

City of Hallandale Beach

Reference RFP # FY 2018-2019-012
Work Authorization

Project Name
18-inch Force Main Layne Blvd

A. SUMMARY OF SERVICES TO BE RENDERED

In accordance with Resolution No. 2020-054, RFP #FY 2018-2019-012 Continuing Professional Architectural and Engineering Services and Other Services, the following scope of services is provided by AECOM Technical Services, Inc. (CONSULTANT) as requested by the CITY to provide Civil Engineering Services.

This Work Authorization (WA) addresses the necessary engineering services for the design, permitting and construction of approximately 2,800 linear feet of 18-inch force main (FM) either by horizontal directional drill (HDD) or open cut or a combination of both from Pump Station No. 1 to Egret Drive to Layne Blvd and crossing Hallandale Beach Blvd to connect into the existing 14-inch FM (16-inch FM) on the north side.

The services included in this WA are design (construction plans, technical specifications), permitting services, limited bidding services, and limited construction services.

The City of Hallandale Beach Procurement Department will provide front-end documents and bidding services.

The project deliverables are:

Construction Plans; Technical Specifications; Topographic Survey; subsurface utilities engineering (SUE) locates; provide preliminary engineering opinion of probable cost of construction, attend pre-bid meeting with meeting minutes and, prepare up to 2 addenda responding to questions from bidding contractors during bidding, review and tabulate the bids, review two lowest bidder's references and report the findings.

Provide limited Engineering Services During Construction (ESDC) such as attending pre-construction meeting, shop drawing review, up to six (6) progress review meetings with meeting minutes, up to six (6) project site meetings during construction with field notes, respond to up to five (5) Request for Information (RFIs), substantial completion inspection with punch list items, and final site inspection for certification of completion.

Permit applications:

1. **Broward County Environmental Protection and Growth Management Department** in the *Environmental Engineering and Permitting Division* – (Broward County General Permit Application to Construct a Wastewater Collection/Transmission System) and (**FDEP Notification/Application for**

Constructing a Domestic Wastewater Collection/Transmission System – General Permit).

2. **City of Hallandale Beach Engineering** – Utility Right-of-Way Use Permit Application
3. **Broward County Traffic Engineering Division** – (Application for Initial Plan Review for Paving, Grading, Drainage, Water, Sewer, Irrigation, Landscaping, Utilities, etc.)

Task A.1 – Final Design:

This task consists of the development of Contract Documents (construction plans, and technical specifications). For the development of the Contract Documents the following subtasks are proposed:

Survey/Utility Location

AECOM will retain Engenuity Group Inc., as a subconsultant to prepare the topographic survey and Subsurface Utility Exploration (SUE) services necessary for the preparation of the construction documents. See attached proposal from Engenuity and the following scope of services and deliverables that they will provide:

- Determine utility locations including both surface and subsurface utilities within the right-of way (ROW). Perform field investigation (utility designation) to flag/mark the existing discoverable underground utility facilities in the project limits. Existing utilities locations will be designated within ROW a total length of approximately 2,800 ft.

Prepare a certified Topographic Survey in accordance with the Florida Statutes Governing Surveying and Mapping for the existing Right-of-Way from Pump Station No. 1 to Egret Drive to Layne Blvd and crossing Hallandale Beach Blvd to connect into the existing 14-inch FM (16-inch FM) on the northside (approximately 2,800 linear feet). The topographic survey will include the full ROW.

- The Topographic Survey will include surface elevations and cross-sections at 100-foot intervals, swales, ditches, top of bank, toe of slope, grade breaks and water elevations, if any, landscape limits, trees 6" and greater, improvements with visible evidence, above ground and utilities, invert elevations, pipe sizes and pipe material if obtainable. Benchmarks will be located along the route.
- The survey effort will include locating subsurface utilities using ground penetrating radar (GPR) and electromagnetic locating to determine where the underground utilities are within the area and show them on the survey.
- Include up to 20 potholes to determine the top of pipe (TOP) elevations.
- The vertical data provided will be referenced to the North American Vertical Datum 1988 (NAVD 1988).

Task Deliverables: Electronic copy of topographic survey and one signed and sealed copy.

Geotechnical Investigation

Geotechnical investigation services shall be included in this WA. Geotechnical investigation services will be performed by RADISE. AECOM will coordinate with Engenuity for the locations of the soil borings.

