

CAMPUS MASTER PLAN UPDATE 2010-2020

FIU | FLORIDA
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Infrastructure Element Focus Group Meeting #4



Campus Master Plan 2010-2020

Meeting #4 Agenda

- 1. Review Schedule / December Minutes**
- 2. Review Campus Vision Plan**
- 3. Review Preliminary 2020 Concept Plan Elements**
 - a. Facility Use**
 - b. Land Use**
 - c. Open Space**
 - d. Circulation/Parking**

Master Planning Schedule

Inventory & Analysis

July-Oct 2012

Preliminary Alternative Concepts

Nov-Dec 2012

Concept Plan Development

Jan 2013

Draft Comprehensive Master Plan

Feb-July 2013

Final Comprehensive Master Plan

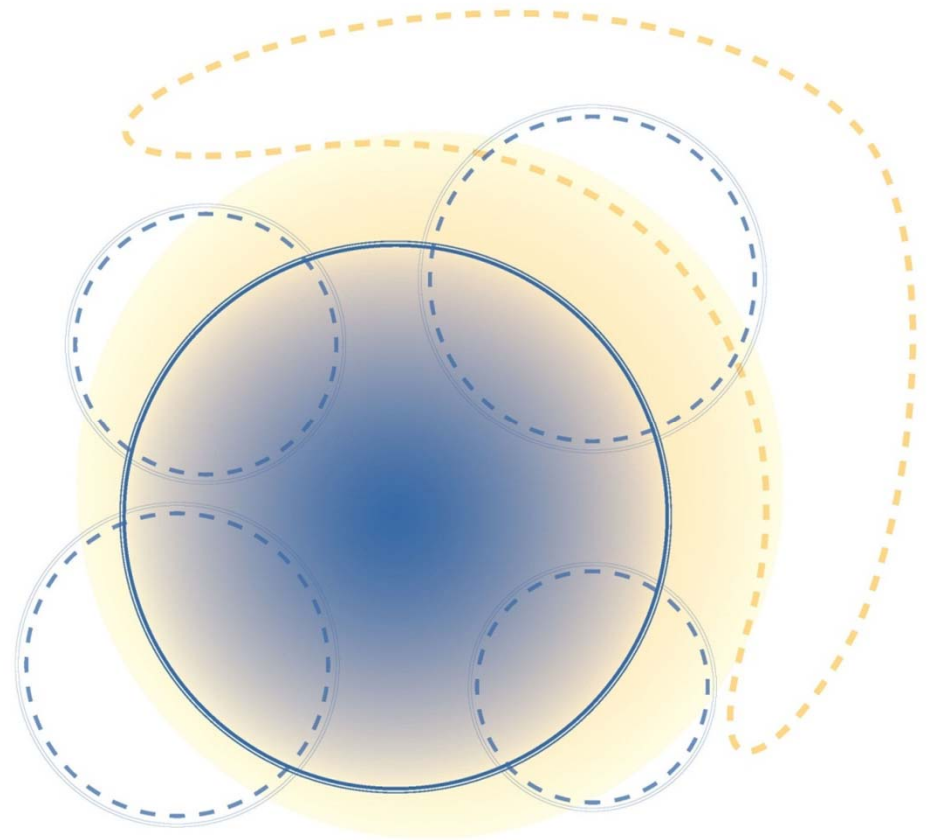
Aug-Dec 2013

BOT Approval of Master Plan

Dec 2013

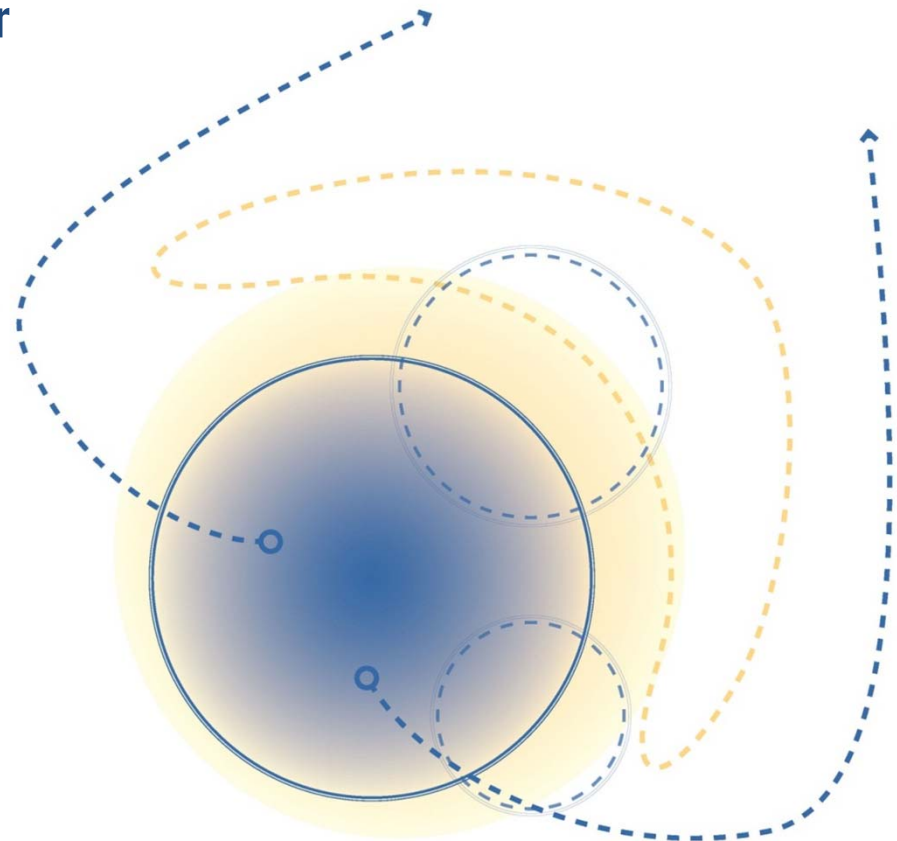
Key Characteristics: Create a Strong Core

- **Expand programs to strengthen current successful campus districts and interdisciplinary practices**
- **Infill buildings and additions discretely to “densify” campus core for collegiality, walkability and livability**
- **Preserve open space for inspiration, education and recreation**



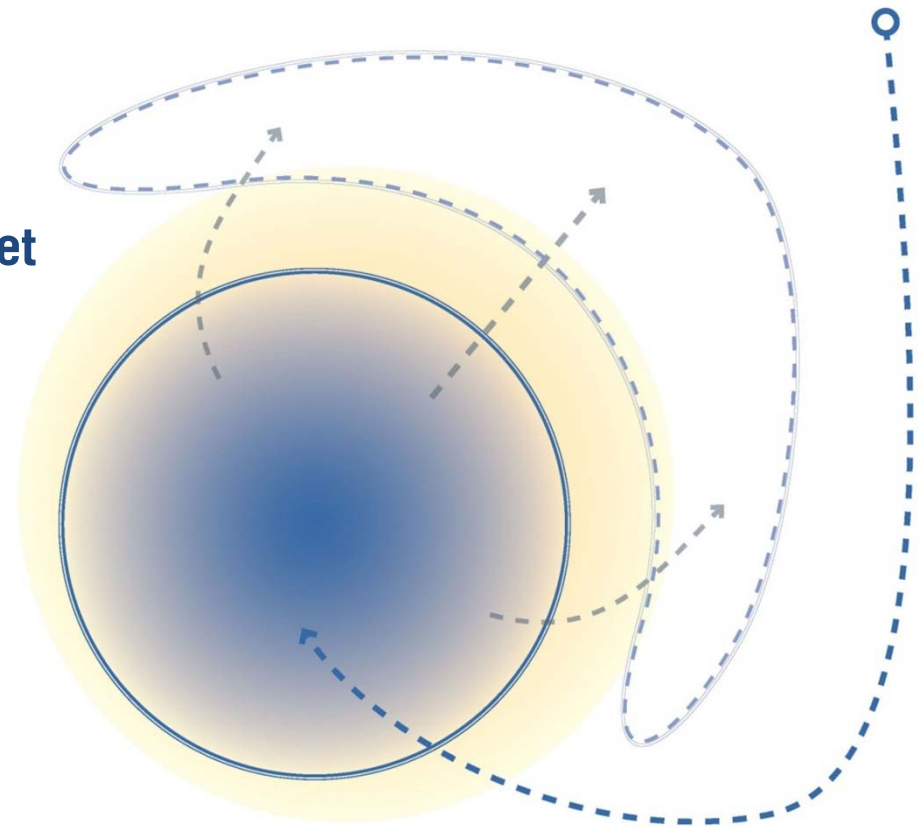
Key Characteristics: Reinforce Identity

- **Position Academic Health programs for high access and outreach**
- **Position Engineering, Math and Computing programs to successfully relocate to MMC over time**
- **Position Journalism, Hospitality, Education and Environmental Science programs to strengthen BBC identity**



