperation and for the courtesies extended to the OIG throughout this inspection.

For your reading convenience, an Executive Summary follows.

Attachment

cc: Jack Osterholt, Deputy Mayor, Miami-Dade County
Kevin Lynskey, Director, Water and Sewer Department
Cathy Jackson, Director, Audit and Management Services Department
Yinka Majekodunmi, Commission Auditor, Office of the Commission Auditor
Maria J. Molina, President, Nova Consulting, Inc.

OIG EXECUTIVE SUMMARY

Audit of WASD's Pump Station Improvement Program, Professional Services Agreement No. 13NCI001 for Task Authorization Proposal and Approvals

The Miami-Dade County Office of the Inspector General (OIG) conducted an audit of Miami-Dade County's Professional Services Agreement (PSA) for the Water and Sewer Department's Pump Station Improvement Program (PSIP). This contract, PSA No.13NCI001, was awarded to Nova Consulting, Inc. (Nova). The principal audit objective was to determine if Nova was including the same employees on multiple Task Authorization (TA) proposals submitted to one or more County departments, and whether employees were slated to work excessive hours during the same time period. The secondary objective was to determine how WASD evaluates the reasonableness of TA proposals.

The Final Audit Report contains three observations and two recommendations that come directly from our testing of the TA proposals as well as interviews with WASD and Nova personnel.

Observation 1 addresses the fact that all of the work that has been tasked to Nova has been in the form of lump sum TAs (as opposed to time and material TAs where invoices include the identification of personnel providing services and timesheets). Making the task of auditing and verification more problematic is that Nova does not internally maintain time utilization records tracking its personnel (i.e., who worked on what and when) for the activities under this PSA. Thus, OIG auditors could not verify that the personnel identified in the TA proposal actually performed the services at the level of effort projected in the proposed (e.g., a full-time equivalent or at 20 hours per week). While this information is not required to be submitted to WASD, the PSA contains no requirement that the consultant maintain these records.

The OIG recommends that WASD consider requiring prime consultants and their subconsultants to maintain project records that identify the employees that actually performed the work and track the specific hours worked throughout the duration of lump sum projects. WASD expressed reservation on this recommendation, explaining that lump sum agreements are used, in part, to reduce paper flow and to transfer the risk and reward (too many or too few hours) to the consultant. Nevertheless, the OIG believes that a requirement that the consultant maintain these types of records (which would not have to be submitted with the invoice) is a reasonable requirement should future verification be warranted. These records could be used by WASD to confirm whether the key personnel identified in the work proposals (or employees with equal qualifications), were the ones that ultimately performed the designated work.

Observation 2 addresses how WASD has no formal written policies, procedures or guidance for evaluating lump sum proposals. Written policies and procedures are an essential management tool that provide guidance to employees. Additionally, policies and procedures establish methods and standards for how work is to be performed, help ensure inconsistencies do not occur, and assist in the training of new employees.

To determine how WASD evaluates TA proposals, OIG Auditors interviewed six WASD project managers regarding how they review and approve lump sum TA proposals. These interviews revealed that the project managers are experienced and knowledgeable in reviewing and understanding this type of proposal. The project managers explained how they rely on industry standards, historical data from past WASD projects, and their past experiences with contractor qualifications, hourly labor rates and established multipliers to evaluate the reasonableness regarding the cost and the timeframe of each lump sum proposal. Nonetheless, each of the project managers we interviewed confirmed that no formal, written policies or procedures exist which outline the process for reviewing and approving lump sum proposals.

The OIG recommends that WASD develop and implement formal policies and procedures regarding the evaluation of lump sum work proposals. These procedures would promote consistency in the evaluation process, assist WASD's continuity of operations, and assist in the training of new employees.

Observation 3 noted that Nova's work proposals did not indicate any duplication of personnel hours during the same timeframes, nor were excessive hours proposed for employees or subconsultants. In our testing for duplication of personnel proposed in each TA, we reviewed Nova's proposals for its work on 20 County projects. Nova was the prime consultant on three projects and a subconsultant on 17 projects. Our audit testing period for this purpose was from June 2016 through June 2017. Nova provided professional services to various County departments, including WASD, Miami-Dade Aviation Department, PortMiami, Regulatory and Environmental Resources, and Jackson Health System. These 20 projects included 39 TAs, which totaled approximately \$8 million, and included 43 personnel. We found no identifiable instances of duplication of employee labor hours during the same timeframe, and no occurrences of employees with proposed work hours so excessive that further testing or investigation was deemed necessary. No recommendation was proposed for observation 3.

The OIG requests that WASD provide this Office with a 90-day status report regarding the implementation of the accepted recommendation addressed in the report. We look forward to receiving this report on or before December 21, 2020.

MIAMI-DADE COUNTY
OFFICE OF THE INSPECTOR GENERAL



FINAL AUDIT REPORT
IG16-0033-A

Audit of WASD's Pump Station Improvement Program, Professional Services Agreement No. 13NCI001 for Task Authorization Proposal and Approvals

September 21, 2020

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I. INTRODUCTION

The Miami-Dade County Office of the Inspector General (OIG) initiated an audit of Miami-Dade County's Professional Services Agreement (PSA) for the Water and Sewer Department's Pump Station Improvement Program (PSIP). This contract, PSA No.13NCI001, was awarded to Nova Consulting, Inc. (Nova).¹ The scope of the PSA covers the coordination of planning, scheduling, design, inspection, and construction management services to meet the needs of WASD and its envisioned goals for the PSIP.

The principal audit objective was to determine if Nova was including the same employees on multiple Task Authorization (TA) proposals submitted to one or more County departments, and whether employees were slated to work excessive hours during the same time period. Excessive work hours would be those greater than an employee's average weekly/annual workload, i.e., 40 hours/week or 2,080 hours/year. The secondary objective was to determine how WASD evaluates the reasonableness of TA proposals.