Task 1 – Field Exploration

Field exploration shall include the following:

- Visit the site to field mark (paint and/or stake) the planned boring locations and observe existing site conditions.
- Contact Sunshine 811 to request field location of underground utilities in the areas of the borings as per Florida Statutes.
- Prior to mobilization of drilling equipment, notify Sunshine 811 of planned exploration to allow affected utility companies the opportunity to mark the location of buried “public utility lines in the proposed exploration areas.
- Mobilize personnel and drilling equipment to site.
- Perform three (3) SPT borings to depths of 15 feet below the existing ground surface.
- The depth to groundwater in each SPT boring will be measured.
- Following completion of the borings, the boreholes will be backfilled with grout upon completion. If borings penetrate pavement sections, pavement shall be patched using “cold patch” asphalt.
- Utilize traffic barricades, cones, and flaggers to the extent necessary and required.

Task 2 – Laboratory Services

Laboratory services shall include the following:

- Classify and stratify the collected soil samples in the field with laboratory confirmations/QC verifications of classifications using the Unified Soil Classification System (USCS). A log presenting this information and groundwater levels shall be prepared for each boring and test excavation.
- Laboratory testing of selected soil samples for index properties limited to moisture content, full sieve analysis, fines content, and organic content.
- Assign and perform a series of laboratory tests to ascertain soil index properties of the soils encountered in each boring.

Task 3 – Professional Services

Prepare a geotechnical report which will include, but not necessarily limited to:

- Overall site map showing the locations of all soil borings.

- General evaluation of the site considering the proposed project and estimated subsurface conditions.
- Ground water level elevations (including seasonal fluctuation and anticipation of groundwater levels and methods for handling it during construction).
- Soil borings subsurface profiles showing soil classifications, depth, groundwater, and standard penetration “N values”, and soil description.
- Soil classification along with engineering properties of all soils according to their soil classification
- Results of soil laboratory testing
- Foundation recommendations for all proposed structures.
- Recommended allowable soil bearing pressures.
- Recommended soil Modulus of Subgrade Reaction (K) for each structure (e.g., stormwater manholes).
- Locations and descriptions of any existing fill or potentially deleterious materials encountered at the site that may interfere with construction progress or structure performance.
- Lateral earth pressure and other soil parameters for the design of below grade structures. Engineering properties shall include but not be limited to:
 - Dry unit weight of soil
 - Submerged unit weight of soil
 - Lateral coefficient for at-rest condition
 - Lateral coefficient for passive condition
 - Lateral coefficient for active condition
 - Soil internal friction angle
- Address adequacy of existing soil for use in backfilling under and against structures (e.g., seawalls and stormwater manholes).
- It is anticipated that trenches of 10-feet deep may be needed for construction of proposed pipeline. Provide the following relative to trenching:
 - Permissible excavation slopes
 - General sheeting and shoring recommendations
 - Suitability of excavated material for use as fill or backfill

Construction Plans

To develop the construction plans and other contract documents, AECOM will:

- Prepare construction plans and technical specifications detailing the installation of a new 18-inch FM from Pump Station No. 1 to Egret Drive to Layne Blvd and crossing Hallandale Beach Blvd to connect into the existing 14-inch FM (16-inch FM) on the north side (approximately 2,800 linear feet). The FM alignment will be based on the findings of the utility locates. The new FM will be designed to be installed by either HDD or open cut or a combination of both.
- Submit progress drawings to City of Hallandale Beach at the 30%, 60% and 90% design stages. Construction Plans will be in AutoCAD latest version. Technical specifications will be prepared in CSI format. Broward County and the City of Hallandale Beach standard documents will be utilized to the fullest extent possible.

Preliminary Opinion of Probable Construction Cost (POPCC) estimates will be provided with each design submittal. As part of our ISO 9001 certification, AECOM will be conducting internal QA/QC reviews at major completion milestones for the project to enhance value to the City.

- The City of Hallandale Beach will review and provide comments on the 30%, 60% and 90% submittals
- Prepare the Final Issued for Bid Plans and Technical Specifications based upon the review comments received from City of Hallandale Beach on the 100% submittal. Submit the Final Construction Plans and Technical specifications to the City of Hallandale Beach for advertising and bidding of the construction contract.

Task Deliverables: Electronic copies of 30%, 60% and 90% plans, Technical Specifications, and POPCC estimates;

Electronic copies and three (3) hard copies of Final Plans (11x17), and one (1) hardcopy of Final Plans (24x36);

Electronic copies of the Final Technical Specifications.