Key Characteristics: Reinforce Partnerships

- **Focus externally funded growth at the campus perimeter**
- **Reserve MMC partnership sites to meet requirements for high access, high visibility, and flexible opportunities**
- **Reposition EC / partnership sites for highest and best use**
- **Landbank sites at BBC in light of limited access**



Overall 2020 New Space Needs

FIU NEEDS BEYOND CAPITAL PROJECTS

ACADEMIC:	951,600 SF
SUPPORT:	476,000 SF
RESEARCH:	246,900 SF
FACILITY SUPPORT:	116,900 SF
RECREATION:	90,900 SF
CLINIC:	35,200 SF
TOTAL:	1,917,500 SF

HOUSING: 1,002,950 SF /3086 BEDS (includes replacement)

RECREATION FIELDS/ COURTS:

NIRSA STANDARDS:

SOCCER/ FOOTBALL FIELDS

5 This assumes continued use of Mourning High

SOFTBALL FIELDS

4 This assumes fields at Tamiami Park are still used

TENNIS COURTS

3

VOLLEYBALL COURTS

3

COUNTY STANDARDS:

13.75 ACRES TOTAL REQUIRED

Additional 2035 Space Needs

FIU NEEDS BEYOND 2020

ACADEMIC:	511,000SF
SUPPORT:	324,400 SF
RESEARCH:	173,000 SF
FACILITY SUPPORT:	28,500 SF
RECREATION:	44,300 SF
STUDENT CLINIC:	15,450 SF
TOTAL:	1,096,650 SF
HOUSING:	1,509,000 SF (4043 BEDS)

RECREATION FIELDS/ COURTS:

NIRSA STANDARDS:

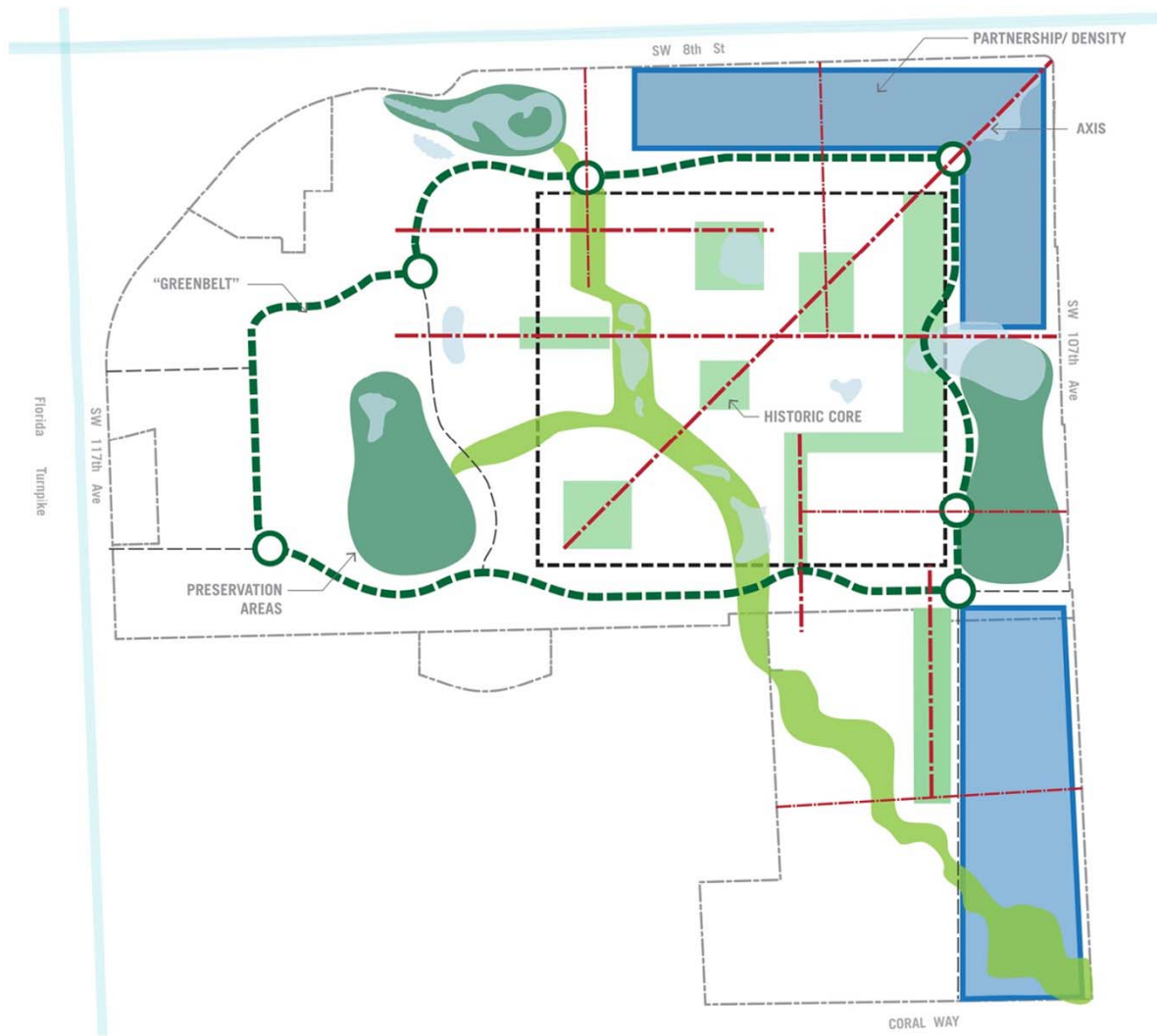
SOCCER/ FOOTBALL FIELDS	3 This assumes continued use of Mourning High
SOFTBALL FIELDS	2 This assumes fields at Tamiami Park are still used
TENNIS COURTS	6
VOLLEYBALL COURTS	2
BASKETBALL COURTS	2

COUNTY STANDARDS:

20.62 ACRES TOTAL REQUIRED

MMC VISION PLAN REVIEW

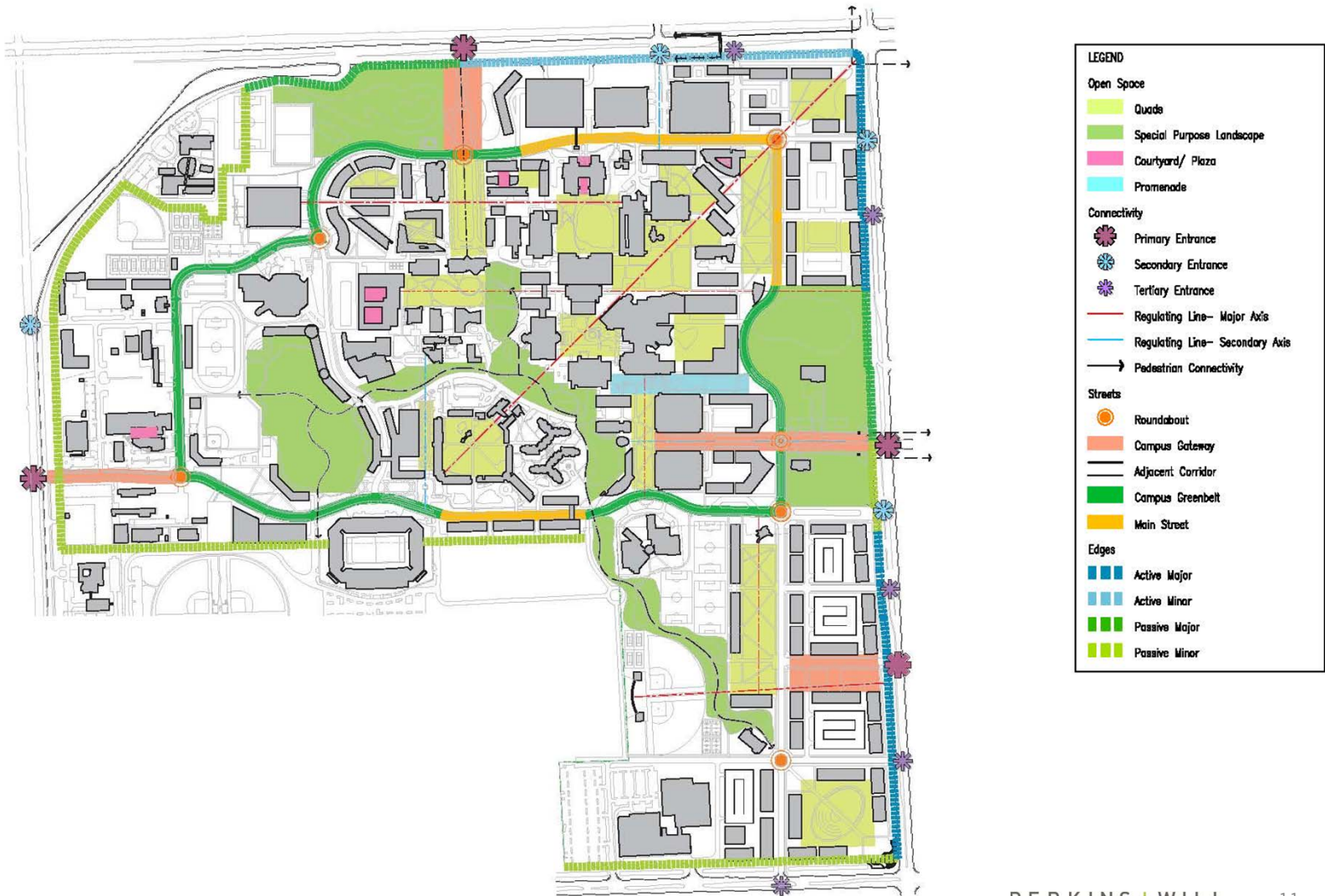
Modesto Maidique Campus Development Framework