II. RESULTS SUMMARY

Our analysis of Nova's 15 TAs for PSA No.13NCI001 disclosed that all of the TAs were lump sum proposals, with 99 percent (\$30,633,166) of the total amount of work proposed, authorized to be performed on a lump sum basis. The remaining one percent (\$115,657) was reimbursable expenses, which included direct costs, including mileage, tolls, parking, and reproductions.

The price for lump sum work is agreed upon before work begins and is customarily billed on a percentage-of-completion basis. The invoices are not required to reflect the number of personnel involved, hours worked, or hourly billing rates for individual personnel. Time and Material of direct expense work, on the other hand, is billed using invoices that reflect the quantity and cost of materials used and the billing rates and number of actual hours worked by each employee. Due to the predominance of lump sum TAs in the PSIP program, in our testing for duplication of employee labor hours throughout the lump-sum agreements, we chose to review the work proposals presented by Nova, for all of the tasks it was performing during that same timeframe, throughout the County.

¹ For simplicity and ease of reading, the OIG uses the terms "Professional Services Agreement" and "contract" interchangeably as is typical in common parlance, even though the two are not legally the same. The PSA does not provide a binding obligation to pay the consultant any amount of money. The value of the PSA is merely a not-to-exceed authorized amount. All commitments to pay for services are effectuated through task authorizations.

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OIG Auditors first examined the labor rates included in the *Truth in Negotiation Certification of Wage Rate* statements provided by Nova and each of their sub-consultants. We also compared these labor rates with those in Nova's approved work proposals submitted to WASD, as well as against Nova's payroll records. All labor billing rates listed in the certification statements matched those in the work proposals, as well as in Nova's payroll records. However, because Nova did not keep time utilization records for its employees, OIG could not verify the individuals (and the time spent) working on PSIP projects. Instead, OIG auditors examined the TA proposals, specifically looking at the individuals proposed to work such assignments and gauging those proposals against Nova's proposed work on other County projects for the same time period.

In our testing for duplication of personnel proposed in the projects, we reviewed Nova's proposals for their work on 20 County projects. Nova was the prime consultant on three projects and a subconsultant on 17 projects. Our audit testing period for this purpose was from June 2016 through June 2017. Nova's work on these projects was performed at various County departments, including WASD, Miami-Dade Aviation Department, PortMiami, Regulatory and Environmental Resources, and Jackson Health System. These 20 projects included 39 TAs, which totaled approximately \$8 million, and included 43 personnel with 32,442 hours of proposed work.

Testing revealed that two Nova employees were proposed to work hours totaling slightly over the standard 2,080 hours during our 12 month testing period.² One of these employees, a Senior Construction Manager, had an additional 100 hours included in his proposed work hours (for a total of 2,180 hours) in order to budget for the possibility of overtime work. All 2,180 hours were proposed for work on the same TA. The other employee, an Expert Engineer/Scientist, had a total of 2,089 hours proposed over 11 different TAs. We found no identifiable instances of duplication of employee labor hours during the same timeframe, and no occurrences of employees with a number of proposed work hours so excessive that further testing or investigation was deemed necessary.

OIG Auditors interviewed WASD project managers regarding how they review and approve proposals for lump sum TAs. These interviews revealed that the project managers are experienced and knowledgeable in reviewing and understanding this type of agreement. The project managers explained how they rely on industry standards, historical data from past WASD projects, and their previous experiences with contractor qualifications, hourly labor rates and established multipliers to evaluate the reasonableness regarding the cost and the timeframe of each lump sum proposal.

² For purposes of our audit testing, we used 2,080 hours as the typical number of work hours in a 40-hour per week, 52-week "work year." A typical "work year" of 2,080 hours is cited in the March 29, 2019 U.S. Bureau of Labor Statistics *Operational Employment Statistics Estimates*, https://www.bls.gov/oes/current/oes_tec.htm

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Nonetheless, each of the project managers we interviewed confirmed that no formal, written policies or procedures exist which outline the process for reviewing and approving lump sum proposals. An Assistant Director who attended one of our interviews stated that, he too, saw a need for this and that his Division was currently approximately 30% complete with drafting procedures for reviewing lump sum proposals.

During the interviews, we suggested that the development and implementation of formal, written procedures would not only promote consistency for WASD in the evaluation of lump sum work proposals, but also assist in continuity of operations as well as the training of new employees. Each project manager interviewed agreed with our suggestion.

III. AUDITEES' RESPONSE AND OIG REJOINDER

This report, as a draft, was provided to WASD and Nova for their review and comment. Their responses are included in this report as Appendix A and B, respectively. Although both WASD and Nova expressed reservations on the OIG's first recommendation, WASD responded positively to the second recommendation, which was only applicable to the department.

Further summation of the auditees' responses, and the OIG rejoinders to them, are located in the body of the report at the end of each related audit recommendation.

IV. TERMS USED IN THIS REPORT

BCC	Board of County Commissioners
CD	Consent Decree
CIP	Capital Improvement Program
County	Miami-Dade County
FTE	Full Time Equivalent
Nova	Nova Consulting, Inc.
OIG	Office of Inspector General
OOL	Ocean Outfall Legislation
PSA	Professional Services Agreement
PSIP	Pump Station Improvement Project
SBE	Small Business Enterprise
TA	Task Authorization
T&M	Time and Material
WASD	Water and Sewer Department

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V. OIG JURISDICTIONAL AUTHORITY

In accordance with Section 2-1076 of the Code of Miami-Dade County, the Inspector General has the authority to make investigations of County affairs; audit, inspect and review past, present and proposed County programs, accounts, records, contracts, and transactions; conduct reviews and audits of County departments, offices, agencies, and boards; and require reports from County officials and employees, including the Mayor, regarding any matter within the jurisdiction of the Inspector General.

VI. BACKGROUND

A. Overview of WASD's Capital Improvements Program and PSAs Awarded to Consulting Firms for Program and Construction Management Services

WASD is the largest water and sewer utility in the southeastern United States, serving over two million residents and thousands of tourists every day. To deliver quality services and to meet the community's needs, while complying with regulatory requirements, WASD has planned a \$7.5 billion multi-year Capital Improvements Program (CIP) over the next 10 years. In addition to WASD's major asset renewal and replacement program, there are three other programs that comprise WASD's CIP. They are the Ocean Outfall Legislation (OOL) Program, the Consent Decree (CD) Program, and the earlier mentioned Pump Station Improvement Program (PSIP).

