PELICAN BAY SERVICES DIVISION
Municipal Services Taxing & Benefit Unit

NOTICE OF PUBLIC MEETING **WEDNESDAY, OCTOBER 14, 2020**

THE PELICAN BAY SERVICES DIVISION BOARD WILL MEET AT 1 PM ON OCTOBER 14 AT THE BOARD OF COUNTY COMMISSIONERS CHAMBERS, THIRD FLOOR, COLLIER COUNTY GOVERNMENT CENTER, 3299 TAMIAMI TRAIL EAST, NAPLES, FLORIDA 34108.

AGENDA

1. Pledge of Allegiance
2. Roll Call
3. Agenda approval
4. Approval of 09/10/20 Regular Session meeting minutes
5. Chairman's report
6. Audience Comments
7. Administrator's report
    a. *SunTrust office space update
    b. Annual work plan (incl. quarterly landscape calendar)
    c. Beach Dune Swale littoral planting proposal
    d. Iguana trapping update
    e. September financial report
8. Committee reports
    a. Budget
    b. Ad Hoc Strategic Planning
    c. Clam Bay
        i. Role of committee in relation to the CAC, CZM
        ii. Current Clam Pass conditions
    d. Landscape & Safety
        i. License plate readers (Cpl. McGilvrey, Sheriff's Office)
        ii. Phase 1 & 2 sidewalk project update
    e. Water Management
        i. ABB estimated lake bank remediation pricing for the top 4 lakes
        ii. Replacement of 7 rusted corrugated metal pipes: Lake 4-1
        iii. *Permitting and design work proposal for Lake 4-1
        iv. Report on Basin 1 pipe evaluations
9. Board and committee meetings at the PBF Community Center
10. Old business
11. New business
12. Adjournment

**indicates possible action items*

ANY PERSON WISHING TO SPEAK ON AN AGENDA ITEM WILL RECEIVE UP TO THREE (3) MINUTES PER ITEM TO ADDRESS THE BOARD. THE BOARD WILL SOLICIT PUBLIC COMMENTS ON SUBJECTS NOT ON THIS AGENDA AND ANY PERSON WISHING TO SPEAK WILL RECEIVE UP TO THREE (3) MINUTES. THE BOARD ENCOURAGES YOU TO SUBMIT YOUR COMMENTS IN WRITING IN ADVANCE OF THE MEETING. ANY PERSON WHO DECIDES TO APPEAL A DECISION OF THIS BOARD WILL NEED A RECORD OF THE PROCEEDING PERTAINING THERETO, AND THEREFORE MAY NEED TO ENSURE THAT A VERBATIM RECORD IS MADE, WHICH INCLUDES THE TESTIMONY AND EVIDENCE UPON WHICH THE APPEAL IS TO BE BASED. IF YOU ARE A PERSON WITH A DISABILITY WHO NEEDS AN ACCOMMODATION IN ORDER TO PARTICIPATE IN THIS MEETING YOU ARE ENTITLED TO THE PROVISION OF CERTAIN ASSISTANCE. PLEASE CONTACT THE PELICAN BAY SERVICES DIVISION AT (239) 597-1749.

10/08/2020 9:06 AM

PELICAN BAY SERVICES DIVISION BOARD REGULAR SESSION
SEPTEMBER 10, 2020

The Pelican Bay Services Division Board met on Thursday, September 10, 2020, at 9:00 a.m. at the Board of County Commissioners Chambers, third floor, Collier County Government Center, 3299 Tamiami Trail East, Naples, Florida 34112.
In attendance were:

Pelican Bay Services Division Board
Michael Fogg, Chairman
Joe Chicurel, Vice-Chairman
Tom Cravens *(absent)*
Jacob Damouni *(absent)*
Nick Fabregas
Peter Griffith *(absent)*
Denise McLaughlin
Susan O'Brien
Scott Streckenbein *(by telephone)*
Rick Swider
Michael Weir

Pelican Bay Services Division Staff
Neil Dorrill, Administrator
Chad Coleman, Operations Manager
Darren Duprey, Assoc. Project Manager
Karin Herrmann, Operations Analyst
Lisa Jacob, Project Manager
Barbara Shea, Administrative Assistant

Also Present
Tom Barber, Agnoli, Barber & Brundage
Jim Carr, Agnoli, Barber & Brundage
Mohamed Dabees, Humiston & Moore

APPROVED AGENDA (AS PRESENTED)

1. Pledge of Allegiance
2. Roll Call
3. Agenda approval
4. Approval of 08/12/20 Regular Session meeting minutes
5. Audience Comments
6. Administrator's report
    a. New staff position
    b. SunTrust office space update
    c. August financial report
    d. Army Corps of Engineers Report (Dr. Dabees)
7. Committee reports
    a. Budget
    b. Ad Hoc Strategic Planning
    c. Clam Bay
    d. Landscape & Safety
    e. Water Management
        i. Lake bank remediation update on Lake 2-9

ii. Review of ABB Oakmont Lake proposal
iii. Update on ABB's estimates on next 2 potential lakes in Bridgeway
iv. Drainage pipes and stormwater easement management options

8. Chairman's report
9. Old business
10. New business
11. Adjournment

ROLL CALL

Mr. Cravens, Mr. Damouni, and Mr. Griffith were absent and a quorum was established

MR. STRECKENBEIN JOINED THE MEETING BY TELEPHONE AFTER ROLL CALL

AGENDA APPROVAL

Dr. Chicurel motioned, Mr. Fabregas seconded to approve the agenda as presented. The motion carried unanimously.

APPROVAL OF 08/12/2020 REGULAR SESSION MEETING MINUTES

Dr. Chicurel motioned, Ms. O'Brien seconded to approve the 08/12/2020 regular session meeting minutes as presented. The motion carried unanimously.

AUDIENCE COMMENTS

None

ADMINISTRATOR'S REPORT

ARMY CORPS OF ENGINEERS REPORT

Our Environmental Consultant, Dr. Mohamed Dabees, provided a presentation on his executive summary discussing his impressions and recommendations on the U.S. Army Corps of Engineers (USACE) Collier County Coastal Storm Risk Management Feasibility Study, which identifies a potential 50-year federal project to manage coastal storm risk in Collier County. Highlights of his presentation included:

- The proposed plan recommends varying levels of protective measures along six defined areas of coastal Collier County. Recommendations for Areas 1 and 3 include beach berm and dune nourishment, construction of surge barriers with sector gates at Wiggins Pass and Doctors Pass, two jetties and concrete structures in the dune system at Wiggins Pass, a Bonita Beach Road floodwall and surge barrier, a Seagate Drive floodwall and gate, and a Tamiami Trail floodwall and surge barrier.
- Area 2, which includes Pelican Bay, Clam Pass Park, Naples Cay, and part of Seagate is not a candidate for the same level of protection as Areas 1 and 3. Dr. Dabees suggested reasons being (1) most of Pelican Bay development is set back from the beach (east of the Clam Bay estuary), (2) Pelican Bay beaches are private, and (3) structures cannot be inserted into the Clam Bay natural preserve.
- The goal of the USACE feasibility study was to define actionable projects for which federal funding may be appropriated to in the future.

- Dr. Dabees expressed concerns over how the future completion of these suggested projects in Areas 1 and 3 may affect the Clam Bay system. It is critical that the Clam Pass inlet remains stable and open.
- Dr. Dabees emphasized the importance for the PBSD Board to provide feedback to the USACE by the Sept. 14 public comment deadline and suggested that the County is copied on a PBSD response submitted to the USACE.

Ms. O'Brien motioned, Dr. Chicurel seconded to direct staff to submit public comments to the Army Corps of Engineers by their deadline on Monday (Sept. 14) and that the letter be signed by Mr. Fogg, our PBSD Chair. The motion carried unanimously.

Mr. Fogg commented that Dr. Gandolfo, PBF Board Chair, will submit a separate response to the USACE on behalf of the PBF.

Ms. O'Brien suggested that in light of our increased staff, one employee is assigned to oversee Coastal Zone issues.

NEW STAFF POSITION

Mr. Dorrill reported that our new Associate Project Manager, Darren Duprey, was introduced at last week's Landscape & Safety Committee meeting. He commented that at next month's board meeting, he will provide the work plan for FY2021. Tentatively, Mr. Duprey's responsibilities will include the sidewalk project (lead project manager), the proposed 4-way stop at Hammock Oak Dr. and PB Blvd., the request for flashing warning lights at the San Marino crosswalk, parabolic mirrors, and other traffic/safety projects. Ms. Jacob's responsibilities will include Clam Bay, the new Operations Facility project, the second phase of the community sign replacement project (the first phase included only those signs which were damaged by Hurricane Irma and FEMA reimbursement eligible), the Lake 2-9 lake bank remediation project, the Dorchester conveyance swale, the beach dune swale, and other water management drainage projects. Mr. Coleman will oversee the day-to-day operations including the four divisions on the operations side which include, (1) landscape maintenance, (2) irrigation, (3) electrical, and (4) beach maintenance.

SUNTRUST OFFICE SPACE UPDATE

Mr. Dorrill provided a blank lease agreement form provided by the American National Insurance Company, the current owner of the SunTrust Building, which was added to the record. He commented that based on recent negotiations, the rent for the first-floor office space will be $25.75/square foot plus approximately $14/square foot for CAM (common area maintenance). This space will be shared with the PBF at almost a 50/50 split. This lease agreement form has been provided to the County's Real Property Division for review. Mr. Dorrill commented that he will provide an estimate of the total annual rent at next month's board meeting. Mr. Coleman commented that the total annual rent is estimated at $125,000, with a proposed term of seven years and a maximum 3% rate increase. Mr. Dorrill also shared, (1) the configured first-floor space includes two large conference rooms which will be available to both parties, (2) the final lease agreement will be provided to the board at the October board meeting, (3) BCC approval is ultimately required, and (4) a floor plan of the space will be e-mailed to the board, this afternoon, for review.

AUGUST MONTHLY FINANCIAL STATEMENTS

Mr. Dorrill reviewed the eleven-month financial statements and highlighted several items including a current PBSD cash balance of approximately $9.4 million. Mr. Fogg noted that the year-end carry-forward amount appears to be close to our budgeted forecast. He noted that adjustments have been made to the "commitment column" which only affect the variance column.

COMMITTEE REPORTS

BUDGET COMMITTEE

Mr. Fogg commented that a Budget Committee meeting has been scheduled for Oct. 12 to discuss (1) 9/30/2020 financial statements, and (2) financing options for our planned projects. He noted that our FY2021 budget was approved by the BCC at the County's Budget Hearing last week. Mr. Fogg reported that staff is in the process of assessing the life expectancy of our street light poles.

AD HOC STRATEGIC PLANNING COMMITTEE

Mr. Fogg reported that the PBF Board has approved our conceptual plans for the replacement of our Operations Building. Board members praised Mr. Kitchen (of the PBF Design Review Committee) in working with the PBSD and County staff to finalize these plans. Mr. Fogg commented that the next phase is for the County to select an architect for the project.

Mr. Dorrill commented that he continues to work on obtaining a resolution from the County to memorialize our interest in the Operations site. He noted that Deputy County Manager Nick Casalanguida has expressed support for such a resolution, while County Manager Ochs recently has questioned why such a resolution is needed. Ms. O'Brien requested that the draft resolution is provided to the board for review, prior to its being submitted to the BCC for approval.

CLAM BAY COMMITTEE

Ms. O'Brien provided her September 2020 Clam Bay update in the agenda packet. She highlighted, (1) PBSD's use of Roundup in Clam Bay (a natural preserve area) while Ms. Danette Kinaszczuk, Collier County's Pollution Control Manager, does not recommend Roundup and would prefer hand pulling the weeds wherever possible, and (2) Coastal Zone Management's preliminary plans for boater safety signage in Clam Bay do not include all the signs for which Clam Bay is eligible per FL statute, as illustrated on an exhibit (included in the agenda packet) prepared by our consultant Mr. Tim Hall and approved by the PBSD Board in 2014. Ms. O'Brien suggested that the PBSD works with the PBF and Coastal Zone Management (CZM) to agree on the signs that should be placed in Clam Bay. Ultimately, CZM must obtain PBF approval for the signs.

Mr. Dorrill responded that Roundup is the world's most recognized herbicide and is EPA approved. Mr. Dorrill commented that Mr. Gary McAlpin, CZM Manager, is retiring in 90 days. He noted that Mr. McAlpin's replacement is aware of the boater safety sign inconsistencies and is aware that PBF approval is required. Mr. Dorrill stated that he will set up a meeting with the new CZM Manager, Ms. O'Brien, and staff to discuss this issue.

LANDSCAPE & SAFETY COMMITTEE

Dr. Chicurel reported that the Landscape & Safety Committee met on Sept. 2, and the following items were discussed.

1. Ms. McLaughlin encouraged everyone to review Dr. Dabees' video and the Army Corps of Engineers Coastal Storm Management Risk Study Report.

2. The committee, staff, and our civil engineer discussed aspects of the proposed sidewalk replacement project. Mr. Carr, our civil engineer, provided an updated cost breakdown of $5,514,092 for the entire project. (Mr. Dorrill confirmed that landscape restoration is included in this total cost estimate.) Updated and detailed plans for Phase I were distributed. Timelines remain the same. A sample tree evaluation by Mr. Orlikoff was presented and a more thorough evaluation was planned. Hardwood trees were evaluated onsite for tree health, longevity potential, disease, and strategies to allow the project and trees to co-exist in health and harmony. Various construction and resident communication concerns were discussed.
3. Line of sight issues and solutions were discussed including landscape removal, better landscape maintenance and trimming, and traffic mirrors.
4. Crosswalk signage, request for flashing warning lights at the San Marino crosswalk to the berm, and establishing a 4-way stop at the intersection of Hammock Oak/The Crescent/Pelican Bay Blvd. were all discussed.
5. Iguana sightings on the southern banks of Oakmont Lake were presented. Some proactive plan needs to be instituted either by the PBSD and/or a joint effort with the PBF to eradicate, as much as possible, the threat imposed by these invasive creatures. They are known to burrow, destroy, and undermine lake banks, spread salmonella, and defoliate landscapes.
6. Mr. Griffith and Mr. Mumm will review and evaluate cul-de-sac needs for trees and report back to the committee.

Dr. Chicurel reported that on Sept. 3 he met with Mr. Orlikoff and staff to evaluate the health and longevity of trees in the Phase I area, to determine strategies to enable trees and the new sidewalk to co-exist. Dr. Chicurel also commented that Phase I construction plans will be provided on the PBF website. He noted that the PBSD is not responsible for the sidewalks on Vanderbilt Beach Road and Seagate Drive. Ms. Jacob reported that the 09/09/2020 PBSD e-blast included a link to the construction plans.

Mr. Dorrill commented that staff will contact potential iguana trappers to discuss our options. Ms. O'Brien suggested that we provide the trappers' contact information to the Waterford Assoc. Mr. Streckenbein requested an update on the cane toad invasion. Dr. Chicurel responded that based on conversations with the PBF, this issue is being left up to individual PB homeowners associations.

WATER MANAGEMENT COMMITTEE
LAKE BANK REMEDIATION UPDATE ON LAKE 2-9

Mr. Dorrill commented that he has reviewed the engineers' field notes for our Lake 2-9 project and noted that subsurface obstructions were encountered during construction which caused three sections of the seawall to be slightly askew. He noted that the worst section at the south end of the project was reworked by the contractor, at no additional cost to us. Mr. Dorrill stated that sheet pile material would not be used in future seawall projects. He commented that he would make the field notes available to the board. Mr. Dorrill noted that we could evaluate a claim against our civil engineer; a claim against the contractor would not be appropriate as the contractor followed the plans.

Ms. O'Brien commented that she reviewed the field notes which indicated that the contractor straightened the sections which were requested by staff, but that staff did not request that all askew sections be straightened. She suggested that staff could have discussed a change order (for additional section straightening work) with the contractor.

Mr. Fogg commented that the Lake 2-9 final product is structurally sound and the residents are pleased with the project. He also suggested that when we chose the "sheet pile" seawall for the project that we were not aware/warned of the potential risk of using this material.

Ms. McLaughlin commented that we should not have an expectation of perfection of the angles within the seawall, but we do expect sufficient integrity of the wall.

REVIEW OF ABB OAKMONT LAKE PROPOSAL

Ms. McLaughlin described the deficiencies of the lake bank of Lake 4-1 (Oakmont Lake) which include (1) steep lake bank slopes, (2) exposed irrigation pipes, (3) exposed old Geotubing, and (4) significant erosion near the pathway. She noted that we have different remediation options as well as options on whether to address the whole lake, half of the lake, or patches of the lake. She emphasized that this lake is a very visible and utilized part of the community.

Our ABB consultant, Mr. Tom Barber, commented that lake bank escarpments are more concerning than slopes; there are drop-offs of 30 inches in some areas of this lake. His remediation recommendations include (1) re-grading of the lake bank, covered by sod, and adding littoral plants, (2) installing Geoweb, covered by sod, and adding littoral plants, or (3) installing rip-rap along the lake banks; however, SFWMD only allows rip-rap to be installed on a maximum of 40% of the perimeter of the lake bank. He noted that there is not enough historical data on Geoweb to be able to provide a life expectancy for this material. Board discussion ensued on these options as well as whether the project should include the entire lake's perimeter.

Ms. O'Brien suggested that 8 out of 42 sections (or 19%) of the lake bank are less than where they should be. She noted that the path is the responsibility of the PBF. She distributed a document (to the board) written by County Attorney Klatzkow, expressing his opinion on the Oakmont Lake pathway in 2015 (which was added to the record). Ms. O'Brien suggested that if we have blue tilapia in this lake that these fish will have an adverse effect on littoral plants.

Ms. O'Brien commented that per our SFWMD permit, we are not responsible for lake bank escarpments. She provided copies (to the board) of the permit for Basin 4 in which Oakmont Lake is located (which was added to the record). She also suggested that we explore the possibility of raising the lake's water level to reduce the escarpment.

Mr. Streckenbein commented that his homeowners association (Valencia) used rip-rap for their lake remediation project with good results.

Mr. Fogg commented on an e-mail from PBF President Jim Hoppensteadt to PBSD staff which discussed concerns related to the lake at the PBF Community Center including (1) lake bank erosion, (2) overgrown, tired landscaping around the lake, (3) drainage issues, and (4) inconsistent, scraggly littoral plantings around the lake. Mr. Barber commented that he has observed escarpments of approximately 10 inches around this lake. Ms. McLaughlin suggested that staff follow up with Mr. Hoppensteadt.

Mr. Fogg commented that a policy decision must be made by the board on whether to borrow the money to finance a package of 10 lake bank remediation projects and incur financing costs, or to increase the budget by approximately $1 million each year (an increase in the assessment of $130 - $150) which would provide funding for one or two lake bank projects each year. Ms. O'Brien commented that Mr. Mark English, PBPOA President, continues to be an advocate in favor of long-term financing for lake bank remediation.