January 9, 2013

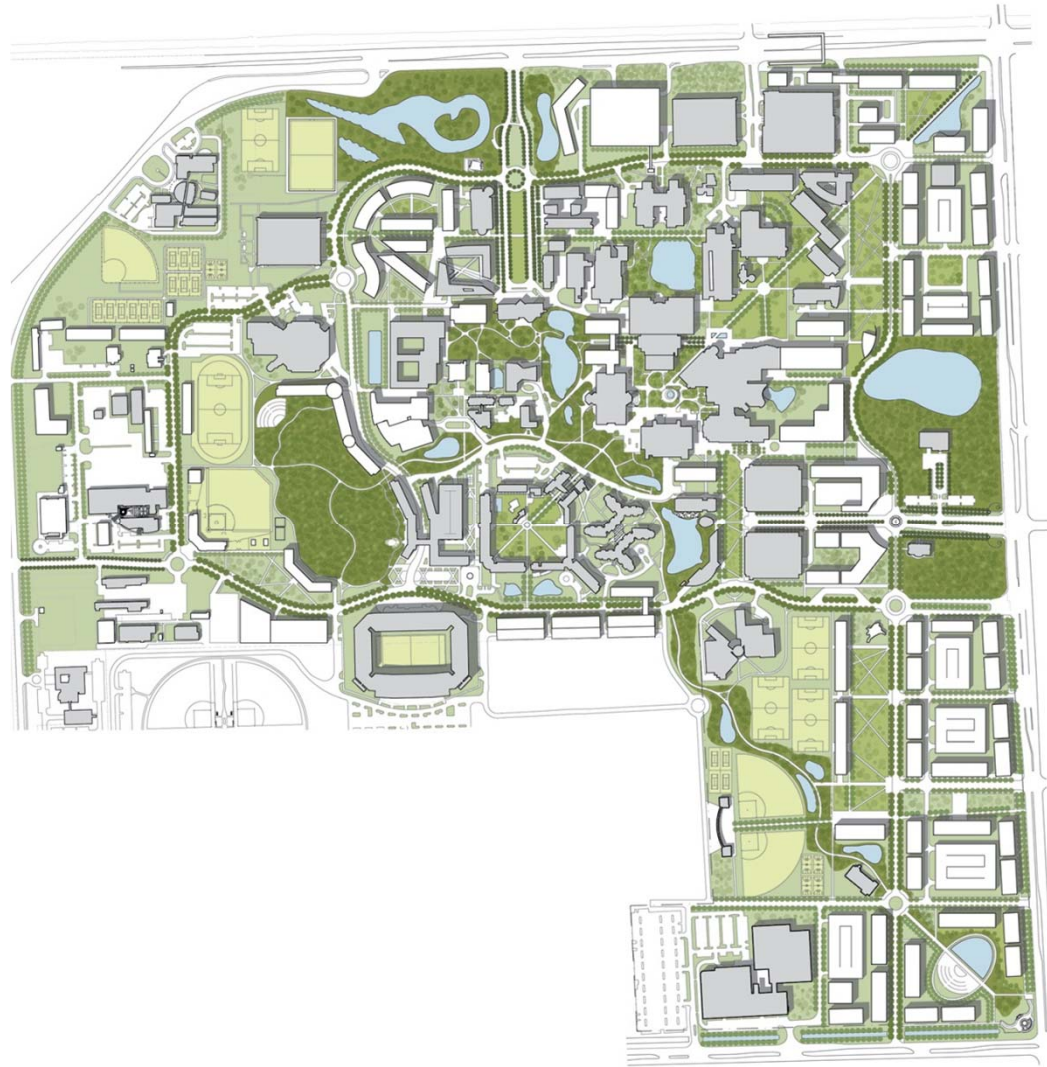
Modesto Maidique Campus

Urban Design Framework - Vision



Modesto Maidique Campus

Vision Plan



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PERKINS+WILL

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MMC – 2035 Facility Use

LEGEND

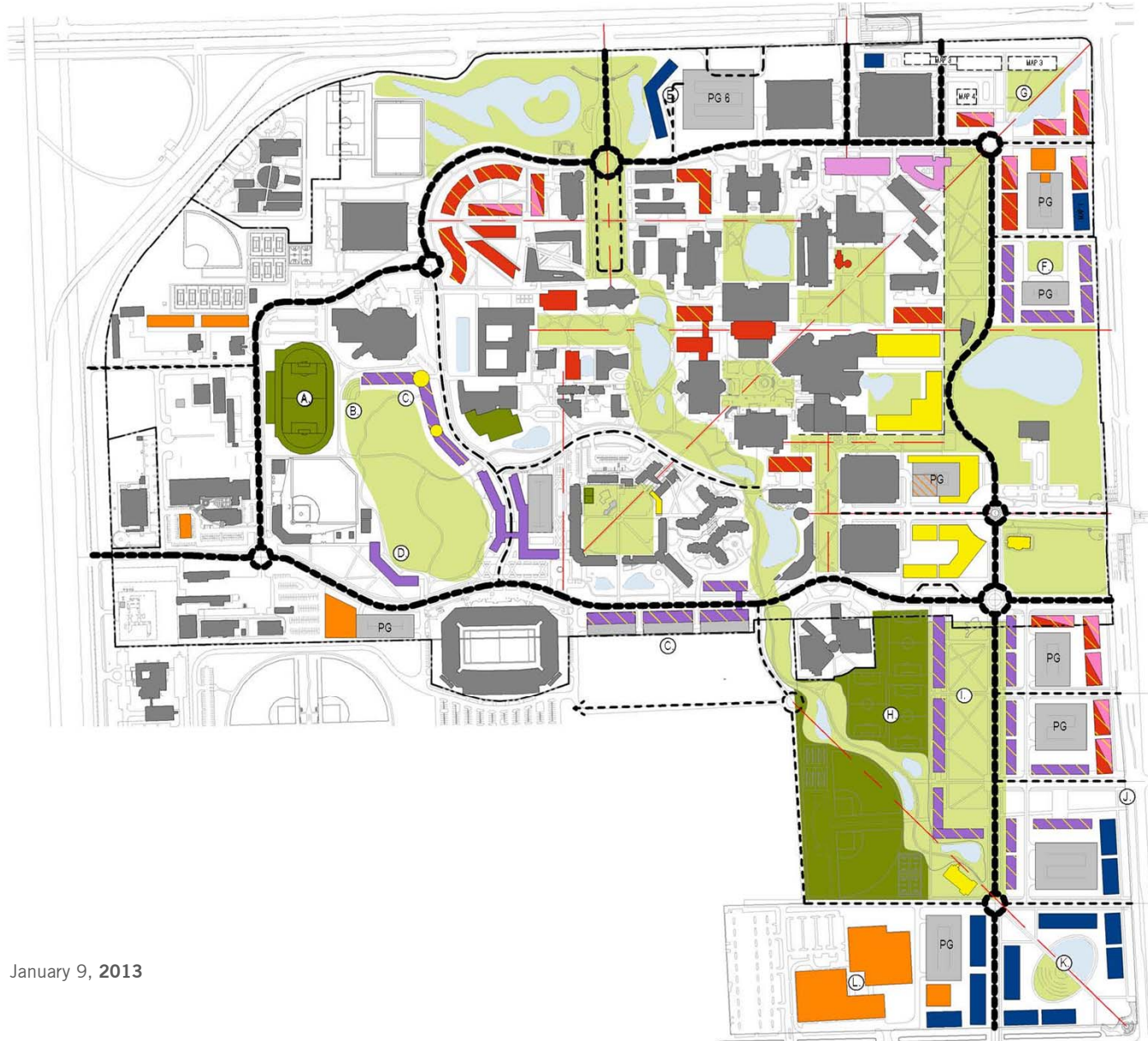
- ACADEMIC
- RESEARCH
- SUPPORT
- 1ST FLOOR SUPPORT
- HOUSING
- PARTNERSHIP
- SPORTS / RECREATION
- FACILITY SUPPORT
- OPEN SPACE
- NEPP PARKING
- VISION PLAN BUILDING
- ROAD REALIGNMENT
- CAMPUS AXES

KEY:

- A. EXPANDED TRACK AND FIELD
- B. AMPHITHEATER
- C. EXPANDED UNIVERSITY HOUSING
- D. GREEK HOUSING
- E. HOTEL
- F. GRADUATE HOUSING
- G. ACADEMIC/RESEARCH AREA
- H. EXPANDED RECREATION FIELDS
- I. EXPANDED UNIVERSITY HOUSING
- J. MIXED USE DISTRICT
- K. AMPHITHEATER
- L. FACILITY SUPPORT AREA

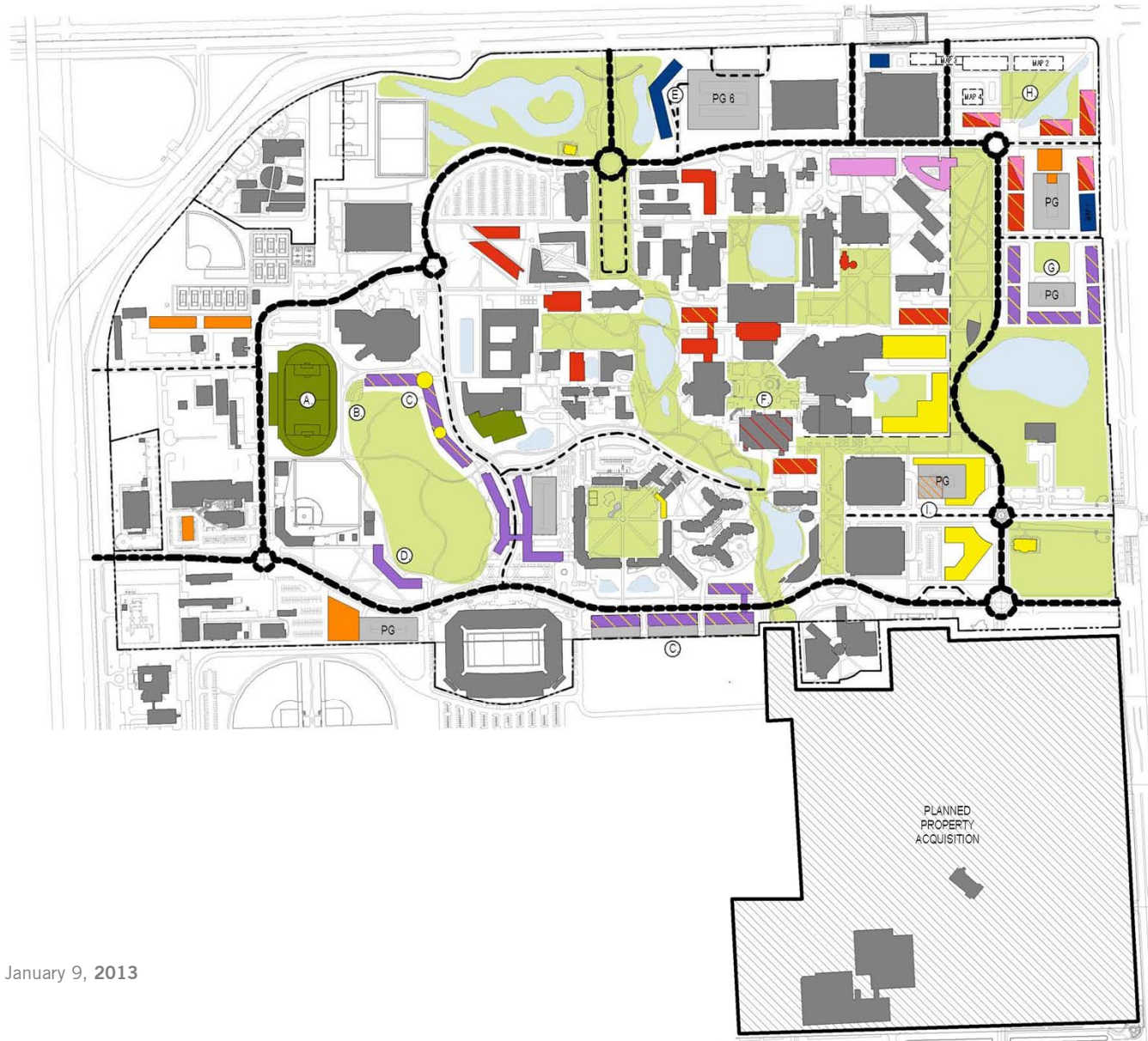
MODESTO MAIDIQUE CAMPUS

2035 PROPOSED PLAN



Modesto Maidique Campus

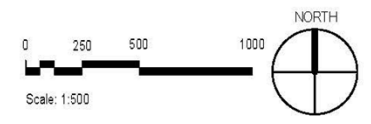
Facility Use



- LEGEND**
- ACADEMIC
 - RESEARCH
 - SUPPORT
 - 1ST FLOOR SUPPORT
 - HOUSING
 - PARTNERSHIP
 - SPORTS/RECREATION
 - FACILITY SUPPORT
 - OPEN SPACE
 - NEW PARKING
 - VISION PLAN BUILDING
 - ROAD REALIGNMENT
 - CAMPUS AXES

- KEY:**
- A. EXPANDED TRACK AND FIELD
 - B. AMPHITHEATER
 - C. EXPANDED UNIVERSITY HOUSING
 - D. GREEK HOUSING
 - E. HOTEL
 - F. REPURPOSING OF PRIMERA CASA
 - G. GRADUATE HOUSING
 - H. ACADEMIC/RESEARCH AREA
 - I. CENTRAL CHILLER PLANT