Permitting

To acquire the necessary permits, AECOM will:

1. Prepare and submit a **Broward County Environmental Protection and Growth Management Department** in the *Environmental Engineering and Permitting Division* – (Broward County General Permit Application to Construct a Wastewater Collection/Transmission System) and (**FDEP Notification/Application for Constructing a Domestic Wastewater Collection/Transmission System** – General Permit).
2. Prepare and submit a **City of Hallandale Beach Engineering** – Utility Right-of-Way Use Permit Application
3. Prepare and submit a **Broward County Traffic Engineering Division** – (Application for Initial Plan Review for Paving, Grading, Drainage, Water, Sewer, Irrigation, Landscaping, Utilities, etc.)

No other permit applications are anticipated. Permit fees will be paid by the City of Hallandale Beach.

Task Deliverables: Electronic copies of the Broward County Environmental Protection and Growth Management Department Letter of Commitment,

FDEP Construction permit application,

Broward County Traffic Engineering permit application.

Task A.2 – Construction Bid Services:

AECOM will assist the City of Hallandale Beach with the bidding of the project. AECOM will:

- Attend a pre-bid meeting, including preparation of an Agenda and Minutes of the Meeting;
- AECOM will prepare up to two (2) addenda during the bid phase to formally answer bidder's technical questions, clarify issues or adjust the bid documents prior to the bid opening;
- From the Final Issued for Bid Plans and Technical Specifications, AECOM will prepare a Conformed Set of Plans and Technical Specifications which will incorporate all revisions issued in Addenda; and
- Provide a recommendation for selection of apparent low bidder, based on a review of the bid documents and checking references.

*Task Deliverables: Electronic copies of Addenda.
Electronic copy of Engineer's recommendation.*

Task A.3 – Construction Contract Administration:

AECOM will provide construction administration on the project via the following services:

- Attend a pre-construction meeting, including preparation of an Agenda and Minutes of the Meeting;
- Attend up to six (6) monthly progress meetings, including preparation of Agenda and Minutes of the Meetings;
- Review shop drawings for materials proposed for construction and provide comments;
- Attend up to six (6) field meetings to address any questions and/or comments;
- Review up to (8) contractor pay requests and provide recommendation for payment. City of Hallandale staff will provide the required inspection of the Project and verify the quantities installed for each pay application;
- AECOM will review and respond to up to five (5) Contractor generated Requests for Information (RFIs);
- Attend a site meeting for "Substantial Completion" and provide a punch list of items for correction;

- Review and provide comments on as-built survey as prepared by the Contractor's Florida registered professional Surveyor.
- Contractor to provide final signed and sealed as-built survey by the Contractor's Florida registered professional Surveyor. AECOM shall review final as built Record Drawings for the new FM.
- Attend a site meeting for Final Completion of Project, based on the punch list items generated as part of the Substantial Completion; and
- Prepare final certification forms to FDEP and Broward County.

*Task Deliverables: Electronic copies Meeting Minutes;
Electronic copies of reviewed shop drawings;
Electronic copies of approved pay requests;
Electronic copy of the Record Drawings;
Electronic copy of punch list items; and
Electronic copy of final certification forms to FDEP and Broward County.*

B. ASSUMPTIONS

1. AECOM will rely on the information provided by the City of Hallandale Beach and others, including any plans, Record Drawings, and studies without an independent review and considers such information to be accurate and reliable.
2. City of Hallandale Beach shall pay for all applicable permitting costs and advertising costs.
3. City of Hallandale Beach Procurement Department will provide the related front-end documents and template for consolidation of all other documents into one bid package.
4. Construction stake-out and preparation of certified as-built drawings shall be the responsibility of the construction contractor's Florida registered professional surveyor.
5. Bid Phase will be no more than one effort of services.
6. Compensation for engineering work in this proposal will be based on a lump-sum method of payment based on percentage complete.

C. PROJECT COST:

Task A.1 – Final Design

	Billed At	Number of Hours	Cost Extended
Director Engineer	\$245	16	\$3,920
Associate Engineer	\$210	64	\$13,440
Project Manager	\$195	0	\$0
Senior Engineer	\$195	0	\$0
Project Engineer	\$185	212	\$39,220
Engineer	\$155	432	\$66,960
Junior Engineer	\$120	0	\$0
CADD Technician	\$110	308	\$33,880
Administration	\$85	34	\$2,890
Geotechnical	NA	NA	\$8,945
Survey and SUE	NA	NA	\$35,373
Potholes Pipe Elevations	NA	NA	\$12,649.42
Expenses	NA	NA	\$1,531.20

