21MAR2017

To: FIU Faculty Senate Administrative Assistant Juneisy Hawkins
Re: Year End Report for the Environment and Planning (EAP) Committee

The following Year End Report is submitted for your records:

Committee Membership:

Name	Department	Years Remaining	email
Roberto Rovira, Chair	CARTA	1	rovirar@fiu.edu
Steve Oberbauer	CASE	1	oberbaue@fiu.edu
Krish Jayachandran	CASE	1	jayachan@fiu.edu
Gray Read	CARTA	1	readg@fiu.edu
Jaime Canaves	Architecture	2	canavesj@fiu.edu
Mohammed Hadi	Engineering	1	hadim@fiu.edu

Roberto Rovira
Associate Professor & Chair
Landscape Architecture Department
College of Architecture + the Arts
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Landscape Architect Lic. #4629 (CA)

The Environment and Planning/EAP Committee has been primarily focused on the ongoing design and oversight of the FIU Multi-Purpose Fields and New Preserve Lake and Wetland project construction approved during the 11MAR2016 Board of Trustees meeting. The BOT vote approved an amendment to the Campus Master Plan for the Modesto A. Maidique Campus to accommodate the construction of two (2) intramural/athletics department practice fields (Appendix A: BOT Minutes, Item 6.FA.4). The EAP assembled a group of consulting faculty and has been working alongside the Office of Sustainability and in close collaboration with Facilities Management and the Construction and Engineering teams. The project is ongoing.

PROJECT INFO:

- **Operating Budget for Preserve:** $80,000 per year for the first 5 years (we are on Year 1); a plan for operating costs after the initial 5 years has not been established [see below for Year 1 detail]
- **Construction Budget for New Preserve Lake and Wetland**: $400,000
- **Construction / Engineering Team**: MOSS / Construction, Stantec / Engineering Services
- **Design Development of the project has involved**: Environment and Planning Committee Faculty, Office of Sustainability (Alexandra Duttonadutton@fiu.edu, Connie Caldwell cccaldwe@fiu.edu), Consulting Faculty (Jennifer Richards richards@fiu.edu, Joel Trexler trexlerj@fiu.edu, Leonard Scinto scintol@fiu.edu, Philip Stoddard stoddard@fiu.edu, Krish Jayachandran jayachan@fiu.edu, Mahadev Bhat bhatm@fiu.edu, Steven Oberbauer oberbaue@fiu.edu, Gary Milano Wetlands Restoration Expert, Gray Read readg@fiu.edu, Roberto Rovira rovirar@fiu.edu), FIU Facilities (Celi Ervesun ervesunc@fiu.edu), MOSS Construction (Crews, Jeff jeff.crews@stantec.com), MOSS Construction (Michael Cottle MCottle@mosscm.com)
- **Calendar:** The project broke ground in early February and will continue through spring and summer 2017 (end date TBD)

The following outlines the activities related to this project and the nature of EAP involvement this year. Appendices of supporting documents are attached as well:

1. Generated a Schematic Plan indicating the various zones, contours, stormwater drainage scheme and site elements like a pedestrian bridge and outdoor classroom

(Appendix B)

2. Conducted multiple site visits to survey existing plant palette and campus ponds and generated a list of species (Appendix C)
3. Site Documentation
4. Survey Coordination
5. Attended Project planning and management meetings with FIU Facilities, Office of Sustainability, Consulting Faculty throughout fall and spring semester

The Office of Sustainability has additionally coordinated with Dr. Bhat, Dr. Jayachandran, and Dr. Khoddamzadeh to develop a plan and a budget for the operational funds. The budget for this first year includes:

- Expansion of the Organic Garden area
- Fencing the Organic Garden for food production safety so that it can supplement the cafeteria
- New Nature Preserve nursery for tool storage, plant propagation, and volunteer activities
- New and expanded compost area
- Restoration work in the northeast corner of the Nature Preserve
- Funding set aside for restoration or naturalization of other areas on campus (such as lake edge restorations)

Sincerely,

Roberto Rovira, Chair Environment & Planning Committee

APPENDIX A

APPROVED
June 2, 2016

FLORIDA INTERNATIONAL UNIVERSITY
BOARD OF TRUSTEES
FULL BOARD MEETING
MARCH 11, 2016
MINUTES

1. Call to Order and Chair's Remarks

Board Chair Claudia Puig convened the meeting of the Florida International University Board of Trustees at 2:14 p.m., on Friday, March 11, 2016, at the Modesto A. Maidique Campus, Parkview Hall, Multipurpose Room, Miami, Florida.