Ms. McLaughlin concluded that we need to evaluate the options discussed and determine whether it is possible to raise the water level in the lake. There was no board consensus on whether it is imperative that the Lake 4-1 project include the entire lake.

UPDATE ON ABB'S ESTIMATES ON NEXT 2 POTENTIAL LAKES IN BRIDGEWAY

Mr. Barber commented that the next two lakes on the prioritized list of lake bank remediation projects are Lakes 1-3 and 1-6. He commented that he will provide estimated costs for lake bank remediation of these two lakes at the next meeting. He expects the estimates to be substantially lower than the Oakmont Lake remediation estimates.

DRAINAGE PIPES AND STORMWATER EASEMENT MANAGEMENT OPTIONS

Ms. Jacob reported that in the next fiscal year, staff is planning to utilize (piggyback) a Broward College contract to hire a contractor to begin videoing drainage pipes in the south end of Pelican Bay. Mr. Duprey will assist in assessing the condition and life expectancy of the pipes. Mr. Fogg suggested that Ms. McLaughlin meets with Ms. Jacob and Mr. Duprey to discuss an appropriate proactive plan for the pipe assessment. Mr. Dorrill commented that in general, the life expectancy of a concrete-enforced pipe is 50 years. He also noted that we have an inventory of all the pipes in Pelican Bay, including lengths and diameters.

ADMINISTRATOR'S REQUEST

Mr. Dorrill asked Ms. O'Brien to briefly identify several documents which she distributed to board members at this meeting and asked whether copies were made available for the record. Ms. O'Brien identified these documents as (1) Mr. Klatzkow's opinion on the pathway at Oakmont Lake that he wrote in 2015 at our request, and (2) SFWMD permit for Basin 4 in which Oakmont Lake is located. She confirmed that she provided copies of these documents to Ms. Shea for the record.

CHAIRMAN'S REPORT

Mr. Fogg reported on a change to the Water Management Committee. Mr. Damouni has agreed to step down from the committee (as he has numerous work commitments) and Ms. O'Brien has agreed to join the committee.

Mr. Fogg reported that the "three-board monthly meetings" will resume starting next week.

Mr. Fogg reported that he has discussed a future joint PBSD/PBF meeting with PBF Chair John Gandolfo; suggested dates are Jan. 18 or 25. Mr. Fogg asked that board members provide suggested agenda items for this joint meeting. Mr. Fogg also reported that he has had discussions with Dr. Gandolfo regarding "candidate forums" for this year's PBSD election cycle. Five PBSD Board member terms expire on 03/31/2021. Ms. O'Brien suggested that we include an article on our 2021 election in the PB Post sometime soon.

OLD BUSINESS

Ms. O'Brien commented that although Mr. Fogg has previously requested that staff provide updates to the board on significant PBSD activities and/or unusual events, this has not happened. Mr. Fogg agreed that such a process would be helpful and suggested that Mr. Dorrill might include this information in his Administrator's Report. Ms. O'Brien and Ms. McLaughlin noted that residents often ask questions on various PBSD community activities and that it would be helpful to have relevant information to provide to them.

Ms. O'Brien commented that earlier in this meeting, Mr. Dorrill made a comment that she was misrepresenting something, and he is entitled to his opinion, and then he went on to say, "and that is typical of her." She commented that she would like to go on the record as objecting to this comment.

NEW BUSINESS

Mr. Dorrill commented that at last week's County Budget Hearing, a new resident to Pelican Bay expressed his concerns with "ambient noise" in Pelican Bay (one of our responsibilities included in our Ordinance).

ADJOURNMENT

The meeting was adjourned at 11:45 a.m.

Michael Fogg, Chairman

Minutes approved [___] *as presented* OR [___] *as amended* ON [_____] *date*

LETTER OF INTENT
SunTrust Building

TENANT	Collier County. Lease shall specify that Tenant may sublet a portion of its space to the Pelican Bay Foundation.
PREMISES	Suite 102, consisting of 3,399 rentable square feet of office space
USE	Professional business offices
INITIAL TERM	Seven years
POSSESSION AND COMMENCEMENT	Immediate upon lease execution. Tenant's existing lease on Suite 302 shall be considered terminated upon Possession of the Premises.
BASE RENTAL RATE	Year 1: $25.75 per square foot. Thereafter: 3% increases per annum. Collier County is exempt from Florida State sales tax.
COMMON AREA CHARGES	Tenant shall be responsible for its pro-rata share of Common Area Expenses including common area maintenance, property taxes, property insurance, utilities, and janitorial costs. Common Area Expenses are estimated at $14.00/s.f. for 2020. Collier County is exempt from Florida State sales tax.
OPTIONS	One seven-year option period. Escalations per initial term.
IMPROVEMENTS	Landlord shall deliver the Premises in 'as-is' condition. Landlord shall provide a Tenant Improvement Allowance of $43,000, or approximately $12.65/s.f.
SIGNAGE	Tenant shall be included, at Landlord's expense, on all directory signage commonly found in the building.
SECURITY/PRE-PAID DEPOSITS	None
REAL ESTATE CO-BROKERAGE	Premier Commercial, Inc.

This proposal is an outline of business terms and does not constitute an agreement between Tenant and Landlord to enter into a lease., Such prospective lease shall be effective only when executed by both parties and all necessary deposits and advance payments have been made..

Approved:

X_____ Date_____
by: _____
Approved: Landlord

X_____ Date_____
by: _____

"

Lease Year	Rent/S.F.	Annual Base Rent	Monthly Base Rent
1	$24.00 NNN	$23,496.00	$1,958.00
2	$25.00 NNN	$24,475.00	$2,039.58
3	$25.75 NNN	$25,209.25	$2,100.77
1/1/20 4 (Option Term)	$26.52 NNN	$25,963.08	$2,163.59
1/1/21 5 (Option Term)	$27.32 NNN	$26,746.28	$2,228.86

"

4. Notice and Payment of Rents. The parties hereto agree and acknowledge that notwithstanding anything in Section 19.01 of the Lease, the notice address for Landlord and the address to which payments of Rent should be delivered are as follows:

Notice address:
American National Insurance Company
Attn: Mortgage and Real Estate Investments Dept.
2525 South Shore Blvd., Ste. 207
League City, Texas 77573
RE: IRE 5161

With a copy to:
CRE Consultants | Property Management
Attn: Stevie Clifford
1100 Fifth Avenue S
Naples, Florida 34102

Rent payments:
CRE Consultants | Property Management
Attn: Stevie Clifford
1100 Fifth Avenue S
Naples, Florida 34102

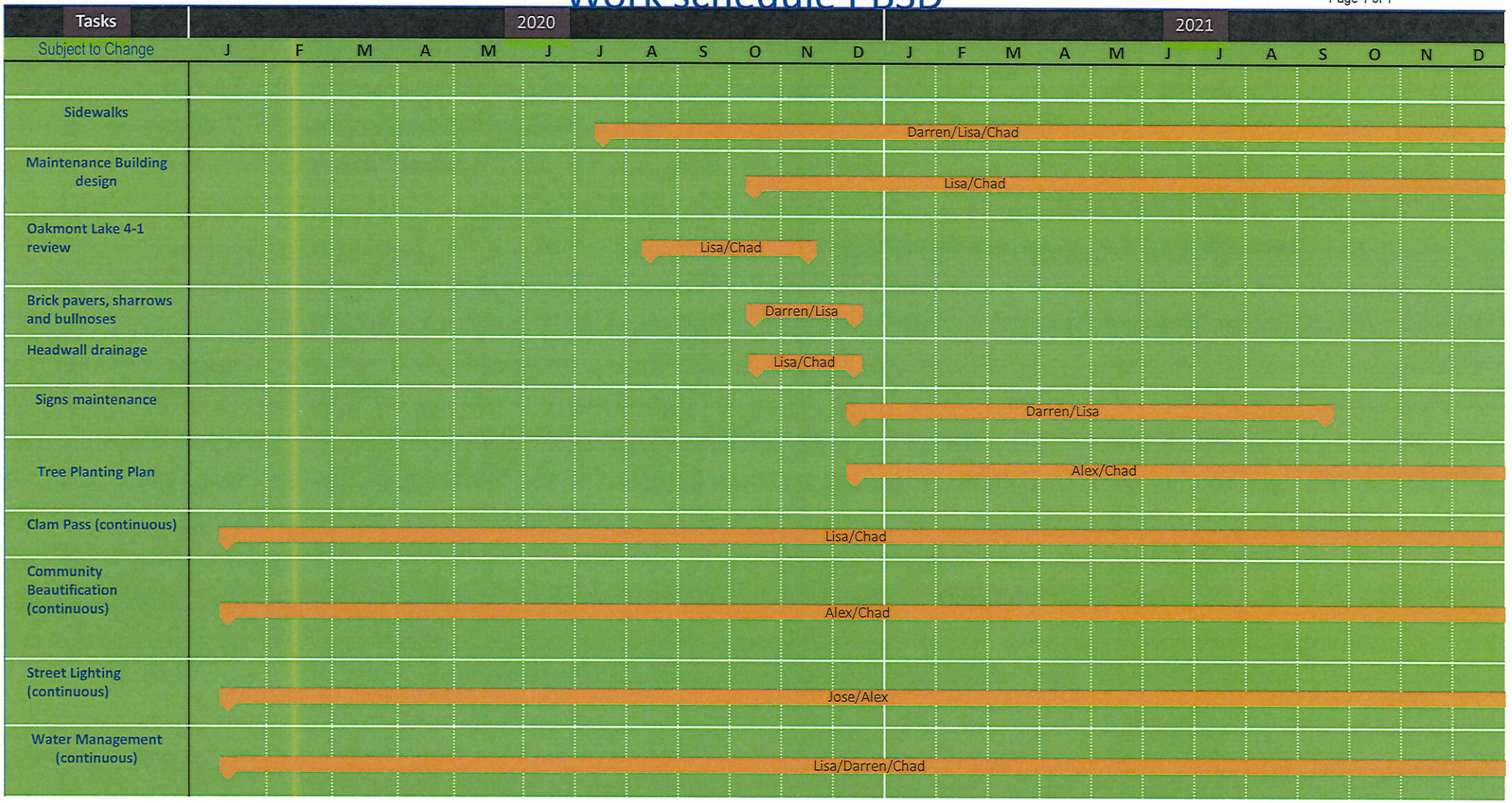
5. Option Term. The parties hereto agree and acknowledge that effective as of the Extended Term Commencement Date, Section 29 of the Lease is amended and restated in full to read as follows:

" 29. Extension Options

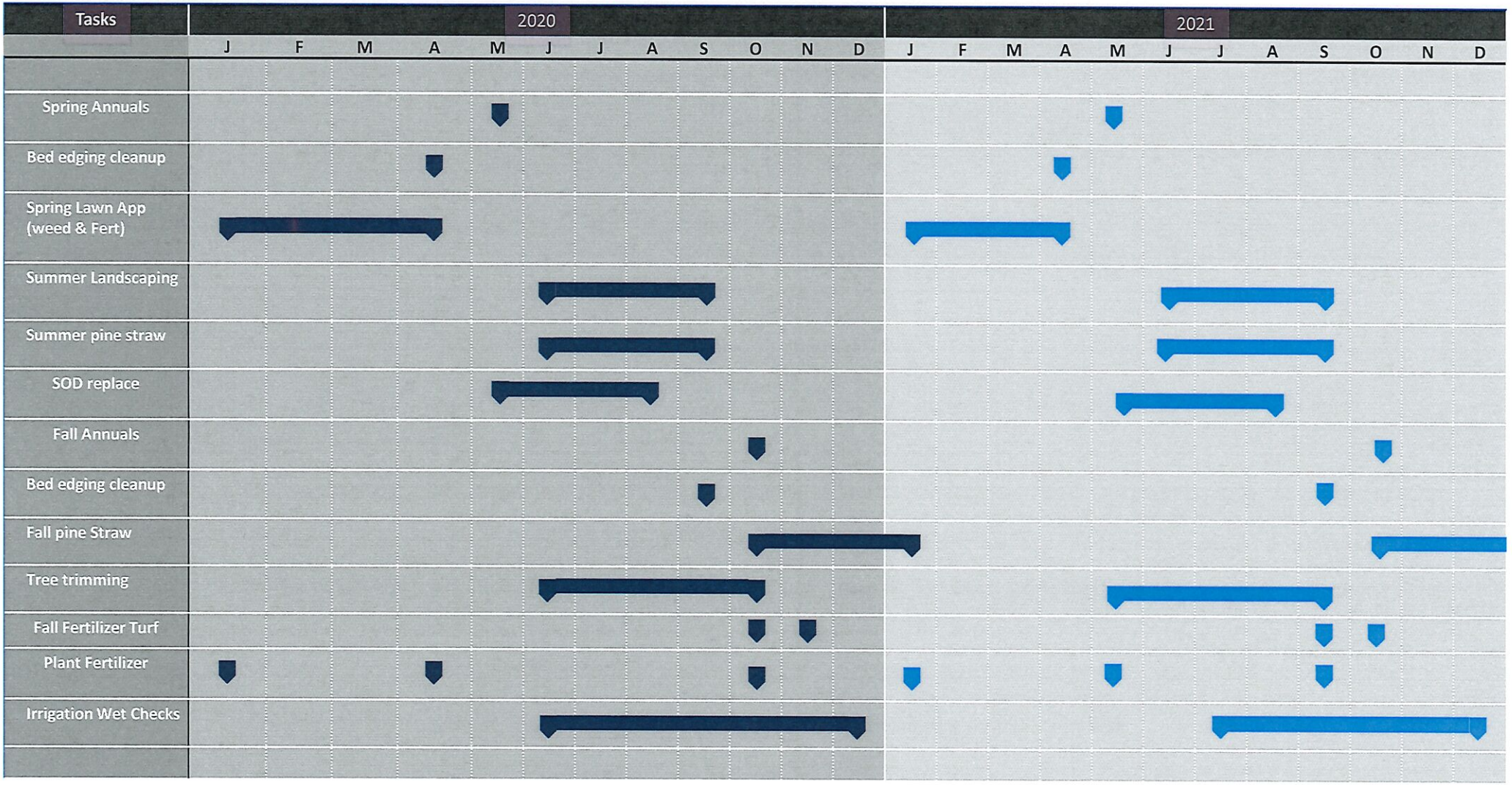
Upon written notice to Landlord in the manner provided in this Lease, no later than one hundred eighty (180) days and no earlier than two hundred forty (240) days prior to the expiration of the Term and provided Tenant is not then in default in the performance of its obligations pursuant to this Lease, Tenant shall have the right to renew this Lease, as the same may be amended from time to time, for one (1) additional term of two (2) years (the "Option Term"). If Tenant exercises this option and the conditions in this Section 29 are satisfied, then this Lease shall be renewed and extended upon the same terms and conditions set forth in this Lease, with the exception of the amount of Annual Base Rent to be paid by Tenant to Landlord, which shall be as provided for in Section 3.02 of this Lease. "

CAO

Work schedule PBSD



Landscaping Reference Calendar PBSD



PELICAN BAY
BALANCE SHEET
September 30, 2020
(UNAUDITED)

	Operating Fund 109	Street Lighting 778	Pelican Bay Landscape, Safety, Lake & Beach Projects 322	Clam Bay Capital Projects 320	TOTAL
ASSETS					
Cash and investments	2,996,910.38	2,110,543.74	3,652,874.69	213,194.20	8,973,523.01
Interest receivable	-	-	-	-	-
Trade receivable, net	-	-	-	-	-
Due from other governments	-	-	136,252.77	-	136,252.77
Total assets	2,996,910.38	2,110,543.74	3,789,127.46	213,194.20	9,109,775.78
LIABILITIES AND FUND BALANCE					
Liabilities:					
Accounts payable	108,604.57	4,159.50	216,873.84	2,379.14	332,017.05
Wages payable	-	-	-	-	-
Total liabilities	108,604.57	4,159.50	216,873.84	2,379.14	332,017.05
Fund balances:					
Fund balance	2,888,305.81	2,106,384.24	3,572,253.62	210,815.06	8,777,758.73
Total liabilities and fund balances	2,996,910.38	2,110,543.74	3,789,127.46	213,194.20	9,109,775.78
	-	-	-	-	-
Fund Balance at the end of the period	2,888,305.81	2,106,384.24	3,572,253.62	210,815.06	8,777,758.73
Unspent balance of projects:					
Small projects under $200K	-	-	437,412.05	-	437,412.05
50066-PBSD Landscape Improvement	-	-	377,677.21	-	377,677.21
50126-Beach Renourishment	-	-	563,883.89	-	563,883.89
50143-PBSD Field Operation Center Improvements	-	-	298,194.56	-	298,194.56
50154-Hurricane Irma	-	-	620,860.44	-	620,860.44
51026-PBSD Lake Bank Restoration	-	-	182,741.95	-	182,741.95
51100-Clam Bay Restoration	-	-	-	181,539.52	181,539.52
Total unspent balance of major projects	-	-	2,480,770.10	181,539.52	2,662,309.62
Budgeted reserves:					
991000-Reserve for contingencies	115,100.00	-	-	-	115,100.00
991700-Reserve for disaster relief	680,900.00	-	-	-	680,900.00
992090-Reserve for sinking fund	-	-	500,000.00	-	500,000.00
993000-Reserve for capital outlay	200,000.00	90,000.00	-	-	290,000.00
994500-Reserve for future construction and improvement	-	1,534,800.00	-	-	1,534,800.00
998000-Reserve for cash	291,300.00	150,000.00	-	-	441,300.00
Total budgeted reserves	1,287,300.00	1,774,800.00	500,000.00	-	3,562,100.00
Budgeted commitments at the end of the period	1,287,300.00	1,774,800.00	2,980,770.10	181,539.52	6,224,409.62
Projected excess (deficit) fund balance	1,601,005.81	331,584.24	591,483.52	29,275.54	2,553,349.11

Clam Bay Update-October 2020

Clam Bay. Updates on mangrove monitoring, hand-dug channel maintenance, and a plan to begin the removal of scaevola, a type 1 exotic in the coastal scrub, are expected at the next Clam Bay Committee meeting.

Coastal Zone Management's preliminary plans for boater safety signage in Clam Bay do not include all the signs for which Clam Bay is eligible, per FL statute. The PBF has notified CZM that PBF approval for signage in Clam Bay is needed. It may be advantageous for PBSD representatives to work with PBF representatives on this topic so the PB community will be satisfied with the boater safety signage that the County ultimately puts in Clam Bay.

Clam Pass. Tidal ratios for September at markers 4 and 14 are above .5, meaning tidal flow is in the acceptable range. In August these ratios were above .6.

Attached are aerials of Clam Pass taken in April 2020 following the dredging/grading event and in September 2020. A sizable sand bar has developed near the mouth of the Pass.

Attached are documents about the Clam Pass maintenance dredging permits issued to Collier County and PBSD by the Florida Department of Environmental Protection and the United States Army Corps of Engineers.