MODESTO MAIDIQUE CAMPUS
2020 PROPOSED PLAN

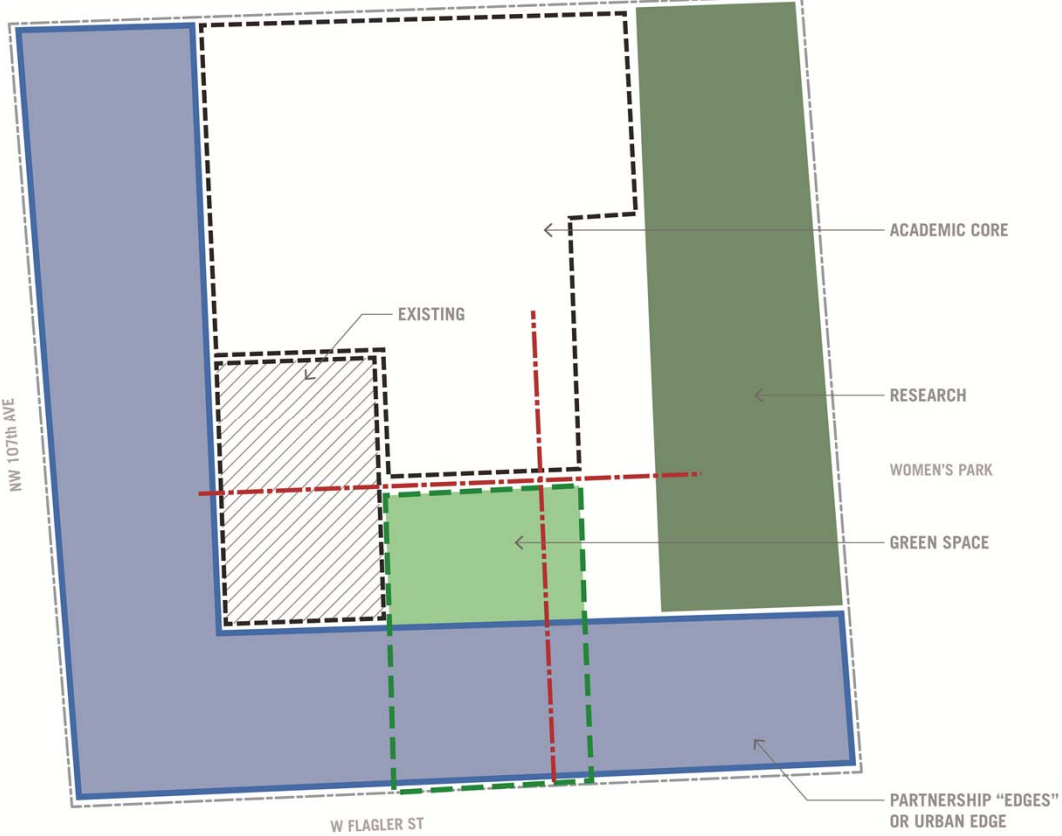




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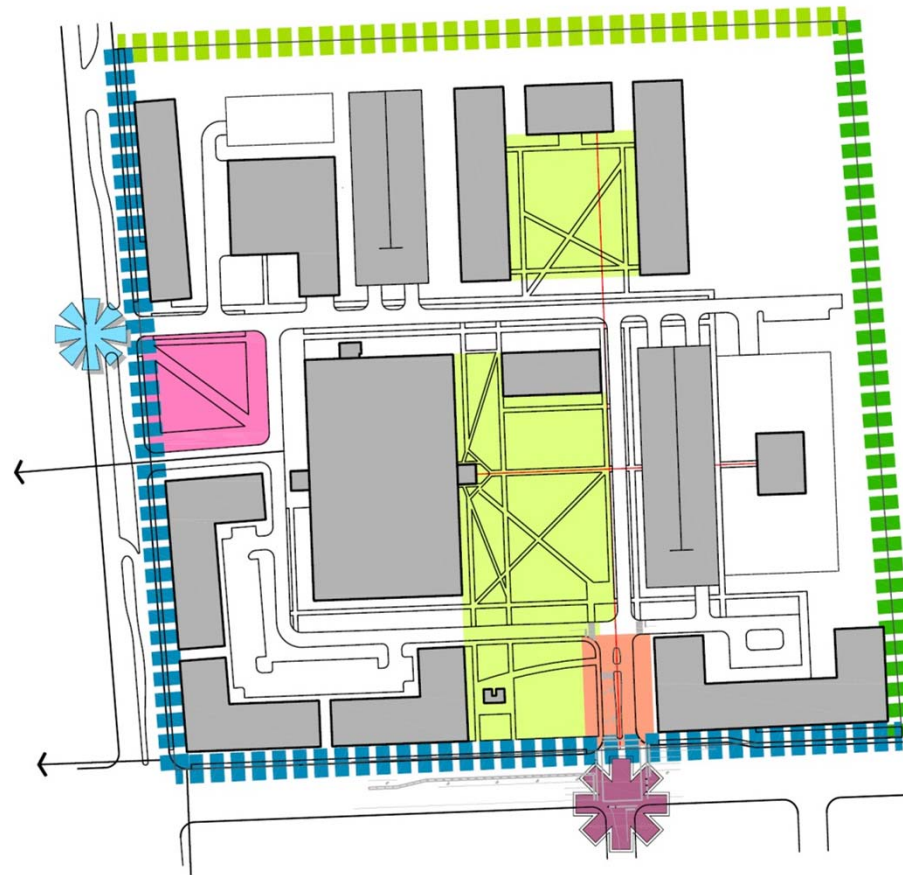
EC VISION PLAN REVIEW