The following attendance was recorded:

Present:
Claudia Puig, *Chair*
Cesar L. Alvarez
Jorge L. Arrizurieta
Leonard Boord
Alexis Calatayud
Gerald C. Grant, Jr.
Natasha Lowell
Albert Maury
Kathleen L. Wilson

Excused:
Jose J. Armas
Mayi de la Vega
Michael G. Joseph
Justo L. Pozo

Chair Puig welcomed all Trustees, University faculty and staff. On behalf of the Board, she congratulated Trustee Jose J. Armas and Trustee Gerald C. Grant, Jr., noting that they were recently reappointed to serve a respective second term on the FIU Board of Trustees. She thanked the members of the FIU Board of Trustees who traveled to Tallahassee for FIU Day with the delegation of students, administrators, and faculty to advocate for the University's legislative priorities. On behalf of the FIU Board of Trustees, Chair Puig extended her gratitude to Student Trustee and Student Government President for the Modesto A. Maidique Campus, Alexis Calatayud for her leadership and dedication to the Board, to the University and to the students.

2. Foundation Report

FIU Foundation, Inc. Board of Directors Vice Chair Richard Brilliant provided the Foundation Report. He presented a campaign and fundraising update. He stated that as of March 4, 2016, the Foundation's investment portfolio totaled approximately $233 million, down an estimated 6.1% fiscal year-to-date. He added that $16 million has been raised towards the $56 million fundraising goal, adding that to date the fundraising total is $310 million.

3. Public Appearances
Ms. Jacquelyn Amie Esteves, junior majoring in Agricultural Sciences, addressed the Board to express her opposition to the agenda item pertaining to the approval of Amendment to the 2010-20 Campus Master Plan for the Modesto A. Maidique Campus to accommodate the construction of two intramural/athletics department practice fields.

4. President's Report
University President Mark B. Rosenberg requested that Vice President for Governmental Relations Michelle L. Palacio provide a legislative update. VP Palacio reported that the State Legislature appropriated $28 million in new funding for FIU in the 2016-17 state budget, adding that $20 million of that appropriation was designated for infrastructure projects. She noted that the University expects to receive approximately $9 million for Performance Funding, in addition to funding for numerous FIU projects: the University Paradigm: Learn, Interact, Facilitate, Transform (FIU UP:LIFT) initiative; Hurricane Research Mitigation Projects including the Wall of Wind and Public Loss Model; and Startup FIU. She thanked the State Legislature, especially the Miami-Dade delegation, for championing FIU's priorities. She added that the budget will require the final approval of the Governor, further noting that all funded projects with the exception of FIU UP:LIFT are subject to a potential veto.

President Rosenberg noted that FIU continues to advocate the importance of relocating the Fair in order to realize the academic and economic benefits to the community through FIU's expansion. He added that in order to meet the rapidly growing demand of jobs requiring science and engineering skills, it is anticipated that the Board of Trustees will discuss the expansion of the University's Engineering Center at a future meeting.

Associate Vice President for Advancement/Alumni Affairs Duane Wiles noted that Trustee Gerald C. Grant, Jr.'s leadership has played a critical role in propelling Panther Alumni Week (PAW) forward. Mr. Wiles noted that during PAW's week of service, alumni are invited to return as guest speakers to inspire students and share career advice. He introduced President's Council member Mr. Michael A. Hernandez '04, MPA '11, who serves as the Director of Communications for the Office of Miami-Dade County Mayor Carlos Gimenez and freshman and Student Ambassador Ms. Amanda Silva. Ms. Silva and Mr. Hernandez discussed their respective experiences with PAW.

President Rosenberg reported that the FIU community recently celebrated the opening of the world-class exhibition Predators and Prey: A Roman Mosaic from Lod, Israel at the Frost Art Museum. He noted that William Shakespeare's First Folio was on display in February at the FIU Patricia & Phillip Frost Art Museum, adding that the University was the only site in Florida to host a first edition of his collected works.

5. Action Items – Consent Agenda
Chair Puig noted that the Finance and Audit Committee and Academic Policy and Student Affairs Committee each recommended approval by the Board of the respective action items contained in the Consent Agenda.