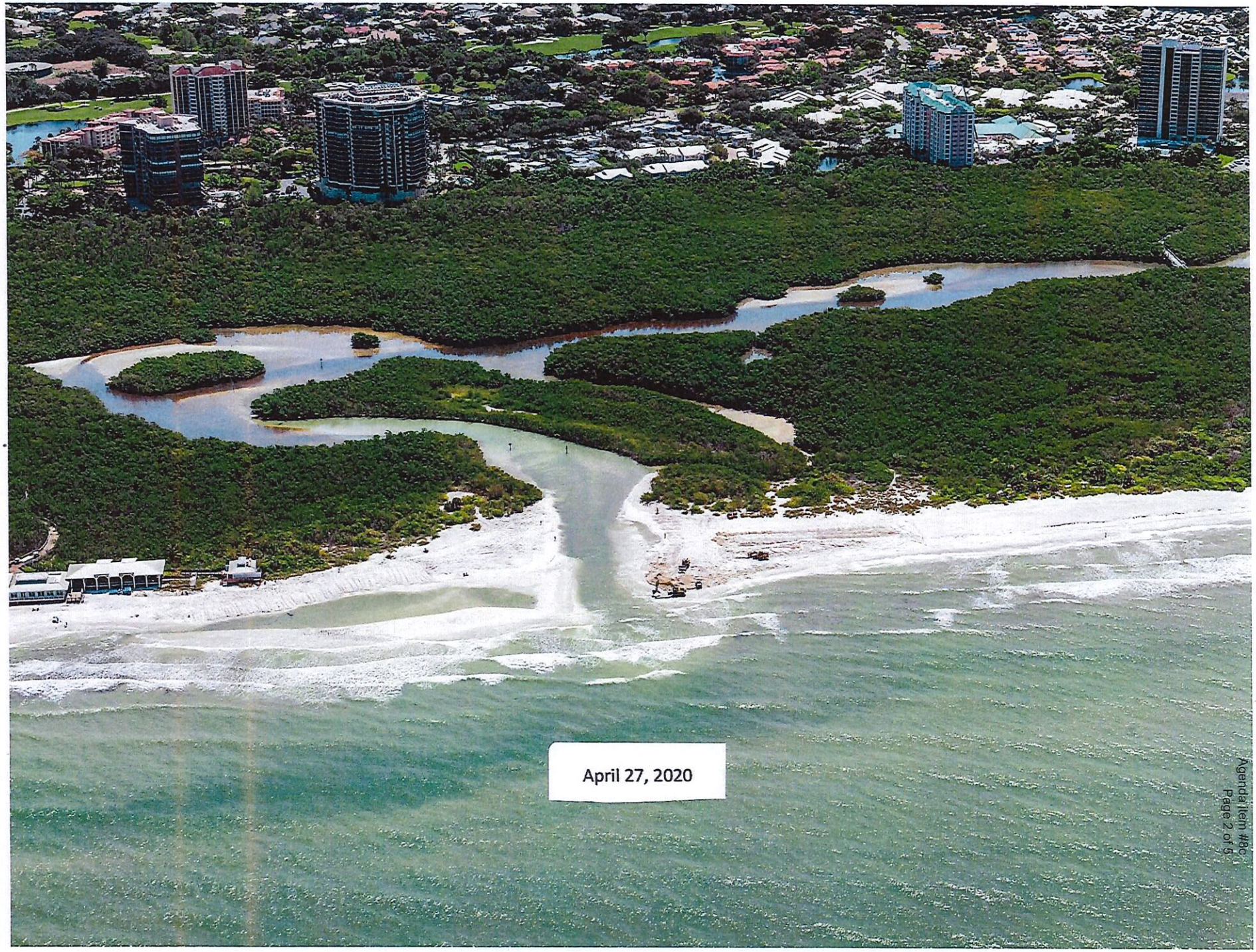
Water Quality.
Total phosphorus and total nitrogen. The WQ report for April, May, and June 2020, is expected on October 9. In the WQ Report for January, February, and March 2020 all 27 samples for TN were within allowable limits and 20 of the 27 samples for TP were within allowable limits. These TP results are significantly better than they were in the last two years.

Copper. Only three of 54 samples for January through June 2020 exceeded the allowable limit which is very good.

Other. Collier County Coastal Storm Risk Management Feasibility Study. PBSD and the PBF submitted comments to the U.S. Army Corps of Engineer about this study. Hopefully this will be a topic for the upcoming PBSD/PBF Joint Board meeting in January 2021.

Clam Bay Committee. Hopefully the Clam Bay Committee will meet later this month.

Prepared by Susan O'Brien
October 7, 2020


April 27, 2020


September 24, 2020
8 2020

Florida Department of Environmental Protection
Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

CONSOLIDATED JOINT COASTAL PERMIT AND SOVEREIGN SUBMERGED LANDS AUTHORIZATION

PERMITTEE:
Collier County
c/o Gary McAlpin, PE
Director – Coastal Zone Management
Collier County Government
3299 Tamiami Trail East, Suite 103
Naples, Florida 34112

AGENT:
Atkins
c/o Jeff Tabar
4030 West Boy Scout Blvd
Suite 700
Tampa, FL 33607

PERMIT INFORMATION:
Permit Number: 0296087-001-JC

Project Name: Clam Pass Maintenance Dredging

County: Collier

Issuance Date: August 14, 2012

Expiration Date: August 14, 2022

REGULATORY AUTHORIZATION:

This permit is issued under the authority of Chapter 161 and Part IV of Chapter 373, Florida Statutes (F.S.), and Title 62, Florida Administrative Code (F.A.C.). Pursuant to Operating Agreements executed between the Department of Environmental Protection (Department) and the water management districts, as referenced in Chapter 62-113, F.A.C., the Department is responsible for reviewing and taking final agency action on this activity.

PROJECT DESCRIPTION:

The project is to restore the alignment of Clam Pass to the previously approved location and conducting periodic maintenance dredging of a portion of the Clam Pass Channel in order to maintain tidal exchange between Clam Bay and the Gulf of Mexico. Approximately 22,000 cubic yards of sand will be dredged from approximately 1800 feet (~549 meters) of Clam Pass. The beach-compatible sand will be placed north of the Pass, along Pelican Bay Beach, and south of the Pass, along Collier County Clam Pass Park Beaches. Additionally, the meandered channel location will be filled with beach compatible sand.

DEPARTMENT OF THE ARMY PERMIT

Issued on March 9, 2016

Permittee: Collier County
c/o Pelican Bay Services Division
801 Laurel Oak Drive Suite 302
Naples, Florida 34108

Permit No: SAJ-1996-02789 (SP-BEM)

Issuing Office: U.S. Army Engineer District, Jacksonville

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the U.S. Army Corps of Engineers (Corps) having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description:

Maintenance Dredging:

- Remove sand from Clam Pass and associated flood shoal areas in three sections (A, B, and C, see attached drawings) to restore tidal flow to the estuary. It is anticipated that approximately 11,800 cubic yards of sand would be removed from Clam Pass and flood shoal areas according to the most recent survey. This amount could vary in subsequent dredging events up to the maximum 22,800 cubic yards which can be contained within the proposed spoil templates.
- Channel bottom width would be a maximum of 50 feet through the Pass (Dredging Section A) with a design depth of (-5.5) feet NAVD, which includes a 0.5 foot over dredge. Sections B and C would have a design depth of (-4.5) NAVD, which includes a 0.5 foot over dredge. The widths of Sections B and C would vary (see attached drawings).
- A minimum of a 5 to 15 foot buffer would be maintained between the dredging and any mangrove prop roots adjacent to the dredge template. Additional buffers would be provided to seagrasses growing adjacent to the proposed template.
- Dredging would be performed by backhoe, hydraulic dredge, or a combination of both.
- The dredging work is expected to take between 45 and 75 days to complete.

SheaBarbara

Subject: Shifting and Erosion at Clam Pass - comments from Dr. Dabees

From: Mohamed Dabees
Sent: Friday, October 2, 2020 7:46 PM
To: James Hoppensteadt <jimh@pelicanbay.org>
Cc: Neil Dorrill <neil@dmgfl.com>; ColemanChad <Chad.Coleman@colliercountyfl.gov>; Mark Gruen <mgruen@pelicanbay.org>; William Bowden <bbowden@pelicanbay.org>
Subject: RE: Shifting and Erosion at Clam Pass

Jim,
I have been monitoring the inlet changes especially over the past few weeks. There has been persistent flow of sand from south side of the inlet since the sand placement at the park last winter. Over the summer months wave energy from the south also compound the rate of sand inflow towards the inlet from the south. As a result, The inlet channel is pushing north to flow around the sand build up by the inlet. The inlet regrade effort in April helped restore conditions of restoring tidal flow but the sand continues to spread from the beach fill project.

The recent erosion of the north inlet bank is a mixed outcome for me. The good part is that there is enough flow to keep the inlet open but the level of erosion of the north bank is concerning from erosion encroaching on existing structures. As I watch the system adjust I am encouraged by the fact that sand buildup is not an elevated dry sand spit, but shoals that gets overtopped at highwater allowing gulf water to flow into the pass but then the ebb flow has to find way around. I am hopeful that the weather in the coming weeks will not be too rough and allow tidal flow to dominate and breach the shoals and redirect the flow southward.

We will continue to monitor the changes and advise PBSD when conditions becomes critical and necessitate corrective measures. The inlet regrade and mechanical bypassing operation earlier this year demonstrated a practical way to assist the inlet stability. However, we are still in turtle nesting season until the end of the month so available options are limited at this time.

Let me know if you have any questions.

Mohamed

Mohamed Dabees, Ph.D. PE. D. CE.
Humiston & Moore Engineers
Naples, FL
239-594-2021

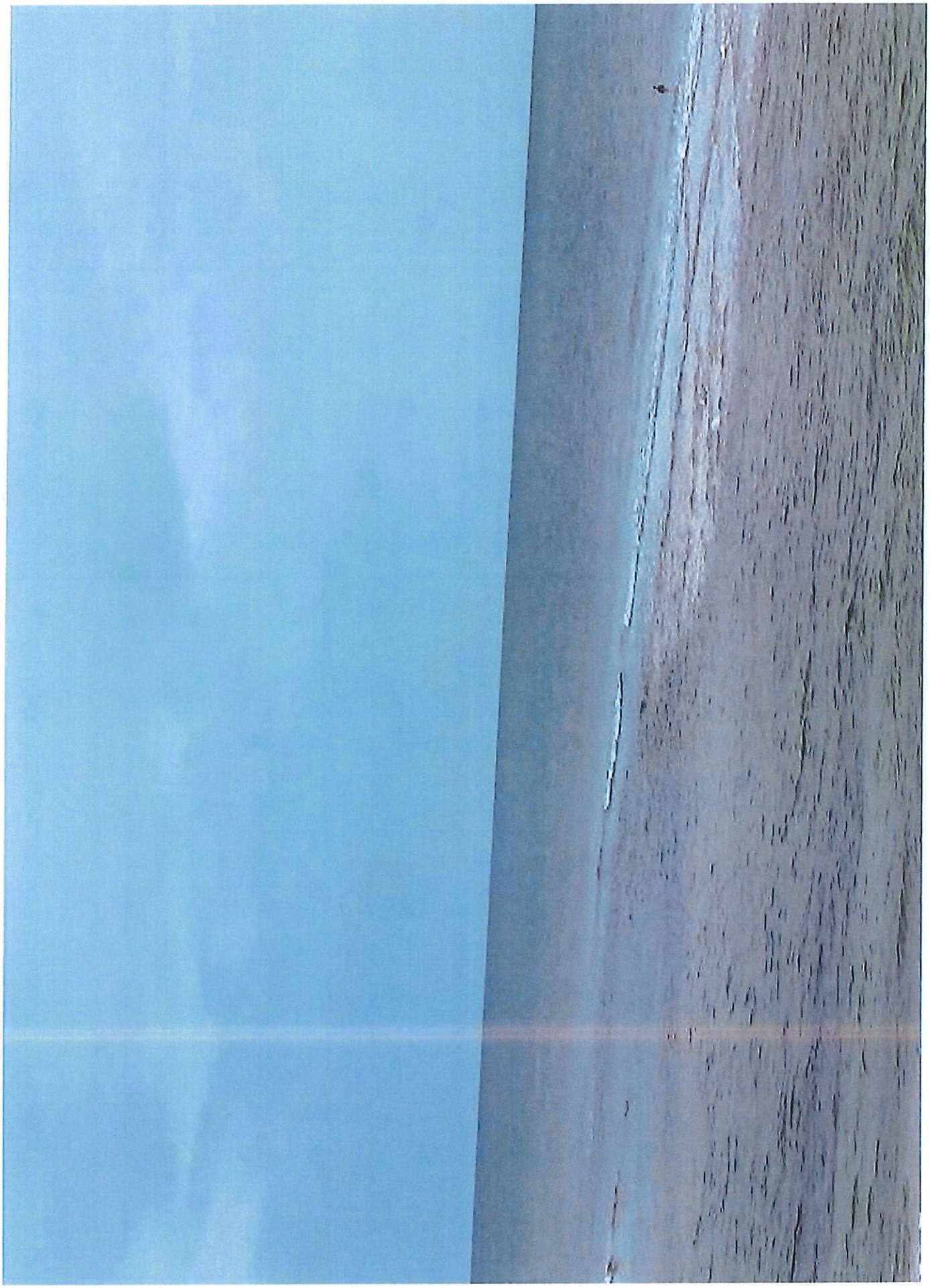
From: James Hoppensteadt <jimh@pelicanbay.org>
Sent: Friday, October 2, 2020 5:59 PM
To: Mohamed Dabees <md@humistonandmoore.com>
Cc: Neil Dorrill <neil@dmgfl.com>; ColemanChad <Chad.Coleman@colliercountyfl.gov>; Mark Gruen <mgruen@pelicanbay.org>; William Bowden <bbowden@pelicanbay.org>
Subject: Shifting and Erosion at Clam Pass

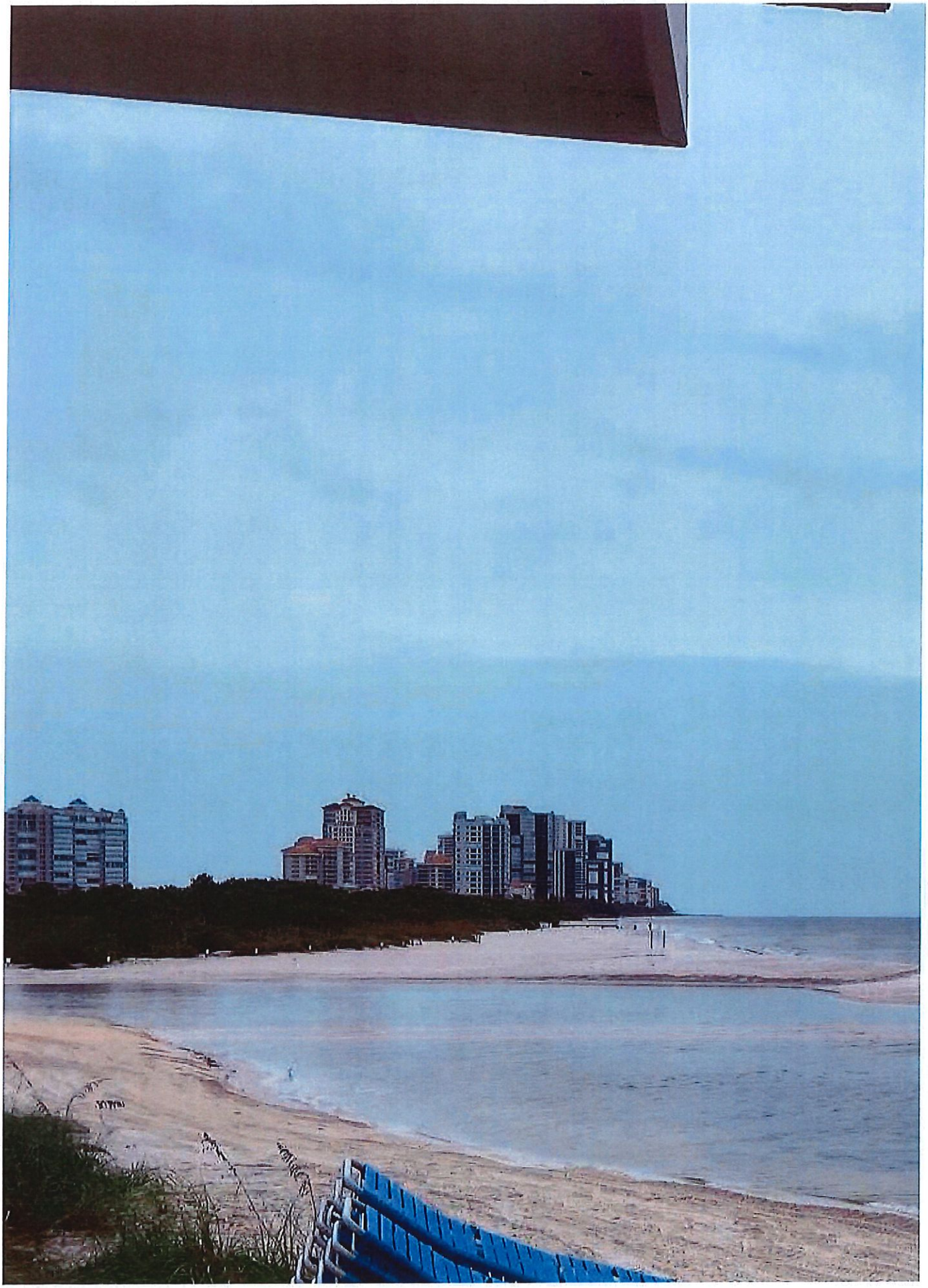
Mohamed,

1

We have seen a quickly evolving erosion and shift in direction of the Pass. Thoughts?