Engineering Center Development Framework



Engineering Center

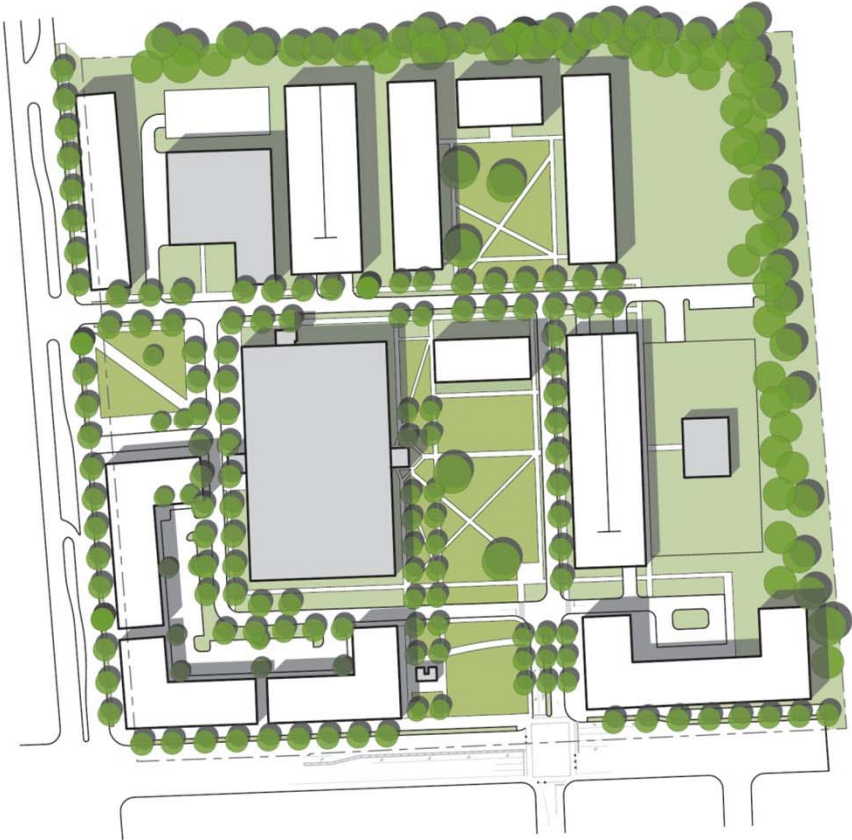
Urban Design Framework - Vision



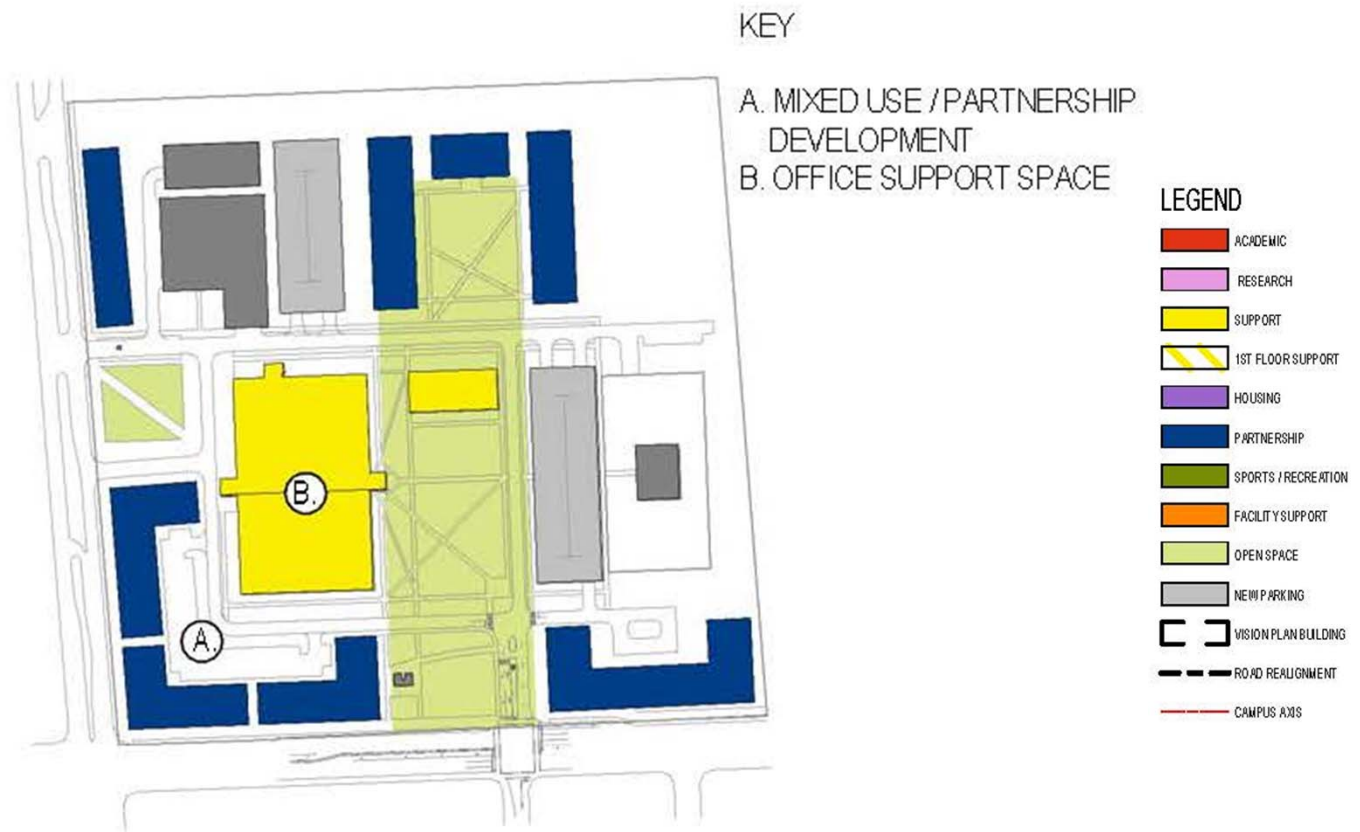
LEGEND	
Open Space	
	Quads
	Special Purpose Landscape
	Courtyard/ Plaza
	Promenade
Connectivity	
	Primary Entrance
	Secondary Entrance
	Tertiary Entrance
	Regulating Line- Major Axis
	Regulating Line- Secondary Axis
	Pedestrian Connectivity
Streets	
	Roundabout
	Campus Gateway
	Adjacent Corridor
	Campus Greenbelt
	Main Street
Edges	
	Active Major
	Active Minor
	Passive Major
	Passive Minor