APPROVED 6.2.16

Chair Puig asked for comments on any of the items included in the Consent Agenda. Hearing none, a motion was made and passed to accept the Consent Agenda, and members of the Board concurred with the following actions:

- **BT1. Minutes, December 9, 2015 -** Approve the Minutes of the Florida International University Board of Trustees, Full Board meeting held on Wednesday, December 9, 2015 at the Modesto A. Maidique Campus, Graham Center Ballrooms.

- **FA3. Proposed Amendment to Regulation - FIU-115 Skateboarding, Skates, Scooters, Ripstiks, Hoverboards, and other Similar Devices and High Risk Activities on University Property -** Approve the proposed Amendment to the Regulation of the Skateboarding, Skates, Scooters, Ripstiks, Hoverboards, and other Similar Devices and High Risk Activities on University Property FIU-115 and delegate authority to the University President to approve any subsequent amendments that are based on comments to the Regulation received from the Florida Board of Governors and as a result of the regulation-making process.

- **AP1. Tenure as a Condition of Employment Nomination -** Approve one (1) candidate for Tenure as a Condition of Employment (TACOE).

- **AP2. New Program Proposal: Master of Science in Logistics Engineering -** Approve the Master of Science in Logistics Engineering (CIP 14.2701) new program proposal.

- **AP3. Exception to 120 Credit Hours to Degree: Dietetics and Nutrition -** Approve an exception to the 120 credit hour limit for the Bachelor of Science in Dietetics and Nutrition (CIP 51.3101).

6. Action Items

FA1. Finance and Audit Committee Charter

University General Counsel M. Kristina Raattama provided an overview of the proposed revisions to the Finance and Audit Committee Charter, delineating key changes. She added that the Finance and Audit Committee amended the proposed Charter revisions to increase the minimum committee membership from four to five and to maintain the separate sessions with the Chief Audit Executive and with senior management as currently prescribed in the Charter.

A motion was made and passed that the FIU Board of Trustees approve the proposed revisions to the Finance and Audit Committee Charter, as amended.

FA4. Approval of Amendment to the 2010-20 Campus Master Plan for the Modesto A. Maidique Campus to accommodate the construction of two intramural/athletics department practice fields

Senior Vice President of Administration and Chief Financial Officer Kenneth A. Jessell presented the Approval of Amendment to the 2010-20 Campus Master Plan for the Modesto A. Maidique Campus to accommodate the construction of two (2) intramural/athletics department practice fields (the Project) for Committee review. He noted that on December 9, 2015, the Florida International

University Board of Trustees approved the construction of two recreational/practice fields on the MMC campus and also delegated to the University President the authority to amend the construction program as required in order to consider and implement alternative lower-cost opportunities for the Project that achieve the same objectives.

Sr. VP and CFO Jessell stated that the practice fields will serve both the recreational needs of students engaged in intramural athletics programs as well as the needs of football and other athletics programs. He added that while developing the program, additional limitations with the original site were identified and, alternative options and locations were considered. He indicated that meetings were held with Miami-Dade County Parks and Recreation officials to discuss the viability of sharing existing intramural fields at Tamiami Park, noting that this option was later deemed unfeasible due to annual restoration caused by the fair patron parking and non-exclusive use.

Sr. VP and CFO Jessell noted that the amendment to the Campus Master Plan reflects the re-location of the Project to the northern part of the area on campus identified as the Preserve, an area containing approximately 2.82 acres. He further noted that the area includes a man-made pond and is over-grown with extensive invasive and exotic trees that have been under a removal program. He indicated that an additional land area south and west of the Preserve, comprising approximately 2.95 acres, will be reclassified as Preserve area to offset the currently open space to be utilized for the Project and that the location change will achieve an approximate $900,000 savings to the Project after completing $400,000 mitigation efforts in the newly created Preserve area. Additionally, he stated, since environment and sustainability are areas of strategic emphasis, the University will allocate from existing operating funds $80,000 annually to maintain and enhance the Preserve in support of the teaching and research activities that take place there.

Sr. VP and CFO Jessell further stated that multiple meetings with the Faculty Senate and a town hall with student government were held in order to hear comments and address concerns from the University community. He stated that during its March 8, 2016 meeting, the Faculty Senate voted in support of the Project, adding that the Project will move forward with the cooperation of FIU faculty and staff to ensure successful outcomes of mitigation and long-term strategies to fulfill Preserve goals. Trustee Leonard Boord commented that protections should be put in place to ensure no further encroachment on the newly defined preserve boundaries.