The OOL Program will reduce WASD's nutrient discharge by eliminating its two ocean outfalls and will effectuate the reuse of 60 percent of its wastewater flows. Currently, the OOL Program consists of 25 projects with an estimated construction value of approximately \$2.2 billion. The OOL Program is being managed for WASD by Jacobs Engineering Group, Inc. (Jacobs). Jacobs' PSA is for a not-to-exceed amount of \$139.4 million over its 12-year term (6-year original contract duration plus one, 6-year option-to-renew period).

WASD's CD Program is in response to a judicially-enforced settlement agreement (aka consent decree) between the United States Environmental Protection Agency and the State of Florida, as plaintiffs, and Miami-Dade County, as defendant. The judicially-enforced agreement requires WASD to improve its wastewater collection and transmission systems, as well as its wastewater treatment plant operations. The CD Program consists of 81 projects with an estimated construction value of approximately \$1.9 billion.³ AECOM Technical Services, Inc. (AECOM) is contracted to

³ The original 81 projects have been subdivided/reconfigured into one or more "child" projects; currently, there are one hundred seventy-two independent CD projects.

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serve as WASD's PM/CM for the CD Program. AECOM's PSA, after a 2019 amendment, has a not-to-exceed valued of \$140 million and will terminate in May 2027.

The PSIP calls for upgrades to designated WASD pump stations, sanitary sewer connections, and force mains.⁴ At present, the PSIP consists of 153 projects totaling approximately \$183.2 million. Nova is WASD's PM/CM for the PSIP, and its PSA (which was originally capped at \$17.6 million) has been amended twice increasing the total not-to-exceed amount of the PSA to \$30.75 million.

While each of the three above-identified consultants (Jacobs, AECOM, and Nova), manage a different program in WASD's overall CIP, all three PSAs contain scopes of work that involve both program and construction management services. The PSA is a shell contract—by itself, the agreement does not authorize payment for services. All work to be performed by the consultant is contracted by individual task authorizations (TAs). Each TA sets forth the work to be performed and how the work will be compensated. Both parties agree to the terms of the TA. Compensation typically comes in two forms: time and material compensation or lump sum compensation. The former involves the consultant providing resources (labor) to accomplish the agreed to scope of work. Those resources are compensated at actual hourly rates multiplied by an agreed to factor that accounts for overhead, and profit. Because the price for those services are not fixed, invoices for payment must be supported by time sheets identifying the person(s) providing the services, the level of service (i.e., number of hours worked) and the person(s) rate of pay. The latter involves a fixed amount of compensation for an agreed to level of service. Payments are typically made on a pro-rata basis, for example proportioned on a monthly basis or based on a percentage of completion, and do not require detailed support, such as time sheets. Wages, overhead and profit are included in the fixed, lump-sum amount.

For the three aforementioned CIP programs, WASD utilizes both the lump sum and time and material (T&M) task authorizations. Table 1 illustrates the financial utilization of the PSA agreements of the three major CIPs.

⁴ WASD has had previous pump station improvement programs in the past.

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Table 1: Approved TAs by Type and Amounts for CIPs

	Jacobs OOL	AECOM CD	Nova PSIP
Lump Sum TAs	14	67	15
T&M / Other TAs	14	18	0
TAs Issued to Date	28	85	15
\$ Lump Sum	\$ 17,643,695	\$ 71,865,709	\$ 30,748,616
\$ T&M / Other	\$ 65,140,044	\$ 47,089,676	\$ 116,849*
Total	\$ 82,783,739	\$118,955,385	\$ 30,865,465
% Lump Sum by \$	21.31%	60.41%	99.62%
% T&M / Other by \$	78.69%	39.59%	0.38%

*These monies were paid to Nova for reimbursable expenses.

As shown above, the work tasked to WASD consultants Jacobs and AECOM⁵ have been both in the form of lump sum TAs and T&M TAs, whereas all of the compensation paid to Nova has been in the form of lump sum TAs.

There are advantages and disadvantages to both lump sum and T&M TAs. For lump sum TAs, advantages to the consultant include administrative efficiencies in the preparation of pay requisitions and regularly expected cash flows. A disadvantage may be a loss of profit if actual labor resources exceed estimated amounts. From the owner's perspective, lump sum TAs can also be easier to manage. Invoices are easier to process for payment. On the other hand, a disadvantage for the owner is less visibility as to whom is performing the work and the level of resources being put to the task. Auditing the consultant's records to determine if the proposed personnel had actually performed the work can be challenging. Deliverables are the main means of determining whether a TA had been performed according to the agreement between the owner and the consultant.

B. Nova's PSA and the PSIP

After reviewing the three aforementioned programs comprising WASD's CIP, the OIG selected the PSIP as it was the closest to completion. Nova was awarded the PSA on December 17, 2013.⁶ The PSA was for a term of five years, with one two-year option to renew. Initially, the PSA was in an amount not-to-exceed \$17,600,000. Nova

⁵ The OIG notes that for the first five years of the CD Program, the majority of the work tasked to AECOM was in the form of lump sum TAs. With the advent of the first amendment to AECOM's PSA, a shift was made to increasingly task work using T&M TAs as this method provided WASD with a higher degree of scrutiny over the resources (labor hours) that were being committed to the program, and to keep a closer eye on managing expenditures.

⁶ Resolution No. R-1061-13

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as the PM/CM would be managing the 112 pump station and/or force main projects and 72 infiltration and inflow repairs comprising the PSIP.