Total Task A.1 Cost: \$218,808.62

Task A.2 – Construction Bid Services

	Billed At	Number of Hours	Cost Extended
Director Engineer	\$245	2	\$490
Associate Engineer	\$210	12	\$2,520
Project Manager	\$195	0	\$0
Senior Engineer	\$195	0	\$0
Project Engineer	\$185	14	\$2,590
Engineer	\$155	12	\$1,860
Junior Engineer	\$120	0	\$0
CADD Technician	\$110	4	\$440
Administration	\$85	10	\$850
Expenses	NA	NA	\$255.20

Total Task A.2 Cost: \$9,005.20

Task A.3 - Construction Contract Administration

	Billed At	Number of Hours	Cost Extended
Director Engineer	\$245	2	\$490
Associate Engineer	\$210	53	\$11,130
Project Manager	\$195	0	\$0
Senior Engineer	\$195	0	\$0
Project Engineer	\$185	32	\$5,920
Engineer	\$155	188	\$29,140
Junior Engineer	\$120	0	\$0
CADD Technician	\$110	8	\$880
Administration	\$85	52	\$4,420
Expenses	NA	NA	\$1531.20

Total Task A.3 Cost: \$53,511.20

TOTAL LUMP SUM FEE: \$281,325.02

D. PROJECT SCHEDULE:

- 30 Percent Design – complete 120 calendar days from notice to proceed
- 60 Percent Design – complete 180 calendar days from notice to proceed
- 100 Percent Design – complete 240 calendar days from notice to proceed
- Final Design – complete 270 calendar days from notice to proceed
- Construction Contract Administration – complete 180 calendar days from City of Hallandale Beach issuing Notice to Proceed to the Contractor

E. NOTICE/PROJECT MANAGER OF CONSULTANT:



AECOM Technical Services, Inc.
William P. Snow, PE
Principal Engineer
2090 Palm Beach Lakes Blvd.
West Palm Beach, FL 33409



AECOM Technical Services, Inc.
Karen D. Brandon, PE
Associate Vice President
2090 Palm Beach Lakes Blvd
West Palm Beach, FL 33409

1 of 1

Hallandale Beach
FM
Engineer Opinion of Probable Costs

Bid Item No.	Item Description	Units	18" Quantity	18" unit costs	18" Total Cost
1	18" DIP Push on joint Wastewater Forcemain	LF	2800	\$ 240.00	\$ 672,000.00
2	30" DIP Push on joint Wastewater Forcemain	LF			\$ -
3	Ductile Iron Fittings for Force Main	TONS	5	\$ 9,000.00	\$ 45,000.00
4	18" Mechanical Joint Restraint for DIP	EA	100	\$ 900.00	\$ 90,000.00
5	30" Mechanical Joint Restraint for DIP	EA			\$ -
6	18" Gate Valve & Valve Box	EA	12	\$ 15,000.00	\$ 180,000.00
7	30" Gate Valve & Valve Box	EA			\$ -
8	Horizontal Direction Drilling	LF	200	\$ 500.00	\$ 100,000.00
9	2" ARV w/Manhole for Forcemain	EA	3	\$ 9,000.00	\$ 27,000.00
10	Asphalt Roadway Removal and Restoration (2.5" thick)	SY	3800	\$ 50.00	\$ 190,000.00
11	Asphalt Driveway Removal and Restoration (1.5" thick)	SY	1000	\$ 60.00	\$ 60,000.00
12	Asphalt Sidewalk Removal & Restoration	SY	1000	\$ 40.00	\$ 40,000.00
13	Concrete Sidewalk Removal & Restoration	SY	1000	\$ 50.00	\$ 50,000.00
14	Bahia Sod	SY	2000	\$ 5.00	\$ 10,000.00
15	Remove and relocate Trees up to 12" diameter	EA	5	\$ 675.00	\$ 3,375.00
16	Record Drawing	LF	2800	\$ 2.50	\$ 7,000.00
17	Construction Survey	LF	2800	\$ 2.50	\$ 7,000.00
18	Preconstruction Video Taping	LF	2800	\$ 1.50	\$ 4,200.00
19	Maintenance of Traffic FDOT Roadway	LF	3500	\$ 4.00	\$ 14,000.00
20	Density Tests	EA	30	\$ 40.00	\$ 1,200.00
21	Proctor Tests	EA	6	\$ 100.00	\$ 600.00
22	Dewatering	LF	2800	\$ 4.00	\$ 11,200.00
23	Demucking with Imported Clean Fill	CY	50	\$ 20.00	\$ 1,000.00
24	Compacted Clean Fill	CY	50	\$ 14.00	\$ 700.00
25	Protect and Support and Utility Poles	EA	6	\$ 2,000.00	\$ 12,000.00
26	Remove & Replace Signs	EA	20	\$ 150.00	\$ 3,000.00
27	ADA Concrete Ramps per FDOT Index 304 (Include Ramp, Curb and Detectable Warning)	EA	2	\$ 2,500.00	\$ 5,000.00
28	Silt Fence	LF	2800	\$ 3.00	\$ 8,400.00
29	Conflict Manholes	EA			\$ -
30	spare				
31	Sub Total				\$ 1,542,675.00
32	15% contingency				\$ 231,401.25
33	Sub Total				\$ 1,774,076.25
34					
35	Mobilization	LS		2.5%	\$ 44,351.91
36	Demobilization	LS		1.0%	\$ 17,740.76
37	Total				\$ 1,836,168.92