Various Trustees thanked the students present for their involvement and concurred that the process to re-locate the Project was transparent and allowed key University stakeholders the opportunity to raise questions and voice their concerns. Sr. VP and CFO Jessell read an excerpt of an email message sent from Professor Phillip K. Stoddard to Ms. Roxanna Hinzman of the U.S. Fish and Wildlife Service on March 9, 2016. Sr. VP and CFO Jessell noted that Professor Stoddard states in the email that the area under consideration for conversion to practice fields is the least ecologically valuable part of the Preserve and that the area is greater than 90% invasive exotic trees of three species.

A motion was made and passed that the FIU Board of Trustees approve an amendment to the Campus Master Plan for the Modesto A. Maidique Campus to accommodate the construction of two (2) intramural/athletics department practice fields.

G1. Amendment to the Bylaws of the Florida International University Board of Trustees
Ms. Raattama presented the Amendment to the Bylaws of the Florida International University Board of Trustees (the BOT) for Committee review. The proposed amendment, she noted, provides that the Vice Chair of the Board will serve temporarily when a vacancy in the Board Chair position occurs and that an election will be held as soon as possible following a vacancy in the office of Board Chair and/or Vice Chair. She stated that this may result in the Board Chair and Vice Chair terms of office not running concurrently.

A motion was made and passed that the FIU Board of Trustees approve the amendment to the Bylaws of the BOT.

G2. Florida International University 2014-15 Annual Accountability Report
Trustee Cesar L. Alvarez, Chair of the Academic Policy and Student Affairs Committee, noted that the Committee met earlier in the day to review FIU's 2014-15 Annual Accountability Report, which he stated was submitted to the Florida Board of Governors on February 15, 2016. He requested that Provost and Executive Vice President Kenneth G. Furton present an overview of the document.

Provost Furton provided an overview of the data dashboard highlights with principal University metrics. He presented key institutional achievements, noting that FIU is the top university in the continental U.S. in graduating Hispanics with bachelor's and master's degrees in STEM according to *Excelencia in Education*. He stated that the $20 million gift from Ambassador Steven J. Green, his wife Dorothea Green, daughter Kimberly Green and the Green Family Foundation, will help propel the Steven J. Green School of International and Public Affairs forward as one of the world's top academic centers. He indicated that FIU and M-DCPS continue to collaborate to increase the success of at risk high school students leading to a 442% increase in dual enrollment participation over the last five years.

Provost Furton provided an overview on the data on performance metric scores. He stated that overall, the University improved in seven of the 10 metrics and that nine of the 10 metrics are ranked as part of the Excellence category. He added that it is expected that the University's performance scoring will total 76 points out of 100. He indicated that until the BOG's final rankings are released, it is only a projection, but anticipates that this score will keep the University among the top 5 institutions in the state.

A motion was made and passed by the FIU Board of Trustees approving Florida International University's 2014-15 Annual Accountability Report as provided in the Board materials and delegate authority to the University President to perform finish editing as needed and to amend consistent with any comments received from the Board of Governors.

G3. President's Management Review, 2014-15
Board Chair Puig noted that the Board's Governance Committee met earlier in the day to undertake the assessment of President Rosenberg's accomplishments for the 2014-15 academic year relative to the Board-approved goals and his overall performance.

Board Chair Puig noted that as is required by the BOG, she discussed the President's annual evaluation with the Chair of the Board of Governors. She stated that the cooperation enabled the BOG to provide input in the President's evaluation prior to Board of Trustees review. Board Chair Puig added that the BOG Chair provided positive feedback and noted specifically the BOG's satisfaction with the FIU process for evaluating the President's performance as it aligned with the BOG's performance funding metrics.

A motion was made and passed by the FIU Board of Trustees granting a "Superior" performance rating to President Mark B. Rosenberg for his leadership of Florida International University during the 2014-15 academic year.

Board Chair Puig noted that as per the third amendment to Dr. Rosenberg's contract, the Board may, in its discretion, annually award Dr. Rosenberg incentive compensation of up to $100,000 for the 2014-15 academic year. Board Chair Puig added that the Board has delegated the Governance Committee with the responsibility of carrying out the review and award of incentive compensation. She reported that the Governance Committee awarded President Rosenberg $100,000 in incentive compensation for the 2014-15 academic year.

