



TOWN OF GOLDEN BEACH

One Golden Beach Drive
Golden Beach, FL 33160

MEMORANDUM

Date: November 20, 2018

To: Honorable Mayor Glenn Singer &
Town Council Members

From: Alexander Diaz,
Town Manager

Item Number:

9

Subject: Resolution No. 2581.18- Authorizing Craig A. Smith &
Associates to Perform the Work for the Center Island Pump
Station

Recommendation:

It is recommended that the Town Council adopt the attached Resolution No. 2581.18 as presented.

Background:

Currently Center Island is served by two gravity drainage systems with positive drainage to the Intra Coastal Waterway (ICWW). Center Island has two outfalls with backflow prevention devices to keep high tide water from directly entering the drainage system and flooding the streets and yards. However, Center Island is low in elevation and has limited positive head to gravity outfall during a high tide condition.

Tidal seepage (during periods of high tide) from the ICWW occurs and seeps through the ground which ultimately makes its way to the drainage system via overland flow. This occurrence cannot be deterred with the existing backflow prevention devices as the seepage bypasses the devices. To make matters worse during these high tide conditions, heavy rainfall can prolong street flooding until the tide recedes and the drainage system can outflow by gravity into the ICWW.

Recommendation:

We are recommending the installation of a duplex stormwater pumping station that would be sized to reasonably handle a storm event when adverse tide conditions are prevalent. It is the intent of the proposed improvements to keep the existing gravity discharges to the ICWW as the primary outfalls for this island and to operate the station when tide conditions prevent gravity discharge during

a storm event. Basically, the pump station will come on when gravity discharge is not possible.

The existing gravity system would be connected to the station system containing a water quality treatment structure, a weir box, storm pipes, and pumping station with vault and force main. A stormwater pump station with a discharge capacity of 4,032 GPM (9 cfs) is recommended. The station would be a smaller version (in capacity) of the stations serving South & North Park. The addition of the pump station was analyzed and the results showed lowered peak flood stages and lowered flood durations. Flood durations are lowered because the pumps are not impeded by the tidal water to discharge stormwater.

The location of the pump station would be in the Town's Right-of-Way in the parking bays of the Police Boat Dock (See Attached Diagram).

Fiscal Impact:

We anticipate that this project will cost between \$865,000 to \$916,000. We intend to secure funding from the State through a loan.

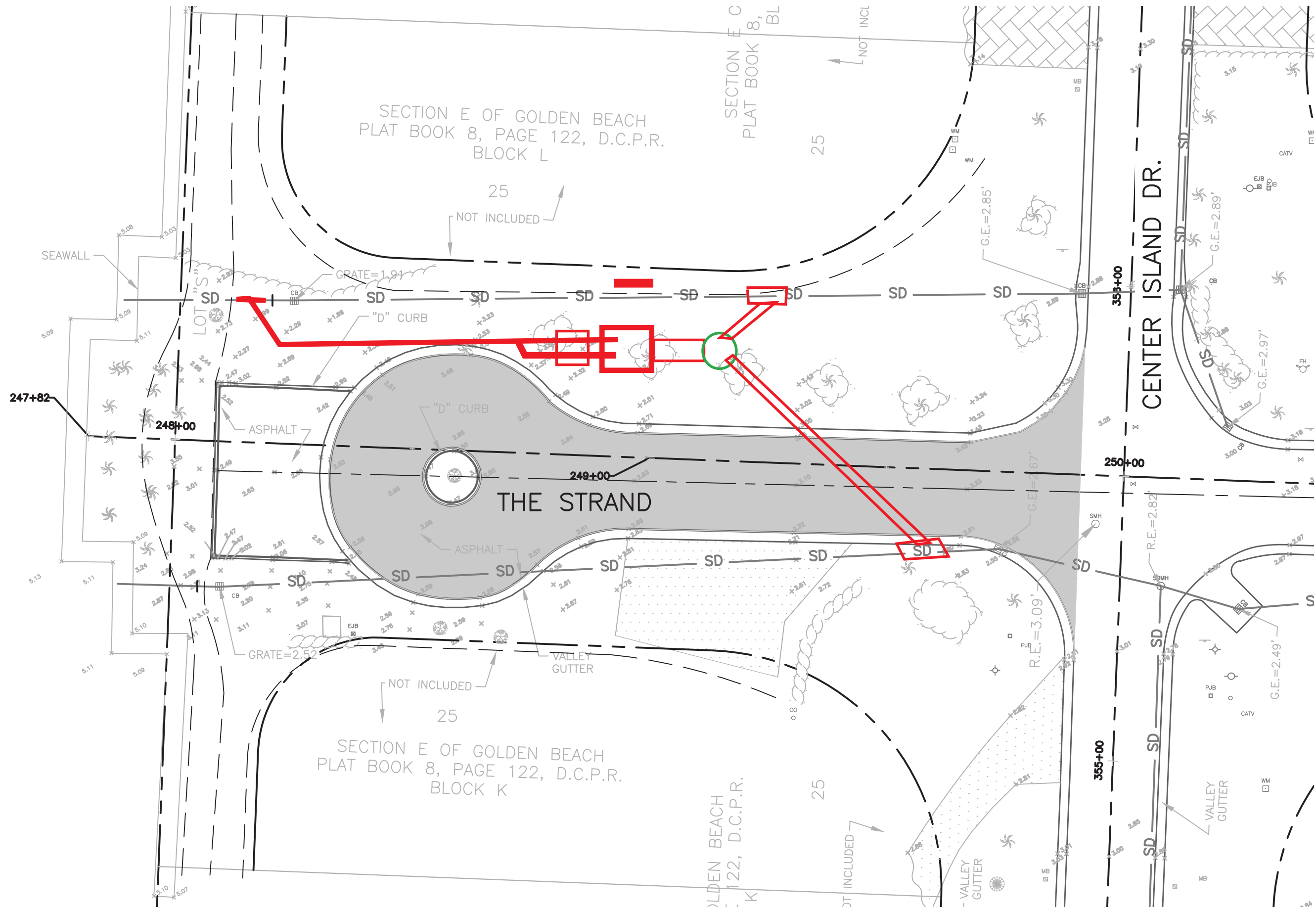
**TOWN OF GOLDEN BEACH STORMWATER IMPROVEMENTS
CONCEPTUAL COST ESTIMATE FOR CENTER ISLAND 9 CFS PUMP STATION - ROADSIDE GREEN AREA
INSTALLATION**

ITEM No.	DESCRIPTION		QUANTITY	UNIT	UNIT COST	TOTAL
1	Mobilization	5.0%	1	LS	\$ 27,927.40	\$ 27,927.40
2	Maintenance of Traffic	2.0%	1	LS	\$ 11,170.96	\$ 11,170.96
3	Survey Stakeout and As-Builts	1.0%	1	LS	\$ 5,585.48	\$ 5,585.48
4	Density Testing	2.0%	1	LS	\$ 11,170.96	\$ 11,170.96
5	Clearing and Stripping	1.0%	1	LS	\$ 5,585.48	\$ 5,585.48
6	Environmental Compliance	2.0%	1	LS	\$ 11,170.96	\$ 11,170.96
	Structures (Include Full Restoration)					
7	10' x 5' Weir Box			EA	\$ 8,500.00	\$ -
8	5' x 3' MH w/USF 580		2	EA	\$ 5,500.00	\$ 11,000.00
9	8' Diameter CDS Water Quality Structure		1	EA	\$ 58,500.00	\$ 58,500.00
10	Duplex Stormwater Pumping Station (10' x 10' x 10') & Vault with all piping & Electrical Components		1	EA	\$362,880	\$ 362,880.00
11	Generator		1	EA	\$50,000	\$ 50,000.00
	Pipe (Include Full Restoration)					
12	18" PVC Pipe			LF	\$ 54.00	\$ -
13	24" A2000 PVC		65	LF	\$ 72.00	\$ 4,680.00
14	36" A2000 PVC			LF	\$ 90.00	\$ -
15	48" RCP Pipe		8	LF	\$ 175.00	\$ 1,400.00
16	10" DIP Force Main		80	LF	\$ 60.00	\$ 4,800.00
17	30" DIP Force Main			LF	\$ 175.00	\$ -
	Miscellaneous (Include Full Restoration)					
18	Core Exist. Sea Wall & Connect FM			LS	\$ 15,000.00	\$ -
19	3-Phase Power/FPL		1	LS	\$ 36,288.00	\$ 36,288.00
20	Augered Piles (For Proposed Drainage Structures, Drainage Pipes & Force Main)		18	EA	\$ 1,500.00	\$ 27,000.00
21	Manatee Grate for FM			EA	\$ 5,000.00	\$ -
22	Remove Existing Pipe Sections and connect existing pipes to new structures (2)		1	LS	\$ 2,000.00	\$ 2,000.00
23	Core Exist. Structure and Connect Pipe			LS	\$ 500.00	\$ -
					SUBTOTAL	\$ 631,159.24
				10%	CONTINGENCY	\$ 63,115.92
					PROBABLE CONSTRUCTION COST TOTAL	\$ 694,275.16
	Professional Surveying/Engineering Services					
	Surveying	1%				\$ 6,311.59
	Civil Engineering Design	8%				\$ 50,492.74
	Electrical Engineering Design	2%				\$ 12,623.18
	Geotechnical Engineering	2%				\$ 12,623.18
	Permitting (MDC-RER)	2%				\$ 12,623.18
	Quantities/Cost Est/Bid Docs & Bidding	2%				\$ 12,623.18
	Engineering Services During Construction	4%				\$ 25,246.37
	Construction Observation Services	6%				\$ 37,869.55
		27%				\$ 170,412.99
					TOTAL PROJECT COST	\$ 864,688.16



0 5 10 20
HORIZONTAL GRAPHIC SCALE
24" X 36" SCALE: 1" = 10'-0"
11" X 17" SCALE: 1" = 20'-0"

INTRACOASTAL
WATERWAY



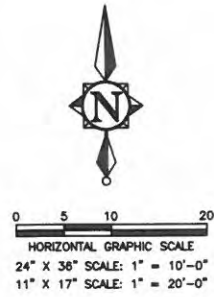
TOWN OF GOLDEN BEACH

THE STRAND ROADWAY AND
STORMWATER IMPROVEMENTS



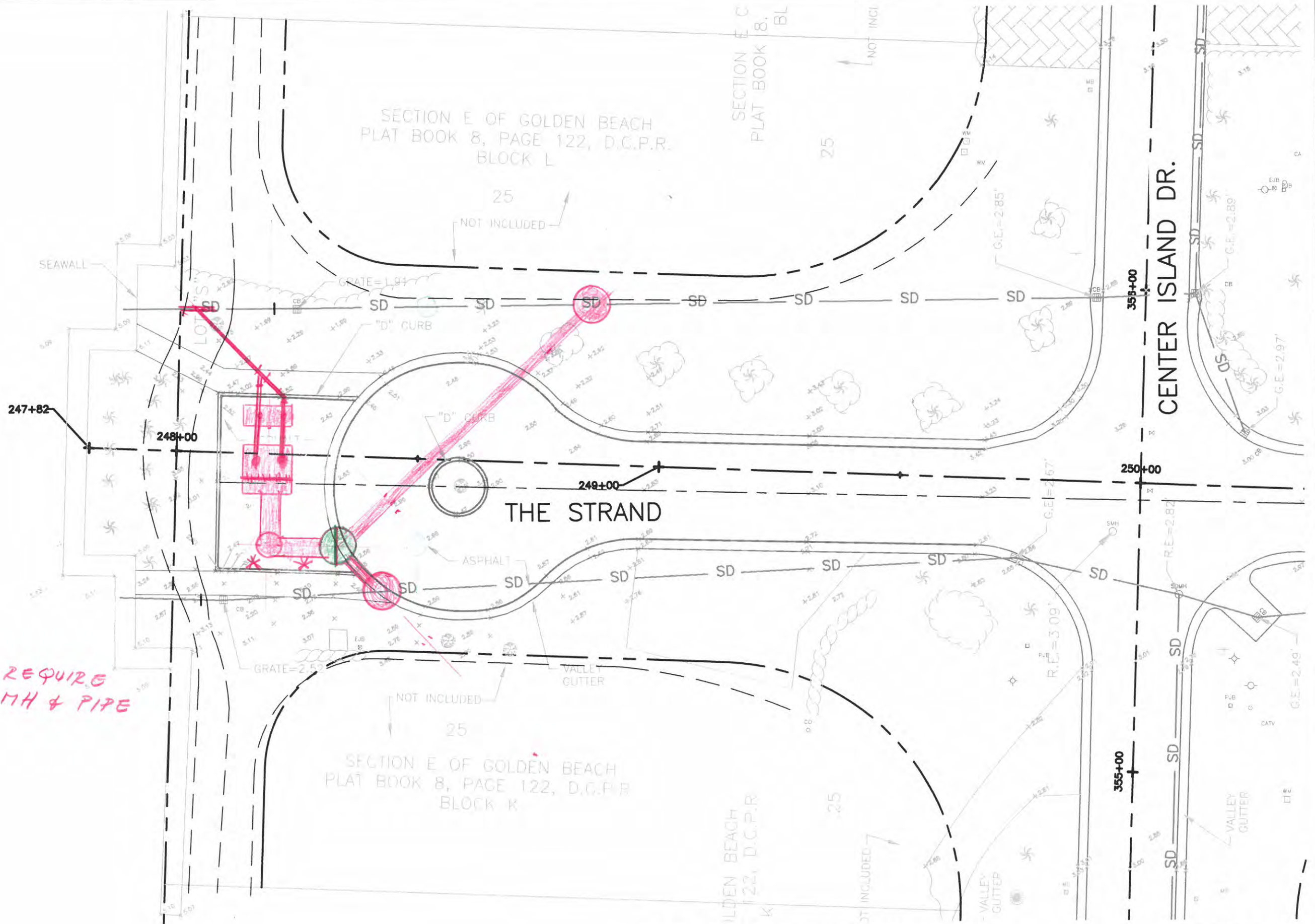
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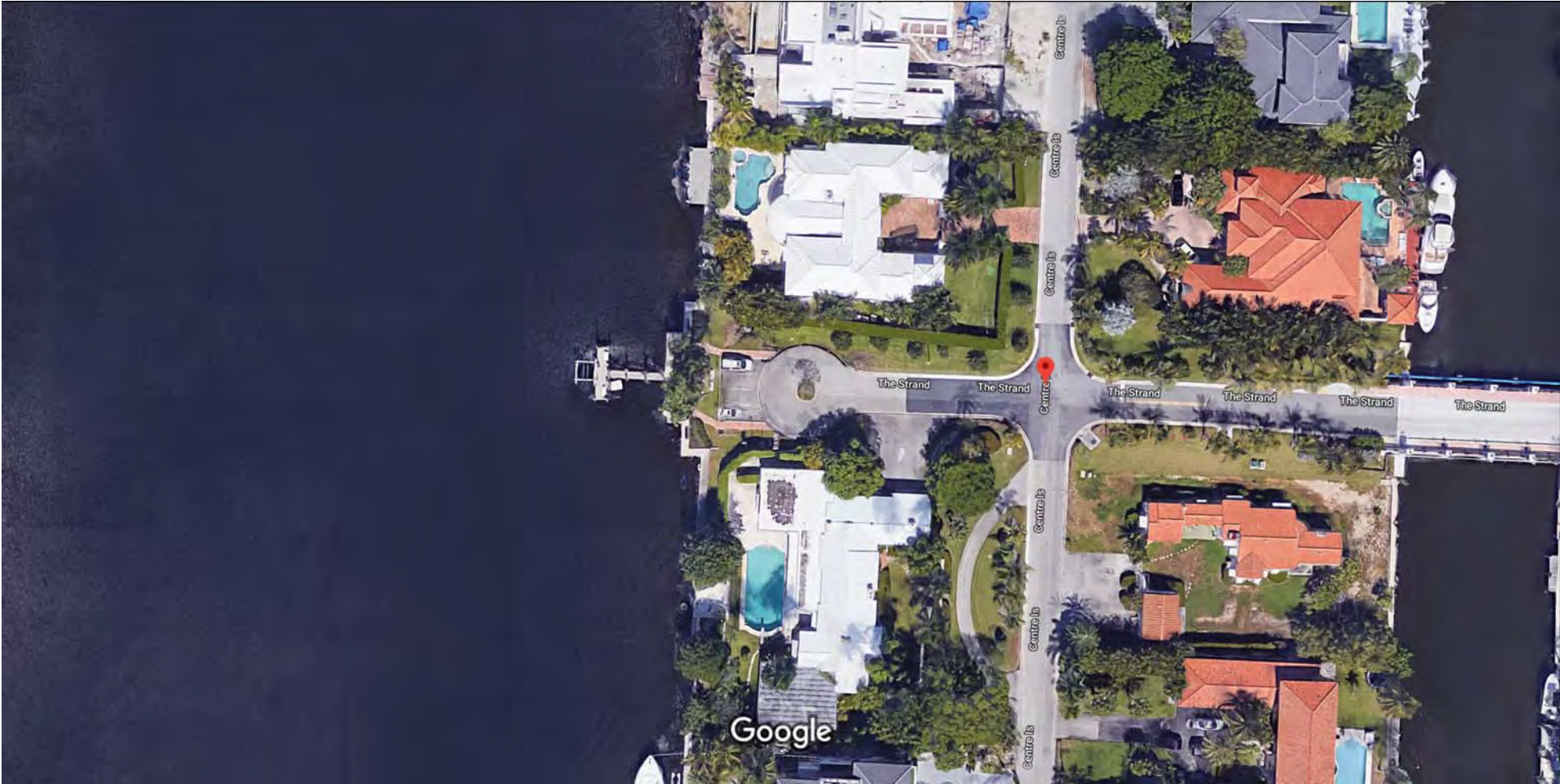
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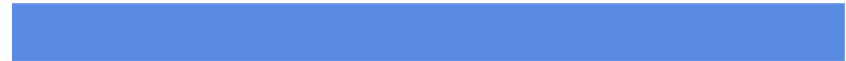
INTRACOASTAL
WATERWAY