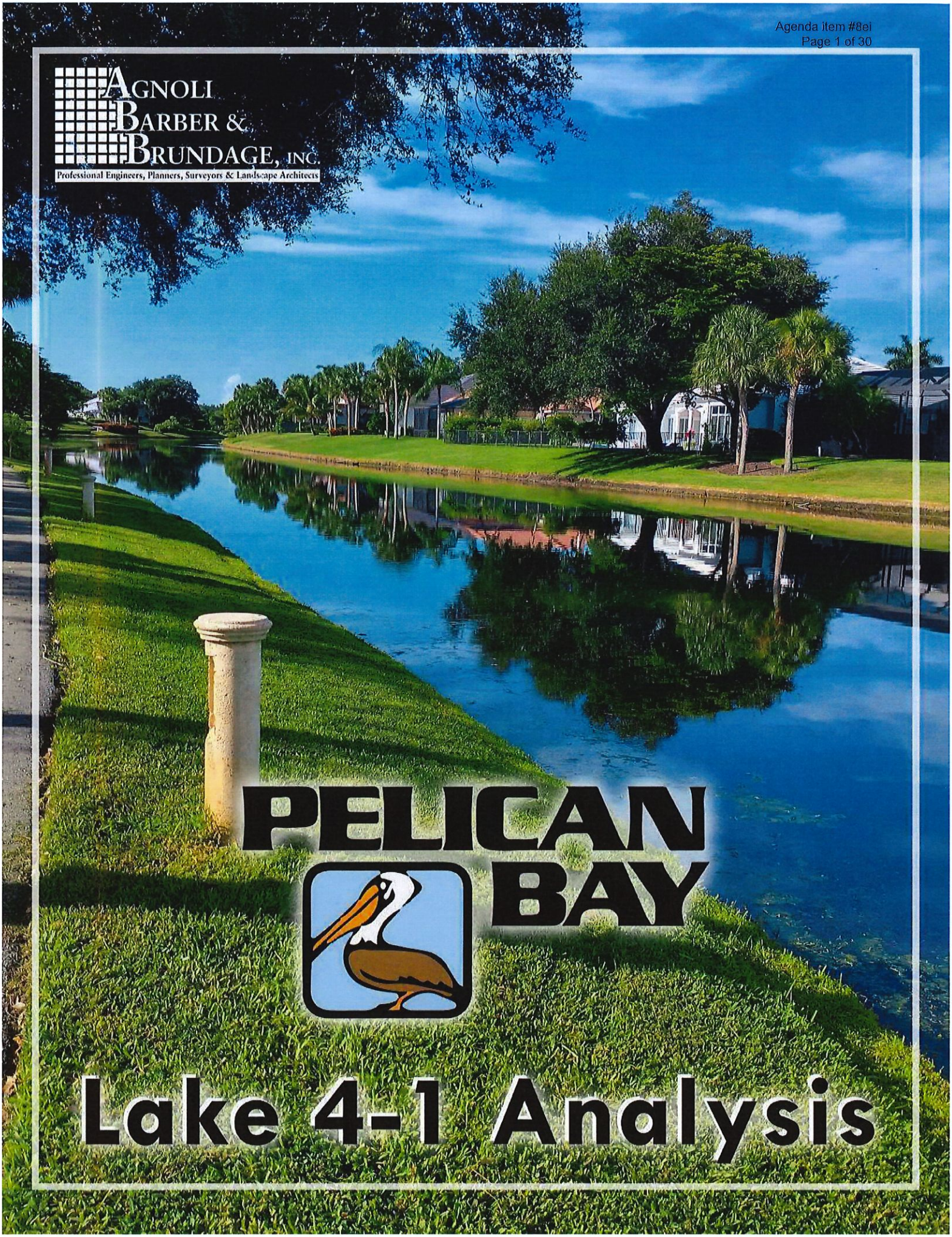
Sincerely,
Jim
Jim Hoppensteadt
President
Pelican Bay Foundation
239-398-7074






5, 2020

AGNOLI
BARBER &
BRUNDAGE, INC.
Professional Engineers, Planners, Surveyors & Landscape Architects



PELICAN BAY

Lake 4-1 Analysis

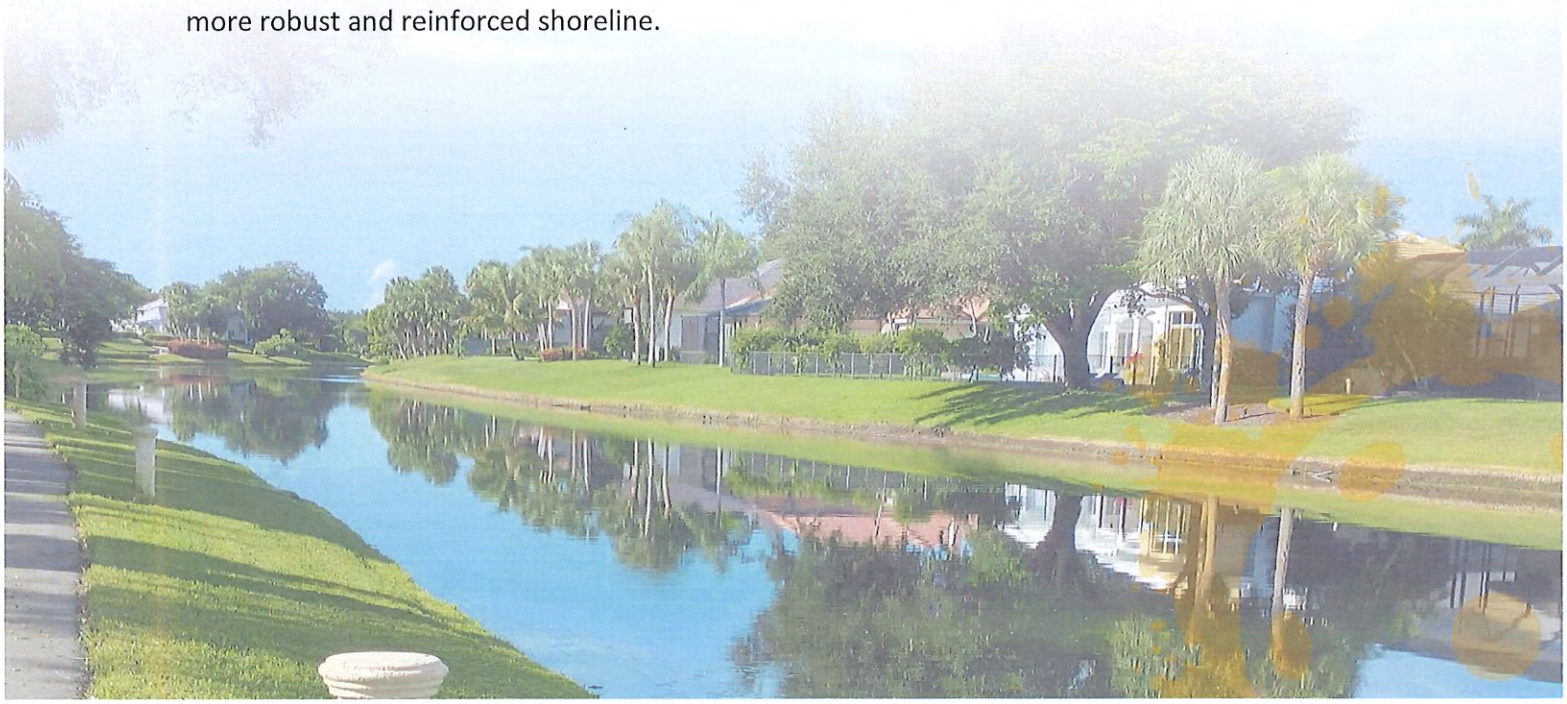
PELICAN BAY

Background

Erosion can be defined as the gradual removal or movement of soil from one area to another caused by water, wind, or other natural causes. Lake bank erosion is very common is southwest Florida due to the variance in seasons it faces. It can be caused by strong winds that damage the shoreline such as in events like Hurricane Irma and overland runoff.

A site visit was conducted on August 6th, 2020 for lake 4-1 at Pelican Bay to measure erosion and assess the condition of the lake banks. Even though all indications of erosion are noted when conducting site visit, the primary form of analytical data that is taken to determine the degree of erosion are measurements of both escarpment height and slope. Escarpment height can be defined as any sudden drop-off that separates the lake bank from the elevation just inside the water's edge. It is important to note that drop-offs are common for any lake however any drop-off over 9 inches exceeds the permitted threshold for the South Florida Water Management District (SFWMD) permit. The slope can be defined as the degree of inclination of the ground. The slope is an indicator of erosion because the slope determines the rate at which water flows over the top of lake banks, its action will accelerate the process of erosion. Like the escarpment height, there is a permitted limit of how steep the slope may be. Any slope greater than 4:1, meaning a length of four feet for every foot in depth, is considered out of compliance with the SFWMD permit.

Wind is a major factor in creating waves, fortunately for Lake 4-1 the longest distance from the east to the west side of the lake is about 260 linear feet however the length from north to south is quite significant. Approximately 2600 linear feet separates the north and south sides of the lake, leaving it prone to erosion. Incoming cold fronts and increased wind from storms can create waves that worsen the condition of the lake banks and create additional problems. The long fetch allows the waves to build up energy before crashing into the lake bank requiring a more robust and reinforced shoreline.



PELICAN BAY

Analysis

Lake 4-1 is bound by Green Tree Drive to the west and Oakmont Parkway to the east. The lake is surrounded by residential properties and a greenway on the east side of the lake bank. The rooftops, roads, and greenway along the lake banks act as impervious surfaces that prevent runoff from percolating into the ground, producing runoff directed to the lowest point of elevation which is the lake. To reduce erosion, the optimal solution is to have a drain or structure to collect and control the flow of the water, however in this case, majority of rainfall flows directly into Lake 4-1. The consistent flowing of water over the lake bank runs down the surface weakening and deteriorating the soil allowing ledges and steep slopes to form.

Some of the depth found around the lake banks during inspection can be attributed to geo-tube put in place from previous erosion prevention effort. This geo-tube anchors much of the soil to the bank and holds the soil in place as water runs over it. This allows the part of the bank not held in place by the fabric sock to be pushed farther into the lake. The geo-tube then begins to fail and slide into the lake itself, no longer serving its purpose.

The pedestrian side has some steep side slopes abutting the lake bank that need to be remediated to meet the 4:1 slope requirement. Excess runoff produced by the roofs of the homes may contribute to this issue however the homes on the east side, abutting the pathway, should have downspouts connected into the storm water system along the roads in front of the homes.

The escarpment height around much of the lake reaches depths of up to 30 inches in some places, falling out of compliance with the SFWMD permit. It was most critical along the east side of the lake where you can see exposed geo-tube from previous erosion prevention efforts. However, this fabric has begun to fail and is now sliding into the water no longer preventing erosion along the bank.

There is an outfall structure on the north side of the lake bank that showed signs of erosion behind the headwall. Typically, headwall is used to stabilize the soil around drainage structures to prevent the structure from falling into the water. In the picture below, the headwall has been exposed due to the receding lake bank. This presents not only a problem of erosion but may put the structure at risk in the long-term.

PELICAN BAY

Financial Summary

Given the amount of lake bank Lake 4-1 provides, there are different restoration options depending on expenses and degree of erosion. Generally, there are three methods of restoration, installing rip-rap, a geoweb system or simply regrading the existing lake bank to comply with the standards.

Rip-rap is primarily made-up of lime rock that have been sized to have a mass that resists manipulation due to wind and wave action. The rocks sit on top of a liner that allows water to slowly percolate into the soil rather than creating large divots in the lake bank caused by the overland runoff. It is important to note that SFWMD only permits a maximum of 40% of the lake bank to be hard cover (seawall or rip-rap). Lake banks exceeding 40%, if permitted, typically require additional mitigation such as increased littoral plantings.

Geoweb is a three-dimensional system made up of interconnected cells that reinforces the lake bank due to the infill inside of these cells. The type of infill selected depends on the extent of the erosion, however in this case, compacted soil would be used. This will allow vegetation to grow through the cells keeping the aesthetic view of a natural lake. This would require minimal maintenance however the additional maintenance would out-weigh the cost of long-term severe erosion. The third option is to re-grade the existing lake bank to restore it to the permitted conditions. However, it must be noted that only regrading the lake bank will provide a short-term solution rather than a longer term structural enforcement. The geoweb and regrading options may require additional costs regarding imported fill. Due to significant slopes and drops-offs, fill is required in some areas to satisfy SFWMD standards.

The field data collected in Appendix A determined that there are areas that are considered more severe than others. Therefore, different options regarding the extent of restoration has been provided below. For further financial information, refer to the tables in Appendix B.


Appendix A
DRAINAGE STRUCTURE
LEGEND
Geo-Web/Regrade
Rip-Rap
Fill Required
MEASUREMENTS:
Slope: Any slope greater than 4:1 (EX. 3:1) exceeds the permitted design (Red).
Escarpement Height: Drop greater than 9 inches is considered out of compliance with SFWMD permit (Red).
1950 LF
3025 LF
640 LF
S: 4:1 H: 23
S: 4:1 H: 10
S: 4:1 H: 18
S: 4:1 H: 16
S: 3:1 H: 10
S: 4:1 H: 21
S: 5:1 H: 10
S: 4:1 H: 16
S: 4:1 H: 30
S: 3:1 H: 12
S: 4:1 H: 30
S: 5:1 H: 16
S: 4:1 H: 27
S: 6:1 H: 17
S: 4:1 H: 12
S: 4:1 H:16
S: 4:1 H: 18
S: 3:1 H: 21
S: 4:1 H: 30
S: 4:1 H: 16
S: 5:1 H: 24
S: 5:1 H: 9
S: 4:1 H: 27
S: 4:1 H: 17
S: 4:1 H: 25
S: 3:1 H: 13
S: 2:1 H: 9
S: 2:1 H: 17
S: 5:1 H: 24
S: 8:1 H:16
S: 4:1 H: 16
S: 10:1 H: 16
S: 4:1 H: 22
S: 8:1 H: 16
S: 3:1 H: 16
S: 8:1 H: 23
S: 3:1 H: 17
S: 5:1 H: 20
S: 4:1 H: 18
S: 4:1 H: 12
S: 4:1 H: 22
Stone Ct
Shadow Lake Ln
Turkey Oak Ln
Pitch Apple Ln
Pine Creek Ln
Annemore Ln
Willowwood Ln
Lismore Ln
Pineside Ln
Ardmore Ln
Arrowhead
Green Tree Dr
Oakmont
© 2020 Google

Appendix B

Preliminary Budget Estimate

Item No.	Description	Unit	Quantity	Unit Cost	Total Cost
	OPTION 1: GEO-WEB SYSTEM & RIP-RAP				
	GEO-WEB SYSTEM				
1	Mobilization	LS	1	$ 125,000	$ 125,000
2	Landscape Replacement (Sod, Native Vegetation) (10' wide x 3,025 LF)	SF	30,250	$ 3	$ 90,750
3	Irrigation Replacement in impacted areas (10' wide x 3,025 LF)	SF	30,250	$ 2	$ 60,500
4	Littoral Plantings @ 2 per linear foot of modified lake bank	EA	6,050	$ 4	$ 24,200
5	In Place Compacted, Imported Fill	CY	6,842	$ 100	$ 684,200
6	Silt Fence	LF	3,025	$ 2	$ 6,050
7	Turbidity Barrier	LF	100	$ 30	$ 3,000
8	Yard Drain Connections @ approx. 2 per lot/home (includes ADS 12" Yard Drain)	EA	27	$ 1,000	$ 27,000
9	Sandy Top Soil with 10%-12% Organics (3" deep over impacted areas) (3,025 LF x 8' x 3")	CY	224	$ 100	$ 22,407
10	GeoWeb - GW 30V3 (12' wide) (Includes backfill, 57 stone, anchors, non-woven fabric)	SF	36,300	$ 15	$ 544,500
		SUBTOTAL		=	$ 1,587,607
	RIP-RAP				
1	Rip-Rap 12" to 24" with Underlayment (4' wide x 1,950 LF)	SY	733	$ 300	$ 220,000
2	In Place Compacted, Imported Fill	CY	1,420	$ 100	$ 142,000
		SUBTOTAL		=	$ 362,000
		GRAND TOTAL		=	**$ 1,949,607**

Note: **Estimated costs are pre-survey and are approximate. Cost estimates do not include survey, site permitting or design plans.**

Preliminary Budget Estimate

Item No.	Description	Unit	Quantity	Unit Cost	Total Cost

OPTION 2: RE-GRADE & RIP-RAP

RE-GRADE

1	Mobilization	LS	1	$ 125,000	$ 125,000
2	Landscape Replacement (Sod, Native Vegetation) (10' wide x 3,025 LF)	SF	30,250	$ 3	$ 90,750
3	Irrigation Replacement in impacted areas (10' wide x 3,025 LF)	SF	30,250	$ 2	$ 60,500
4	Littoral Plantings @ 2 per linear foot of modified lake bank	EA	6,050	$ 4	$ 24,200
5	In Place Compacted, Imported Fill	CY	6,842	$ 100	$ 684,200
6	Silt Fence	LF	3,025	$ 2	$ 6,050
7	Turbidity Barrier	LF	100	$ 30	$ 3,000
8	Yard Drain Connections @ approx. 2 per lot/home (includes ADS 12" Yard Drain)	EA	27	$ 1,000	$ 27,000
		SUBTOTAL		=	$ 1,020,700