Engineering Center

Vision Plan

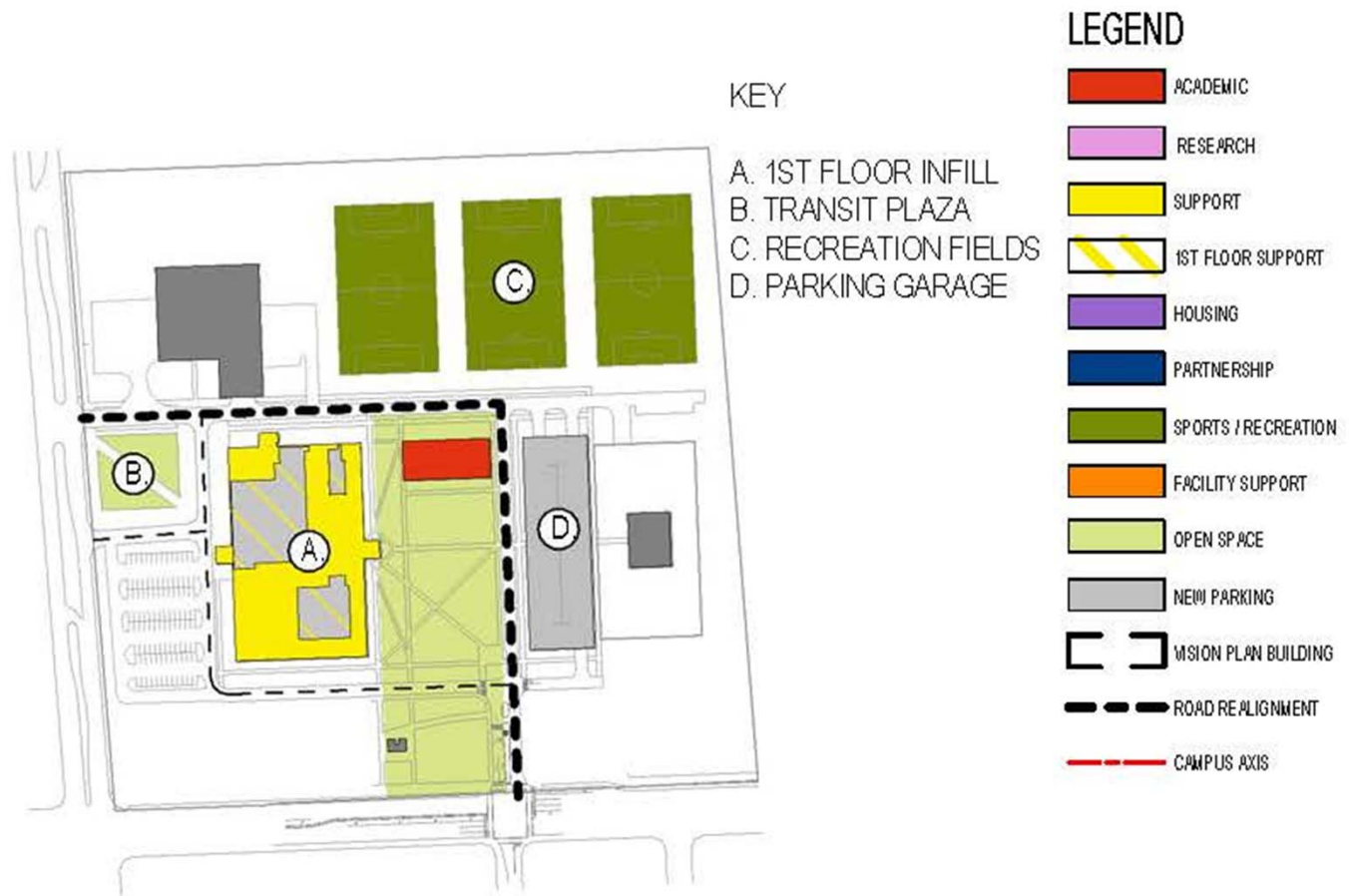


EC – 2035 Facility Use



Engineering Center

Facility Use



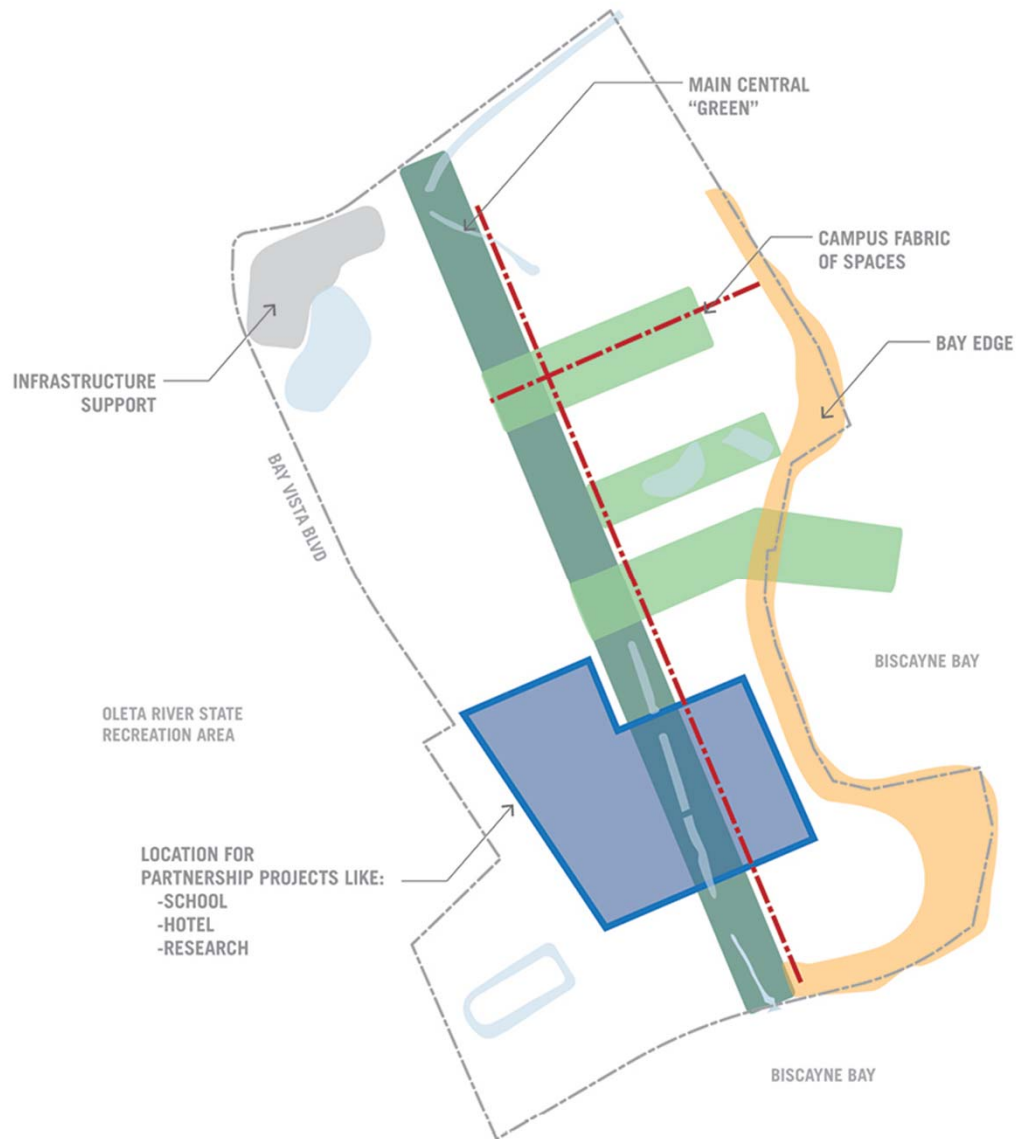


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BBC VISION PLAN REVIEW

Biscayne Bay Campus

Development Framework



Biscayne Bay Campus

Urban Design Framework - Vision



LEGEND	
Open Space	
	Quads
	Special Purpose Landscape
	Courtyard/ Plaza
	Promenade
Connectivity	
	Primary Entrance
	Secondary Entrance
	Tertiary Entrance
	Regulating Line- Major Axis
	Regulating Line- Secondary Axis
	Pedestrian Connectivity
Streets	
	Roundabout
	Campus Gateway
	Adjacent Corridor
	Campus Greenbelt
	Main Street
Edges	
	Active Major
	Active Minor
	Passive Major
	Passive Minor