7. Election of Board Vice Chair

Board Chair Puig noted that in accordance with the recently amended Board's Bylaws, an election to fill the vacancy in the office of Vice Chair was required. She noted that upon election by the Board, the Vice Chair will serve for a two year term effective immediately. She then opened the floor for nominations for Board Vice Chair. Trustee Natasha Lowell nominated Trustee Jorge L. Arrizurieta for the office of Vice Chair and he was unanimously elected. On behalf of the Board, Chair Puig congratulated Trustee Arrizurieta.

8. Status Reports, Board Committees

Athletics Committee Report

Trustee Jorge L. Arrizurieta, Chair of the Athletics Committee, presented highlights from the Committee's meeting earlier in the day. He reported that FIU men's soccer coach Scott Calabrese, 2015 NSCAA Southeast Region Coach of the Year, discussed the men's soccer team season, which he noted ended with a 7-0 record that qualified them for the C-USA tournament that FIU won for the first time in a decade. Trustee Arrizurieta added that the Committee also met Mr. Marvin Hezel, captain of the men's soccer team. Trustee Arrizurieta also stated that the Committee received several reports, including an update on the seven-year agreement between Van Wagner Sports and Entertainment and FIU Athletics.

Finance and Audit Committee Report

Trustee Gerald C. Grant Jr., Chair of the Finance and Audit Committee, presented highlights from the Committee's meeting earlier in the day. He noted that the Committee tabled the proposed amendment to the University's Investment Policy in order to allow for further review prior to consideration by the Board. He reported that Sr. VP and CFO Jessell provided an update on the budget variance for the second quarter of FY 2015-16, noting that operating revenues were below estimates by $7.1M (or 1 percent) and that expenses were below estimates by $26.2M (or 5 percent).

He stated that as is stipulated in the Finance and Audit Committee Charter, the Committee met separately with the Chief Audit Executive without the presence of senior management.

Academic Policy and Student Affairs Committee Report
Trustee Cesar L. Alvarez, Chair of the Academic Policy and Student Affairs Committee, presented highlights from the Committee's meeting earlier in the day. He reported that Equal Opportunity Programs and Diversity Title IX Coordinator Shirlyon McWhorter provided an overview of the University's Title IX program, noting that Ms. McWhorter's presentation addressed the University's efforts in the areas of training, education and awareness.

9. New Business
Chair Puig announced that she wished to bring forth a new business item for the Board's review and consideration. She added that the Board's Bylaws state that the Board shall have special member categories of Chairperson Emeritus and Trustee Emeritus for honorary purposes to recognize past chairpersons and Trustees who have provided extraordinary service and contributions to the University and are no longer serving in that capacity. She presented a Resolution for Board approval, noting that she wishes to recognize Trustee Albert Maury's pivotal contributions to the University and commitment to higher education.

A motion was made and passed by the FIU Board of Trustees adopted the following Resolution:

> WHEREAS, Mr. Albert Maury, has served dutifully as a member of the Florida International University Board of Trustees (the BOT) for over eight years in various capacities; and
>
> WHEREAS, Mr. Maury is an FIU alumnus who has demonstrated his passion and unyielding commitment to FIU by selflessly giving of his time and service; and
>
> WHEREAS, in addition to his numerous professional accomplishments, Mr. Maury, a staunch advocate for children, was recognized with an FIU medallion for his leadership and work in the community; and
>
> WHEREAS, during his tenure as BOT Chair, Mr. Maury distinguished himself in numerous ways by leading with transparency in the spirit of collaboration and shared governance;
>
> NOW, THEREFORE, BE IT RESOLVED that the BOT at its regular meeting this 11th day of March 2016, does hereby recognize, commend and express its gratitude to Mr. Albert Maury for his contributions to Florida International University,
>
> BE IT FURTHER RESOLVED, that the BOT grants Mr. Albert Maury the status of Chairperson Emeritus of this Board with all the rights, honors and privileges thereunto appertaining; and
>
> BE IT FURTHER RESOLVED that the University Administration take all actions necessary to give effect to this Resolution.

APPROVED 6.2.16

President Rosenberg introduced a video that featured local news coverage of William Shakespeare's First Folio at FIU.

10. Concluding Remarks and Adjournment

With no other business, Board Chair Claudia Puig adjourned the meeting of the Florida International University Board of Trustees on Friday, March 11, 2016 at 4:13 p.m.

There were no Trustee requests.