On May 16, 2017, the BCC approved Amendment 1 to the PSA, which added \$8,000,000 to the contract and authorized the two-year option to renew.⁷ This extended the PSA to December 10, 2020. According to the memorandum accompanying the proposed amendment, additional time and monies were necessary due to program set-up costs and the time required for additional services related to permitting, public outreach activities, and small businesses, which were more than originally anticipated. Prior to Amendment 1, seven additional projects were added to the PSIP, bringing the total number of projects to 119. Amendment 1 provided extra funding to cover Nova's PM/CM work for an additional 28 projects added to the PSIP, as well as the addition of aesthetic improvements for 35 pump stations.⁸ The aesthetic improvements were based upon Resolution No. R-898-15, and the reasoning for adding these improvements to Nova's scope of work, was that since it was already performing project management for the PSIP, it seemed a good fit for it to oversee these improvements as well.

On June 9, 2019, the BCC approved Amendment 2 to the PSA, which added another \$5,150,000 to the contract, bringing the total not-to-exceed amount of the PSA to \$30,750,000.⁹ The contract period was not amended; the expiration date remains December 2020. Table 2 below shows the PSA amount and contract period as amended.

Table 2: Nova PSA No. 13NCI001

Agreement	Date	End Date	Amount
Initial Agreement	December 2013	December 2018	\$17,600,000
Amendment 1	May 2017	December 2020	\$ 8,000,000
Amendment 2	June 2019	December 2020	\$ 5,150,000
Total Amount			\$30,750,000

According to the memorandum accompanying the proposed second amendment, additional funds were necessary due to a variety of unforeseen factors that adversely impacted the construction schedule of 36 projects.¹⁰ Additionally, six more projects were added to the PSIP, bringing the total to 153 projects to be managed. As Table 3, below, shows, while Amendment 2 was being reviewed by the BCC for approval, a total of 133 projects (87 + 46) had completed the design process and 105 projects (48 + 57)

⁷ Resolution No. R-533-17

⁸ See BCC Resolution R-533-17, page 2

⁹ Resolution No. R-607-19

¹⁰ See BCC Resolution No. R-607-19, page 2

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had finished the construction phase and were certified for operation. As of May 2020, 15 projects were various stages of the completion and five projects were in various stages of the design phase.

Table 3: Nova Consulting, Inc., Original Projects and Amendments 1 and 2

Description	Pump Station and Force Main Projects	Total Projects	Completed Design	Completed Certification
Original Projects	119	119	87	48
Amendment 1	28	147	46	57
Amendment 2	6	153	16	33
Total	153	153	149	138
Projects Remaining*	19			

*Remaining projects figures provided by WASD as of May 22, 2020

C. PSIP Task Authorizations and Nova Staffing Levels

The PM/CM team consists of Nova, as the prime consultant, supplemented by the staffing resources of five subconsultants. OIG Auditors reviewed the proposals for each TA issued under the PSA and documented the total employees proposed to provide services. Table 4 below summarizes the number of proposed employees, by each consulting firm.

Table 4: Proposed Collective Number of Employees by Firm

Employer	Employee Count	Percent of Total
Nova Consulting	35	38.04%
300 Engineering Group	26	28.26%
MWH Americas, Inc.	9	9.78%
BND Engineers, Inc.	8	8.70%
Bermello & Ajamil Partners, Inc.	13	14.13%
Avino & Associates, Inc	1	1.08%
Total	92	100.00%

As noted previously, our review of Nova's TAs indicated that all of them were performed on a lump sum basis. Table 5 lists each TA, scope of work, period for performance, and compensation amount issued to Nova.

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Table 5: Task Authorizations Issued to Nova

No.	Task Authorization Description	Status	TA Amount	Amount Paid	Difference
1	Progress Meetings, Engineering Services, and Program Management Setup; 5/2014 - 6/2014	Closed	\$1,421,699	\$1,394,817	\$26,882
2	Development Community Coordination for 108 Moratorium Basins; 5/2014 - 5/2015	Closed	\$ 201,394	\$ 197,193	\$ 4,201
3	Program, Design & Construction Management for 108 Basins; 5/2014 - 5/2015	Closed	\$5,496,295	\$5,457,645	\$38,650
4	Program, Design & Construction Management for Four Additional Pump Stations; 9/2014 - 9/2015	Closed	\$ 259,820	\$ 259,820	\$ 0
5	Surveying Services for Ten Pump Stations; 9/2014 - 12/2014	Closed	\$ 29,020	\$ 28,519	\$ 501
6	Program, Design & Construction Management; 5/2015 - 5/2016	Closed	\$5,299,289	\$5,299,273	\$ 16
7	Program, Design & Construction Management for Four Additional Pump Stations; 10/2015 - 9/2016	Closed	\$ 105,459	\$ 100,638	\$ 4,821
8	Development Industry and Public Outreach Coordination; 9/2015 - 9/2016	Closed	\$ 225,000	\$ 220,097	\$ 4,903
9	Program, Design & Construction Management; 5/2016- 2/2017	Closed	\$4,036,080	\$4,015,928	\$20,151
10	Program, Design & Construction Management; 3/2017 - 4/2017	Closed	\$ 524,998	\$ 521,513	\$ 3,484
11	Development Industry and Public Outreach Coordination; 1/2017 - 5/2017	Closed	\$ 74,935	\$ 74,434	\$ 500
12	Program, Design & Construction Management; 6/2017 - 5/2018	Closed	\$4,280,276	\$4,262,795	\$17,481
13	Program, Design & Construction Management; 5/2018 - 5/2019	Closed	\$3,431,618	\$3,429,369	\$ 2,249
13.1	Program, Design & Construction Management; 5/2019 - 6/2019	Closed	\$ 335,705	\$ 335,251	\$ 454
14	Program, Design & Construction Management; 6/2019 - 12/2021	In Process	\$3,816,377	\$3,816,376*	\$ 0
15	Program, Design & Construction Management for Six Additional Pump Stations; 8/2019 - 7/2022	In Process	\$1,327,500	\$1,327,500*	\$ 0
		Total	\$30,865,465	\$30,741,171	\$124,293

* Note: TAs 14 and 15 are still in process, so the Table is assuming that the amounts paid will be 100% of the TA amounts upon completion

We note that TAs 14 and 15 have end dates that exceed the contract expiration date of December 2020. These end dates of December 2021 and July 2022, respectively, extend by 12 and 18 months past the contract's expiration date. As detailed in Table 5, TAs 1 through 13.1 are closed. However, they had not been billed

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to 100% of their original, authorized, amounts. Therefore, the unused remaining balance of \$124,293, was returned to the total PSA contract available balance, for the TAs still in progress. As the total authorized contract amount is \$30,750,000, less than \$10,000 remains as available contract capacity.