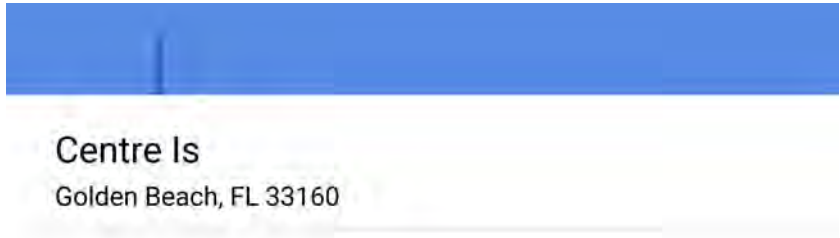
* WILL REQUIRE
ADD'L MH & PIPE





Imagery ©2018 Google, Map data ©2018 Google 20 ft





TOWN OF GOLDEN BEACH, FLORIDA

RESOLUTION NO. 2581.18

A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF GOLDEN BEACH, FLORIDA, APPROVING AND AUTHORIZING WORK BY CRAIG A. SMITH & ASSOCIATES, INC. FOR ENGINEERING SERVICES RELATING TO STORMWATER IMPROVEMENTS; AUTHORIZING THE MAYOR TO EXECUTE THE AGREEMENT; PROVIDING FOR IMPLEMENTATION; AND PROVIDING FOR AN EFFECTIVE DATE

WHEREAS, as part of a comprehensive Town-wide stormwater improvement plan, the Town wishes to construct a new pump station for Center Island; and

WHEREAS, the Town of Golden Beach (the "Town") is commencing a process of designing and constructing a new stormwater pump station facility for Center Island; and

WHEREAS, as part of the process, the Town wishes to direct the Town Engineer Craig A. Smith & Associates, Inc. to design and engineer the proposed pump station; and

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF GOLDEN BEACH, FLORIDA, AS FOLLOWS:

Section 1. Recitals Adopted. Each of the above stated recitals are hereby adopted, confirmed and incorporated herein.

Section 2. Approval of Agreement. The Town Council hereby authorizes the work within the October 12, 2018 Scope of Services and Fee Proposal by Craig Smith & Associates, Inc. in substantially the form attached hereto as Exhibit "A" (the "Proposal").

Section 3. Implementation. The Town Manager is hereby authorized to issue a directive to the Town Engineer for the work contained in the Proposal and to take all steps reasonably necessary to implement the work and this Resolution.

Section 4. Effective Date. This Resolution shall be effective immediately upon adoption.

The Motion to adopt the foregoing Resolution was offered by _____, seconded by _____, and on roll call the following vote ensued:

Mayor Glenn Singer	_____
Vice Mayor Jaime Mendal	_____
Councilmember Kenneth Bernstein	_____
Councilmember Amy Isackson-Rojas	_____
Councilmember Judy Lusskin	_____

PASSED AND ADOPTED by the Town Council of the Town of Golden Beach, Florida this 30th day of October, 2018.

MAYOR GLENN SINGER

ATTEST:

LISSETTE PEREZ
TOWN CLERK

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY:

STEPHEN J. HELFMAN
TOWN ATTORNEY

EXHIBIT “A”

(Attach Agreement between the Town and Craig A. Smith & Associates, Inc.)

TOWN OF GOLDEN BEACH

PROPOSED SCOPE OF SERVICES AND PROPOSED FEE

FOR

PROFESSIONAL ENGINEERING SERVICES

FOR

CENTER ISLAND PUMP STATION

DATED: October 12, 2018

CRAIG A. SMITH & ASSOCIATES
Consulting Engineers • Planners • Surveyors
7777 Glades Road, Suite 410
Boca Raton, FL 33434
(O) 561.314.4445
(F) 561.314.4457

CRAIG A. SMITH & ASSOCIATES

PROPOSED SCOPE OF SERVICES AND PROPOSED FEE

FOR

CENTER ISLAND TIDAL PUMP STATION

PROJECT NAME: TOWN OF GOLDEN BEACH

PROPOSAL NO: P3747

PROJECT DESCRIPTION: Providing professional engineering, design, permitting, surveying, utility location, and construction services for the design of a pumping station to provide limited flood relief during periods of high tide.

OWNER: Town of Golden Beach

Attention: Alexander Diaz, Town Manager

Address: 1 Golden Beach Drive
Golden Beach, FL 33160

Phone: (305) 932-0744
FAX (305) 933-3825

GENERAL

Craig A. Smith & Associates (CAS) proposes to accomplish the services as follows:

ITEM

NO.

S86 SPECIFIC PURPOSE SURVEY/SUBSURFACE UTILITY MAP

CAS Surveying will recover horizontal and vertical control relative to project datum as previously established. Surveying will then gather topographic information within the right of way of the Strand beginning approximately 50 feet west of Center Island Drive and running west to the end. One cross section will be taken on each side of the existing dock running west of the bulkhead out to the angle of repose. Utilities as surface marked by others will be located and shown on the Survey. A Map of Specific Purpose Survey will be prepared for the project adhering to Florida Statutes Chapter 472.027, Florida Administrative Code 5J-17 (Minimum Technical Standards for Surveying in the State of Florida)

\$5,360.00

E74 &

E75 ONE CALL COORDINATION & EM / GPR LOCATING

Coordinate with SSOCOF to ascertain approximate facility locations prior to vacuum excavation in accordance with FS 556. Perform project "White Lining" in accordance with FS 556. Maintain database of SSOCOF Tickets and responses. Perform EM / GPR locating to confirm information derived from review of as-builts and coordination with member operators, identify buried power, telecom, CATV, water, sewer and drainage facilities, identify potentially unknown/unclaimed facilities and supplement surface markings for collection by CAS Survey. Prepare sketch of identified facilities.

Total for E74 & E75: \$1,550.00

E78 VACUUM EXCAVATION ("SOFT DIGS")

Perform up to three (3) "soft digs" to identify the type, size, and material as well as depth to the top of potentially conflicting and / or newly identified or previously unknown facilities. Prepare Vacuum Excavation reports including location sketch with facility type, size, depth and composition. (Survey not included, see survey proposal for soft dig survey price). Additional soft digs above this amount will be charged at the rate of \$325.00 each, exclusive of survey. Provide coordination with CAS Survey and Engineering Departments to review subsurface utility information and review survey maps to ensure accurate depiction of located facilities.

\$975.00

E53 PUMP STATION DESIGN AND ENGINEERING ANALYSIS

Compile gathered information and provide stormwater pump station design utilizing the Hydraulic Institute Standards; force main sizing, wetwell & vault design, pump selection and component design. Hydrologic and Hydraulic analyses of the system. Coordinate with subconsultants (geotechnical and electrical) on the design of the station. Prepare construction plans with supporting electrical design plans. Provide plans sufficient to bid and construct the proposed pump station. Meetings with Town staff or requested presentation to Town Council will be billed hourly at the attached rates.

\$38,550.00**E14 COST ESTIMATE**

Provide quantity take-off and an engineer's opinion of probable cost estimate for the proposed pump station. Coordinate with subconsultants on discipline specific quantities and costs.

\$3,500.00**E61 PERMITTING**

Prepare and submit Miami-Dade County Regulatory Economic Resources Class II permit application with supporting documentation to secure the permit. This service will include up to one response to requests for additional information letters from the County. Permit fees are not included in this scope.

\$3,500.00**E15 CONTRACT DOCUMENTS AND ASSISTANCE DURING BIDDING**

CAS will prepare contract documents and specifications and assist the OWNER in advertising for and obtaining bids to construct the system. CAS will run the pre-bid meeting as the OWNER's representative to discuss the project and answer questions from prospective bidders during the bid advertisement period. CAS will perform bid reviews, tabulate bids, perform reference checks, and assist the Owner in the evaluation of bids and submit bid award recommendation package to the OWNER.

\$9,500.00**E56 ENGINEERING SERVICES DURING CONSTRUCTION**

CAS Engineer will conduct the pre-construction meeting and subsequent progress meetings, perform shop drawing reviews, respond to contractor's request for additional information, coordinate with CAS inspection staff and Town staff, perform site visits as appropriate, review as-builts, review pay applications and coordinate with the Town, conduct a final inspection with the appropriate agencies to determine if the work is acceptable, and provide construction certification to the appropriate agency. The fee for these services will be on a monthly basis billed at **\$ 7,280** per month and is based on 10 hours/week, for an estimated construction period of three (3) months.

\$21,840.00

E57 CONSTRUCTION OBSERVATION SERVICES

CAS will to continue act as the Owner's representative monitoring construction on a full time basis to ensure the project is being constructed substantially in accordance to the plans. As the Owner's representative, CAS will oversee required testing, review test results, provide weekly construction reports, and coordinate between engineers and contractor to resolve construction issues. The fee for these services will be on a monthly basis billed at \$ 19,420.00 per month and is based on 30 hours/week for an estimated construction period of three (3) months.

\$43,680.00

E11 OPERATIONAL PHASE SERVICES

During this task, CAS will attend and oversee the pump station start up, assist the OWNER in the closing of financial matters, review and submit a set of record prints showing as-built information (furnished to us by the Contractor) and provide certification to appropriate governmental agencies. CAS will visit the site with the OWNER and assist in resolving with the Contractor apparent defects or deficiencies.

\$2,240.00

SUB1 GEOTECHNICAL ENGINEERING DESIGN AND CONSTRUCTION SERVICES

Geotechnical engineering services in support of the pump station design will be provided by Terracon as a subconsultant to CAS. Terracon's proposal is attached.

Geotechnical engineering : \$6,900.00

Post design services: \$1,200.00

Total Geotechnical Engineering Services: \$8,100.00

SUB2 ELECTRICAL ENGINEERING DESIGN AND CONSTRUCTION SERVICES

Electrical engineering services in support of the pump station design will be provided by Bailey Engineering Consultants, Inc (BEC). as a subconsultant to CAS. BEC's proposal is attached.

Electrical Engineering : \$12,000.00

Electrical Engineering Construction services: \$7,800.00

Total Electrical Engineering Services: \$19,800.00

SUMMARY OF COSTS

CAS proposes to accomplish the professional engineering services listed for the following total lump sum fee, which is the sum of the fees for each phase and its specific work tasks:

SURVEYING	\$5,360.00
UNDERGROUND UTILITY LOCATION SERVICES	\$1,550.00
VACUUM EXCAVATION	\$975.00
PUMP STATION DESIGN AND ENGINEERING ANALYSIS	\$48,750.00
COST ESTIMATE	\$3,500.00
PERMITTING (Miami-Dade County)	\$3,500.00
CONTRACT DOCUMENTS & BIDDING SERVICES	\$9,500.00
ENGINEERING SERVICES DURING CONSTRUCTION	\$21,840.00
CONSTRUCTION OBSERVATION SERVICES	\$43,680.00
OPERATIONAL PHASE	\$2,240.00
SUBCONSULTANT - GEOTECHNICAL ENGINEERING	\$8,100.00
SUBCONSULTANT - ELECTRICAL ENGINEERING	\$19,800.00
TOTAL	\$168,795.00

Additional Services

Any service not specifically included in the final Agreement will be considered as an Additional Service. CAS will accomplish Additional Services upon proper written authorization of the CLIENT. The fees for Additional Services are at the attached hourly rates or at a mutually agreed upon Lump Sum Fee.

If this proposal is acceptable to you, please execute as indicated and return one executed copy to our office for our files.

Yours Sincerely,

CRAIG A. SMITH & ASSOCIATES



Stephen C. Smith, P.E.
Senior Vice-President / COO

ACCEPTED BY:

TOWN OF GOLDEN BEACH

Corporation Name

Signature

Date

Name of Authorized Representative

Title of Authorized Representative

October 12, 2018



Craig A. Smith & Associates, Inc.
7777 Glades Road, Suite 410
Boca Raton, FL 33434

Attn: Mr. Orlando A. Rubio, P.E.
P: (561) 314 4445
E: ORubio@craigasmith.com

Re: Proposal for Geotechnical Engineering Services
Town of Golden Beach Center Island Pump Station
West of Center Island Drive and The Strand
Golden Beach, Florida
Terracon Proposal No. PH8185073

Dear Mr. Rubio:

We appreciate the opportunity to submit this proposal to Craig A. Smith & Associates, Inc. (Craig A. Smith) to provide Geotechnical Engineering services for the above referenced project. The following are exhibits to the attached Agreement for Services.

Exhibit A	Project Understanding
Exhibit B	Scope of Services
Exhibit C	Compensation and Project Schedule
Exhibit D	Site Location
Exhibit E	Anticipated Exploration Plan

Our base fee to perform the Scope of Services described in this proposal is \$6,200. Our fees for post design services during construction is estimated to be \$ 1,200. See Exhibit C for more details of our fees and consideration of additional services.

Your authorization for Terracon to proceed in accordance with this proposal can be issued by signing and returning a copy of the attached Agreement for Services to our office.