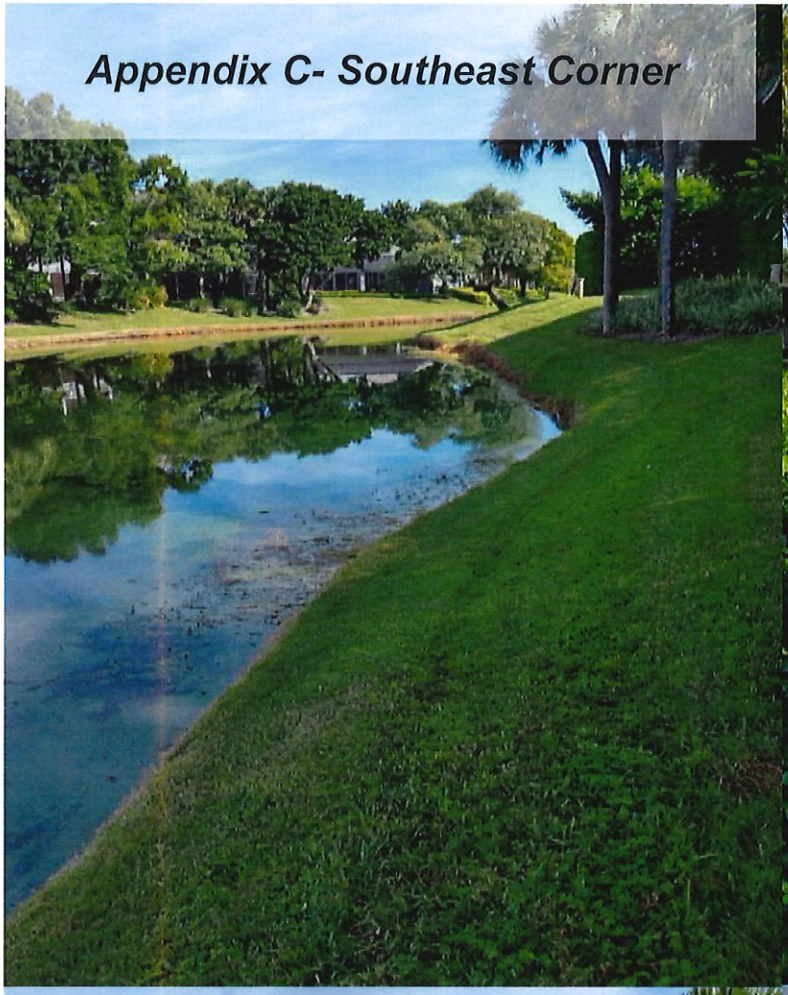
RIP-RAP

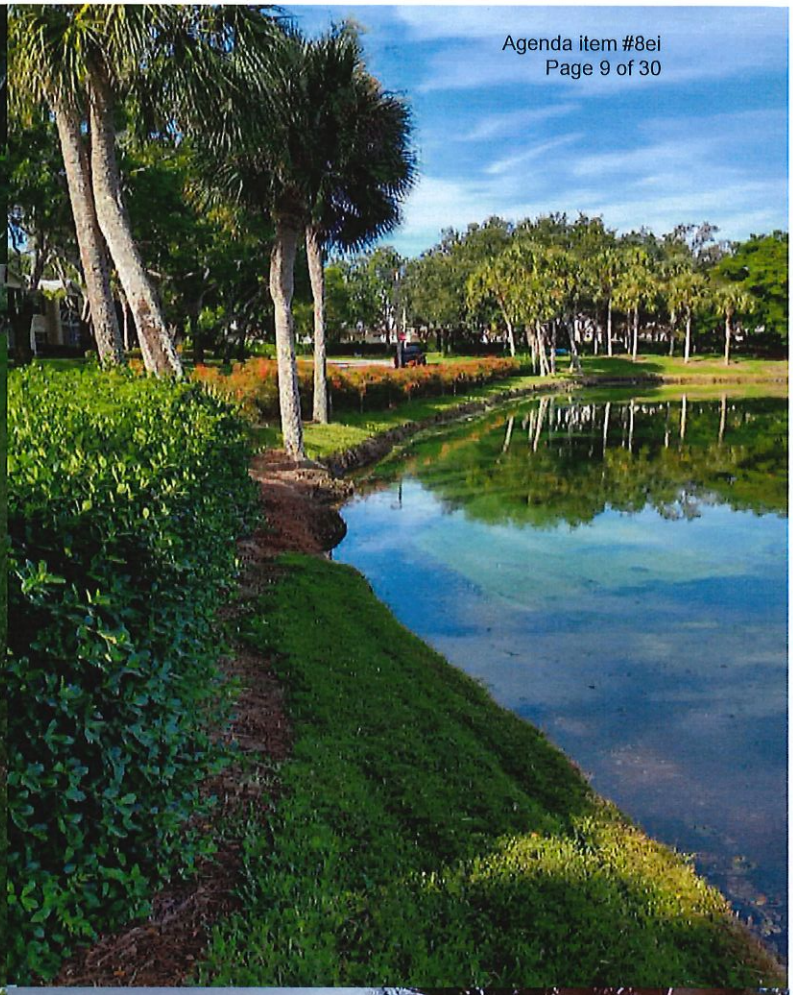
1	Rip-Rap 12" to 24" with Underlayment (4' wide x 1,950 LF)	SY	733	$ 300	$ 220,000
2	In Place Compacted, Imported Fill	CY	1,420	$ 100	$ 142,000
		SUBTOTAL		=	$ 362,000

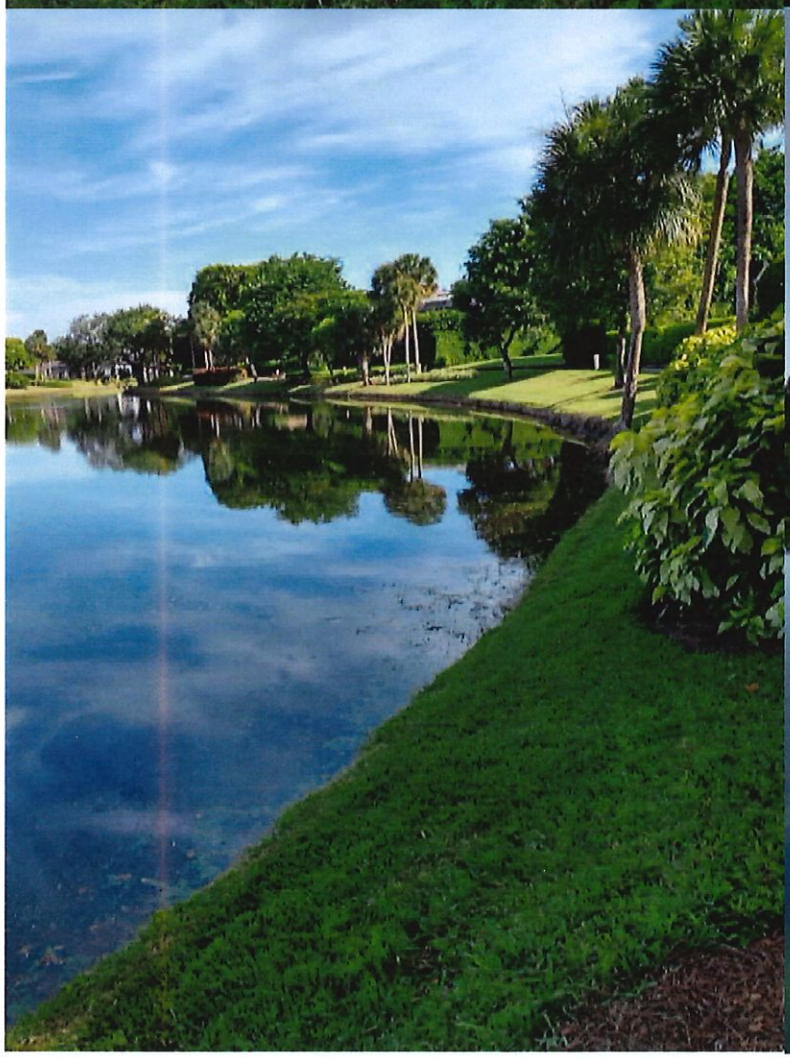
GRAND TOTAL	=	$ 1,382,700

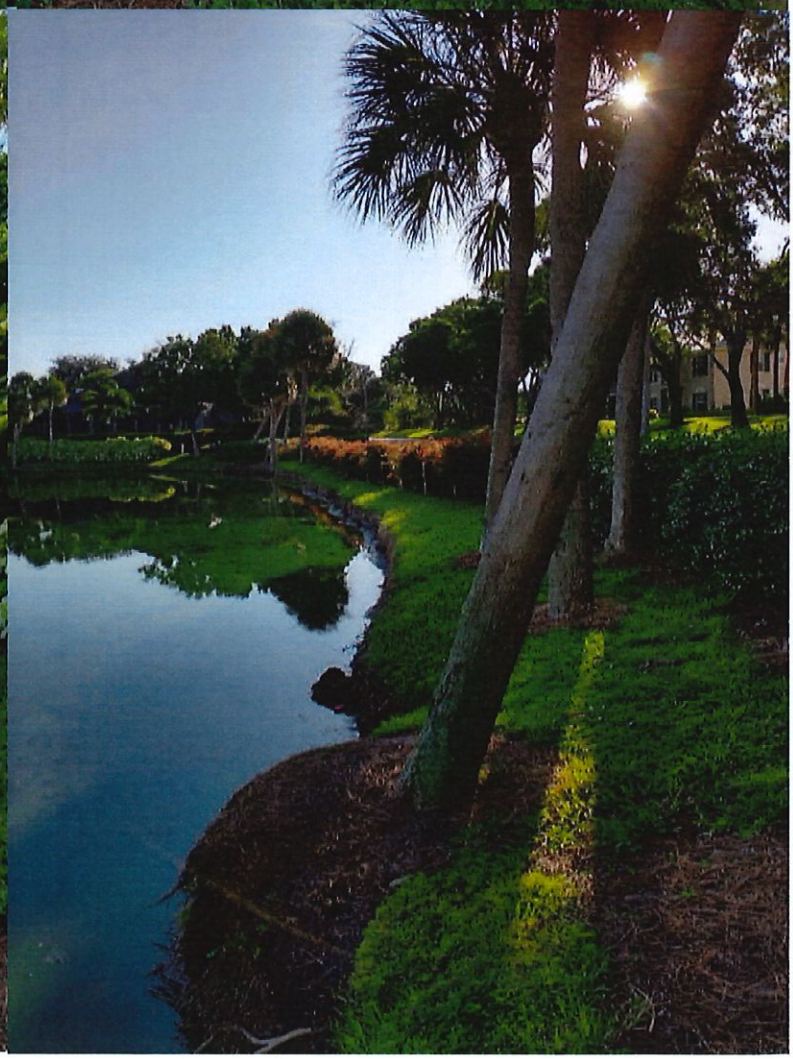
Note: Estimated costs are pre-survey and are approximate. Cost estimates do not include survey, site permitting or design plans.

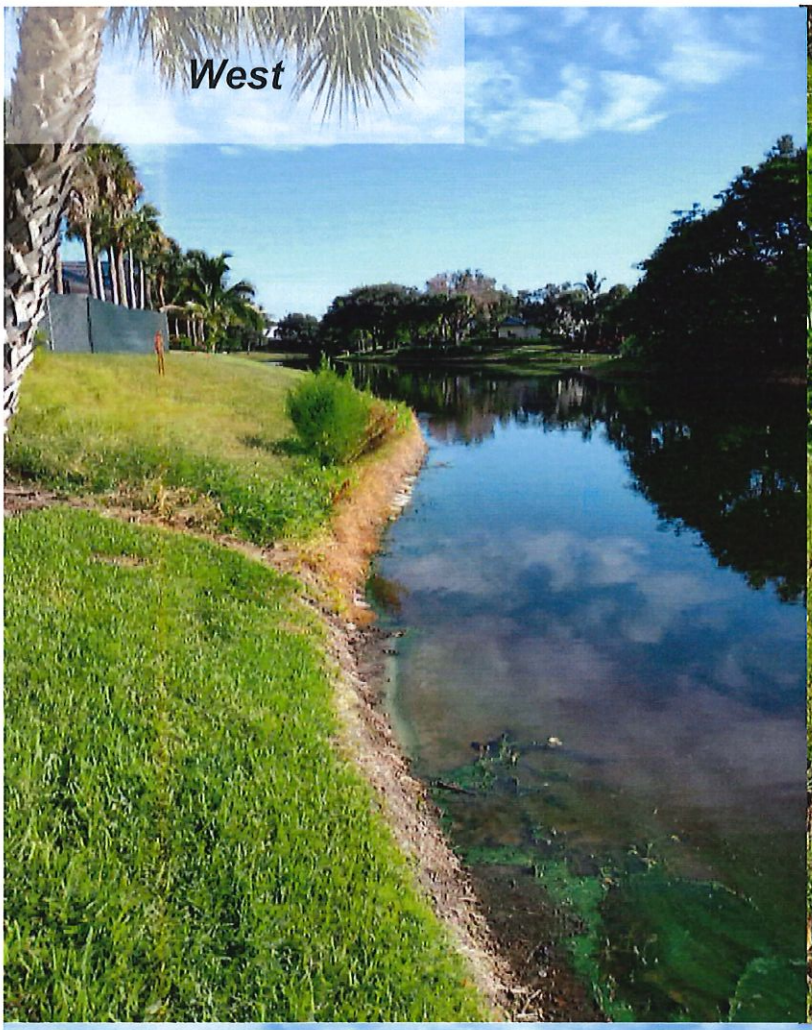
Appendix C- Southeast Corner

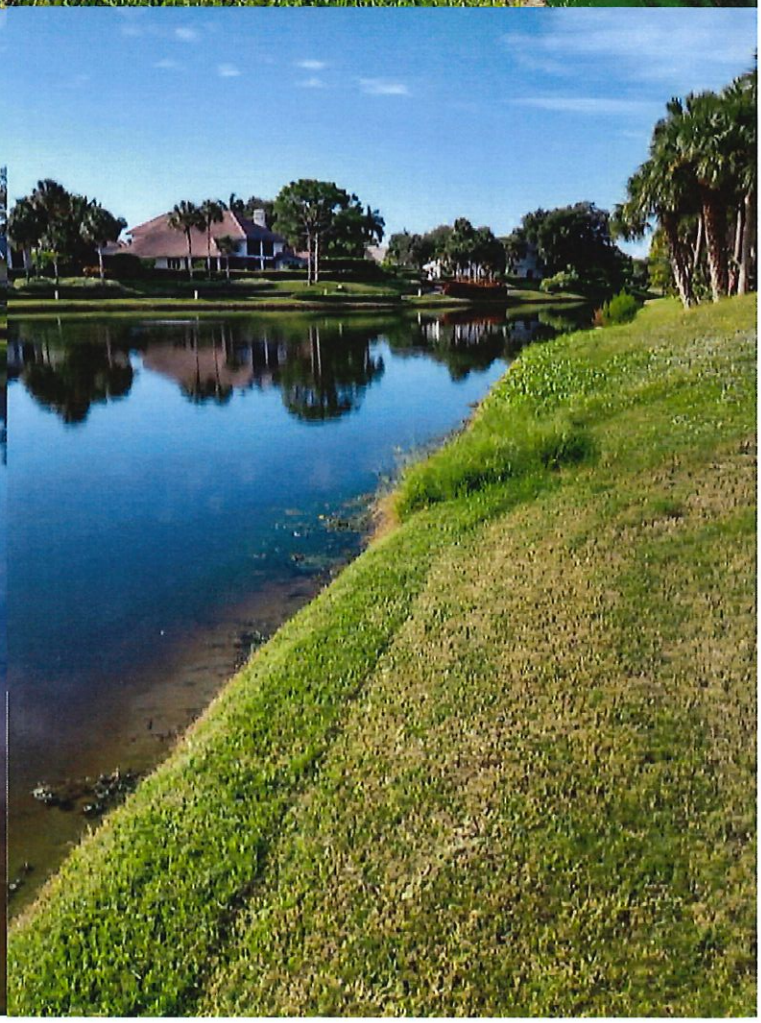




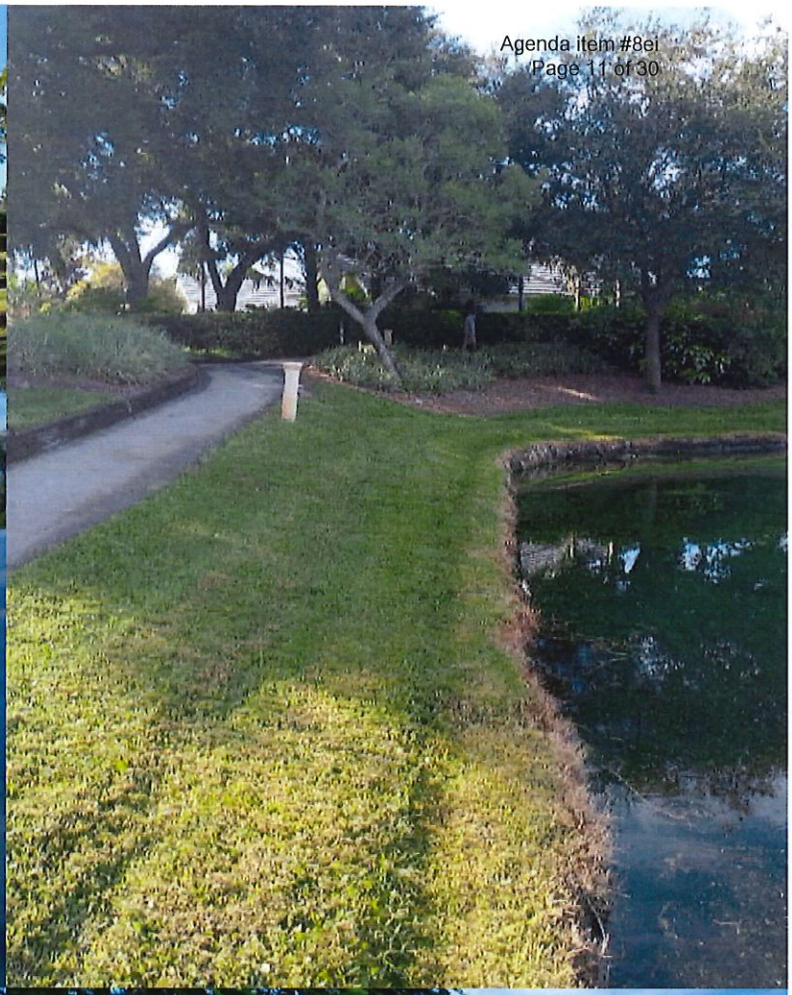


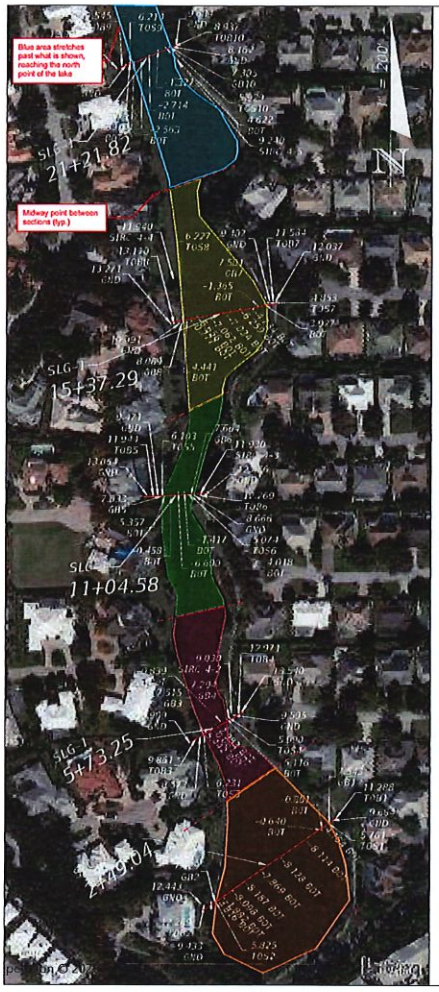



West




East





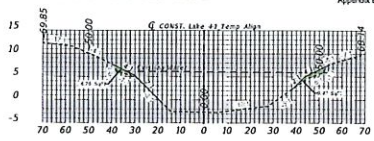
Lake 4-1

Appendix D - Cross Sections

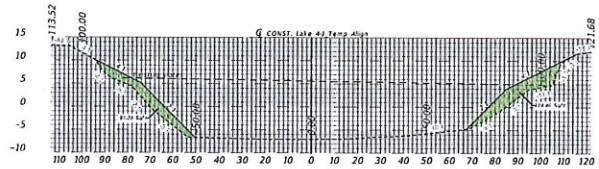
NOTE: The cross sections were used to come up with an estimation for the quantity of imported fill required, found in Appendix B.