VII. OBJECTIVES, SCOPE & METHODOLOGY

A. Objectives

The principal audit objective was to determine if Nova was including the same employees on multiple Task Authorization (TA) proposals submitted to one or more County departments, and whether employees were slated to work excessive hours during the same time period. Excessive work hours would be those greater than an employee's average weekly/annual workload, i.e., 40 hours/week or 2,080 hours/year. The secondary objective was to determine how WASD evaluates the reasonableness of TA proposals.

B. Scope

As previously noted, we selected Nova for testing since they provided the program management services for the PSIP, and its work was nearing completion. To satisfy our first objective, we selected for in-depth review the proposals for TAs 9 and 10. TA 9 covered a little over 9 months of services between May 23, 2016 and February 28, 2017 and TA 10 covered just over one month from March 1, 2017 through April 5, 2017. Both generally covered the same scope of work; however, TA 10 did not include work on Infiltration and Inflow Reduction, or Enhancement and Aesthetics Improvements. The budget allocation percentages, by sub-task, were similar, and the bulk of the money was for Design Management and Construction Management services. See Table 6 for a breakdown of dollars and allocation percentages by sub-task.

Table 6: Budgeted Cost Breakdown by Sub-Task for TAs 9 and 10

Sub-Tasks	TA 9 Budget	% of TA 9 Budget	TA 10 Budget	% of TA 10 Budget
Progress Meetings / Status Report	\$ 29,980	1%	\$ 3,946	1%
Infiltration/Inflow Reduction	\$ 64,578	2%	-	-
Enhancements & Aesthetics Improvements	\$ 181,328	5%	-	-
Design Management	\$1,162,472	29%	\$174,090	33%
Construction Management	\$1,862,127	46%	\$233,129	45%
Health & Safety Coordination	\$ 26,035	1%	\$ 8,462	2%
Permitting Assistance	\$ 38,493	1%	\$ 15,942	3%
Program Controls	\$ 650,664	16%	\$ 85,944	16%
Total	\$4,015,678	100%	\$521,514	100%

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For this same time period, OIG Auditors reviewed 100% of the work proposals submitted by Nova for work at all County departments. Nova's work, either as a prime consultant or subconsultant, among County departments consisted of 39 additional TAs for work performed for the Miami-Dade Aviation Department, PortMiami, Regulatory and Environmental Resources, Jackson Health System, and other work for WASD outside of the PSIP.

C. Methodology

To satisfy the first objective, we obtained the *Proposals for Engineering Services Labor Expenses* for Nova and its subconsultants for the same time periods. Nova created a *Proposal For Engineering Services Labor Expenses (Proposal)* for each TA in its contract agreement. This document outlines the individuals proposed to perform the work scoped in the TA, along with each individual's job classification/title, hourly billing rate, and the labor hours proposed for the work to be performed. The Proposal also includes the total dollar cost for each individual's labor for the TA, and the total lump sum labor cost that is proposed for the TA.

We then compared the *Truth in Negotiation Certification of Wage Rate* statements for Nova personnel against the *Proposals* and Nova's payroll system, to determine accuracy. Additionally, the *Truth in Negotiation Certification of Wage Rates* statements provided by each sub-consultant performing work on these TAs were then reconciled against the rates per the *Proposals*. *The Truth In Negotiations Certification of Wage Rates statements* are required by Florida Statute Section 287.055 and County AO 3-39. It states that the Consultant certifies and warrants that wage rates and other factual unit costs supporting the compensation for the project's agreement are accurate, complete, and current at the time of contracting.

OIG auditors attempted to review payroll information that would support the hours worked and the rates paid to Nova employees that worked on TAs 9 and 10. However, as Nova's Controller explained, its employees are salaried and hours worked on lump sum projects are not tracked on a task by task basis. We were thus unable to conduct a reconciliation against work proposals, to track employee utilization on Nova's lump sum TAs.

As to the second audit objective, OIG Auditors obtained from WASD a listing of PSA contracts, as well as their associated WASD project managers. There were a total number of 75 PSA contracts assigned to 40 project managers. We chose to review project managers that had managed, or were currently managing, at least two PSA contracts. This reduced our sample population to 12 project managers. We then judgmentally selected six, or 50 percent, of the project managers that had managed two or more PSA contracts. Our auditors then conducted interviews with the six project managers to better understand the overall process, including what standards were

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being utilized, and what formal guidance, if any, was being followed in evaluating lump sum TAs.

D. Standards Used

This audit was conducted in accordance with the *Principles and Standards for Offices of Inspector General* and with *Generally Accepted Government Auditing Standards*. Those standards require that we plan and perform the audit to obtain sufficient and appropriate evidence to provide a reasonable basis for our findings and conclusions. Based on our audit objectives, we believe the evidence obtained provides a reasonable basis for our findings and conclusions.

VIII. AUDIT OBSERVATIONS, AND RECOMMENDATIONS

Observation 1: WASD's PSA with Nova does not require Nova, or its subconsultants, to maintain documentation to track their employee utilization for work on lump sum Task Authorizations.

We judgmentally (based on dollars billed) selected and reviewed the proposals submitted for work performed on TAs 9 and 10. The proposals for TAs 9 and 10 showed the duties that would be performed by Nova employees and subconsultant personnel.

The proposal for TA 9 lists specific positions requiring a total of 29 individuals. Ten of the individuals proposed to do the work were Nova employees, while the remaining 19 individuals were from Nova's subconsultants. Twenty of the 29 individuals proposed were Full-Time Equivalent (FTE) positions, while the remaining 9 were of varying percentages of FTE, or from 1% to 63% of FTE. All 10 of Nova's employees proposed for Task 9 were FTE. An FTE for Task 9 was 1,440 hours. Table 7, below, provides a breakdown of positions by title, percentage of FTE and firm where employed.