Sincerely,

Terracon Consultants, Inc.

A handwritten signature in blue ink, appearing to read "Rutu Nulkar", with a horizontal line extending to the right.

Rutu Nulkar, P.E.
Senior Engineer

Douglas S. Dunkelberger, P.E.
Principal



AGREEMENT FOR SERVICES

This AGREEMENT is between Craig A. Smith & Associates ("Client") and Terracon Consultants, Inc. ("Consultant") for Services to be provided by Consultant for Client on the Town of Golden Beach Center Island Pump Station project ("Project"), as described in Consultant's Proposal dated 10/12/2018 ("Proposal"), including but not limited to the Project Information section, unless the Project is otherwise described in Exhibit A to this Agreement (which section or Exhibit is incorporated into this Agreement).

1. **Scope of Services.** The scope of Consultant's services is described in the Proposal, including but not limited to the Scope of Services section ("Services"), unless Services are otherwise described in Exhibit B to this Agreement (which section or exhibit is incorporated into this Agreement). Portions of the Services may be subcontracted. Consultant's Services do not include the investigation or detection of, nor do recommendations in Consultant's reports address the presence or prevention of biological pollutants (e.g., mold, fungi, bacteria, viruses, or their byproducts) or occupant safety issues, such as vulnerability to natural disasters, terrorism, or violence. If Services include purchase of software, Client will execute a separate software license agreement. Consultant's findings, opinions, and recommendations are based solely upon data and information obtained by and furnished to Consultant at the time of the Services.
2. **Acceptance/ Termination.** Client agrees that execution of this Agreement is a material element of the consideration Consultant requires to execute the Services, and if Services are initiated by Consultant prior to execution of this Agreement as an accommodation for Client at Client's request, both parties shall consider that commencement of Services constitutes formal acceptance of all terms and conditions of this Agreement. Additional terms and conditions may be added or changed only by written amendment to this Agreement signed by both parties. In the event Client uses a purchase order or other form to administer this Agreement, the use of such form shall be for convenience purposes only and any additional or conflicting terms it contains are stricken. This Agreement shall not be assigned by either party without prior written consent of the other party. Either party may terminate this Agreement or the Services upon written notice to the other. In such case, Consultant shall be paid costs incurred and fees earned to the date of termination plus reasonable costs of closing the Project.
3. **Change Orders.** Client may request changes to the scope of Services by altering or adding to the Services to be performed. If Client so requests, Consultant will return to Client a statement (or supplemental proposal) of the change setting forth an adjustment to the Services and fees for the requested changes. Following Client's review, Client shall provide written acceptance. If Client does not follow these procedures, but instead directs, authorizes, or permits Consultant to perform changed or additional work, the Services are changed accordingly and Consultant will be paid for this work according to the fees stated or its current fee schedule. If project conditions change materially from those observed at the site or described to Consultant at the time of proposal, Consultant is entitled to a change order equitably adjusting its Services and fee.
4. **Compensation and Terms of Payment.** Client shall pay compensation for the Services performed at the fees stated in the Proposal, including but not limited to the Compensation section, unless fees are otherwise stated in Exhibit C to this Agreement (which section or Exhibit is incorporated into this Agreement). If not stated in either, fees will be according to Consultant's current fee schedule. Fee schedules are valid for the calendar year in which they are issued. Fees do not include sales tax. Client will pay applicable sales tax as required by law. Consultant may invoice Client at least monthly and payment is due upon receipt of invoice. Client shall notify Consultant in writing, at the address below, within 15 days of the date of the invoice if Client objects to any portion of the charges on the invoice, and shall promptly pay the undisputed portion. Client shall pay a finance fee of 1.5% per month, but not exceeding the maximum rate allowed by law, for all unpaid amounts 30 days or older. Client agrees to pay all collection-related costs that Consultant incurs, including attorney fees. Consultant may suspend Services for lack of timely payment. It is the responsibility of Client to determine whether federal, state, or local prevailing wage requirements apply and to notify Consultant if prevailing wages apply. If it is later determined that prevailing wages apply, and Consultant was not previously notified by Client, Client agrees to pay the prevailing wage from that point forward, as well as a retroactive payment adjustment to bring previously paid amounts in line with prevailing wages. Client also agrees to defend, indemnify, and hold harmless Consultant from any alleged violations made by any governmental agency regulating prevailing wage activity for failing to pay prevailing wages, including the payment of any fines or penalties.
5. **Third Party Reliance.** This Agreement and the Services provided are for Consultant and Client's sole benefit and exclusive use with no third party beneficiaries intended. Reliance upon the Services and any work product is limited to Client, and is not intended for third parties other than those who have executed Consultant's reliance agreement, subject to the prior approval of Consultant and Client.
6. **LIMITATION OF LIABILITY. CLIENT AND CONSULTANT HAVE EVALUATED THE RISKS AND REWARDS ASSOCIATED WITH THIS PROJECT, INCLUDING CONSULTANT'S FEE RELATIVE TO THE RISKS ASSUMED, AND AGREE TO ALLOCATE CERTAIN OF THE ASSOCIATED RISKS. TO THE FULLEST EXTENT PERMITTED BY LAW, THE TOTAL AGGREGATE LIABILITY OF CONSULTANT (AND ITS RELATED CORPORATIONS AND EMPLOYEES) TO CLIENT AND THIRD PARTIES GRANTED RELIANCE IS LIMITED TO THE GREATER OF \$50,000 OR CONSULTANT'S FEE, FOR ANY AND ALL INJURIES, DAMAGES, CLAIMS, LOSSES, OR EXPENSES (INCLUDING ATTORNEY AND EXPERT FEES) ARISING OUT OF CONSULTANT'S SERVICES OR THIS AGREEMENT. PRIOR TO ACCEPTANCE OF THIS AGREEMENT AND UPON WRITTEN REQUEST FROM CLIENT, CONSULTANT MAY NEGOTIATE A HIGHER LIMITATION FOR ADDITIONAL CONSIDERATION IN THE FORM OF A SURCHARGE TO BE ADDED TO THE AMOUNT STATED IN THE COMPENSATION SECTION OF THE PROPOSAL. THIS LIMITATION SHALL APPLY REGARDLESS OF AVAILABLE PROFESSIONAL LIABILITY INSURANCE COVERAGE, CAUSE(S), OR THE THEORY OF LIABILITY, INCLUDING NEGLIGENCE, INDEMNITY, OR OTHER RECOVERY. THIS LIMITATION SHALL NOT APPLY TO THE EXTENT THE DAMAGE IS PAID UNDER CONSULTANT'S COMMERCIAL GENERAL LIABILITY POLICY.**
7. **Indemnity/Statute of Limitations.** Consultant and Client shall indemnify and hold harmless the other and their respective employees from and against legal liability for claims, losses, damages, and expenses to the extent such claims, losses, damages, or expenses are legally determined to be caused by their negligent acts, errors, or omissions. In the event such claims, losses, damages, or expenses are legally determined to be caused by the joint or concurrent negligence of Consultant and Client, they shall be borne by each party in proportion to its own negligence under comparative fault principles. Neither party shall have a duty to defend the other party, and no duty to defend is hereby created by this indemnity provision and such duty is explicitly waived under this Agreement. Causes of action arising out of Consultant's Services or this Agreement regardless of cause(s) or the theory of liability, including negligence, indemnity or other recovery shall be deemed to have accrued and the applicable statute of limitations shall commence to run not later than the date of Consultant's substantial completion of Services on the project.
8. **Warranty.** Consultant will perform the Services in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the same locale. **EXCEPT FOR THE STANDARD OF CARE PREVIOUSLY STATED, CONSULTANT MAKES NO WARRANTIES OR GUARANTEES, EXPRESS OR IMPLIED, RELATING TO CONSULTANT'S SERVICES AND CONSULTANT DISCLAIMS ANY IMPLIED WARRANTIES OR WARRANTIES IMPOSED BY LAW, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.**
9. **Insurance.** Consultant represents that it now carries, and will continue to carry: (i) workers' compensation insurance in accordance with the laws of the states having jurisdiction over Consultant's employees who are engaged in the Services, and employer's liability insurance (\$1,000,000); (ii)

commercial general liability insurance (\$1,000,000 occ / \$2,000,000 agg); (iii) automobile liability insurance (\$1,000,000 B.I. and P.D. combined single limit); and (iv) professional liability insurance (\$1,000,000 claim / agg). Certificates of insurance will be provided upon request. Client and Consultant shall waive subrogation against the other party on all general liability and property coverage.

10. **CONSEQUENTIAL DAMAGES. NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR LOSS OF PROFITS OR REVENUE; LOSS OF USE OR OPPORTUNITY; LOSS OF GOOD WILL; COST OF SUBSTITUTE FACILITIES, GOODS, OR SERVICES; COST OF CAPITAL; OR FOR ANY SPECIAL, CONSEQUENTIAL, INDIRECT, PUNITIVE, OR EXEMPLARY DAMAGES.**
11. **Dispute Resolution.** Client shall not be entitled to assert a Claim against Consultant based on any theory of professional negligence unless and until Client has obtained the written opinion from a registered, independent, and reputable engineer, architect, or geologist that Consultant has violated the standard of care applicable to Consultant's performance of the Services. Client shall provide this opinion to Consultant and the parties shall endeavor to resolve the dispute within 30 days, after which Client may pursue its remedies at law. This Agreement shall be governed by and construed according to Kansas law.
12. **Subsurface Explorations.** Subsurface conditions throughout the site may vary from those depicted on logs of discrete borings, test pits, or other exploratory services. Client understands Consultant's layout of boring and test locations is approximate and that Consultant may deviate a reasonable distance from those locations. Consultant will take reasonable precautions to reduce damage to the site when performing Services; however, Client accepts that invasive services such as drilling or sampling may damage or alter the site. Site restoration is not provided unless specifically included in the Services.
13. **Testing and Observations.** Client understands that testing and observation are discrete sampling procedures, and that such procedures indicate conditions only at the depths, locations, and times the procedures were performed. Consultant will provide test results and opinions based on tests and field observations only for the work tested. Client understands that testing and observation are not continuous or exhaustive, and are conducted to reduce - not eliminate - project risk. Client shall cause all tests and inspections of the site, materials, and Services performed by Consultant to be timely and properly scheduled in order for the Services to be performed in accordance with the plans, specifications, contract documents, and Consultant's recommendations. No claims for loss or damage or injury shall be brought against Consultant by Client or any third party unless all tests and inspections have been so performed and Consultant's recommendations have been followed. Unless otherwise stated in the Proposal, Client assumes sole responsibility for determining whether the quantity and the nature of Services ordered by Client is adequate and sufficient for Client's intended purpose. Client is responsible (even if delegated to contractor) for requesting services, and notifying and scheduling Consultant so Consultant can perform these Services. Consultant is not responsible for damages caused by Services not performed due to a failure to request or schedule Consultant's Services. Consultant shall not be responsible for the quality and completeness of Client's contractor's work or their adherence to the project documents, and Consultant's performance of testing and observation services shall not relieve Client's contractor in any way from its responsibility for defects discovered in its work, or create a warranty or guarantee. Consultant will not supervise or direct the work performed by Client's contractor or its subcontractors and is not responsible for their means and methods. The extension of unit prices with quantities to establish a total estimated cost does not guarantee a maximum cost to complete the Services. The quantities, when given, are estimates based on contract documents and schedules made available at the time of the Proposal. Since schedule, performance, production, and charges are directed and/or controlled by others, any quantity extensions must be considered as estimated and not a guarantee of maximum cost.
14. **Sample Disposition, Affected Materials, and Indemnity.** Samples are consumed in testing or disposed of upon completion of the testing procedures (unless stated otherwise in the Services). Client shall furnish or cause to be furnished to Consultant all documents and information known or available to Client that relate to the identity, location, quantity, nature, or characteristic of any hazardous waste, toxic, radioactive, or contaminated materials ("Affected Materials") at or near the site, and shall immediately transmit new, updated, or revised information as it becomes available. Client agrees that Consultant is not responsible for the disposition of Affected Materials unless specifically provided in the Services, and that Client is responsible for directing such disposition. In no event shall Consultant be required to sign a hazardous waste manifest or take title to any Affected Materials. Client shall have the obligation to make all spill or release notifications to appropriate governmental agencies. The Client agrees that Consultant neither created nor contributed to the creation or existence of any Affected Materials conditions at the site and Consultant shall not be responsible for any claims, losses, or damages allegedly arising out of Consultant's performance of Services hereunder, or for any claims against Consultant as a generator, disposer, or arranger of Affected Materials under federal, state, or local law or ordinance.
15. **Ownership of Documents.** Work product, such as reports, logs, data, notes, or calculations, prepared by Consultant shall remain Consultant's property. Proprietary concepts, systems, and ideas developed during performance of the Services shall remain the sole property of Consultant. Files shall be maintained in general accordance with Consultant's document retention policies and practices.
16. **Utilities.** Client shall provide the location and/or arrange for the marking of private utilities and subterranean structures. Consultant shall take reasonable precautions to avoid damage or injury to subterranean structures or utilities. Consultant shall not be responsible for damage to subterranean structures or utilities that are not called to Consultant's attention, are not correctly marked, including by a utility locate service, or are incorrectly shown on the plans furnished to Consultant.
17. **Site Access and Safety.** Client shall secure all necessary site related approvals, permits, licenses, and consents necessary to commence and complete the Services and will execute any necessary site access agreement. Consultant will be responsible for supervision and site safety measures for its own employees, but shall not be responsible for the supervision or health and safety precautions for any other parties, including Client, Client's contractors, subcontractors, or other parties present at the site.

PURSUANT TO SECTION 558.0035 OF FLORIDA STATUTES, AN INDIVIDUAL EMPLOYEE OR AGENT OF CONSULTANT MAY NOT BE HELD INDIVIDUALLY LIABLE.

Consultant: Terracon Consultants, Inc.
 By: *Douglas S. Dunkelberger* Date: 10/12/2018
 Name/Title: Douglas S. Dunkelberger, P.E. / Principal
 Address: 16200 NW 59th Ave, Ste 106
Miami Lakes, FL 33014-7541
 Phone: (305) 820-1997 Fax: (305) 820-1998
 Email: Doug.Dunkelberger@terracon.com

Client: Craig A. Smith & Associates
 By: _____ Date: _____
 Name/Title: Orlando Rubio, P.E. /
 Address: 7777 Glades Rd Ste 410
Boca Raton, FL 33434-4193
 Phone: (561) 314-4445 Fax: _____
 Email: ORubio@craigasmith.com

EXHIBIT A - PROJECT UNDERSTANDING

Our Scope of Services is based on our understanding of the project as described by Craig A. Smith and the expected subsurface conditions as described below. We have not visited the project site to confirm the information provided. Aspects of the project, undefined or assumed, are highlighted as shown below. We request the design team verify all information prior to our initiation of field exploration activities.

Site Location and Anticipated Conditions

Item	Description
Parcel Information	The project is located at West of Center Island Drive and The Strand in Golden Beach, Florida. (See Exhibit D)
Existing Improvements	Paved Roadway
Current Ground Cover	Asphalt paved roadway
Existing Topography (from images from Google Earth)	The site seems to be fairly level
Site Access	We expect the site, and all exploration locations, are accessible with our truck-mounted drilling equipment. We will setup MOT equipment while working in the street. However, any lane closure permits from the City will be provided by the Client.
Expected Subsurface Conditions	Our experience near the vicinity of the proposed development, specifically a 2004 study for a nearby, companion project, indicates subsurface conditions consist of surficial fill over 8 to 10 feet of soft, organic soil (peat) underlain by a limestone formation.