11x17 SCALE: 1" = 40'

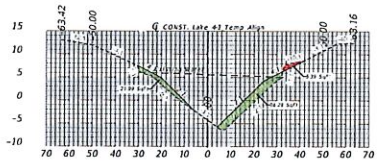
21+21.82



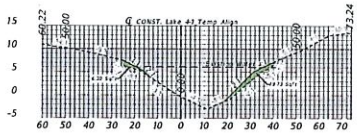
15+37.29



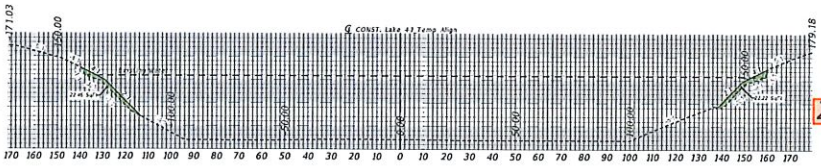
11+04.58



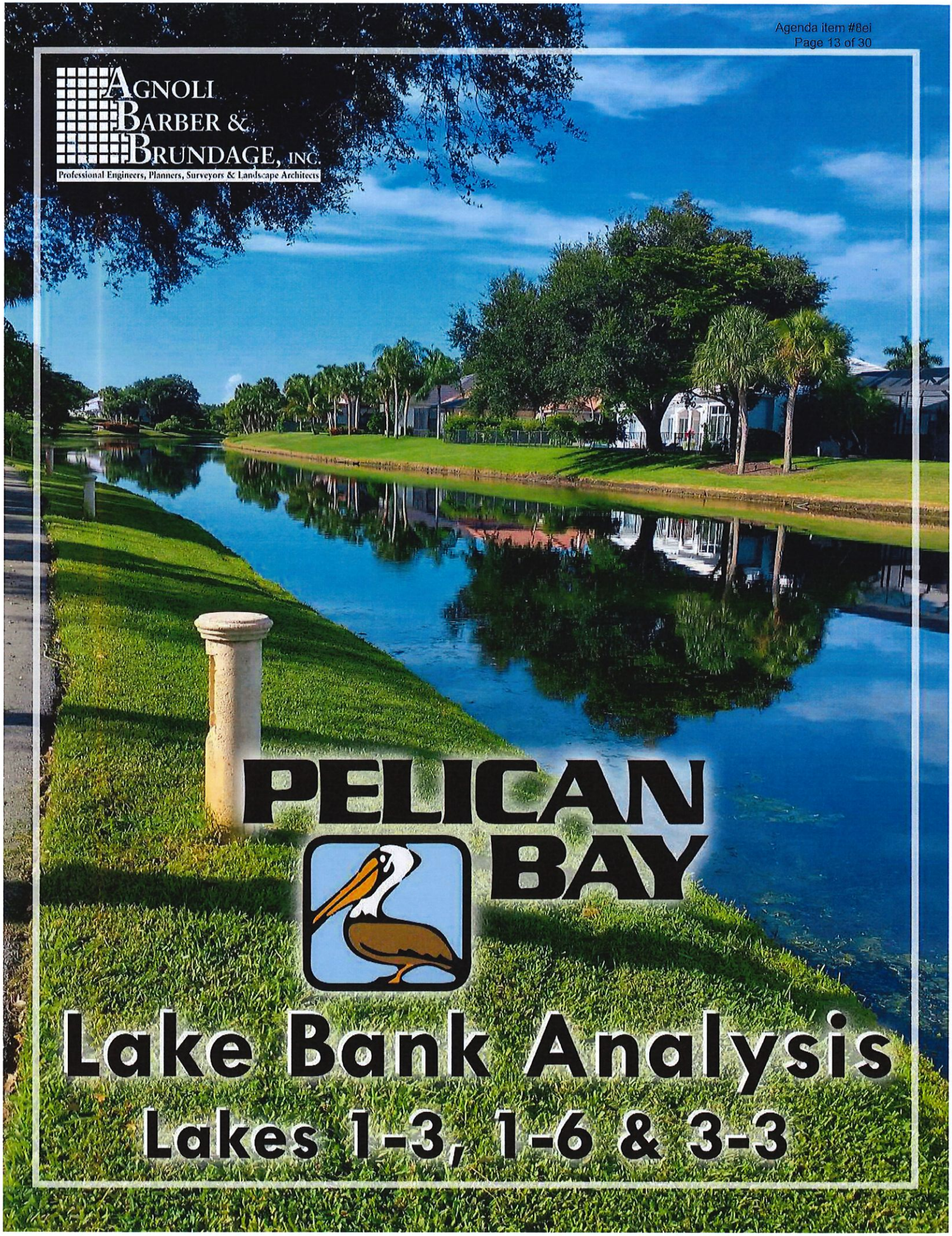
5+73.25



2+49.04



AGNOLI BARBER & BRUNDAGE, INC.
Professional Engineers, Planners, Surveyors & Landscape Architects



PELICAN BAY

Lake Bank Analysis

Lakes 1-3, 1-6 & 3-3

PELICAN BAY

Background

Lake bank erosion is common in southwest Florida due to the fluctuation in water levels given the wet/dry season and the significant storm events. When the water fluctuates, the water works to grab the soil towards the water, destabilizing the lake bank. This causes lake banks to fall into the water which causes the banks to recede. For homeowners that live on a lake, this can be concerning because this may not only present a non-aesthetic view but also puts the home at risk. This report focused on three lakes located in Pelican Bay (Figure 1), which were primarily located off residential neighborhoods or roads. Utilizing field measurements, specifically the slope and escarpment height, the degree of erosion present was determined. The slope can be defined as the degree of inclination of the ground. The slope is the primary indicator erosion because the slope determines the rate at which water flows over the top of lake banks which will accelerate the process of erosion. Like the escarpment height, there is a permitted limit of how steep the slope may be. Any inclination greater than a 4:1 slope, meaning a length of four feet for every foot in depth, is considered out of compliance with the South Florida Water Management District (SFWMD) permit. Escarpment height can be defined as any sudden drop-off that separates the lake bank from the elevation of the lake floor. It is important to note that drop-offs are common for any lake however anything over 9 inches exceeds the permitted amount required by the SFWMD permit.

There are several ways to restore and prevent the erosion from occurring. This report includes a "Restoration Options" section which explains different types of methods and many of the advantages and disadvantages of each one. A cost estimate is also included throughout the appendices of the report.

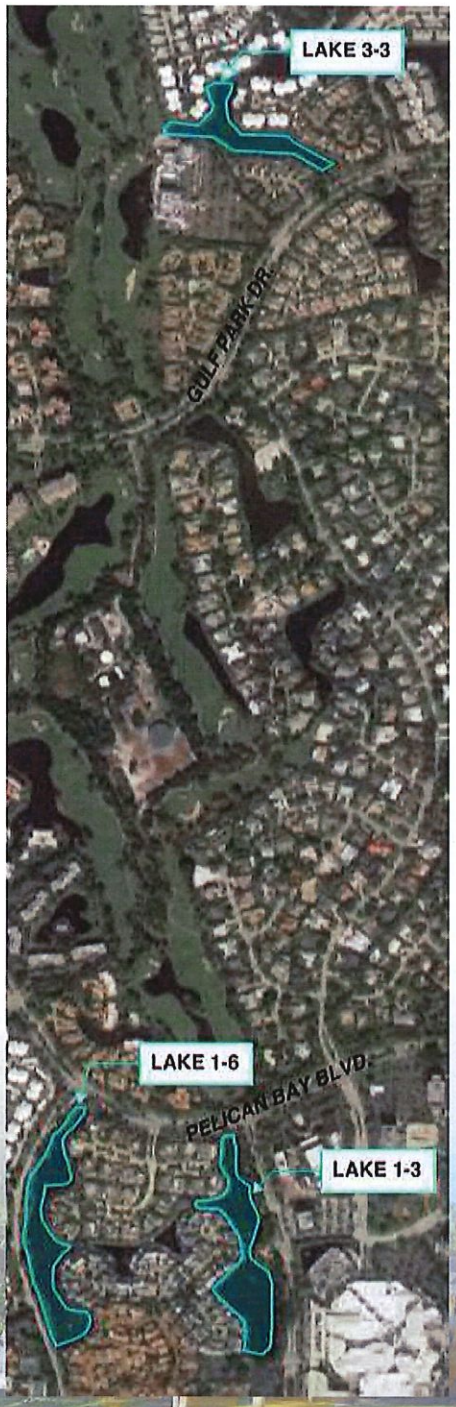


Figure 1: Location of lakes observed.

PELICAN BAY

Lake 3-3

Lake 3-3 is primarily located in between multiple residential neighborhoods. This presents the issue of runoff from impervious surfaces like roofs, roads, etc. There was a total of 22 lake-data points to ensure the most accurate representation of the conditions of the lake bank could be measured. Of the 22 points (shown in Appendix A), there was only one point that met both criteria to be in compliance with the SFWMD (South Florida Water Management District) permit. It was determined that the leading sign of erosion at Lake 3-3 is the escarpment height, with the most significant drop off reaching approximately 32 inches. Primarily, the most erosion was found to be in the northwest quadrant of the lake in between two drainage structures. The slope was also found to be an issue in this area which is most likely the result of the lack of roof drains. During a rain event, water is deflected from impervious surface, where it travels to the lowest point which in many cases can be a lake. During the time water flows towards the lake, the consistent saturated soil can cause deterioration.

Similarly, wind can also speed up the erosion process by generating forces that crash into the lake banks, loosening up the soil and in extreme cases, causing the lake banks to collapse. Like most lakes throughout the Pelican Bay community, Lake 3-3 is narrow in width however reaches about 775 linear feet in length measuring form the southeast corner to the northwest point. This length, along with the surface area to the northwest point of the lake, allows for waves to consistently generate more energy before crashing into the lake banks. Overtime, this will cause weakening and critical erosion problems.

In this case, the drainage structures are exposed or even damaged (see above). The exposure of drainage pipe is an indicator that the lake bank is receding or falling into the water, which can create a significant amount of issues.

Figure 4: Exposed & damaged drainage pipe depicting the receding lake bank.

PELICAN BAY

Lake 1-3

Lake 1-3 has approximately 3250 linear feet of lake bank however about half of it has had riprap installed. Due to this, there were only 12 lake-data points taken, primarily on the east side of the lake. The data shows that erosion does not seem to be a significant issue here, however it will be in the future. While the existing slopes satisfy requirements, the escarpment height does exceed the permitted amount. Generally, the height only falls within 6 inches of the permitted amount except for two points that are over 20 inches in height. If any restoration were to occur, it is recommended that this area be prioritized. The structures around this lake are in good condition.

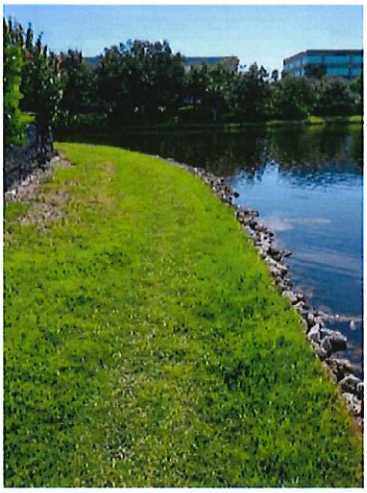


Figure 2: Rip-rap has been installed around approximately half of the existing lake bank on Lake 1-3.

Lake 1-6

As seen in many of the other lakes throughout this observation, the escarpment height is typically the primary sign of erosion. While this is true for Lake 1-6 as well, a combination of both the escarpment height and the slope highlights points of critical erosion, specifically on the southwest side of the lake. This side is adjacent to Crayton Road which most likely contributes to much of these characteristics. Lake 1-6 also offers a large fetch which, as previously stated, speeds up the erosion process. The lake stretches approximately 1,500 linear feet from north to south however due to the lake following the bend in Crayton Road, this length is broken in about half which prevents significantly more damage from the wind and waves. Nevertheless, the bend in the middle of the lake still suffers from these factors. Referring to Appendix C, there is approximately 160 linear feet of lake bank that is "sliding" towards the waters edge. The picture below depicts a distinct line where the bank looks to be flattening out, where water can sit and saturate the soil, ultimately making it fall into the water (right). It should also be noted that there was a portion of the lake bank around Lake 1-6 that could not be measured due to not having access.

Figure 3: Erosion causing the lake bank to "slide".

PELICAN BAY

Restoration Options

Throughout the Appendices, there are three different restoration options based on the existing conditions of the lake banks as well as an estimation of the amount of erosion that takes place. These options include:

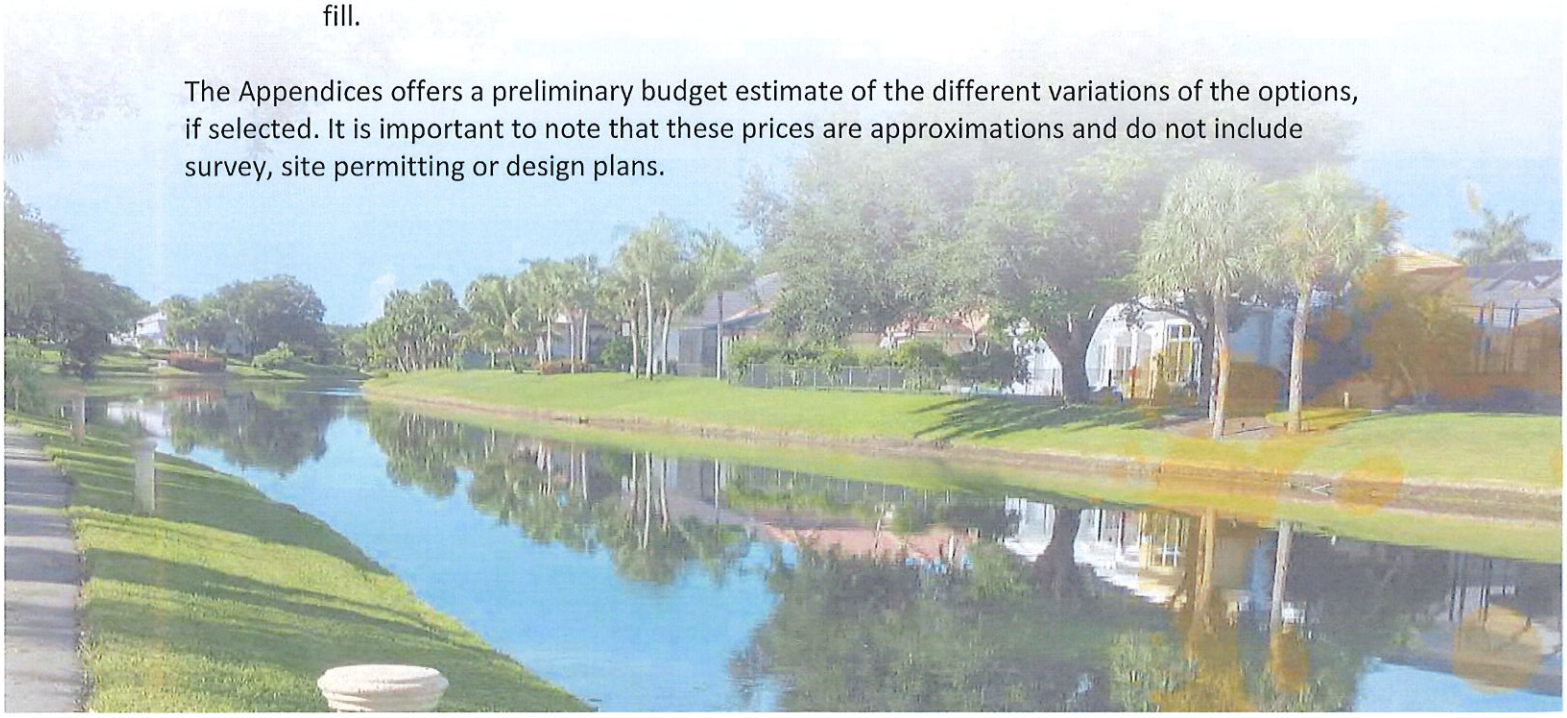
- *Rip-Rap:* Primarily made-up of lime rock that have been sized to have a mass that resists manipulation due to wind and wave action. The rocks sit on top of a liner that allows water to slowly percolate into the soil rather than creating large divots in the lake bank caused by the overland runoff. It is important to note that SFWMD only permits a maximum of 40% of the lake bank to be hard cover (seawall or rip-rap). Lank banks exceeding 40%, if permitted, typically require additional mitigation such as increased littoral plantings.

- *Geoweb:* Geoweb is a three-dimensional system made up of interconnected cells that reinforces the lake bank due to the infill. Typically for lake banks, compacted soil is used which allows for vegetation grow inside of these cells restoring the aesthetic view of a natural lake. This method would involve regrading and filling the lake bank so that the escarpment height and slope requirements are met. (right)

Figure 5: Geoweb with compacted soil infill.

- *Re-grade:* Another method involves regrading the lake banks to fall in compliance with the SFWMD permit. This could be done with additional fill, adding soil to the existing lake bank, or to only regrade the existing lake bank without the additional fill.

The Appendices offers a preliminary budget estimate of the different variations of the options, if selected. It is important to note that these prices are approximations and do not include survey, site permitting or design plans.

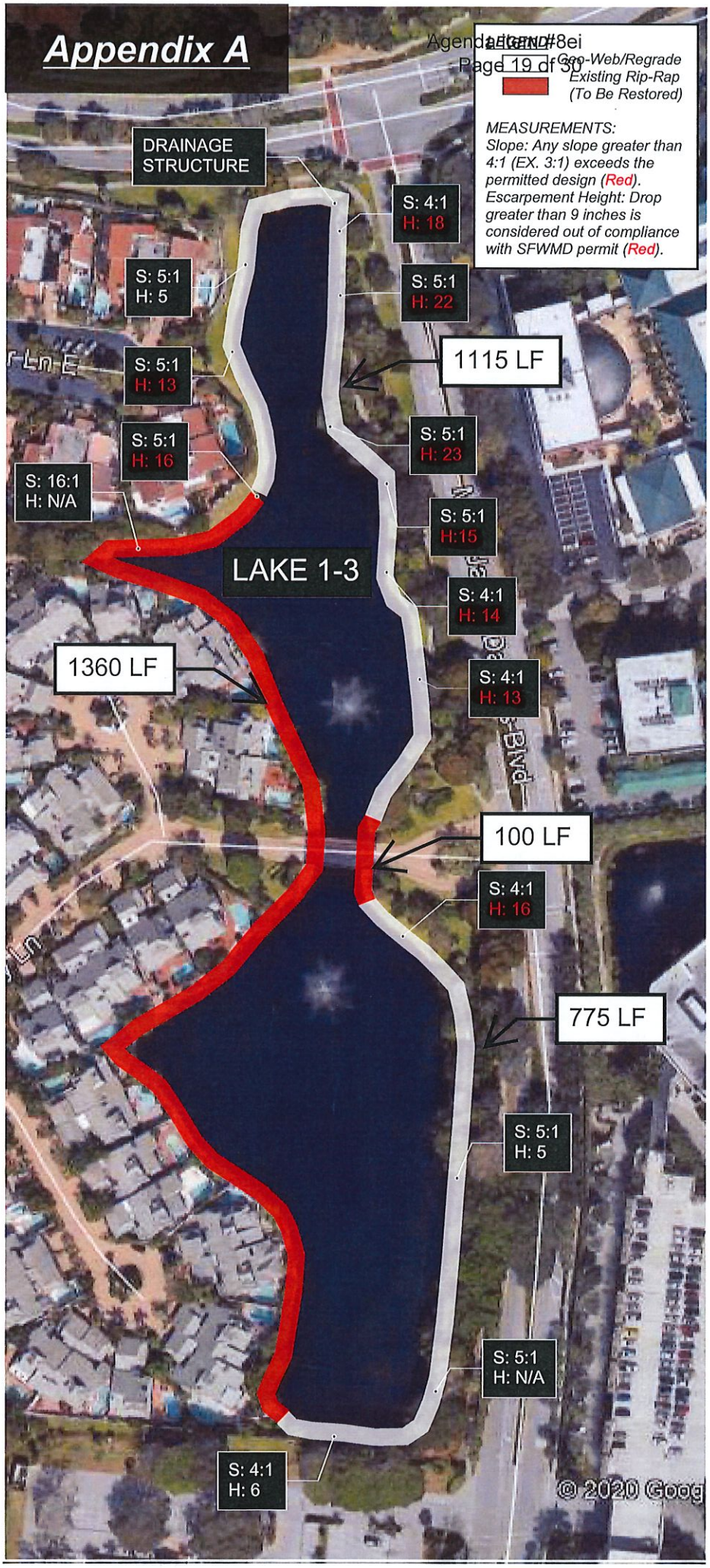


PELICAN BAY

List of Appendices

NOTE: Each Appendix includes a lake exhibit depicting the areas of critical erosion, field measurements and restoration options as well as a preliminary budget estimate.