Table 7: Task 9 Position Proposals by Firm

Hours / Position	Number of Employees by Firm					Total Employees
	Nova	MWH	BND Engineers	Bermillo & Ajamill	300 Engineering	
FTE / 1,440 Hours						
Admin	1	-	-	-	-	1
Construction Manager	2	-	1	-	1	4
Document Controls	-	1	-	-	-	1
Engineer	2	-	-	-	-	2
Field Representative	-	-	-	1	-	1
Project Manager	2	1	1	2	-	6
Scheduler	-	1	1	-	-	2

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Hours / Position	Number of Employees by Firm					Total Employees
	Nova	MWH	BND Engineers	Bermillo & Ajamill	300 Engineering	
Tech Staff	3	-	-	-	-	3
Subtotal	10	3	3	3	1	20
> 60% < 90% FTE						
Invoice Processor	-	-	-	-	1	1
Subtotal	-	-	-	-	1	1
> 20% < 60% FTE						
Landscape Architect	-	-	-	1	-	1
Landscape Designer	-	-	-	1	-	1
Subtotal	-	-	-	2	-	2
< 20% FTE						
Admin	-	-	-	1	-	1
Design Tech	-	-	-	-	1	1
Field Representative	-	-	-	-	1	1
Project Manager	-	-	-	2	-	2
Program Manager	-	-	-	-	1	1
Subtotal	-	-	-	3	3	6
Total Hours by Firm	10	3	3	8	5	29

The proposal for TA 10 lists specific positions requiring 26 individuals. Seven individuals of the proposed positions were to be Nova employees. The remaining 19 individuals proposed to perform the work were employed by Nova's subconsultants. Twenty of the 26 individuals proposed were FTE positions, while the remaining 6 were of varying percentages of FTE, from 12% to 74% of FTE. Nine of the 10 proposed Nova employees for Task 10 were FTE, with one employee having between 60% to 90% of FTE hours. An FTE for Task 10 was 194 hours. Table 8, below, provides a breakdown of positions by title, percent of FTE and firm.

Table 8: Task 10 Position Proposals by Firm

Hours / Position	Number of Employees by Firm				Total Employees
	Nova	MWH	BND Engineers	300 Engineering	
FTE / 194 Hours					
Admin	1	-	-	-	1
Construction Manager	-	-	1	1	2
Document Controls	-	-	-	1	1
Engineer	1	-	-	-	1
Field Rep	-	-	1	5	6
Scheduler	-	1	1	-	2
Tech Staff	3	-	-	-	3
Project Manager	1	-	2	-	3
Design Manager	-	1	-	-	1
Subtotal	6	2	5	7	20

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Hours / Position	Number of Employees by Firm				Total Employees
	Nova	MWH	BND Engineers	300 Engineering	
> 60% < 90% FTE					
Expert Engineer	1	-	-	-	1
Subtotal	1	-	-	-	1
> 20% < 60% FTE					
Invoice Processor	-	-	-	1	1
Program Manager	-	-	-	1	1
Tech Staff	-	1	-	-	1
Subtotal	-	1	-	2	3
< 20% FTE					
Design Tech	-	-	-	1	1
Field Rep	-	-	-	1	1
Subtotal	-	-	-	2	2
Total Hours by Firm	7	3	5	11	26

The WASD project managers interviewed stated that when reviewing and approving a proposal for a TA, they review the list of individuals proposed to work each position. Proposed personnel, both Nova and subconsultant employees, are reviewed to determine if the individual has the relevant education and experience to sufficiently perform the required assignment. To determine if individuals with the level of expertise noted in the proposals actually performed the work, we reviewed the invoices presented by Nova. As the TAs were for lump sum work, the invoices for TAs 9 and 10 were submitted on a percentage of completion basis and did not include support for hours worked, or the associated wage rates. However, the invoices still provided substantial details surrounding the completion of each assigned subtask for that period, and WASD project managers reviewing these invoices thereby approved them, as a necessary step in the payment process.

We compared Nova's *Proposal for Engineering Services Labor Expenses* for TAs 9 and 10, to the labor rates proposed in the *Truth in Negotiation Certification of Wage Rates* statements provided by Nova and each of their subconsultants performing work on the tasks reviewed. All wage rates reviewed in the proposals reconciled when compared to the Truth in Negotiation and Wage Rate Certifications, as well as Nova's payroll records. However, as indicated, support for hours worked by both Nova and subconsultant personnel for each individual TA was not available. Without relevant information showing employee labor hours allocated to a task, it is impossible to determine if the individuals having the level of expertise proposed to work on a task, had performed the work. While the PSA lump sum agreement does not require the consultant to maintain this data, the absence of that data could still be detrimental when analyzing the consultant's and subconsultants' performance, even though the task may have been completed satisfactorily. Given the number of subconsultants working on the PSIP project, having the relevant data regarding all costs allocated to a task, would

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provide for a more comprehensive evaluation of all expenditures attributable to that task.

When we inquired as to how a project is determined to be on track and/or profitable, Nova's Controller explained that since Nova employees are paid salaries, and not on an hourly basis, hours worked on lump sum projects are not tracked for each individual task or project. However, he stated that an analysis is performed to determine profitability once the entire project has been completed. While from an audit perspective, the availability of that data would have facilitated a more comprehensive review, our audit findings, based on review of the TA data, including the detailed invoices and discussions with WASD Project Managers, showed that the well-defined and fully scoped PSIP projects managed by Nova did contribute to cost certainty, minimized change orders (there were none identified), and appeared to have contributed to tight project management and communication with WASD. Specifically, our thorough review of the sub-tasks comprising TAs 9 and 10, as detailed above, showed the extent of close collaboration between the PSIP Team and WASD.

RECOMMENDATION

1. WASD should consider requiring prime consultants and their subconsultants to maintain project records that identify the employees that actually performed the work and track the specific hours worked throughout the duration of lump sum projects. These records could be used by WASD to confirm whether the key personnel identified in the work proposals (or employees with equal qualifications), were the ones that ultimately performed the designated work.