PROJECT:
18" SEWER FM

SITE LOCATION:
EGRET DRIVE

Project No.
TBD

Photo No.
1

Date:
06-24-21

Location Photo Taken:
Egret Drive

Photo Description:

View of City of Hallandale
Master Pump Station No.
1.



Photo No.
2

Date:
06-24-21

Location Photo Taken:
Egret Drive

Photo Description:

View of City of Hallandale
Master Pump Station No.
1.



PROJECT:
18" SEWER FM

SITE LOCATION:
EGRET DRIVE

Project No.
TBD

Photo No.
3

Date:
06-24-21

Location Photo Taken:
Egret Drive

Photo Description:

View of tennis courts next to City of Hallandale Master Pump Station No. 1.



Photo No.
4

Date:
06-24-21

Location Photo Taken:
Egret Drive

Photo Description:

Looking east on Egret Drive towards Layne Boulevard.



PROJECT:
18" SEWER FM

SITE LOCATION:
EGRET DRIVE

Project No.
TBD

Photo No.
5

Date:
06-24-21

Location Photo Taken:
Egret Drive

Photo Description:

Looking south on Egret Drive towards City of Hallandale Master Pump Station No. 1.



Photo No.
6

Date:
06-24-21

Location Photo Taken:
Hallandale Beach Blvd.

Photo Description:

Looking south towards Layne Blvd. from Hallandale Beach Blvd.



PROJECT:
18" SEWER FM

SITE LOCATION:
HALLANDALE BEACH BOULEVARD

Project No.
TBD

Photo No.
7

Date:
06-24-21

Location Photo Taken:
Hallandale Beach Blvd.

Photo Description:

Looking south towards Layne Blvd. from Hallandale Beach Blvd.

Broward County Traffic Fiber Optics box in the sidewalk.



Photo No.
8

Date:
06-24-21

Location Photo Taken:
Hallandale Beach Blvd.

Photo Description:

Underground electric in the sidewalk at the intersection of Hallandale Beach Blvd. and Layne Blvd.



PROJECT:
18" SEWER FM

SITE LOCATION:
HALLANDALE BEACH BOULEVARD

Project No.
TBD

Photo No.
9

Date:
06-24-21

Location Photo Taken:
Hallandale Beach Blvd.

Photo Description:

Underground gas utility line at the intersection of Hallandale Beach Blvd. and Layne Blvd.



Photo No.
10

Date:
06-24-21

Location Photo Taken:
Hallandale Beach Blvd.

Photo Description:

Underground phone utility vault at the intersection of Hallandale Beach Blvd. and Layne Blvd.



PROJECT:
18" SEWER FM

SITE LOCATION:
HALLANDALE BEACH BOULEVARD

Project No.
TBD

Photo No.
11

Date:
06-24-21

Location Photo Taken:
Hallandale Beach Blvd.

Photo Description:

View looking east on Hallandale Beach Blvd. at intersection with Layne Blvd.



Photo No.
12

Date:
06-24-21

Location Photo Taken:
Hallandale Beach Blvd.

Photo Description:

Street lighting box in sidewalk on Hallandale Beach Blvd. at intersection with Layne Blvd.



PROJECT:
18" SEWER FM

SITE LOCATION:
HALLANDALE BEACH BOULEVARD

Project No.
TBD

Photo No.
13

Date:
06-24-21

Location Photo Taken:
Hallandale Beach Blvd.

Photo Description:

Sewer line marking on sidewalk on Hallandale Beach Blvd. at intersection with Layne Blvd.



Photo No.
14

Date:
06-24-21

Location Photo Taken:
Hallandale Beach Blvd.

Photo Description:

View of underground boxes for traffic light.