Claudia Puig *Chair* *FIU Board of Trustees*	Mark B. Rosenberg *Corporate Secretary* *FIU Board of Trustees*

MB
3.23.16

FIU

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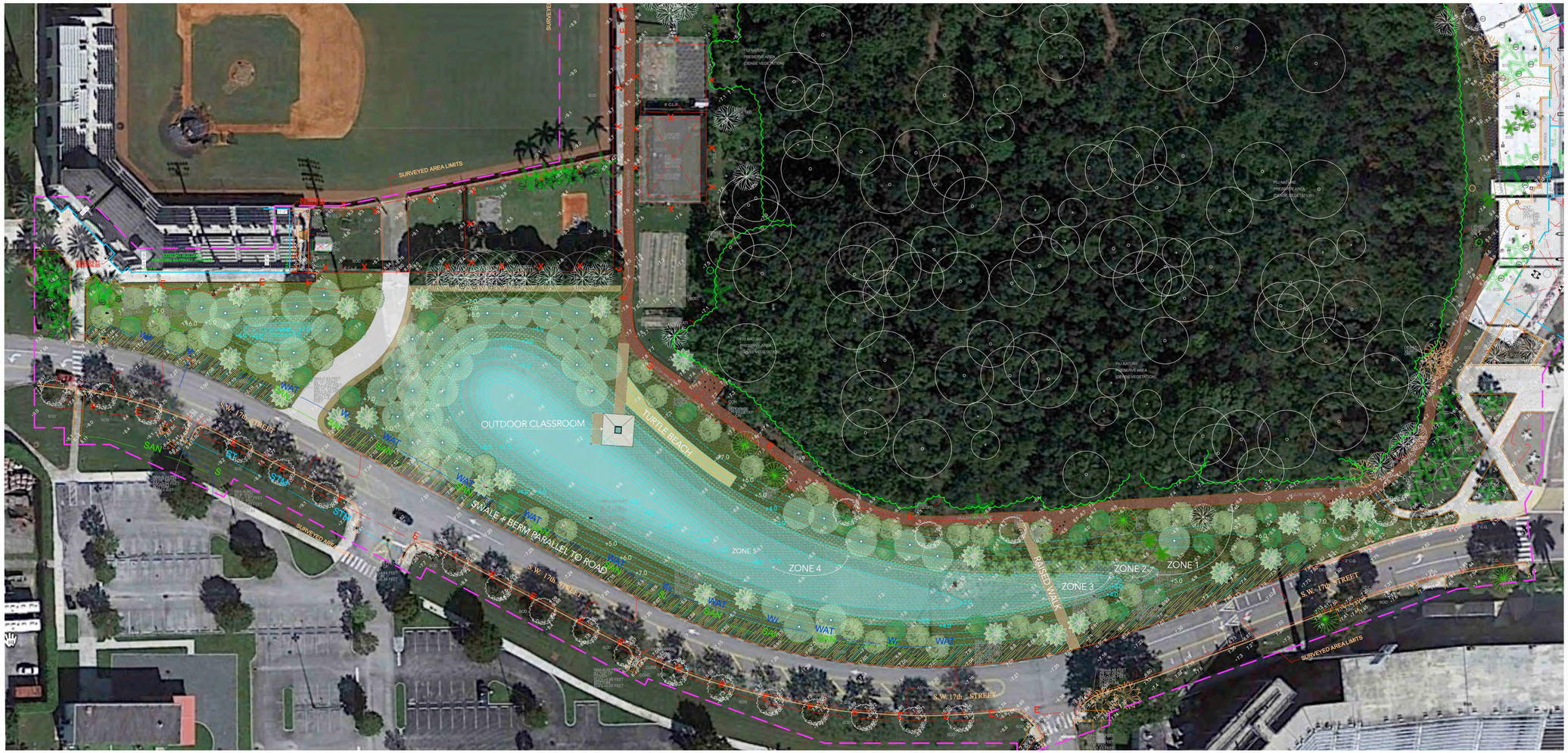
APPENDIX B



FIU NATURE PRESERVE WETLAND • SCHEMATIC PLAN

11200 SW 8th St., Miami, FL 33199

05NOV016

0 20 70 120 FT

ZONE #		ELEVATION [ft]
ZONE 1	HIGH GROUND	+ 4.0 and ABOVE
ZONE 2	ABOVE WATER'S EDGE	+ 3.0 to + 4.0
ZONE 3	AT WATER LEVEL	+ 2.75 to + 3.25
ZONE 4	SUBMERGED LITTTORAL EDGE	+ 1.0 to + 2.75
ZONE 5	OPEN WATER	- 1.0 to + 1.0
SWALE	PARALLEL TO ROAD	VARIES