WASD Response

WASD stated that they understand, from an audit perspective, that time sheets, in addition to certified payroll, would be helpful. However, a lump-sum method is used, in part, to reduce paper flow and to transfer the risk and reward of using too many, or too few, hours to the firm.

Nova Response

Without the unnecessary administrative workload associated with hourly arrangement, Nova and its employees can focus on what they do best: delivering high-quality consulting services.

OIG Rejoinder

The OIG can appreciate the comments from WASD and Nova that this additional paperwork may be burdensome; however, we were not trying to imply that this information

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be submitted with the consultant's monthly pay requisition. Rather, the OIG recommends that WASD should require that the consultant maintain these records in its possession should WASD (or other County offices) want them for verification, inspection, or auditing purposes. Regarding the consultants tracking of labor hours against project tasks, this is instrumental in determining profitability, as well as employee and subcontractor efficiencies, and we hope to believe that the consultant would wish to have this detail available.

Observation 2: WASD has no formal written policies, procedures or guidance for evaluating lump sum proposals.

Written policies and procedures are an essential management tool that provide guidance to employees. Additionally, policies and procedures establish methods and standards for how work is to be performed, help ensure inconsistencies do not occur, and assist in the training of new employees.

While conducting fieldwork, we interviewed six WASD project managers from different disciplines, each having managed a minimum of two PSA projects. The interviews were conducted to determine the methodology used by WASD to evaluate lump sum proposals. During our audit interviews, we observed that WASD project managers are experienced and knowledgeable in reviewing lump sum work proposed by contractors. Each of the six project managers interviewed stated that they rely on a variety of industry standards, their own knowledge, plus historical data from past WASD projects. The project managers also rely on previous experiences with contractor qualifications and the corresponding hourly labor rates and overhead multipliers used to analyze and evaluate the reasonableness of the cost and timeframe of each lump sum work proposal.

Analysis of the design phase proposed cost, as a percentage of total construction costs, is also taken into consideration. However, the interviews revealed that none of the steps used by WASD project managers to evaluate lump sum proposals are formally documented. Furthermore, all six project managers interviewed confirmed that no written policies or procedures exist, which outline a specific, consistent process for the review and approval of lump sum contract proposals. Based on our discussions with WASD project managers, the use of varying valuation methods could lead to inconsistencies in the review and approval phase of lump sum proposals, rather than promote desired uniformity in the proposal evaluation process.

Further, established policies and procedures would provide newly hired project managers with necessary guidelines and strategies of how to evaluate proposals. All of these factors were discussed with the WASD project managers, who agreed that written procedures would provide a benefit to all WASD personnel responsible for evaluating contract proposals.

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RECOMMENDATION

2. WASD should develop and implement formal policies and procedures regarding the evaluation of lump sum work proposals. These procedures, which could be developed from the various steps, industry standards, accumulated knowledge, historical data and similar factors currently used by the experienced WASD project managers, would promote consistency in the evaluation process, assist WASD's continuity of operations, and assist in the training of new employees.

WASD Response

WASD stated that they would formalize the process used to establish the compensation for the lump sum engagements as an additional measure against the likelihood of being overcharged.

OIG Rejoinder

The OIG appreciates WASD's acknowledgment of the recommendation and believe that the implementation of these policies and procedures would help with consistency and continuity in the current practices.

Observation 3: Nova's work proposals did not indicate any duplication of personnel hours during the same timeframes, nor excessive hours proposed for employees or subconsultants.

In our efforts to test for duplication of employee labor hours in lump sum agreements, OIG reviewed the proposals presented for TAs, rather than the invoices submitted after the work had been awarded and performed. We reviewed the 20 County projects where Nova was the prime consultant or subconsultant. These projects included 39 TAs for which Nova had submitted proposals and performed work for the County during the audit scoping period of June 2016 thru June 2017. Three of the 39 TAs and proposals were T&M based, while the remaining 36 were lump sum. During this period, Nova performed work at WASD, Miami-Dade Aviation Department, PortMiami, Regulatory and Economic Resources, and Jackson Health System.

Regarding the three T&M TAs reviewed, the number of proposed hours could not be specifically defined prior to the work being performed. In these cases, the invoices were reviewed to determine the personnel, their rates, and hours billed. This information was included in our proposal analysis in order to have a complete picture of the personnel and the hours proposed and/or worked.

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In the proposals and invoices reviewed, we identified 43 different Nova employees. These 43 employees accounted for 32,619.25 hours, and approximately \$8 million. Testing identified two Nova employees who were proposed to perform work that totaled slightly over 2,080 hours during the selected 12-month audit test period. One of these employees, a Senior Construction Manager, had an additional 100 hours included in his proposed work hours, for a total of 2,180 hours), in order to budget for the possibility of overtime work. All 2,180 hours were proposed for work on the same TA. The other employee, an Expert Engineer/Scientist, had a total of 2,089 hours proposed over 11 different TAs. We found no identifiable instances of duplication of employee labor hours during the same timeframe, and no occurrences of employees with a number of proposed work hours so excessive that further testing or investigation was deemed necessary.

IX. CONCLUSION

Our testing disclosed no identifiable instances of duplication of man hours, and no occurrences of employees with proposed work hours so excessive that further audit testing or investigation was deemed necessary. However, we do find it difficult to comprehend why Nova does not track employee hours on its lump sum projects, or determine its profitability, until the project has reached completion.

Additionally, we found that WASD project managers are experienced, knowledgeable, and perform thorough reviews of proposals for lump sum agreements submitted by contractors. However, the OIG believes that the development and implementation of formal, written procedures would promote consistency for WASD in the evaluation and approval of lump sum proposals, assist in reinforcing the continuity of operations, and help provide training or guidance for new employees.

* * * * *

The OIG appreciates WASD's and Nova's responses. The OIG asks WASD to report on the status of fully implementing recommendation number two and to include with its response any new or amended policies and procedure, supporting its implementation. We kindly request that WASD provide the OIG with this status report in 90 days, on or before December 21, 2020.