Appendix A


LEGEND
Geo-Web/Regrade
Existing Rip-Rap
(To Be Restored)
MEASUREMENTS:
Slope: Any slope greater than 4:1 (EX. 3:1) exceeds the permitted design (Red).
Escarpement Height: Drop greater than 9 inches is considered out of compliance with SFWMD permit (Red).
DRAINAGE STRUCTURE
S: 4:1 H: 18
S: 5:1 H: 5
S: 5:1 H: 22
1115 LF
S: 5:1 H: 13
S: 5:1 H: 23
S: 5:1 H: 16
S: 16:1 H: N/A
S: 5:1 H:15
LAKE 1-3
S: 4:1 H: 14
1360 LF
S: 4:1 H: 13
100 LF
S: 4:1 H: 16
775 LF
S: 5:1 H: 5
S: 5:1 H: N/A
S: 4:1 H: 6
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Preliminary Budget Estimate

Item No.	Description	Unit	Quantity	Unit Cost	Total Cost

OPTION 1: GEO-WEB SYSTEM & RIP-RAP

GEO-WEB SYSTEM

1	Mobilization	LS	1	$ 70,000	$ 70,000
2	Landscape Replacement (Sod, Native Vegetation) (10' wide x 1,890 LF)	SF	18,900	$ 3	$ 56,700
3	Irrigation Replacement in impacted areas (10' wide x 1,890 LF)	SF	18,900	$ 2	$ 37,800
4	Littoral Plantings @ 2 per linear foot of modified lake bank	EA	3,780	$ 4	$ 15,120
5	In Place Compacted, Imported Fill ((1,890 LF x 2' x 8')x2)/27 = 2,240 CY	CY	2,240	$ 100	$ 224,000
6	Silt Fence	LF	1,890	$ 2	$ 3,780
7	Turbidity Barrier	LF	160	$ 30	$ 4,800
8	Yard Drain Connections @ approx. 2 per lot/home (includes ADS 12" Yard Drain)	EA	2	$ 1,000	$ 2,000
9	Sandy Top Soil with 10%-12% Organics (3" deep over impacted areas) (1,890 LF x 8' x 3")	CY	140	$ 100	$ 14,000
10	GeoWeb - GW 30V3 (12' wide) (Includes backfill, 57 stone, anchors, non-woven fabric)	SF	22,680	$ 15	$ 340,200
		SUBTOTAL		=	$ 768,400

RIP-RAP

1	Rip-Rap Restoration: 12" to 24" with Underlayment (4' wide x 1,460 LF)	SY	649	$ 300	$ 194,667
		SUBTOTAL		=	$ 194,667

GRAND TOTAL	=	$ 963,067

Note: **Estimated costs are pre-survey and are approximate. Cost estimates do not include survey, site permitting or design plans.**

Preliminary Budget Estimate

OPTION 2: RE-GRADE & RIP-RAP

RE-GRADE

Item No.	Description	Unit	Quantity	Unit Cost	Total Cost
1	Mobilization	LS	1	$ 70,000	$ 70,000
2	Landscape Replacement (Sod, Native Vegetation) (10' wide x 1,890 LF)	SF	18,900	$ 3	$ 56,700
3	Irrigation Replacement in impacted areas (10' wide x 1,890 LF)	SF	18,900	$ 2	$ 37,800
4	Littoral Plantings @ 2 per linear foot of modified lake bank	EA	3,780	$ 4	$ 15,120
5	In Place Compacted, Imported Fill ((1,890 LF x 2' x 8')x2)/27 = 2,240 CY	CY	2,240	$ 100	$ 224,000
6	Silt Fence	LF	1,890	$ 2	$ 3,780
7	Turbidity Barrier	LF	160	$ 30	$ 4,800
8	Yard Drain Connections @ approx. 2 per lot/home (includes ADS 12" Yard Drain)	EA	2	$ 1,000	$ 2,000
		SUBTOTAL		=	$ 414,200

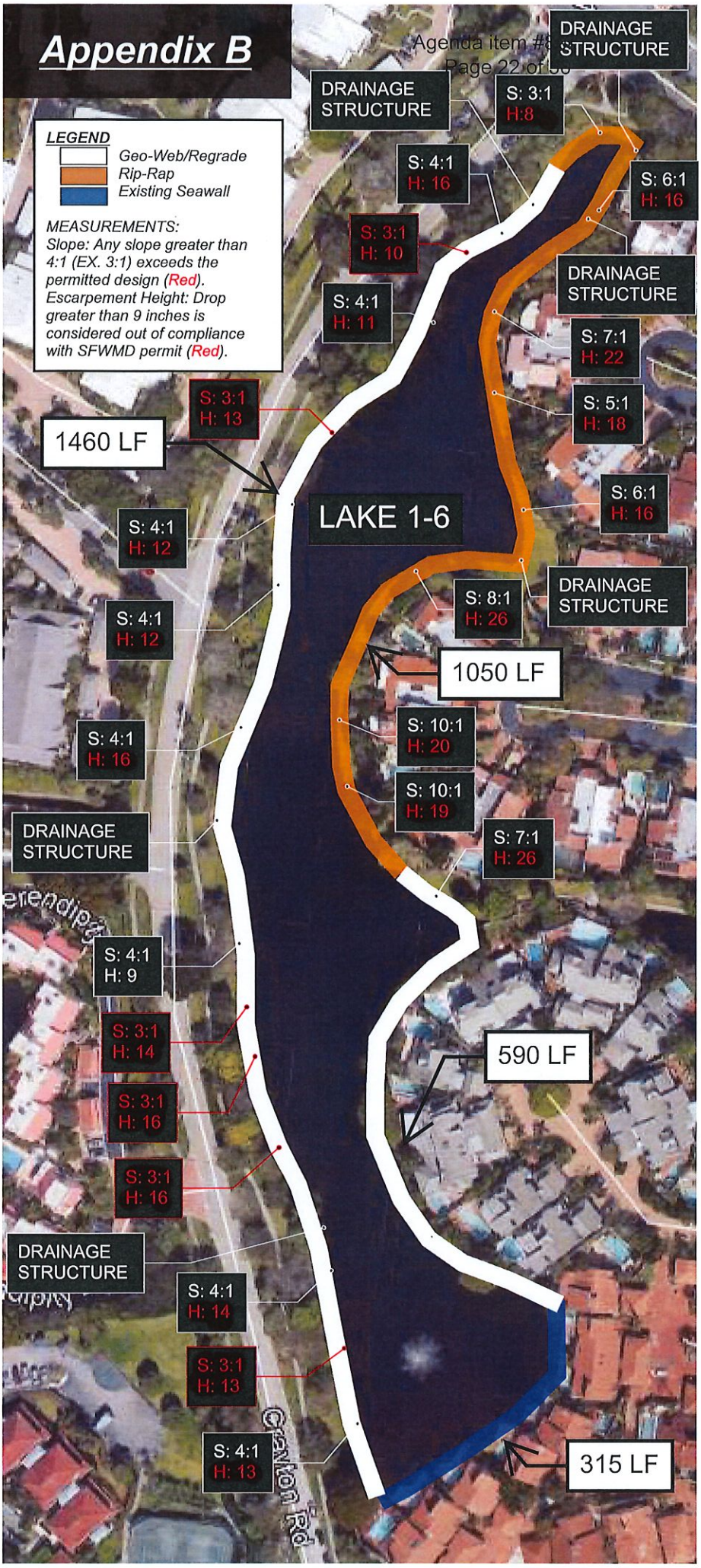
RIP-RAP

1	Rip-Rap Restoration: 12" to 24" with Underlayment (4' wide x 1,460 LF)	SY	649	$ 300	$ 194,667
		SUBTOTAL		=	$ 194,667

GRAND TOTAL	=	$ 608,867

Note: Estimated costs are pre-survey and are approximate. Cost estimates do not include survey, site permitting or design plans.

Appendix B


LEGEND
Geo-Web/Regrade
Rip-Rap
Existing Seawall
MEASUREMENTS:
Slope: Any slope greater than 4:1 (EX. 3:1) exceeds the permitted design (Red).
Escarpement Height: Drop greater than 9 inches is considered out of compliance with SFWMD permit (Red).
DRAINAGE STRUCTURE
DRAINAGE STRUCTURE
S: 3:1 H:8
S: 4:1 H: 16
S: 6:1 H: 16
S: 3:1 H: 10
DRAINAGE STRUCTURE
S: 4:1 H: 11
S: 7:1 H: 22
S: 5:1 H: 18
S: 3:1 H: 13
1460 LF
LAKE 1-6
S: 6:1 H: 16
S: 4:1 H: 12
DRAINAGE STRUCTURE
S: 8:1 H: 26
S: 4:1 H: 12
1050 LF
S: 10:1 H: 20
S: 4:1 H: 16
S: 10:1 H: 19
S: 7:1 H: 26
DRAINAGE STRUCTURE
S: 4:1 H: 9
S: 3:1 H: 14
590 LF
S: 3:1 H: 16
S: 3:1 H: 16
DRAINAGE STRUCTURE
S: 4:1 H: 14
S: 3:1 H: 13
S: 4:1 H: 13
315 LF
Clayton Rd

Preliminary Budget Estimate

OPTION 1: GEO-WEB SYSTEM & RIP-RAP

GEO-WEB SYSTEM

Item No.	Description	Unit	Quantity	Unit Cost	Total Cost
1	Mobilization	LS	1	$ 70,000	$ 70,000
2	Landscape Replacement (Sod, Native Vegetation) (10' wide x 2050 LF)	SF	20,500	$ 3	$ 61,500
3	Irrigation Replacement in impacted areas (10' wide x 2050 LF)	SF	20,500	$ 2	$ 41,000
4	Littoral Plantings @ 2 per linear foot of modified lake bank	EA	4,100	$ 4	$ 16,400
5	In Place Compacted, Imported Fill ((2,050 LF x 2' x 8")x2)/27 = 2,430 CY	CY	2,430	$ 100	$ 243,000
6	Silt Fence	LF	2,050	$ 2	$ 4,100
7	Turbidity Barrier	LF	100	$ 30	$ 3,000
8	Yard Drain Connections @ approx. 2 per lot/home (includes ADS 12" Yard Drain)	EA	5	$ 1,000	$ 5,000
9	Sandy Top Soil with 10%-12% Organics (3" deep over impacted areas) (2050 LF x 8' x 3")	CY	152	$ 100	$ 15,185
10	GeoWeb - GW 30V3 (12' wide) (Includes backfill, 57 stone, anchors, non-woven fabric)	SF	24,600	$ 15	$ 369,000
		SUBTOTAL		=	$ 828,185

RIP-RAP

1	Rip-Rap 12" to 24" with Underlayment (4' wide x 1,050 LF)	SY	467	$ 300	$ 140,000
		SUBTOTAL		=	$ 140,000

GRAND TOTAL	=	$ 968,185

Note: **Estimated costs are pre-survey and are approximate. Cost estimates do not include survey, site permitting or design plans.**

Preliminary Budget Estimate

Item No.	Description	Unit	Quantity	Unit Cost	Total Cost

OPTION 2: RE-GRADE & RIP-RAP

RE-GRADE

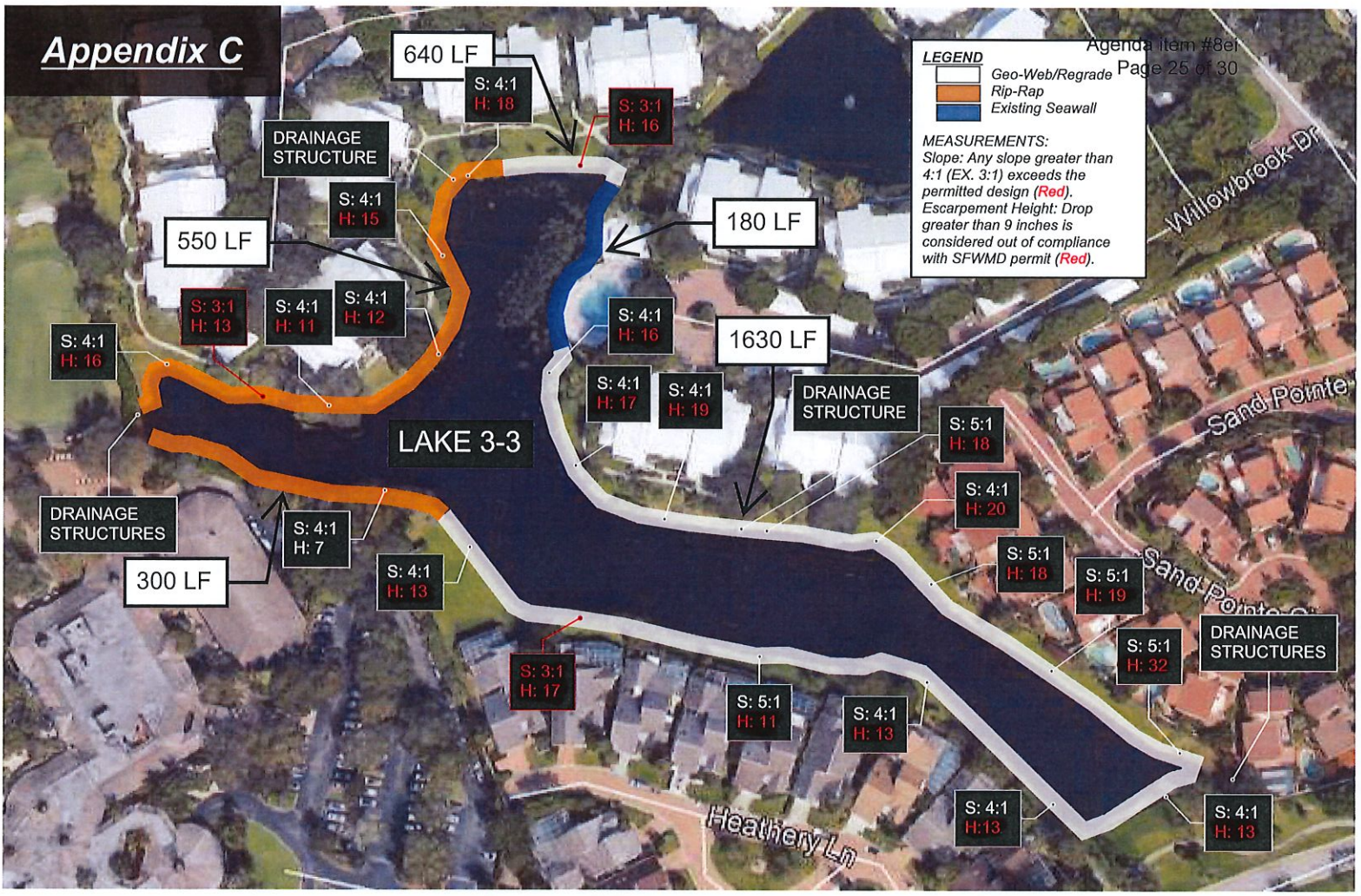
1	Mobilization	LS	1	$ 70,000	$ 70,000
2	Landscape Replacement (Sod, Native Vegetation) (10' wide x 2050 LF)	SF	20,500	$ 3	$ 61,500
3	Irrigation Replacement in impacted areas (10' wide x 2050 LF)	SF	20,500	$ 2	$ 41,000
4	Littoral Plantings @ 2 per linear foot of modified lake bank	EA	4,100	$ 4	$ 16,400
5	In Place Compacted, Imported Fill ((2,050 LF x 2' x 8')x2)/27 = 2,430 CY	CY	2,430	$ 100	$ 243,000
6	Silt Fence	LF	2,050	$ 2	$ 4,100
7	Turbidity Barrier	LF	100	$ 30	$ 3,000
8	Yard Drain Connections @ approx. 2 per lot/home (includes ADS 12" Yard Drain)	EA	5	$ 1,000	$ 5,000
		SUBTOTAL		=	$ 444,000

RIP-RAP

1	Rip-Rap 12" to 24" with Underlayment (4' wide x 1,050 LF)	SY	467	$ 300	$ 140,000
		SUBTOTAL		=	$ 140,000

GRAND TOTAL	=	$ 584,000

Note: **Estimated costs are pre-survey and are approximate. Cost estimates do not include survey, site permitting or design plans.**


Appendix C
640 LF
S: 4:1
H: 18
S: 3:1
H: 16
DRAINAGE
STRUCTURE
S: 4:1
H: 15
550 LF
180 LF
S: 3:1
H: 13
S: 4:1
H: 11
S: 4:1
H: 12
S: 4:1
H: 16
S: 4:1
H: 16
1630 LF
S: 4:1
H: 17
S: 4:1
H: 19
DRAINAGE
STRUCTURE
LAKE 3-3
S: 5:1
H: 18
S: 4:1
H: 20
DRAINAGE
STRUCTURES
S: 4:1
H: 7
300 LF
S: 4:1
H: 13
S: 5:1
H: 18
S: 5:1
H: 19
S: 5:1
H: 32
DRAINAGE
STRUCTURES
S: 3:1
H: 17
S: 5:1
H: 11
S: 4:1
H: 13
S: 4:1
H:13
S: 4:1
H: 13
Heathery Ln
Willowbrook Dr
Sand Pointe
LEGEND
Geo-Web/Regrade
Rip-Rap
Existing Seawall
MEASUREMENTS:
Slope: Any slope greater than 4:1 (EX. 3:1) exceeds the permitted design (Red).
Escarpement Height: Drop greater than 9 inches is considered out of compliance with SFWMD permit (Red).