Planned Construction

Item	Description
Information Provided	The information for the project was provided via email dated October 5, 2018 from Craig A. Smith
Project Description	The project consists of adding a new pump station to the existing drainage system to allow for positive discharge for the existing outfalls.
Proposed Structure	The pump station will be a below-ground, cast in place structure. The bottom depth of the structure is not known at this time but is expected to be approximately 10 feet below existing grade.
Building Construction	Below-grade, cast in place structure with storm pipe connections

EXHIBIT B - SCOPE OF SERVICES

Our proposed Scope of Services consists of field exploration, laboratory testing, and engineering/project delivery. These services are described in the following sections.

Field Exploration

The field exploration program consists of the following:

Number of Borings	Planned Boring Depth (feet) ¹	Planned Location
2	30	Planned pump station

¹. Below ground surface.

Boring Layout and Elevations: We will use handheld GPS equipment to locate borings with an estimated horizontal accuracy of +/-20 feet. Field measurements from existing site features may be utilized.

Subsurface Exploration Procedures: We will advance soil borings with a truck-mounted drill rig using rotary drilling. Four samples will be obtained in the upper 10 feet of each boring and at intervals of 5 feet thereafter. Soil sampling is typically performed using thin-wall tube and/or split-barrel sampling procedures. The split-barrel samplers are driven in accordance with the standard penetration test (SPT). The samples will be placed in appropriate containers, taken to our soil laboratory for testing, and classified by a Geotechnical Engineer. In addition, we will observe and record groundwater levels during drilling and sampling.

Our exploration team will prepare field boring logs as part of standard drilling operations including sampling depths, penetration distances, and other relevant sampling information. Field logs include visual classifications of materials encountered during drilling, and our interpretation of subsurface conditions between samples. Final boring logs, prepared from field logs, represent the Geotechnical Engineer's interpretation, and include modifications based on observations and laboratory tests.

Property Disturbance: We will backfill borings with soil cuttings upon completion. Pavements will be patched with cold-mix asphalt and/or ready mixed concrete, as appropriate. Our services do not include repair of the site beyond backfilling our boreholes, and cold patching existing pavements. Excess soil cuttings will be dispersed in the general vicinity of the borehole. Because backfill material often settles below the surface after a period, we recommend boreholes to be periodically checked and backfilled, if necessary. We can provide this service, or grout the boreholes for additional fees, at your request.

Proposal for Geotechnical Engineering Services

Town of Golden Beach Center Island Pump Station ■ Golden Beach, Florida

October 12, 2018 ■ Terracon Proposal No. PH8185073



Safety

Terracon is not aware of environmental concerns at this project site that would create health or safety hazards associated with our exploration program; thus, our Scope considers standard OSHA Level D Personal Protection Equipment (PPE) appropriate. Our Scope of Services does not include environmental site assessment services, but identification of unusual or unnatural materials encountered while drilling will be noted on our logs and discussed in our report.

Exploration efforts require borings (and possibly excavations) into the subsurface, therefore Terracon will comply with local regulations to request a utility location service through Sunshine One Call. We will consult with the owner/client regarding potential utilities, or other unmarked underground hazards. Based upon the results of this consultation, we will consider the need for alternative subsurface exploration methods, as the safety of our field crew is a priority.

Private utilities should be marked by the owner/client prior to commencement of field exploration. Terracon will not be responsible for damage to private utilities not disclosed to us. If the owner/client is unable to accurately locate private utilities, Terracon can assist the owner/client by coordinating or subcontracting with a private utility locating services. Fees associated with the additional services are presented in the additional services section of the project. The detection of underground utilities is dependent upon the composition and construction of the utility line; some utilities are comprised of non-electrically conductive materials and may not be readily detected. The use of a private utility locate service would not relieve the owner of their responsibilities in identifying private underground utilities.

Site Access: Terracon must be granted access to the site by the property owner. By acceptance of this proposal, without information to the contrary, we consider this as authorization to access the property for conducting field exploration in accordance with the Scope of Services.

Laboratory Testing

The project engineer will review field data and assign laboratory tests to understand the engineering properties of various soil and rock strata. Exact types and number of tests cannot be defined until completion of field work. The anticipated laboratory testing may include the following:

- Water content
- Organic Content
- Wash -#200

Our laboratory testing program often includes examination of soil samples by an engineer. Based on the material's texture and plasticity, we will describe and classify soil samples in accordance with the Unified Soil Classification System (USCS).

Boring log rock classification is determined using the Description of Rock Properties.

Engineering and Project Delivery

Results of our field and laboratory programs will be evaluated by a professional engineer. The engineer will develop a geotechnical site characterization, perform the engineering calculations necessary to evaluate foundation alternatives, and develop appropriate geotechnical engineering design criteria for earth-related phases of the project.

Your project will be delivered using our **GeoReport®** system. Upon initiation, we provide you and your design team the necessary link and password to access the website (if not previously registered). Each project includes a calendar to track the schedule, an interactive site map, a listing of team members, access to the project documents as they are uploaded to the site, and a collaboration portal. The typical delivery process includes the following:

- Project Planning – Proposal information, schedule and anticipated exploration plan will be posted for review and verification
- Site Characterization – Findings of the site exploration
- Geotechnical Engineering – Recommendations and geotechnical engineering report

When utilized, our collaboration portal documents communication, eliminating the need for long email threads. This collaborative effort allows prompt evaluation and discussion of options related to the design and associated benefits and risks of each option. With the ability to inform all parties as the work progresses, decisions and consensus can be reached faster. In some cases, only minimal uploads and collaboration will be required, because options for design and construction are limited or unnecessary. This is typically the case for uncomplicated projects with no anomalies found at the site.

When services are complete, we upload a printable version of our completed geotechnical engineering report, including the professional engineer's seal and signature, which documents our services. Previous submittals, collaboration and the report are maintained in our system. This allows future reference and integration into subsequent aspects of our services as the project goes through final design and construction.

The geotechnical engineering report will provide the following:

- Boring logs with field and laboratory data
- Stratification based on visual soil (and rock) classification
- Groundwater levels observed during and after the completion of drilling
- Site Location and Exploration Plans
- Subsurface exploration procedures
- Description of subsurface conditions
- Recommended pump station foundation options and engineering design parameters
- Estimated settlement of foundations
- Recommendations for pipe support

Proposal for Geotechnical Engineering Services

Town of Golden Beach Center Island Pump Station ■ Golden Beach, Florida

October 12, 2018 ■ Terracon Proposal No. PH8185073



Post Design Services

In addition, Terracon will provide post design services during construction. These services will entail

1. Review of Plans and Specifications - Our geotechnical report and associated verbal and written communications will be used by others in the design team to develop plans and specifications for construction. Review of project plans and specifications is a vital part of our geotechnical engineering services. This consists of review of project plans and specifications related to site preparation, foundation, and pavement construction. Our review will include a written statement conveying our opinions relating to the plans and specifications' consistency with our geotechnical engineering recommendations
2. Respond to RFIs related to geotechnical work

Additional Services

In addition to the services noted above, the following are often associated with geotechnical engineering services. Fees for services noted above do not include the following:

Observation and Testing of Pertinent Construction Materials: Development of our geotechnical engineering recommendations and report relies on an interpretation of soil conditions. This is based on widely spaced exploration locations, and assuming construction methods will be performed in a manner sufficient to meet our expectations and is consistent with recommendations made at the time the geotechnical engineering report is issued. We should be retained to conduct construction observations, and perform/document associated materials testing, for site preparation, foundation, and pavement construction. This allows a more comprehensive understanding of subsurface conditions and necessary documentation of construction, to confirm and/or modify (when necessary) the assumptions and recommendations made by our engineers.

Perform Environmental Assessments: Our Scope for this project does not include, either specifically or by implication, an environmental assessment of the site intended to identify or quantify potential site contaminants. If the client/owner is concerned about the potential for such conditions, an environmental site assessment should be conducted. We can provide a proposal for an environmental assessment, if desired.

EXHIBIT C - COMPENSATION AND PROJECT SCHEDULE

Compensation

Based upon our understanding of the site, the project as summarized in Exhibit A, and our planned Scope of Services outlined in Exhibit B, our base fee is shown in the following table:

Task	Lump Sum Fee
Subsurface Exploration, Laboratory Testing, Geotechnical Consulting & Reporting	\$6,200
Post Design Services during construction	\$1,200

Additional services not part of the base fee include the following:

Additional Services (see Exhibit B)	Lump Sum Fee	Initial for Authorization
Private Utility Locate Service ¹	\$700	
Construction Materials Testing Services	TBD	

1. If the owner/client is unable to accurately locate private utilities, we can subcontract a private utility locating firm and/or utilize geophysical equipment, if necessary. The detection of underground utilities is dependent upon the composition and construction of utility lines. Some utilities are comprised of non-electrically conductive materials and may not be readily detected. The use of a private locate service does not relieve the owner of their responsibilities in identifying private underground utilities..

Our Scope of Services does not include services associated with site clearing, wet ground conditions, tree or shrub clearing, or repair of/damage to existing landscape. If such services are desired by the owner/client, we should be notified so we can adjust our Scope of Services.

Unless instructed otherwise, we will submit our invoice(s) to the address shown at the beginning of this proposal. If conditions are encountered that require Scope of Services revisions and/or result in higher fees, we will contact you for approval, prior to initiating services. A supplemental proposal stating the modified Scope of Services as well as its effect on our fee will be prepared. We will not proceed without your authorization.

Project Schedule

We developed a schedule to complete the Scope of Services based upon our existing availability and understanding of your project schedule. However, this does not account for delays in field exploration beyond our control, such as weather conditions, permit delays, or lack of permission to access the boring locations. In the event the schedule provided is inconsistent with your needs, please contact us so we may consider alternatives.

Proposal for Geotechnical Engineering Services

Town of Golden Beach Center Island Pump Station ■ Golden Beach, Florida

October 12, 2018 ■ Terracon Proposal No. PH8185073



GeoReport® Delivery	Posting Date from Notice to Proceed ^{1, 2}
Project Planning	3-4 days
Site Characterization	8-9 days
Geotechnical Engineering	25 days

1. Upon receipt of your notice to proceed we will activate the schedule component of our **GeoReport®** website with specific, anticipated calendar days for the three delivery points noted above as well as other pertinent events such as field exploration crews on-site, etc.
2. We will maintain a current calendar of activities within our **GeoReport®** website. In the event of a need to modify the schedule, the schedule will be updated to maintain a current awareness of our plans for delivery.

EXHIBIT D – SITE LOCATION

Town of Golden Beach Center Island Pump Station ■ Golden Beach, Florida
October 12, 2018 ■ Terracon Proposal No. PH8185073