Pond Elevation Zones

Note: Water level in October surveyed at 3'-1" elevation (NGVD).
Highlighted species to be planted by contractor

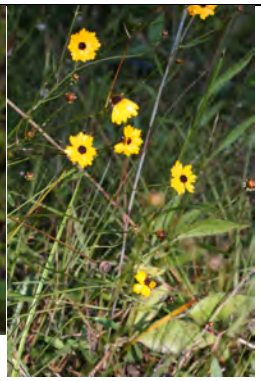
Zone 1: High ground : Elevation above 4'-0" NGVD (Scraped fill: rocks and dirt with 2" soil) Jody Haines, Len Scinto, Gary Milano

Herbaceous Plants

Scientific Name	Family	Common Name
Andropogon		
Eupatorium capillifolium	Asteraceae	Dog Fennel
Rhynchospora colorata	Cyperaceae	White bracted sedge
Sisyrinchium atlanticum	Iridaceae	Atlantic blue-eyed grass
Eleocharis geniculata	Cyperaceae	Canada spikerush
Coreopsis floridana	Asteraceae	Coriopsis (in swale).
Asclepias tuberosa	Apocynaceae	milkweed(pinelands ecotype)
Fimbristylis cymosa	Cyperaceae	Hurricane grass
Flaveria linearis	Asteraceae	yellowtops
Cephalanthus occidentalis	Rubiaceae	buttonbush
Phyla nodiflora	Verbenaceae	turkey tangle fogfruit
Pteris bahamensis	Pteridaceae	Bahama ladder brake fern
Anemia wrightii	Schizaeaceae	Pineland parsley fern (rare, but common in this type of habitat)

Blue eyed grass

Yellowtop



Coreopsis

Turkey tangle fogfruit

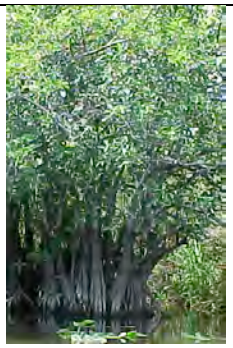
Zone 2: Above water's edge: Excavation Elevation ~ 3'-0" to 4'-0" NGVD (Scraped fill/rock) *Many of these plants would also do well in Zone 3

Trees

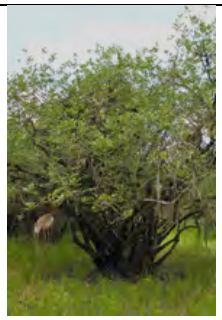
Scientific Name	Family	Common Name
Taxodium distichum	Cupressaceae	Pond Cypress
Annona glabra	Annonaceae	Pond Apple
Ilex cassine	Aquifoliaceae	Dahoon Holly

Roystonea regia	Arecaceae	Royal Palm
Chrysobalanus icaco	Chrysobalanaceae	Cocoplum
Acoelorraphe wrightii	Arecaceae	Paurotis Palm
Fraxinis caroliniana	Oleaceae	Swamp Ash
Acer rubrum	Sapindaceae	Red maple
Herbaceous plants		
Aristida purpurascens	Poaceae	three-awn grass
Fuirena breviseta	Cyperaceae	pineapple sedge
Flaveria linearis	Asteraceae	yellowtops
Sabatia grandiflora	Gentianaceae	rose gentian
Bacopa monnieri	Plantaginaceae	herb-of-grace
Cephalanthus occidentalis	Rubiaceae	buttonbush
Acrostichum danaeifolium	Pteridaceae	Leather fern

Pond Cypress


Pond Apple

Dahoon Holly


Swamp Ash

Royal Palm

Cocoplum

Paurotis Palm

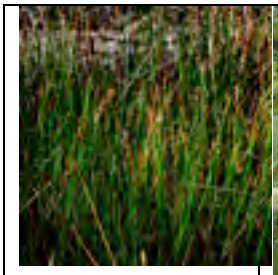
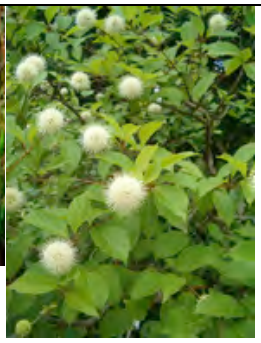
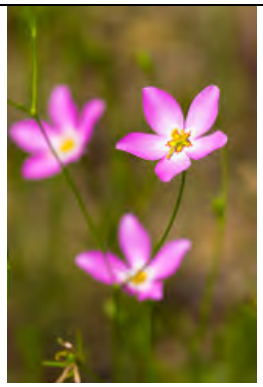
Red Maple