Last, the OIG would like to thank the staffs of WASD and Nova for their cooperation and for the courtesies extended to the OIG throughout this audit.

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APPENDIX A

Water and Sewer Department's Response

Audit of WASD's Pump Station Improvement Program, Professional Services Agreement No. 13NCI001 for Task Authorization Proposal and Approvals

IG16-0033-A

From: [Lynskey, Kevin T. \(WASD\)](#)
To: [Cagle, Mary \(OIG\)](#)
Cc: [Schlotzhauer, James \(OIG\)](#); [Penaloza, Alissa \(WASD\)](#)
Subject: OIG Draft Audit Report, IG16-0003-A
Date: Wednesday, August 26, 2020 10:31:14 AM

The Miami-Dade Water and Sewer Department (WASD) has reviewed the Office of the Inspector General (OIG) Draft Audit Report, IG16-0003-A concerning the use of lump sum task authorizations for engineering work.

WASD uses two principal methods to award task authorizations - each is common to the county and to other entities procuring engineering work. The first is a fee for professional services (time and materials) approach that pays hourly costs, including an industry multiplier, and which may also provide for certain reimbursable expenses. This approach and its record keeping, which includes time sheets, is largely determined by state statute and other county contracting practices.

The second method, which is the subject of this audit, is more akin to a lump-sum arrangement, which may also include certain reimbursable expenses, but does not feature time sheet reporting. The lump sum approach relies on a well-defined scope, timeline, and maximum compensation, which is based on estimation technics (below) and departmental experience. Generally, WASD selects the preferred method based on the following:

- **Lump-sum proposals:** used for a finite scope with clear requirements and deadlines
- **Time and material (T&M):** used for projects with a dynamic scope and deadline, or flexible or unknown data and level of effort (e.g., hydraulic modeling, surveying, etc.)

When consultants prepare their scope of services and proposed fee, they are asked to generate a work breakdown structure for each sub-task within the proposal to include every person or position assigned to that sub-task, including the rate and multiplier. This work breakdown is required, whether it is a lump-sum or time and material task. Based on the work breakdown, the project manager has an accurate representation of how the fee has been generated, and he or she can use it along with the procedures listed below to determine if the fee is reasonable.

There are several procedures used by WASD project managers to evaluate proposed professional services fees and determine if they are reasonable:

1. **Design as a percentage of the estimated construction cost.** This method can be readily compared with similar past projects.
2. **Cost per sheet.** This method needs to be indexed for inflation if compared to past projects.
3. **Total staff hours.** This method can be readily compared to similar past projects.
4. **Design cost per lineal foot of pipeline.** This method is a simple comparison tool,

indexed for inflation, on pipeline projects with no significant design difficulties (i.e., tunneling).

In the case that a consultant is not able to accomplish a lump-sum project or program within the negotiated fee, the consultant and sub-consultants are contractually required to complete the negotiated work scope for no additional compensation. The focus of these contracts are deliverables, not individual hours, though certified payrolls provide some assurance of professional accountability.

Ultimately, WASD understands that from an auditing perspective that time sheets, in addition to a certified payroll, would be helpful. However, a lump-sum method is used, in part, to reduce paper flow and to transfer the risk and reward of using too many - or too few - hours to the engineering firm.

WASD continues to value the lump-sum approach absent additional time tracking requirements. As recommended in the draft audit, WASD will formalize the process used to establish the compensation for these arrangements as an additional measure against the likelihood of being over-charged.

Sincerely,

Kevin

MIAMI-DADE COUNTY OFFICE OF THE INSPECTOR GENERAL



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APPENDIX B

Nova Consulting, Inc. Response

Audit of WASD's Pump Station Improvement Program, Professional Services Agreement No. 13NCI001 for Task Authorization Proposal and Approvals

IG16-0033-A



August 11, 2020

VIA E-MAIL

Ms. Mary T. Cagle, Inspector General
Office of the Inspector General Miami-Dade County
604 NW 1st Court, South Tower 22nd Floor
Miami, Florida 33136

Re: *OIG Draft Audit Report – IC16-003*

Dear Ms. Cagle:

Nova Consulting, Inc. (“Nova”) is in receipt of the OIG Draft Audit Report of WASD’s Pump Station Improvement Program Professional Services Agreement No. 13NC1001, dated July 28, 2020.

Nova has been a long-standing partner of Miami-Dade County, delivering the highest quality of engineering consulting services for more than 25 years. Our company takes pride in our unwavering ethical culture and commitment to meeting and exceeding our clients' expectations. For that reason, we welcome and appreciate the OIG’s review of this matter.

Miami-Dade’s Pump Station Improvement Program (PSIP) has been one of Nova’s most successful programs. Throughout the term of the program, we have managed to meet all regulatory deadlines, achieve our scope of work, stay on schedule, and more importantly reduce overall program costs. As a result, we have consistently obtained the highest scores during our annual reviews by Miami-Dade’s Water and Sewer Department (“WASD”). We are pleased with the OIG’s findings, among them the well-defined scope of services developed for the PSIP projects which allowed a high level of accuracy of costs leading to no change orders and contributing to tight communication with WASD staff and close tracking of project progress.

The success of the PSIP stems from Nova’s goal-oriented method of delivering services. We dedicate as many resources as necessary to meet the objectives of the client. For that reason, we typically price our services on a lump sum basis, rather than on an hourly basis. Having over two decades of experience in the field allows Nova to perform an accurate cost analysis which includes a profit margin. Our clients benefit from the predictability of this arrangement as it limits their exposure to cost overruns while Nova absorbs the risk. Without the unnecessary administrative workload associated with hourly arrangements, Nova and its employees can focus on what they do best: delivering high quality consulting services.

Again, we appreciate the OIG’s time and attention in reviewing this matter and stand ready to answer any additional questions that you may have.

Very truly yours,

NOVA CONSULTING

A handwritten signature in blue ink that reads "Marja J. Molira".

Marja J. Molira, P.E.
President