Terracon

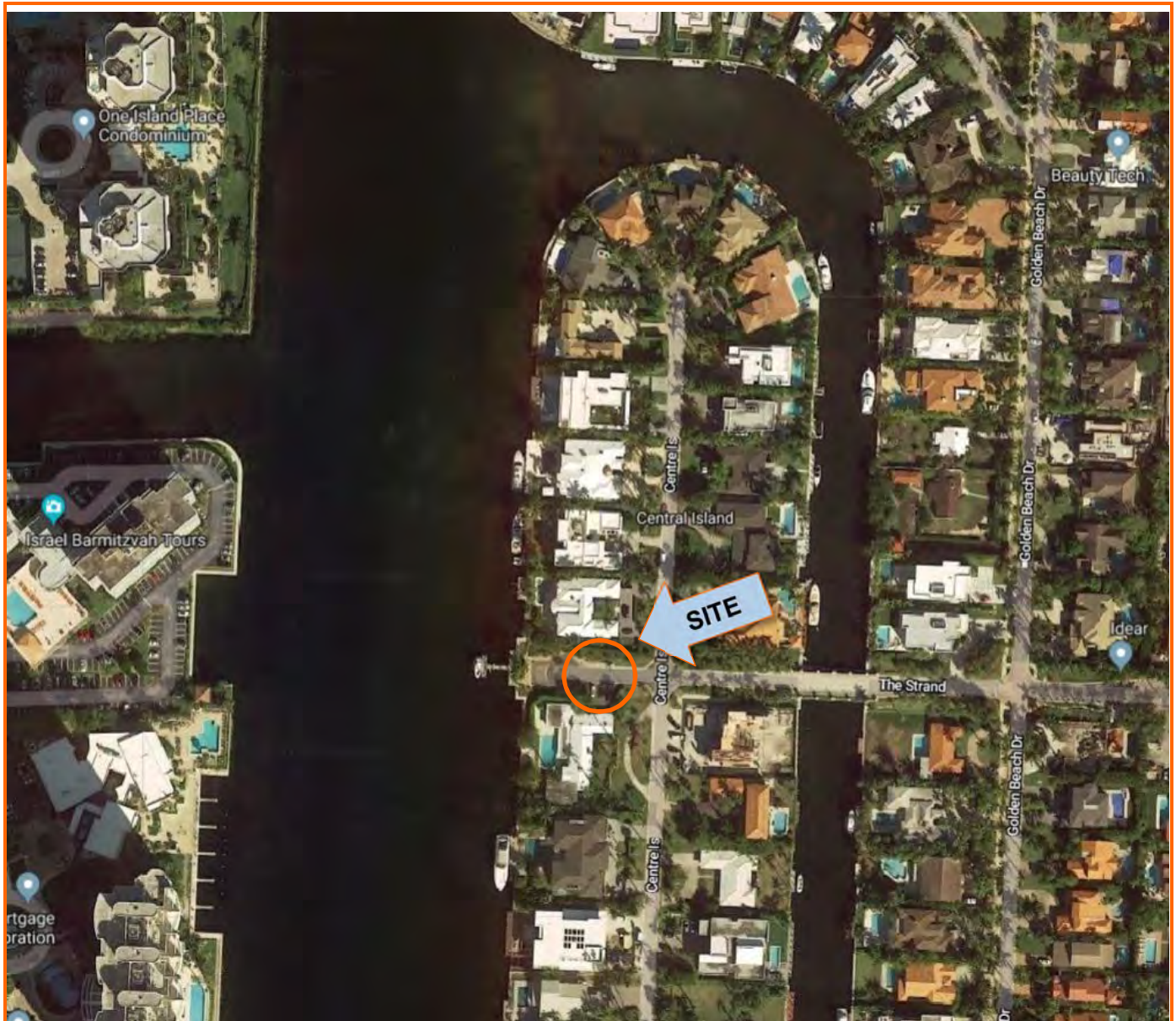


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

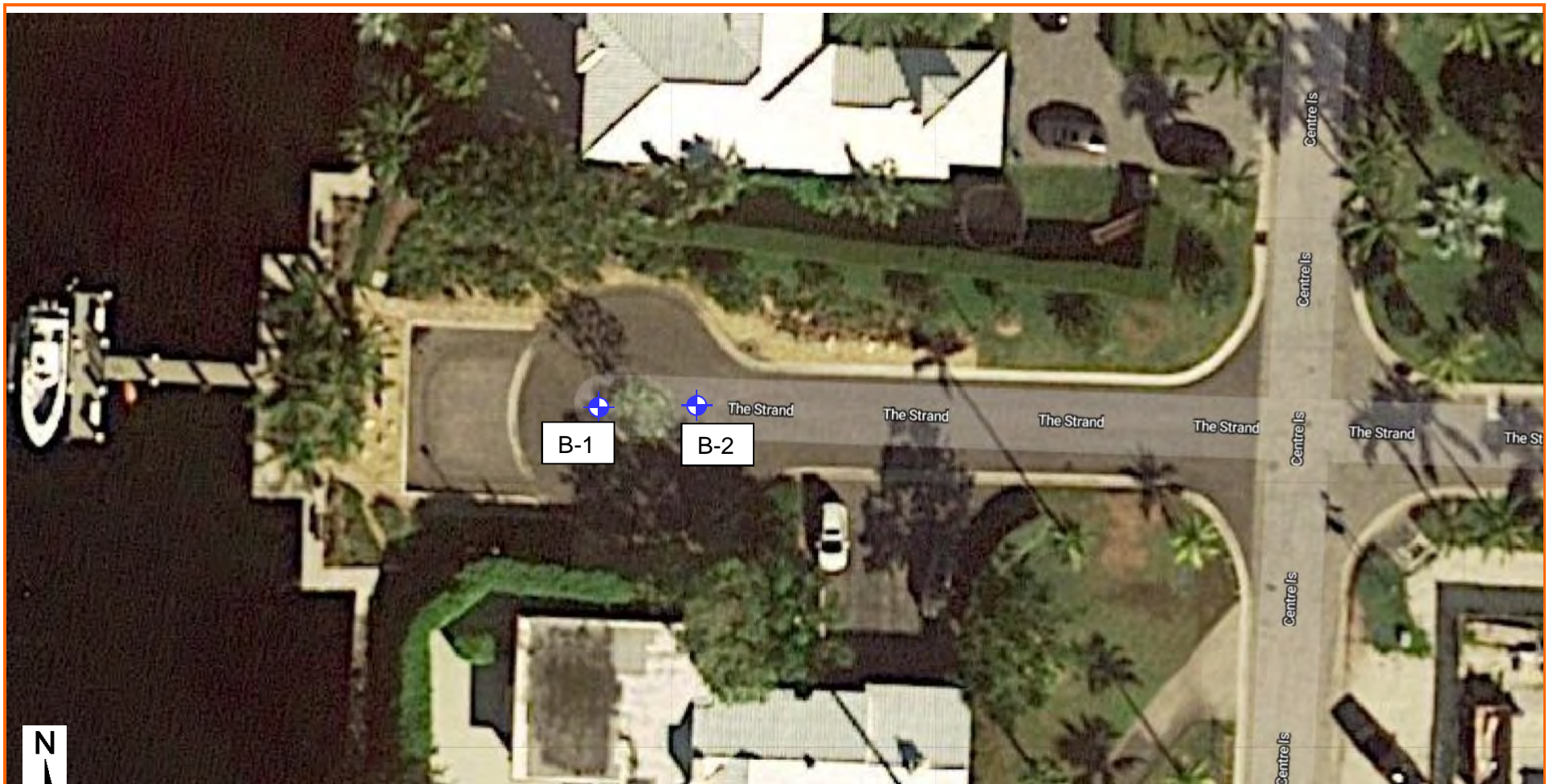
MAP PROVIDED BY MICROSOFT BING MAPS

EXHIBIT E – ANTICIPATED EXPLORATION PLAN

Town of Golden Beach Center Island Pump Station ■ Golden Beach, Florida

October 12, 2018 ■ Terracon Proposal No. PH8185073

Terracon



LEGEND



Approximate SPT Boring Test Locations

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS



October 12, 2018

Orlando A. Rubio, P.E.
Craig A. Smith & Associates
7777 Glades Road, Suite 410
Boca Raton, Florida 33434

Re: Center Island Pump Station
Town of Golden Beach, FL

Dear Mr. Rubio:

We are pleased to submit our proposal for electrical engineering services for the above project. The following serves to provide an overview of the engineering services Bailey Engineering Consultants, Inc. (BEC) intends to furnish on the above referenced project and provides the agreed upon lump sum fee proposal. Your signature on this agreement will serve as your letter of intent and official notice to proceed with the referenced work. Our scope of work will include the following:

Task 1 - Design Services:

1. Electrical design associated with the proposed stormwater pump station with portable generator.
2. BEC will visit the site and meet with the Owner in order to obtain any necessary information.
3. BEC will coordinate with the local Power Company and the Town of Golden Beach as required.
4. BEC will attend meetings to answer questions relating to our design.
5. Deliverables:
 - a. 100% Drawings and Specifications with 100% cost estimate
 - b. Bid Submittal, Drawings and Specifications with Bid cost estimate
6. BEC shall provide assistance during the permitting process, including but not limited to responding to questions from the building department and revising drawings as needed.

7. BEC shall provide assistance during the bidding process, including but not limited to answering bidders questions, providing addendums and issuing conformed documents.

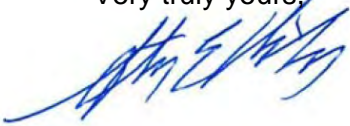
Task 2 – General Services during Construction

1. Shop Drawing Review - Review and approve (or take other appropriate action in respect of) Shop Drawings and samples, the results of tests and inspections and other data which each Contractor is required to submit, but only for conformance with the design concept of the Project and compliance with the information given in the Contract Documents (but such review and approval or other action shall not exceed to means, methods, sequences, techniques or procedures of construction or to safety precautions and programs incident thereto); and receive and review (for general content as required by the Specifications) maintenance and operating schedules and instruction, guarantees, bonds and certificates of inspection which are to be assembled by Contractor(s) in accordance with the Contract Documents.
2. Issue Clarifications - Issue all instructions of OWNER to Contractor(s); issue necessary interpretations and clarifications of the Contract Documents; have authority, as OWNER's representative to require special inspection or testing of the work; act as initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the work thereunder, and make decisions on all claims of OWNER and Contractor(s) relating to the acceptability of the work or the interpretation of the requirements of the Contract Documents pertaining to the execution and progress of the work. The ENGINEER shall render all interpretations or decisions in good faith and in accordance with the requirements of the Contract Documents.
3. Site Visits - Make visits to the site at periods appropriate to the various stages of construction to observe, as an experienced and qualified professional, the progress and quality of the executed work of Contractor(s) and to determine in general if such work is proceeding in accordance with the Contract Documents. Prepare trip reports to document observations made during these inspections. ENGINEER shall not be responsible for the means, methods, techniques, sequences or procedures of construction selected by Contractor(s) or the safety precautions and programs incident to the work of Contractor(s). ENGINEER's efforts will be directed toward providing a greater degree of confidence for OWNER that the completed work of Contractor(s) will conform to the Contract Drawings, but ENGINEER shall not be responsible for the failure of Contractor(s) to perform the work in accordance with the Contract Drawings. During such visits and on the basis of on-site observations, ENGINEER shall keep OWNER informed of the progress of the work, shall endeavor to guard OWNER against defects and deficiencies in such work and may disapprove or reject work failing to conform to the Contract Documents.

Our scope of work shall be as outlined above. Services not specifically outlined above are excluded. Our fee for this work shall be billed monthly and shall be payable as follows:

	Work Effort
<u>Task 1 – Design Services</u>	
90 and 100% Complete	\$ 10,800.00
<u>Bid and Permitting</u>	<u>\$ 1,200.00</u>
Sub Total Design:	\$ 12,000.00
<u>Task 2 – General Services during Construction</u>	
Shop Drawings	\$ 2,200.00
Issue Clarifications	\$ 2,000.00
<u>Site Visits</u>	<u>\$ 3,600.00</u>
Sub Total Construction:	\$ 7,800.00
Total:	\$ 19,800.00

Very truly yours,



Stephen E. Bailey, P.E.

ACCEPTED _____ DATE _____

CAS-18-004DG



TOWN OF GOLDEN BEACH

One Golden Beach Drive
Golden Beach, FL 33160

MEMORANDUM

Date: November 20, 2018

To: Honorable Mayor Glenn Singer &
Town Council Members

From: Alexander Diaz
Town Manager

Item Number:

10

Subject: Resolution No. 2582.18- Adopting a Stormwater Facilities
Improvement Plan for a State Revolving Loan Fund

Recommendation:

It is recommended that the Town Council adopt the attached Resolution No. 2582.18 as presented.

Background:

As we consider the design and construction of a new Stormwater Pump Station for Center Island, we will be required to secure funding for the project. As with all stormwater projects the Town has undertaken, we fund them through the State of Florida, State Revolving Loan Fund (SRF). A condition of the SRF loan application is that the Town Council adopt a Facility Plan for the project.

This resolution adopts the facilities plan (attached) and allows the Town to commence the application process for funding of the project. All final negotiations, loan commitments and funding will come before the Town Council for final approval.

Fiscal Impact:

The project has an anticipated cost estimate of \$900,000.00. We intend to secure funding through the SRF loan program at a very low rate. This program was created by the State of Florida specifically for these types of projects.

TOWN OF GOLDEN BEACH, FLORIDA

RESOLUTION NO. 2582.18

A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF GOLDEN BEACH, FLORIDA, ADOPTING A STORMWATER FACILITIES IMPROVEMENT PLAN FOR A STATE REVOLVING LOAN FUND PROGRAM; PROVIDING FOR IMPLEMENTATION AND AN EFFECTIVE DATE.

WHEREAS, the Florida Statutes provide for loans to local government agencies to finance the construction of stormwater facilities; and

WHEREAS, Florida Administrative Code requires the formal authorization and adoption of a facility plan outlining necessary stormwater facility improvements to comply with State of Florida funding requirements; and

WHEREAS, the Town of Golden Beach has prepared a proposed facility plan, attached to this Resolution as Exhibit “A” (the “Facility Plan”), as required for the Town to participate in the State Revolving Loan Fund Program; and

WHEREAS, the Town Council of the Town of Golden Beach, Florida agrees with the findings and summary of necessary improvements as outlined in the Facility Plan for the purpose of providing flood relief to the Center Island area of the Town.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF GOLDEN BEACH, FLORIDA AS FOLLOWS: Section

Section 1. Recitals Adopted. Each of the above-stated recitals are hereby adopted and confirmed.

Section 2. Approval of Facility Plan. The Facility Plan attached as Exhibit “A” to this Resolution is hereby approved and adopted.

Section 3. Implementation. The Town Manager and/or Town Mayor are hereby authorized to take all action necessary to implement the Facility Plan.

Section 4. Effective Date. This Resolution shall be effective immediately upon adoption.

The Motion to adopt the foregoing Resolution was offered by _____, seconded by _____, and on roll call the following vote ensued:

Mayor Glenn Singer	_____
Vice Mayor Jaime Mendal	_____
Councilmember Kenneth Bernstein	_____
Councilmember Amy Isackson-Rojas	_____
Councilmember Judy Lusskin	_____

PASSED AND ADOPTED by the Town Council of the Town of Golden Beach, Florida this 30th day of October, 2018.

MAYOR GLENN SINGER

ATTEST:

LISSETTE PEREZ
TOWN CLERK

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY:

STEPHEN J. HELFMAN
TOWN ATTORNEY

Craig A. Smith & Associates

TOWN OF GOLDEN BEACH



STORMWATER MASTER PLAN

AMENDMENT NO. 1 (FACILITIES PLAN)

OCTOBER 2018

CAS PROJECT No. 17-1971

PREPARED BY



Corporate Office:

21045 Commercial Trail
Boca Raton, FL
Tel : (561) 314-4445

Branch Offices:

Palm Beach County
Broward County
Miami-Dade County

INTRODUCTION

On behalf of the Town of Golden Beach, Florida, Craig A. Smith & Associates (CAS) is pleased to provide the Florida Department of Environmental Protection (Department) an amendment to the Town's current Stormwater Master Plan (SWMP), otherwise known as the Facilities Plan (FP), to apply for State funding through the Clean Water State Revolving Fund program (CWSRF). Briefly, the intent of this amendment is to provide additional flood protection and provide water quality treatment for the Town's existing Center Island service area (refer to Exhibit A for location maps).

LOCATION

The Town is located within the northeast corner of Miami-Dade County and is bounded by Massina Ave. to the north, Terracina Ave. to the south, the Intracoastal Waterway (ICWW) to the west and the Atlantic Ocean to the east. This amendment to the Town's current Stormwater Master Plan focuses on improvements to Center Island (refer to Exhibit A for additional project location information).

EXISTING FACILITIES

The Town's current FP implemented improvements in six (6) phases and was executed in 2004. All proposed improvements, Phases 1 through 6, were completed by March of 2011 (see Exhibit B for reference to the original SWMP and existing facilities).

Center Island, which was part of Phase 6, is served by two gravity drainage systems with positive drainage to the ICWW. These systems discharge with two outfalls, both equipped with backflow prevention devices to keep high tide water from directly entering the drainage system and flooding the streets and yards.

NEED FOR PROJECT

Center Island is low in elevation (with an average street elevation of 2.5-ft NGVD) and has limited positive head to gravity outfall during a high tide condition. Tidal seepage (during periods of high tide) from the ICWW occurs and seeps through the ground which ultimately makes it way to the drainage system via overland flow. This occurrence cannot be deterred with the existing backflow prevention devices as the seepage bypasses the devices. To make matters worse during these high tide conditions, heavy rainfall can prolong street flooding until the tide recedes and the drainage system can outflow by gravity into the ICWW.

PROJECT ALTERNATIVES

CAS has explored three viable options to help remedy the flooding situation on Center Island. Cost breakdown for all three alternatives can be found in Exhibit C. An outline of these alternatives are as follows:

The first alternative is to reconstruct the roads at higher elevations for on the entire island by approximately 21.75-inches. Raising the roadway elevations to approximately 4.5-ft NVGD would bring them above peak high tide events thus limit flooding on all roadways. The additional work associated with this alternative includes importing of approved fill, reconstruction of valley gutters, adjustments to existing drainage structure inlets, adjustments to other surface utilities, grading of roadside green areas and driveway reconstruction/ harmonization. This alternative would have the least operating and maintenance costs. The probable construction cost for this alternative is estimated at approximately \$2,298,356 with the total project cost, including engineering design and construction services estimated at \$2,778,921.

The next alternative, which addresses the discharge of the existing gravity system directly, is to install a stormwater pump station at the system's outfall as a bypass mechanism to allow stormwater to be pumped into the ICWW. Planning document, Exhibit D, evaluates in detail two different pump station design capacities. The first pump station considered is a duplex submersible pump station with an 8,960 GPM (20 cfs) flow capacity. The additional work associated with this alternative includes the installation of two rectangular manholes (inserted into the existing system), additional gravity drainage piping, one water quality treatment device, valve vault, control panel, forcemain and roadway/landscape restoration. With the pumping scenario during this alternative, flood durations are lessened and begin later in the storm event with recovery within 1.5 hours of a 10-year 1-day rainfall event (as per the findings in Exhibit D). The probable cost of this alternative is estimated at \$2,009,045 which includes engineering design, construction costs and engineering services during construction.

The third alternative includes all the proposed improvements as the second alternative except the proposed duplex submersible pump station would have about half the flow capacity at 4,032 GPM (9 cfs). With the pumping scenario during this alternative, flood durations are lessened and begin later in the storm event with recovery within 2.5 hours of a 10-year 1-day rainfall event (as per the findings in Exhibit D). The probable cost of this alternative is estimated at \$915,773 which includes engineering design, construction costs and engineering services during construction.

SELECTION OF AN ALTERNATIVE

CAS recommends the third alternative (4,032 GPM duplex submersible pump station) as the most viable solution to the flooding problem for the Town of Golden Beach's Center Island. This alternative directly addresses the issues associated with the gravity collection system's discharge during high tide conditions, is less expensive (to build and maintain) than the higher capacity pump station. The Preliminary Site Plan for the proposed improvements for said alternative can be found in Exhibit E. Additional planning documents associated with this alternative can be found in Exhibit D.