Zone 3: Water level zone: Excavation Elevation ~ 2'-9" – 3'-2" (Scraped fill/rock)

Herbaceous Plants

Scientific Name	Family	Common Name
Helenium pinnatifidum	*Asteraceae*	swamp sneezeweed
Asclepias lanceolata	Apocynaceae	fewflower milkweed
Fuirena breviseta	Cyperaceae	pineapple sedge
Sabatia grandiflora	Gentianaceae	rose gentian
Rhynchospora colorata	Cyperaceae	White bracted sedge

Osmunda regalis	Osmundaceae	Royal fern
Blechnum serrulatum	Blechnaceae	Swamp fern

 spikerush	 Buttonbush	 Rose gentian	Pineapple sedge

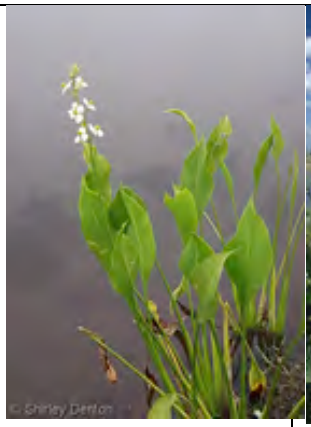
Zone 4: Submerged littoral zone: Excavation Elevation ~ 1'-0"-2'-9" (Scraped fill/rock with 6" muck above) *many of these grow at the high end of this zone.

Herbaceous Plants

Scientific Name	Family	Common Name
Eleocharis cellulosa	Cyperaceae	spikerush (0.5 to 1 ft)
Juncus megacephela	Juncaceae	bulrush
Cladium jamaicense	Cyperaceae	sawgrass (1.5 ft)
Pontederia cordata	Pontederiaceae	pickerel weed (1.5 ft)
Sagittaria lancifolia	Alismataceae	arrowleaf (1.5 ft)
Thalia geniculata	Marantaceae	alligator flag (2 ft)
Peltandra virginica	Araceae	
Eleocharis elongata	Cyperaceae	spikerush
Eleocharis geniculata	Cyperaceae	spikerush
Fimbristylis cymosa	Cyperaceae	
Fuirena breviseta	Cyperaceae	
Cabomba caroliniana	Cabombaceae	fanwort
Ludwigia repens	Onagraceae	creeping primerose willow
Proserpinaca palustris	Haloragceae	marsh mermaid weed
Bacopa caroliniana	Plantaginaceae	lemon bacopa
Panicam hemitomon	Poaceae	maidencane
Paspalidium geminatum	Poaceae	
Rhynchospora tracyi	Cyperaceae	Tracy's beakrush
Crinum americanum	Amaryllidaceae	Swamp lily
Hymenocallis latifolia	Amaryllidaceae	Spider lily
Canna flacida	Cannaceae	Bandana of the Everglades
Iris hexagona	Iridaceae	Dixie Flag íris
Utricularia gibba	Lentibulariaceae	humped bladderwort
Utricularia purpurea	Lentibulariaceae	purple bladderwort
Utricularia foliosa	Lentibulariaceae	leafy bladderwort

Sawgrass

Pickerel Weed


Arrowleaf

Alligator Flag

Zone 5: Open water : Excavation Elevation ~ -1'-0" - +1'-0"

Herbaceous Plants

Scientific Name	Family	Common Name
Nymphaea odorata	Nymphaeaceae	white water lily (2 ft)
Nymphoides aquatica	Menyanthaceae	
Utricularia gibba	Lentibulariaceae	humped bladderwort
Utricularia purpurea	Lentibulariaceae	purple bladderwort
Utricularia foliosa	Lentibulariaceae	
Chara		
Potamogeton illinoensis	Potamogetonaceae	pondweed
Vallisneria americana	Hydrocharitaceae	tapegrass

white water lily

Zone 3 no muck: Seasonal pond with no muck: Excavation Elevation ~ 2'-6" – 3'-0" (Scraped fill/rock)

Herbaceous Plants

Scientific Name	Family	Common Name
Muhlenbergia capillaris	Poaceae	Muhly grass depends on size of clump; if small, 1.5 ft, if larger, 2 to 2.5 ft.
Myrica cerífera	Myricaceae	Wax murtle

Muhly Grass	Wax Murtle