Preliminary Budget Estimate

Item No.	Description	Unit	Quantity	Unit Cost	Total Cost

OPTION 1: GEO-WEB SYSTEM & RIP-RAP

GEO-WEB SYSTEM

1	Mobilization	LS	1	$ 70,000	$ 70,000
2	Landscape Replacement (Sod, Native Vegetation) (10' wide x 1,635 LF)	SF	16,350	$ 3	$ 49,050
3	Irrigation Replacement in impacted areas (10' wide x 1,635 LF)	SF	16,350	$ 2	$ 32,700
4	Littoral Plantings @ 2 per linear foot of modified lake bank	EA	3,270	$ 4	$ 13,080
5	In Place Compacted, Imported Fill ((1,635 LF x 2' x 8')x2)/27 = 1,938 CY	CY	1,938	$ 100	$ 193,800
6	Silt Fence	LF	1,635	$ 2	$ 3,270
7	Turbidity Barrier	LF	150	$ 30	$ 4,500
8	Yard Drain Connections @ approx. 2 per lot/home (includes ADS 12" Yard Drain)	EA	20	$ 1,000	$ 20,000
9	Sandy Top Soil with 10%-12% Organics (3" deep over impacted areas) (1,635 LF x 8' x 3")	CY	121	$ 100	$ 12,111
10	GeoWeb - GW 30V3 (12' wide) (Includes backfill, 57 stone, anchors, non-woven fabric)	SF	19,620	$ 15	$ 294,300
		SUBTOTAL		=	$ 692,811

RIP-RAP

1	Rip-Rap 12" to 24" with Underlayment (4' wide x 850 LF)	SY	378	$ 300	$ 113,333
		SUBTOTAL		=	$ 113,333

GRAND TOTAL	=	**$ 806,144**

Note: **Estimated costs are pre-survey and are approximate. Cost estimates do not include survey, site permitting or design plans.**

Preliminary Budget Estimate

Item No.	Description	Unit	Quantity	Unit Cost	Total Cost

OPTION 2: RE-GRADE & RIP-RAP

RE-GRADE

1	Mobilization	LS	1	$ 70,000	$ 70,000
2	Landscape Replacement (Sod, Native Vegetation) (10' wide x 1,635 LF)	SF	16,350	$ 3	$ 49,050
3	Irrigation Replacement in impacted areas (10' wide x 1,635 LF)	SF	16,350	$ 2	$ 32,700
4	Littoral Plantings @ 2 per linear foot of modified lake bank	EA	3,270	$ 4	$ 13,080
5	In Place Compacted, Imported Fill ((1,635 LF x 2' x 8')x2)/27 = 1,938 CY	CY	1,938	$ 100	$ 193,800
6	Silt Fence	LF	1,635	$ 2	$ 3,270
7	Turbidity Barrier	LF	150	$ 30	$ 4,500
8	Yard Drain Connections @ approx. 2 per lot/home (includes ADS 12" Yard Drain)	EA	20	$ 1,000	$ 20,000
		SUBTOTAL		=	$ 386,400

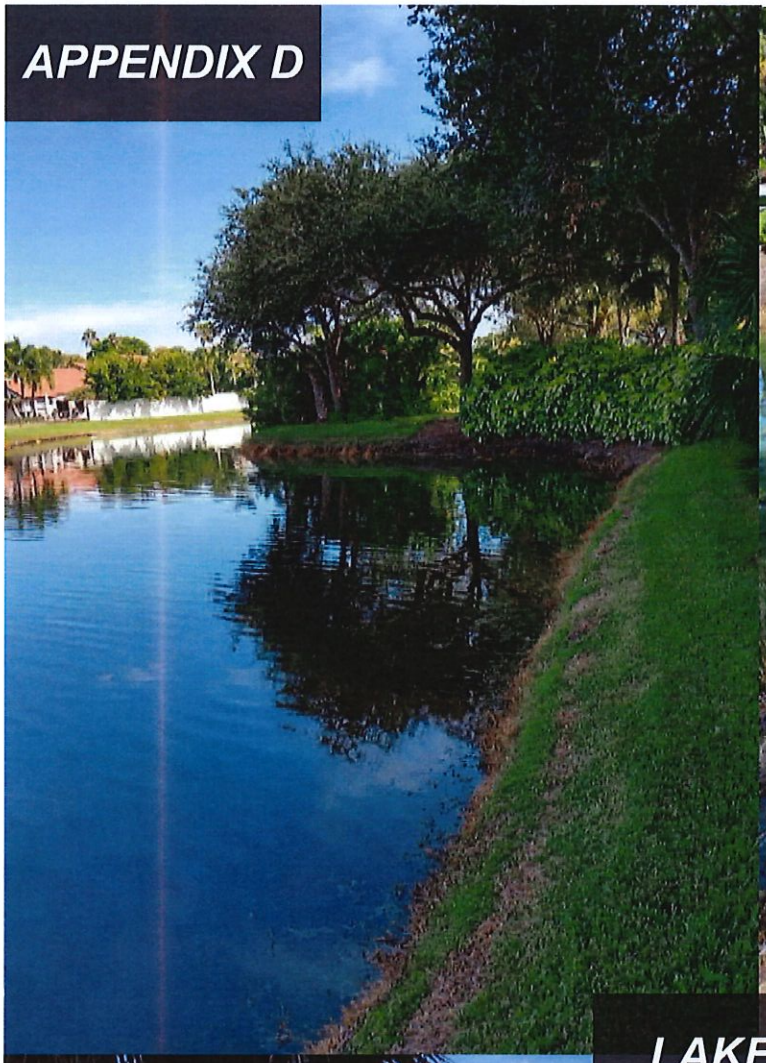
RIP-RAP

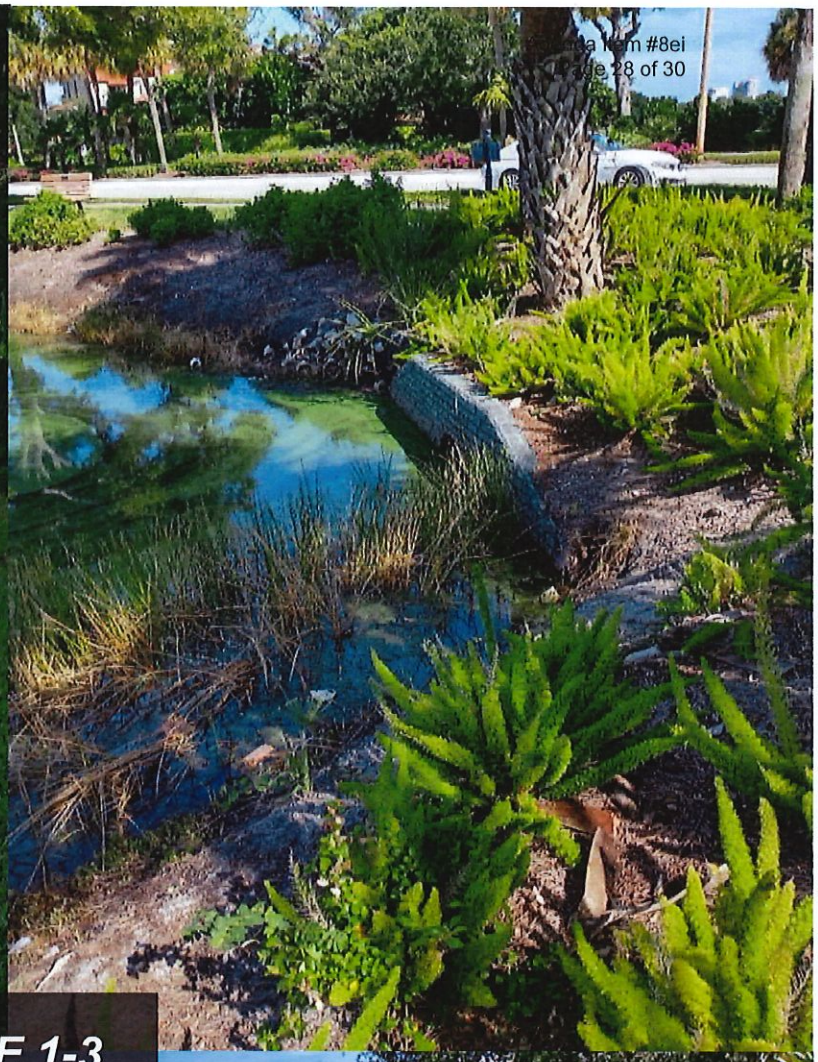
1	Rip-Rap 12" to 24" with Underlayment (4' wide x 1,950 LF)	SY	378	$ 300	$ 113,400
		SUBTOTAL		=	$ 113,400

GRAND TOTAL	=	$ 499,800

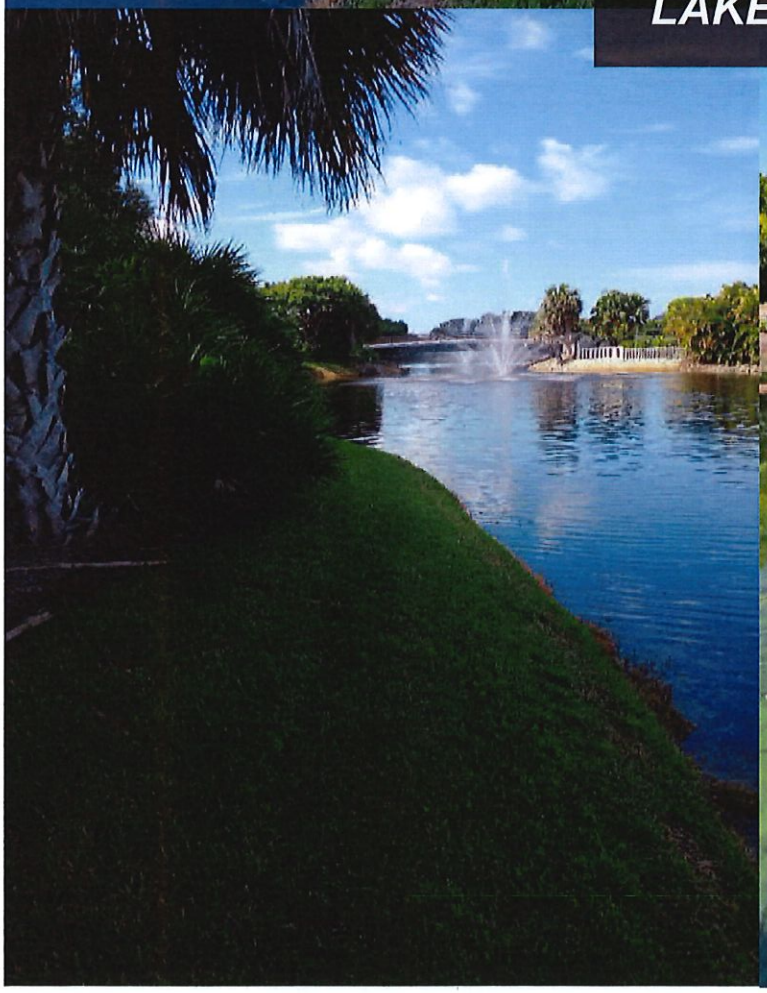
Note: **Estimated costs are pre-survey and are approximate. Cost estimates do not include survey, site permitting or design plans.**

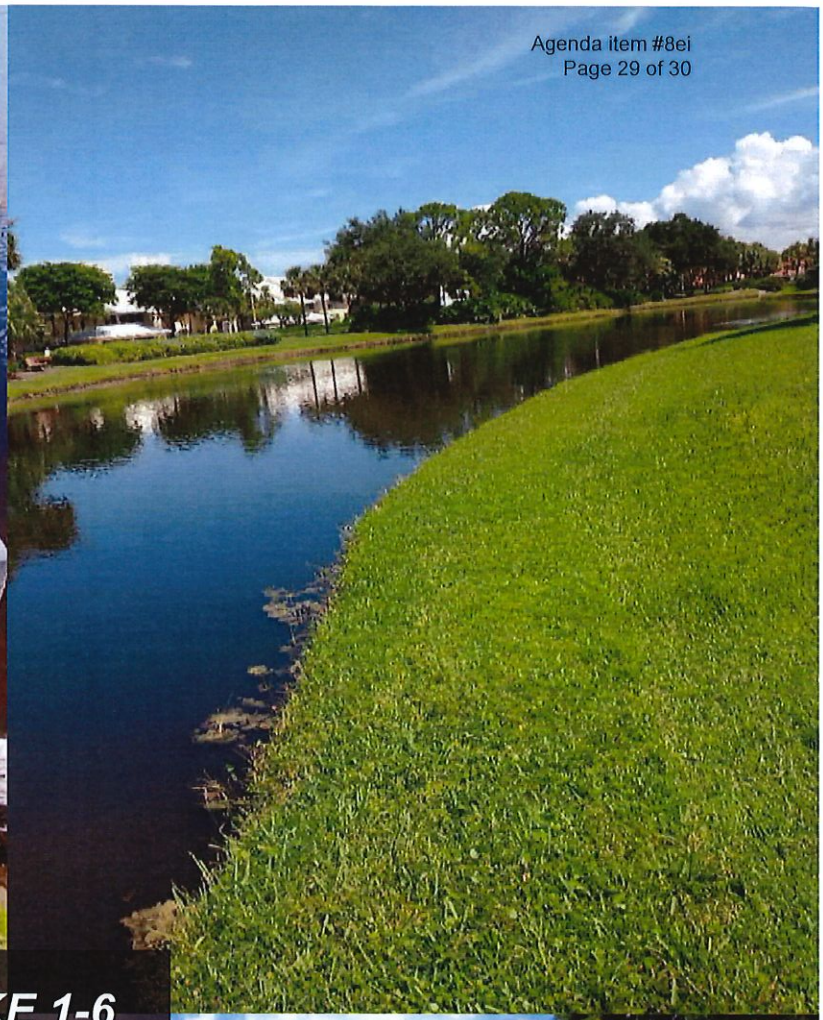
APPENDIX D



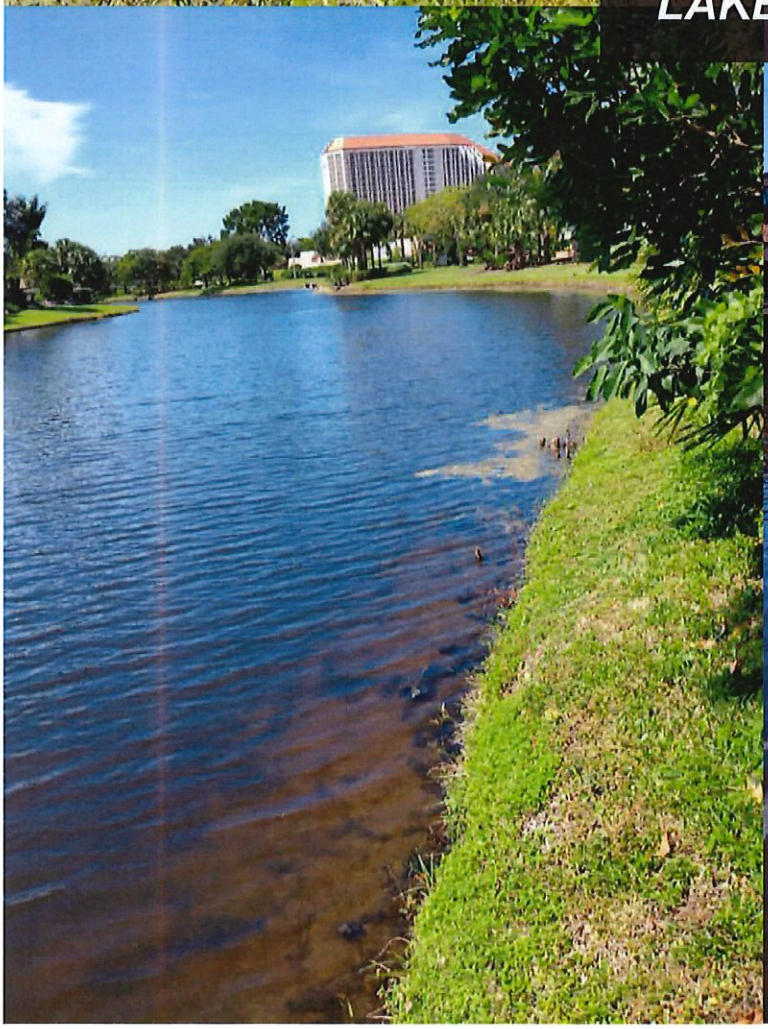


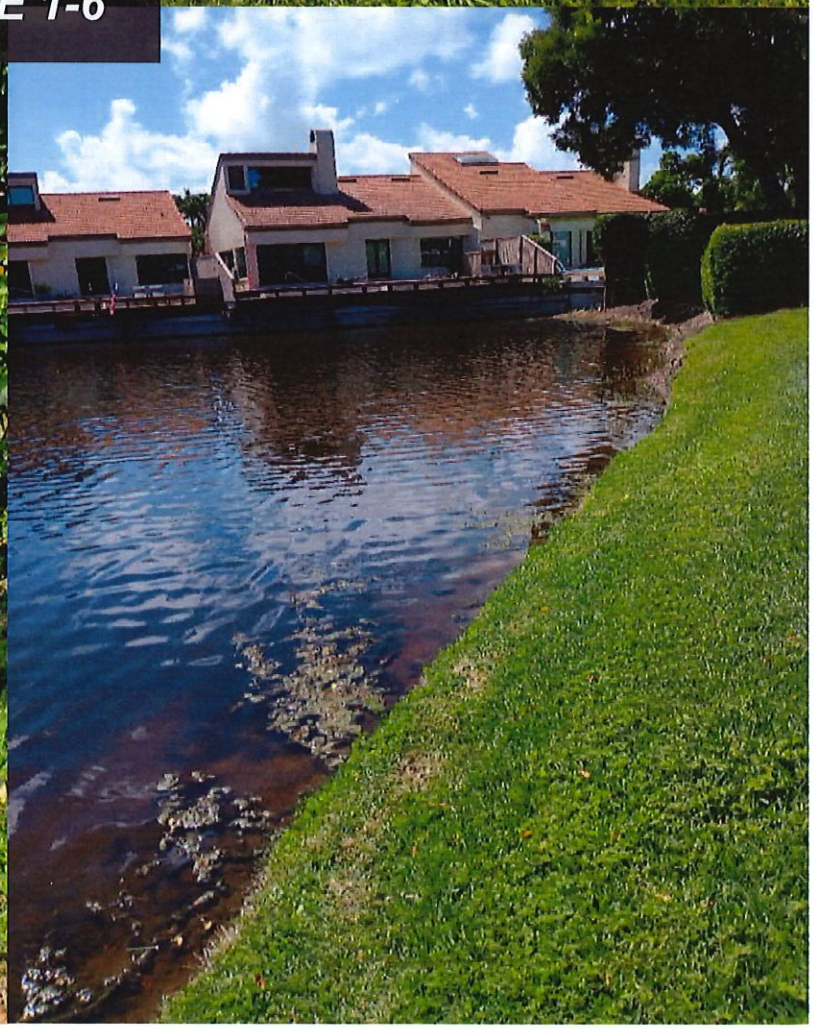
LAKE 1-3





LAKE 1-6





LAKE 3-3