PUBLIC PARTICIPATION

The Town of Golden Beach has been communicating with the current residents of Center Island and its potential solutions over the last year. This document is to be presented at the Towns Council Meeting of October 29th, 2018. At that point, the public will be officially informed of the proposed improvements and this document will be made available for viewing to the public. Additionally, the Town will be presenting a CWSRF resolution which will also be made public. A copy of said draft resolution is presented in Exhibit F.

FINANCIAL IMPACTS

The Town of Golden Beach is currently seeking financial assistance through the Florida Department of Environmental Protection (FDEP) Clean Water State Revolving Fund program (CWSRF) to construct the proposed project. Ultimately, the costs for said improvements will be shared amongst all Town residents and spread out over the repayment period of the anticipated loan. The Town's current Capital Financing Plan is now being revised and will be included, as required, with the submission of the CWSRF Request for Inclusion (RFI).

ADDITIONAL INFORMATION

This document is a proposed amendment to the Town's current Stormwater Master Plan (SWMP). Please refer to Exhibits B and D for additional background information associated with the required design permit(s) (Miami-Dade County, Class II Permit is anticipated) existing facilities, proposed improvements, environmental benefits, environmental impacts (none anticipated), protection of endangered species (remains unchanged), impacts to wetlands (none anticipated) and impacts to low-income areas (none anticipated).

**TOWN OF GOLDEN BEACH
STORMWATER MASTER PLAN,
AMENDMENT NO. 1**

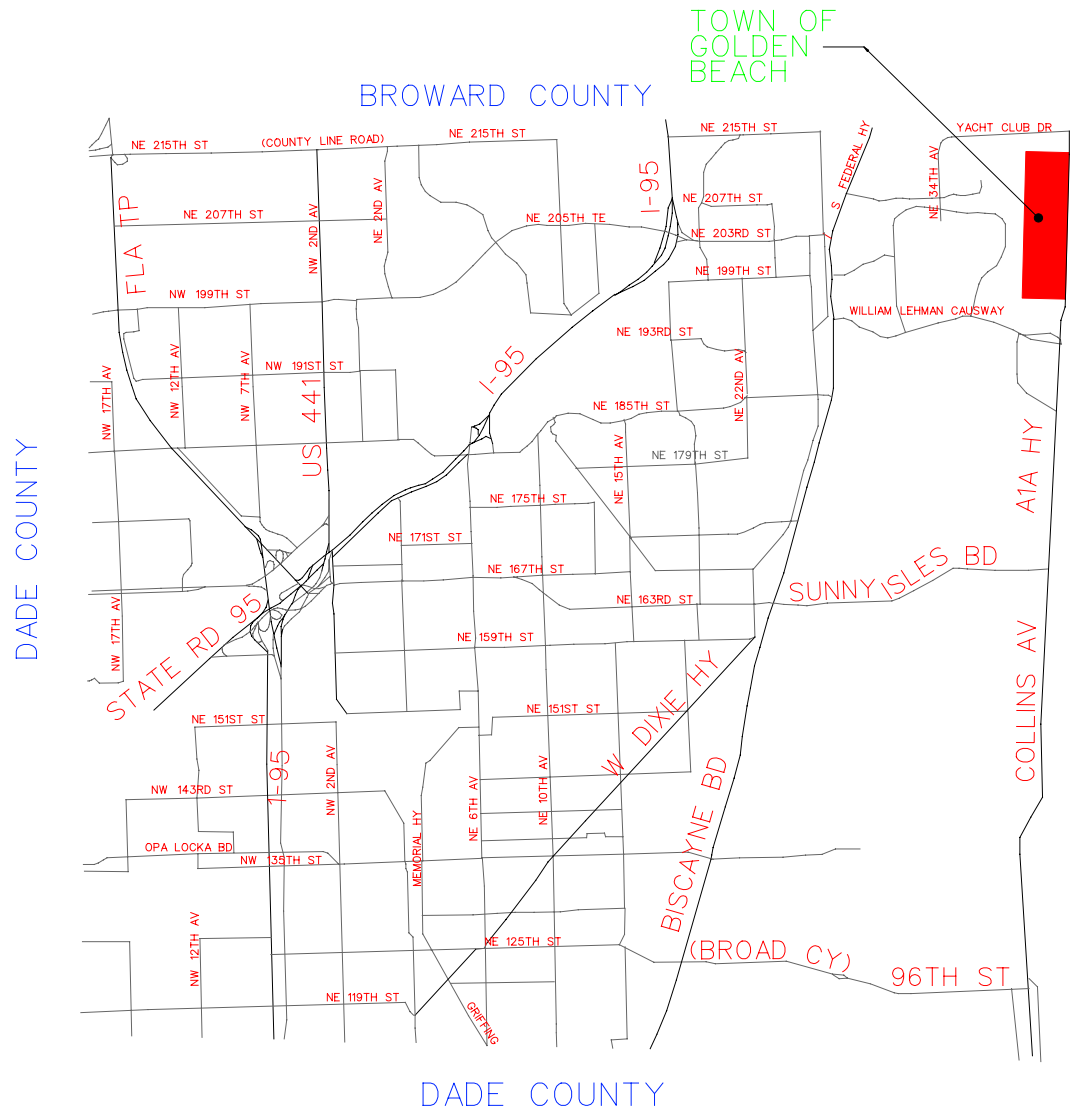
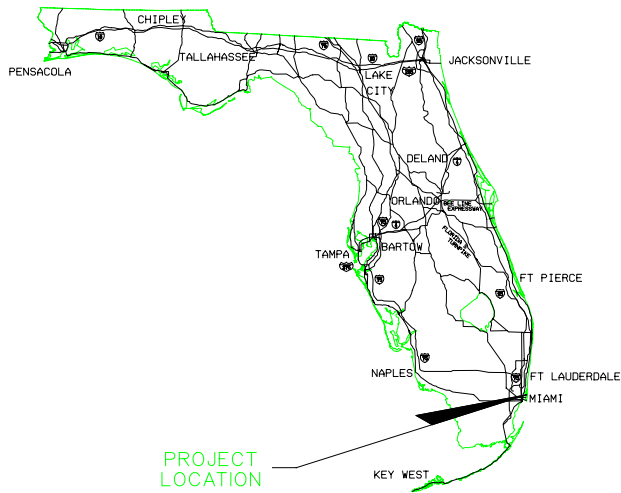


EXHIBIT A

PROJECT LOCATION MAPS

EXHIBIT A

LOCATION MAP



DATE: 2-04-2004 11:22:41
FILE: I:\land\00-0984\cadd_master_plans\0984exa.dgn

\\cas-depot\Projects\Cities_Villages_Towns\Golden_Beach\03-1465-Gb_DRAINAGE\CENTER-ISLAND-BASIN\EXHIBIT\00-1465-LOC-MAP-EXP.dwg, 10/19/2018 9:01:43 AM, mmarcano, 1:2



EXHIBIT A

PROJECT LOCATION



**TOWN OF GOLDEN BEACH
STORMWATER MASTER PLAN,
AMENDMENT NO. 1**



EXHIBIT B

**TOWN OF GOLDEN BEACH
2004 STORMWATER MASTER PLAN**

**THE 2004 TOWN OF GOLDEN BEACH
STORMWATER MASTER PLAN (ALSO
KNOWN AS THE FACILITIES PLAN) CAN
BE PROVIDED UPON REQUEST (DUE TO
THE LARGE SIZE OF THIS DOCUMENT)**

**TOWN OF GOLDEN BEACH
STORMWATER MASTER PLAN,
AMENDMENT NO. 1**



EXHIBIT C

**PROJECT ALTERNATIVES,
ENGINEER'S OPINION OF
PROBABLE COSTS**

**TOWN OF GOLDEN BEACH STORMWATER IMPROVEMENTS
CONCEPTUAL COST ESTIMATE FOR CENTER ISLAND
ALTERNATIVE NO. 1**

ITEM No.	DESCRIPTION		QUANTITY	UNIT	UNIT COST	TOTAL
1	Mobilization	5.0%	1	LS	\$ 82,260.42	\$ 82,260.42
2	Maintenance of Traffic	4.0%	1	LS	\$ 65,808.33	\$ 65,808.33
3	Survey Stakeout and As-Builts	3.0%	1	LS	\$ 49,356.25	\$ 49,356.25
4	Density Testing	2.0%	1	LS	\$ 32,904.17	\$ 32,904.17
5	Clearing and Stripping	8.0%	1	LS	\$ 131,616.67	\$ 131,616.67
6	Environmental Compliance	5.0%	1	LS	\$ 82,260.42	\$ 82,260.42
Project Alternative - Elevate Roads (avg - 21.75")						
7	1" of SP 12.5 Asphalt		3,000	SY	\$13.00	\$ 39,000.00
8	1" of SP 9.5 Asphalt		3,000	SY	\$15.00	\$ 45,000.00
9	8" Limerock Base		3,450	SY	\$ 19.00	\$ 65,550.00
10	Clean fill for compacted Subbase (~11.75")		3,968	SY	\$10	\$ 39,675.00
11	Valley Gutter		3,150	LF	\$31	\$ 97,650.00
12	Driveway Harmonizations		1	LS	\$525,000	\$ 525,000.00
Drainage Structures Adjustments						
13	Remove Existing Brick, install 12" Conc Risers with New Brick & Reinstall Grate/Rim		20	EA	\$ 2,500.00	\$ 50,000.00
Miscellaneous (Include Full Restoration)						
14	Adjustment of Existing Surface Utilities (Non-drainage)		1	LS	\$ 25,000.00	\$ 25,000.00
15	Roadside Green Area Grading & Drainage w/Landscape Adjustments & Sodding		21,666.67	SY	\$ 35.00	\$ 758,333.33
					SUBTOTAL	\$ 2,089,414.58
					10% CONTINGENCY	\$ 208,941.46
PROBABLE CONSTRUCTION COST TOTAL						\$ 2,298,356.04
Professional Surveying/Engineering Services						
	Surveying	2%				\$ 41,788.29
	Civil Engineering Design	4%				\$ 83,576.58
	Legal (Driveway Harmonization Agreements)	1%				\$ 20,894.15
	Geotechnical Engineering	3%				\$ 62,682.44
	Permitting (MDC-RER)	1%				\$ 20,894.15
	Quantities/Cost Est/Bid Docs & Bidding	2%				\$ 41,788.29
	Engineering Services During Construction	4%				\$ 83,576.58
	Construction Observation Services	6%				\$ 125,364.88
		23%				\$ 480,565.35
TOTAL PROJECT COST						\$ 2,778,921.40

**TOWN OF GOLDEN BEACH STORMWATER IMPROVEMENTS
CONCEPTUAL COST ESTIMATE FOR CENTER ISLAND 20 CFS PUMP STATION
ALTERNATIVE NO. 2**

ITEM No.	DESCRIPTION		QUANTITY	UNIT	UNIT COST	TOTAL
1	Mobilization	5.0%	1	LS	\$ 68,119.40	\$ 68,119.40
2	Maintenance of Traffic	2.0%	1	LS	\$ 27,247.76	\$ 27,247.76
3	Survey Stakeout and As-Builts	1.0%	1	LS	\$ 13,623.88	\$ 13,623.88
4	Density Testing	2.0%	1	LS	\$ 27,247.76	\$ 27,247.76
5	Clearing and Stripping	1.0%	1	LS	\$ 13,623.88	\$ 13,623.88
6	Environmental Compliance	2.0%	1	LS	\$ 27,247.76	\$ 27,247.76
Structures (Include Full Restoration)						
7	10' x 5' Weir Box			EA	\$ 8,500.00	\$ -
8	5' x 3' MH w/USF 580		2	EA	\$ 5,500.00	\$ 11,000.00
9	8' Diameter CDS Water Quality Structure		1	EA	\$ 58,500.00	\$ 58,500.00
10	Duplex Stormwater Pumping Station (10' x 10' x 10') & Vault with all piping & Electrical Components		1	EA	\$1,057,280	\$ 1,057,280.00
11	Generator		1	EA	\$90,000	\$ 90,000.00
Pipe (Include Full Restoration)						
12	18" PVC Pipe			LF	\$ 54.00	\$ -
13	24" A2000 PVC		65	LF	\$ 72.00	\$ 4,680.00
14	36" A2000 PVC			LF	\$ 90.00	\$ -
15	48" RCP Pipe		8	LF	\$ 175.00	\$ 1,400.00
16	10" DIP Force Main		80	LF	\$ 60.00	\$ 4,800.00
17	30" DIP Force Main			LF	\$ 175.00	\$ -
Miscellaneous (Include Full Restoration)						
18	Core Exist. Sea Wall & Connect FM			LS	\$ 15,000.00	\$ -
19	3-Phase Power/FPL		1	LS	\$ 105,728.00	\$ 105,728.00
20	Augered Piles (For Proposed Drainage Structures, Drainage Pipes & Force Main)		18	EA	\$ 1,500.00	\$ 27,000.00
21	Manatee Grate for FM			EA	\$ 5,000.00	\$ -
22	Remove Existing Pipe Sections and connect existing pipes to new structures (2)		1	LS	\$ 2,000.00	\$ 2,000.00
23	Core Exist. Structure and Connect Pipe			LS	\$ 500.00	\$ -
					SUBTOTAL	\$ 1,539,498.44
					10% CONTINGENCY	\$ 153,949.84
PROBABLE CONSTRUCTION COST TOTAL						\$ 1,693,448.28
Professional Surveying/Engineering Services						
	Surveying	0.50%				\$ 7,697.49
	Civil Engineering Design	6.00%				\$ 92,369.91
	Electrical Engineering Design	1.00%				\$ 15,394.98
	Geotechnical Engineering	1.00%				\$ 15,394.98
	Permitting (MDC-RER)	1.00%				\$ 15,394.98
	Quantities/Cost Est/Bid Docs & Bidding	1.00%				\$ 15,394.98
	Engineering Services During Construction	4.00%				\$ 61,579.94
	Construction Observation Services	6.00%				\$ 92,369.91
		21%				\$ 315,597.18
TOTAL PROJECT COST						\$ 2,009,045.46

TOWN OF GOLDEN BEACH STORMWATER IMPROVEMENTS
CONCEPTUAL COST ESTIMATE FOR CENTER ISLAND 9 CFS PUMP STATION - ROAD INSTALLATION
ALTERNATIVE NO. 3

ITEM No.	DESCRIPTION		QUANTITY	UNIT	UNIT COST	TOTAL
1	Mobilization	5.0%	1	LS	\$ 28,812.39	\$ 28,812.39
2	Maintenance of Traffic	3.0%	1	LS	\$ 17,287.44	\$ 17,287.44
3	Survey Stakeout and As-Builts	1.0%	1	LS	\$ 5,762.48	\$ 5,762.48
4	Density Testing	3.0%	1	LS	\$ 17,287.44	\$ 17,287.44
5	Clearing and Stripping	2.0%	1	LS	\$ 11,524.96	\$ 11,524.96
6	Environmental Compliance	2.0%	1	LS	\$ 11,524.96	\$ 11,524.96
Structures (Include Full Restoration)						
7	10' x 5' Weir Box			EA	\$ 8,500.00	\$ -
8	5' x 3' MH w/USF 580		2	EA	\$ 5,500.00	\$ 11,000.00
9	8' Diameter CDS Water Quality Structure		1	EA	\$ 58,500.00	\$ 58,500.00
10	Duplex Stormwater Pumping Station (10' x 10' x 10') & Vault with all piping & Electrical Components		1	EA	\$380,607	\$ 380,607.18
11	Generator		1	EA	\$50,000	\$ 50,000.00
Pipe (Include Full Restoration)						
12	18" PVC Pipe			LF	\$ 54.00	\$ -
13	24" A2000 PVC		65	LF	\$ 72.00	\$ 4,680.00
14	36" A2000 PVC			LF	\$ 90.00	\$ -
15	48" RCP Pipe		8	LF	\$ 175.00	\$ 1,400.00
16	10" DIP Force Main		50	LF	\$ 60.00	\$ 3,000.00
17	30" DIP Force Main			LF	\$ 175.00	\$ -
Miscellaneous (Include Full Restoration)						
18	Core Exist. Sea Wall & Connect FM			LS	\$ 15,000.00	\$ -
19	3-Phase Power/FPL		1	LS	\$ 38,060.72	\$ 38,060.72
20	Augered Piles (For Proposed Drainage Structures, Drainage Pipes & Force Main)		18	EA	\$ 1,500.00	\$ 27,000.00
21	Manatee Grate for FM			EA	\$ 5,000.00	\$ -
22	Remove Existing Pipe Sections and connect existing pipes to new structures (2)		1	LS	\$ 2,000.00	\$ 2,000.00
23	Core Exist. Structure and Connect Pipe			LS	\$ 500.00	\$ -
					SUBTOTAL	\$ 668,447.56
				10%	CONTINGENCY	\$ 66,844.76
PROBABLE CONSTRUCTION COST TOTAL						\$ 735,292.32
Professional Surveying/Engineering Services						
	Surveying	1%				\$ 6,684.48
	Civil Engineering Design	8%				\$ 53,475.80
	Electrical Engineering Design	2%				\$ 13,368.95
	Geotechnical Engineering	2%				\$ 13,368.95
	Permitting (MDC-RER)	2%				\$ 13,368.95
	Quantities/Cost Est/Bid Docs & Bidding	2%				\$ 13,368.95
	Engineering Services During Construction	4%				\$ 26,737.90
	Construction Observation Services	6%				\$ 40,106.85
		27%				\$ 180,480.84
TOTAL PROJECT COST						\$ 915,773.16

**TOWN OF GOLDEN BEACH
STORMWATER MASTER PLAN,
AMENDMENT NO. 1**



EXHIBIT D

**PROPOSED IMPROVEMENTS
PRELIMINARY PLANNING
DOCUMENTS**

Center Island Project Summary

Craig A Smith & Associates (CAS) is pleased to present the Town of Golden Beach with a summary of the impacts from a 1-in-10 year storm event occurring during a Spring high tide event. Three scenarios were evaluated with this condition. The first scenario is the analysis with the existing drainage system which functions via gravity outfalls when tailwater conditions allow. The other two scenarios considered the inclusion of a stormwater pumping station; one with a discharge capacity of 4,032 GPM (9 cfs) and the other with a discharge capacity of 8,960 GPM (20 cfs). The opinion of probable cost estimates for the small and larger pump stations are \$864,688 and \$2,009,045, respectively.

Scope: Perform a hydrologic and hydraulic analysis of a 10-year rainfall event to the Town Golden Beach, FL Center Island with relative tide data correlating to the peak of the storm. Probable cost estimates of the potential solutions are made part of this scope.

Background: Center Island is served by water tight gravity drainage systems with positive drainage to the Intra Coastal Waterway (ICWW). Center Island has two outfalls with backflow prevention devices to keep high tide water from directly entering the drainage system and flooding the streets and yards. Center Island is low in elevation and has limited positive head to gravity outfall during a high tide condition with a moderate to severe rain event. The analysis showed that this is what occurred during the rainfall from Hurricane Irma of 2017.

Storm & Tide: A design 10-year 1-day rainfall value of 8 inches was used in the analysis along with an April tide with the peak of the tide occurring during the peak of the storm to show worst case scenario. The 8-inch rainfall is greater than the rainfall from the real time event under Hurricane Irma-2017. The rainfall from that real-time event had an estimated 36-hour period for which 7.05 inches of rainfall occurred.

Tide data was obtained from the Dumfounding Bay Station (See Figure 1). Mean Sea Level (MSL) data relative to Mean Low-Low Water (MLLW) was used in the analysis as a tailwater condition for the storm event. All elevations in the analysis have a datum referenced of 1929 National Geodetic Vertical Datum.

Both Tide and Rainfall data were correlated and used in the analyses and can be seen graphically in (See Figure 2). The peak of the 24-hour design storm occurs at around hour 12.

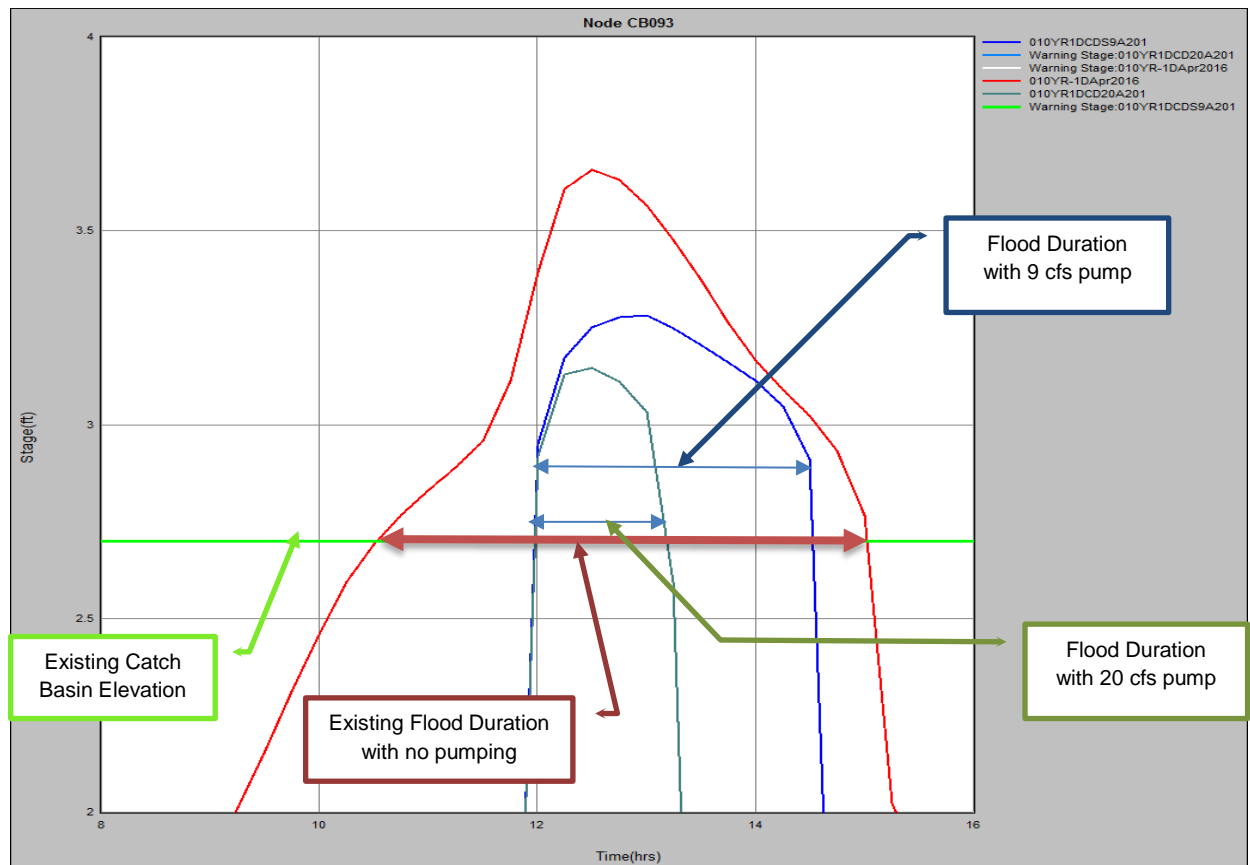
The map displays the coastal region of Miami-Dade County, Florida. Major thoroughfares such as Ives Dairy Rd, Biscayne Blvd, and Dixie Hwy are clearly marked. Notable landmarks include Ives Estates Park, the Presidential Country Club, and the Maule Lake area. The map also shows the proximity to Sunny Isles Beach and Haulover Park. Two specific locations are highlighted with black boxes and arrows: 'TOWN OF GOLDEN BEACH' and 'DUMFOUDNLING BAY TIDE STATION'.

The graph displays two data series over a 30-hour period. The 'Center Island Hydrograph' (blue line with markers) shows a sharp peak in flow at 12 hours, reaching an elevation of approximately 30. The 'Tide Level' (red line with markers) shows a much lower, broader peak at the same time, reaching an elevation of about 3.5. The flow returns to near zero by 16 hours, while the tide level remains slightly elevated until 24 hours before returning to zero.

TIME (HRS)	Center Island Hydrograph (Flow Elevation)	Tide Level (Tide Elevation)
0	0.5	3.0
2	0.2	1.5
4	0.5	0.5
6	1.0	0.0
8	2.0	1.0
10	3.0	2.0
12	30.0	3.5
14	5.0	2.5
16	1.0	1.0
18	0.5	0.5
20	0.5	1.0
22	0.5	2.5
24	0.5	3.5
26	0.5	2.5
28	0.5	1.0
30	0.5	0.5

- Stormwater Modeling:** The flood routing calculations reflect Streamline Technologies' Advanced Inter-Connected Pond Routing (ICPR) model Ver. 3.10. The ICPR model is a hydrodynamic numerical model that approximates solutions to many equations governing flows. For comparison purposes, three scenarios were created to represent the existing condition and two proposed pumping scenarios. A model of the storm event was executed for each scenario and the results were compared. Basins (catch basin areas) were created for the systems and were assigned to a corresponding node, correlating to the structure number shown on the as-built plans. As-built grades and dimensions were used in the model. Other model input assumptions are as follows:
- Existing land use:** Right-of-way (ROW) area calculations were made with respect to pervious and impervious coverages. Basins were further subdivided into a road and residential basins and assigned to the respective catch basin numbered node.
- Existing Topography:** Road ROW survey data was used to establish stage-area curves. Existing catch basin or manhole rim elevations were used as reference points to quantify flood depths and duration above these elevations for the existing and proposed conditions. A sample graph of a structure reflecting the model results is provided in the following figure.

Figure 3Figure 4



for Catch Basin 96 in Center Island which reflects the three model simulations.

**Time of concentration
(Tc):**

A Tc of 10 minutes was assumed for each road basin due to the small basin size and 15 minutes was assumed for each residential basin due to the small basin size.

**Soil Conservation Service
Curve Number (CN):**

Depressional soil storage values were assumed in the models as identified in the District's Basis of Review permit manual.

Basin Surface Storage:

The Stage-vs-Area method was used as shown in the attached calculations.

**Tailwater Assumptions
and its impacts:**

April 2016 tide data from the nearby Dumfoundling Bay station was used. The 2016 data was utilized for no particular reason other than the fact that field measured-observations were made in January of that year. Peak tide elevations ranged from elevation 0' NGVD to 3.58'±. Note that the drivable pavement on Center Island is well below the peak tide elevations.

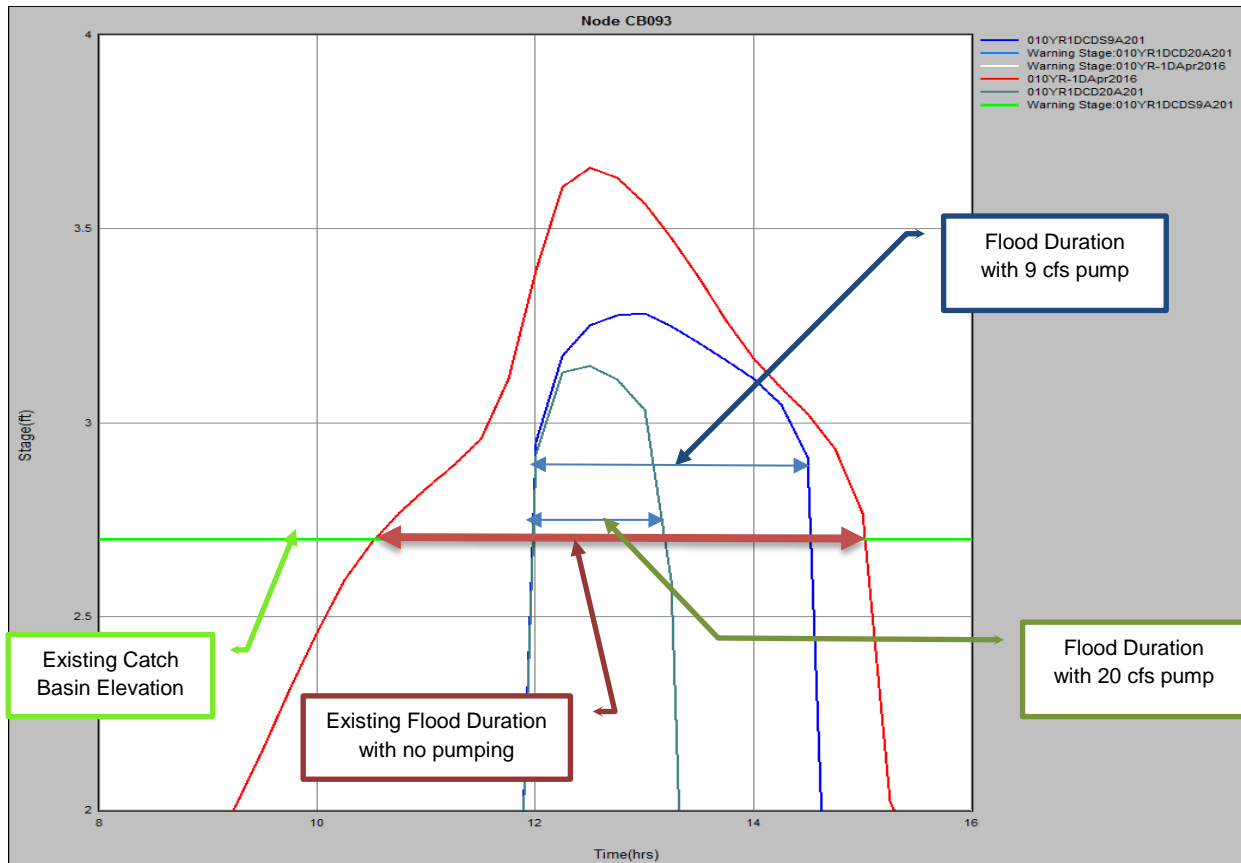
Proposed Improvements: The proposed improvements consist of a duplex stormwater pumping station that would be sized to reasonably handle an event when adverse tide conditions are prevalent. It is the intent of the proposed improvements to keep the existing gravity discharges to the ICWW as the primary outfalls for this island and to operate the station when tide conditions prevent gravity discharge during a storm event.

The gravity system would be connected to the station system containing a water quality treatment structure, a weir box, storm pipes, and pumping station with vault and force main. Pump station discharge capacities of 4,032 GPM (9 cfs) and 8,960 GPM (20 cfs) were analyzed under the two proposed scenarios. The latter station would be a duplicate of the stations serving South & North Park less one water quality treatment device. The results for each pumping scenario showed lowered peak flood stages and lowered flood durations. Flood durations are lowered because the pumps are not impeded by the tailwater to discharge stormwater.

Figure 4 illustrates the reduction in flood depths and duration below the existing catch basin elevation (Catch Basin no. 93) shown as a "Warning Stage." in the graph.

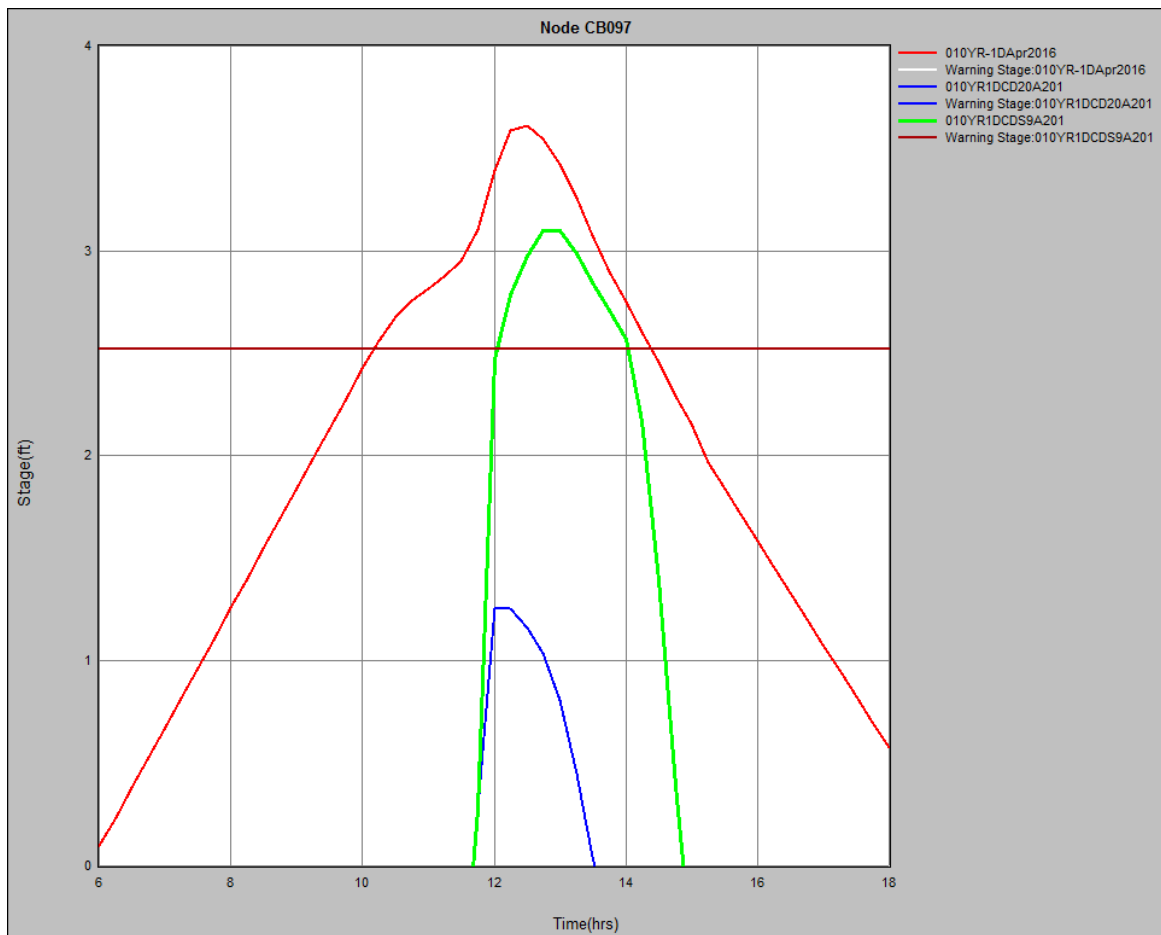
Under the existing gravity system, flooding above the catch basin may last up to ~5.5 hrs. and occurs sooner in the storm event. With the pumping scenarios, flood durations are lessened and begin later in the storm with recovery within 2.5 hrs and 1.5 hrs for the 9 cfs and 20 cfs pump stations, respectively. This occurs because the pumps can be turned on sooner when stormwater is in the drainage system to stay ahead of the storm. The red line represents the existing condition, the blue line represents the 9 cfs pump station, and the green represents the 20 cfs pump station. The horizontal line represents the catch basin elevation.

Figure 4



We will note that since the pump acts as a drawdown system, the areas closer to the pump station will fare better than areas on the upstream ends of the drainage system due to hydraulics of the system. For example, catch basin no. 97 is located nearly adjacent to the proposed pump station and flooding is shown to be removed for the 20 cfs station scenario. With the 9 cfs pump station, flood duration is within 2 hrs; about ½ hour less than upstream catch basins.

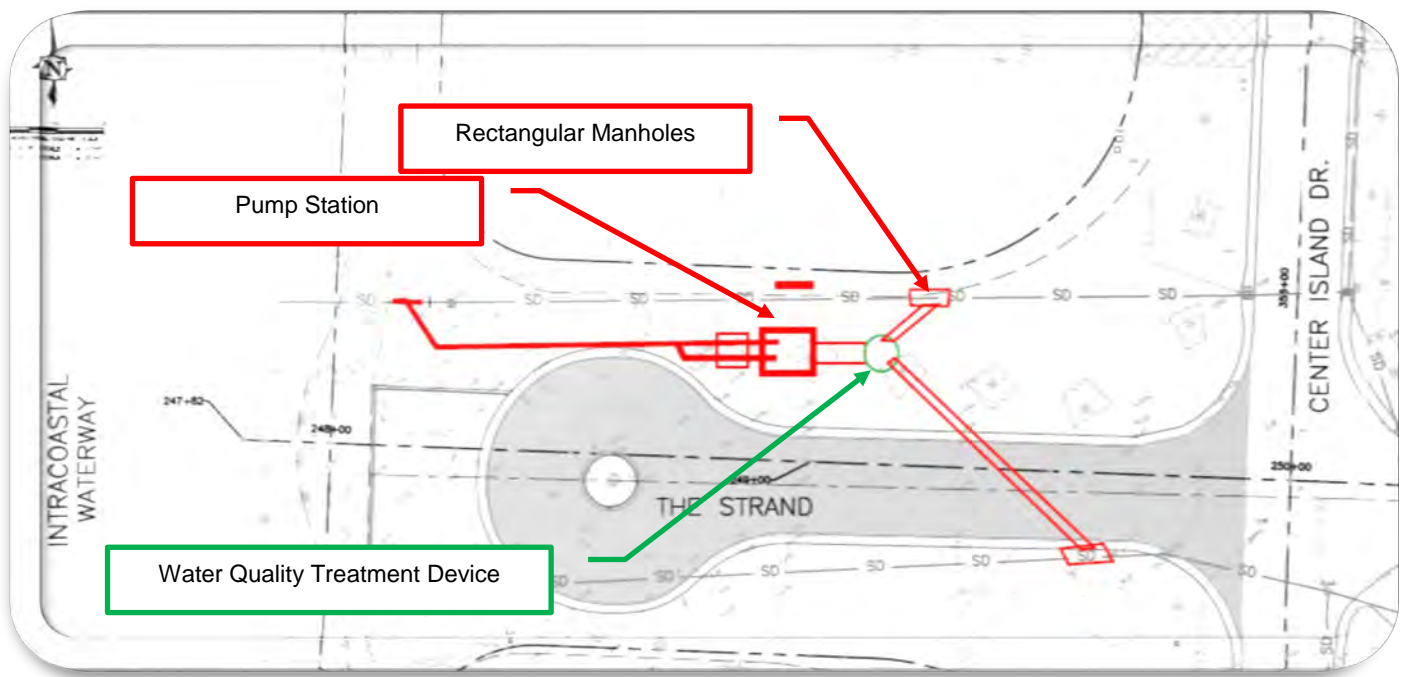
Figure 5



The anticipated modification to the existing drainage system is shown in the following schematic. The intent is to have the least amount of intrusive work performed on the project and this location appears to be better suited.

The proposed work will involve the installation of two rectangular manholes on the north and south side to intercept gravity flows from the existing drainage system when the tide is high. These manholes will be connected to a water quality treatment device which will discharge into the proposed pump station. The pump station force main will be connected to the existing northern outfall.

Figure 6



\\cas-depot\Projects\Cities_Villages_Towns\Golden_Beach\17-1971-1CP-Irma-Fema-Assistance\04-Engineering\Documents\Report\TGB-Center Island System Evaluation.docx

**TOWN OF GOLDEN BEACH
STORMWATER MASTER PLAN,
AMENDMENT NO. 1**



EXHIBIT E

PRELIMINARY SITE PLAN



0 1" = 100' 2" = 200'
HORIZONTAL GRAPHIC SCALE
24" x 36" SCALE: 1" = 100'
11" x 17" SCALE: 1" = 100'

EXIST. BACKFLOW PREVENTOR
(TO REMAIN)

SEAWALL

INTRACOASTAL
WATERWAY

247+82

248+00

ASPHALT

SD

PROP. STORMWATER
FORCE MAIN

25

INCLUDED

GRATE=1.91

"D" CURB

"D" CURB

ASPHALT

PROP. STORM PIPE

GRATE=2.52

PROP. STORM PIPE

25

SECTION E OF GOLDEN BEACH
PLAT BOOK 8, PAGE 122, D.C.P.R.
BLOCK K

EXIST. BACKFLOW PREVENTOR
(TO REMAIN)

TOWN OF GOLDEN BEACH

PROP. STORMWATER
PUMP STATION & VAULT

PROP. STORM MH

PROP. STORM PIPE

PROP. WATER QUALITY
TREATMENT DEVICE

EXIST. STORM PIPE
(TO REMAIN)

THE STRAND

EXIST. STORM PIPE
(TO REMAIN)

PROP. STORM MH

SECTION E OF GOLDEN BEACH
PLAT BOOK 8, PAGE 122, D.C.P.R.
BLOCK L

THE STRAND
PRELIMINARY SITE PLAN

25

INCLUDED

VALLEY
GUTTER

G.E.=2.67'

R.E.=3.09'

250+00

355+00

350+00

CENTER ISLAND DR.

SD

SD

SD

SD

CS

G.E.=2.85'

G.E.=2.89'

G.E.=2.97'

R.E.=2.82'

G.E.=2.49'

VALLEY
GUTTER

SD

SD

**TOWN OF GOLDEN BEACH
STORMWATER MASTER PLAN,
AMENDMENT NO. 1**



EXHIBIT F

**PROPOSED IMPROVEMENT,
DRAFT RESOLUTION**

TOWN OF GOLDEN BEACH, FLORIDA

RESOLUTION NO. _____.18

A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF GOLDEN BEACH, FLORIDA, ADOPTING A STORMWATER FACILITIES IMPROVEMENT PLAN FOR A STATE REVOLVING LOAN FUND PROGRAM; PROVIDING FOR IMPLEMENTATION AND AN EFFECTIVE DATE.

WHEREAS, the Florida Statutes provide for loans to local government agencies to finance the construction of stormwater facilities; and

WHEREAS, Florida Administrative Code requires the formal authorization and adoption of a facility plan outlining necessary stormwater facility improvements to comply with State of Florida funding requirements; and

WHEREAS, the Town of Golden Beach has prepared a proposed facility plan, attached to this Resolution as Exhibit “A” (the “Facility Plan”), as required for the Town to participate in the State Revolving Loan Fund Program; and

WHEREAS, the Town Council of the Town of Golden Beach, Florida agrees with the findings and summary of necessary improvements as outlined in the Facility Plan for the purpose of providing flood relief to the Center Island area of the Town.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF GOLDEN BEACH, FLORIDA AS FOLLOWS: Section

Section 1. Recitals Adopted. Each of the above-stated recitals are hereby adopted and confirmed.

Section 2. Approval of Facility Plan. The Facility Plan attached as Exhibit “A” to this Resolution is hereby approved and adopted.

Section 3. Implementation. The Town Manager and/or Town Mayor are hereby authorized to take all action necessary to implement the Facility Plan.

Section 4. Effective Date. This Resolution shall be effective immediately upon adoption.

The Motion to adopt the foregoing Resolution was offered by Councilmember _____, seconded by _____, and on roll call the following vote ensued:

Mayor Glenn Singer	_____
Vice Mayor Judy Lusskin	_____
Councilmember Kenneth Bernstein	_____
Councilmember Amy Isackson-Rojas	_____
Councilmember Jaime Mendal	_____

PASSED AND ADOPTED by the Town Council of the Town of Golden Beach, Florida this _____ day of October 2018.

MAYOR GLENN SINGER

ATTEST:

LISSETTE PEREZ
TOWN CLERK

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY:

STEPHEN J. HELFMAN
TOWN ATTORNEY



TOWN OF GOLDEN BEACH

One Golden Beach Drive
Golden Beach, FL 33160

MEMORANDUM

Date: November 20, 2018

To: Honorable Mayor Glenn Singer and
Town Council Members

From: Alexander Diaz,
Town Manager

Alex B

Item Number:

11

Subject: Resolution No. 2590.18- Accepting the proposed Employee Manual for the Town of Golden Beach

Recommendation:

It is recommended that the Town Council adopt the attached Resolution No. 2590.18 as presented.

Background:

The Town last updated the Employee manual in 2008. Since then legislation, and regulations that affect employee's rights have changed and the proposed new manual has been revised to reflect changes in legislation as it relates to employment law. The revised manual also provides for a structured working environment guided by rules and regulations to ensure a cohesive and cordial working environment.

We have codified the Town's business practices and past practice to adequately reflect the Town's expectations of employees and to ensure that employees have a clear understanding of what they can expect from the Town of Golden Beach.

Fiscal Impact:

None

TOWN OF GOLDEN BEACH, FLORIDA

RESOLUTION NO. 2590.18

A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF GOLDEN BEACH, FLORIDA, ADOPTING THE TOWN'S NEW EMPLOYEE MANUAL AS PRESENTED; PROVIDING FOR IMPLEMENTATION; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the current Employee Manual has been in place in its current form since 2008; and

WHEREAS, the attached revised Employee Manual reflects changes in legislation as it relates to employment law; and

WHEREAS, the revised Employee Manual provides for a structured working environment guided by rules and regulations to ensure a cohesive and cordial working environment; and

WHEREAS, the Town Council finds that the revised Employee Manual is in the best interest of the Town.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF GOLDEN BEACH, FLORIDA, AS FOLLOWS:

Section 1. Recitals Adopted. That each of the above-stated recitals is hereby adopted and confirmed.

Section 2. Authorization. That the attached Employee Manual is hereby authorized and approved and is hereby adopted as the Town's Employee Manual.

Section 3. Implementation. The Mayor and Town Manager are authorized to take any and all action which is necessary to implement this Resolution.

Section 4. Effective Date. That this Resolution shall become effective immediately upon approval of the Town Council.

Sponsored by **Town Administration**.

The Motion to adopt the foregoing resolution was offered by _____,
seconded by _____, and on roll call the following vote ensued:

Mayor Glenn Singer	_____
Vice Mayor Jaime Mendal	_____
Councilmember Amy Isacson-Rojas	_____
Councilmember Judy Lusskin	_____
Councilmember Kenneth Bernstein	_____

PASSED AND ADOPTED by the Town Council of the Town of Golden Beach,
Florida, this 20th day of November, 2018.

MAYOR GLENN SINGER

ATTEST:

LISSETTE PEREZ
TOWN CLERK

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY:

STEPHEN J. HELFMAN
TOWN ATTORNEY