Biscayne Bay Campus

Vision Plan

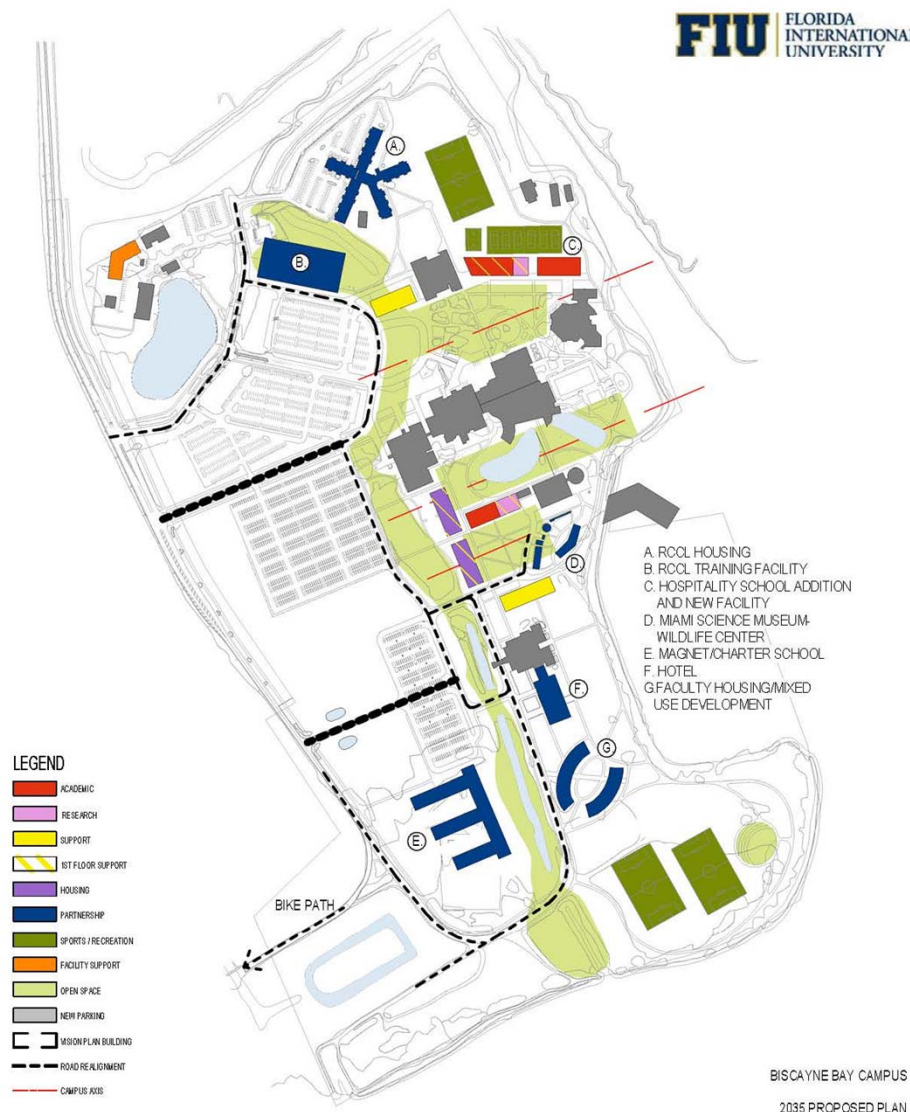


January 9, 2013

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BBC – 2035 Facility Use



January 9, 2013

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Biscayne Bay Campus

Facility Use



January 9, 2013

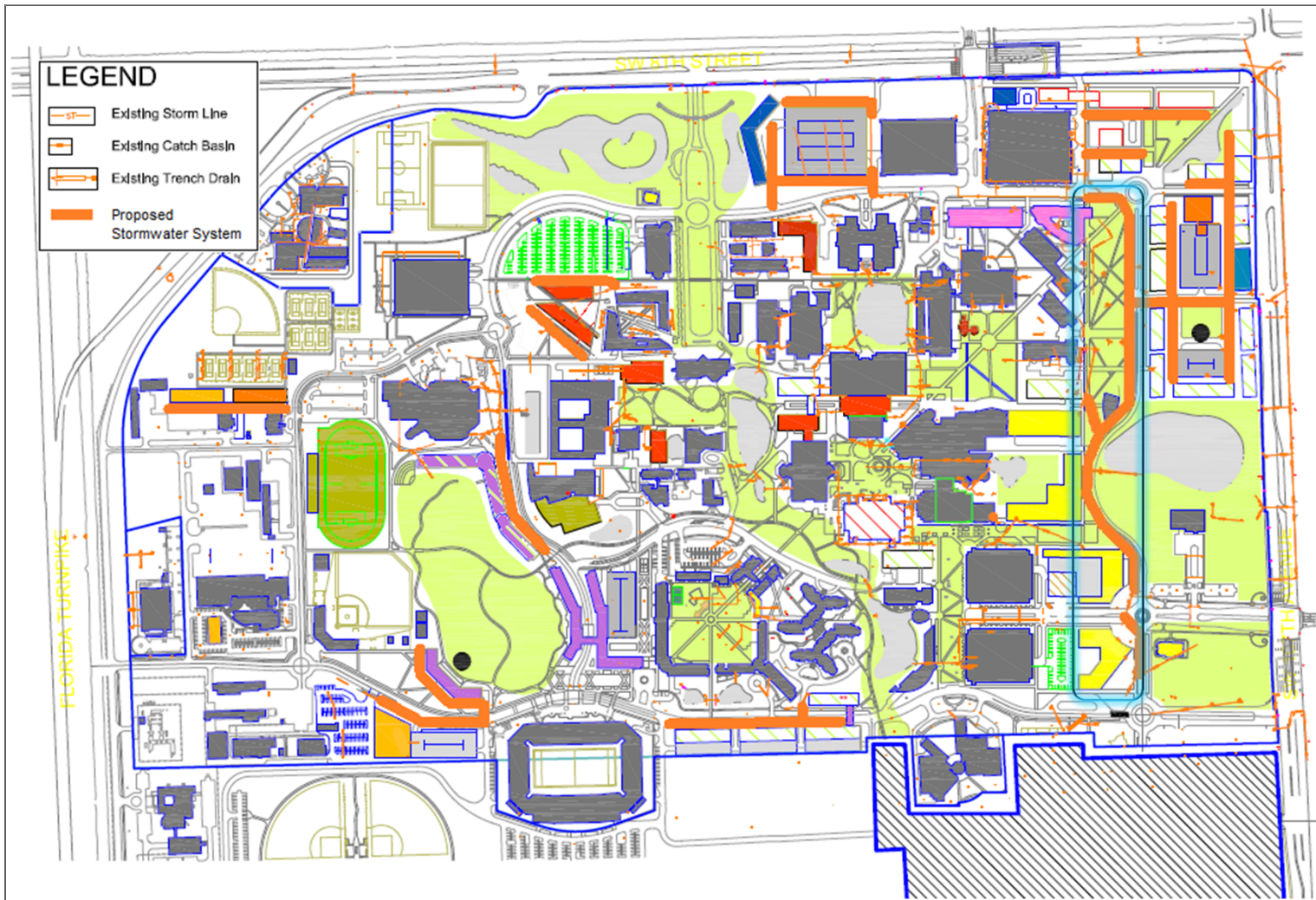
Civil/Site Utilities

Modesto Maidique Campus



Infrastructure, Utilities & Maintenance Issues

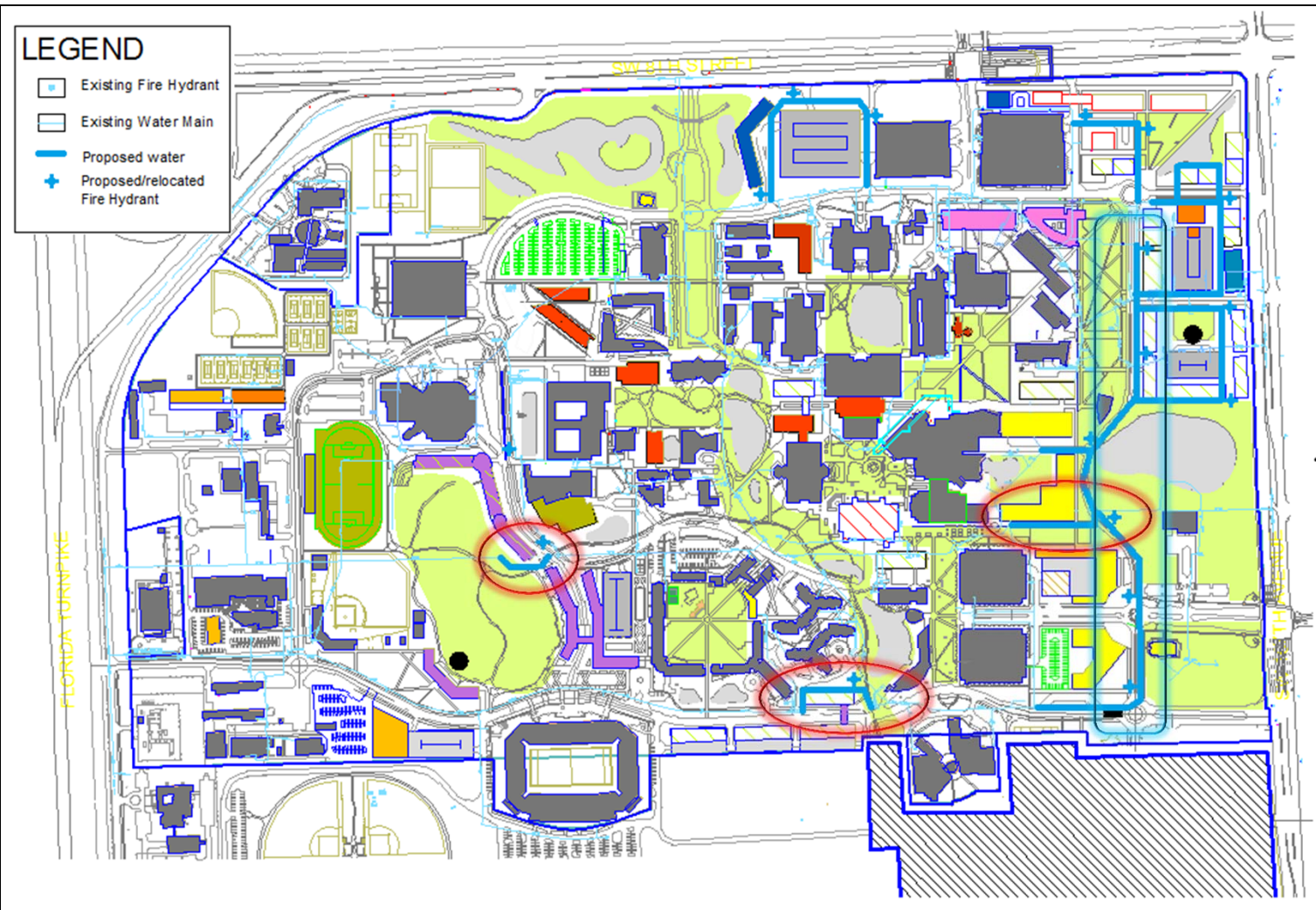
STORMWATER MANAGEMENT



- Exfiltration trench surrounding proposed development.
- Connect to existing stormwater management system where possible.
- Roadway alignment improvements will require relocation of drainage systems to serve new roadway.

Infrastructure, Utilities & Maintenance Issues

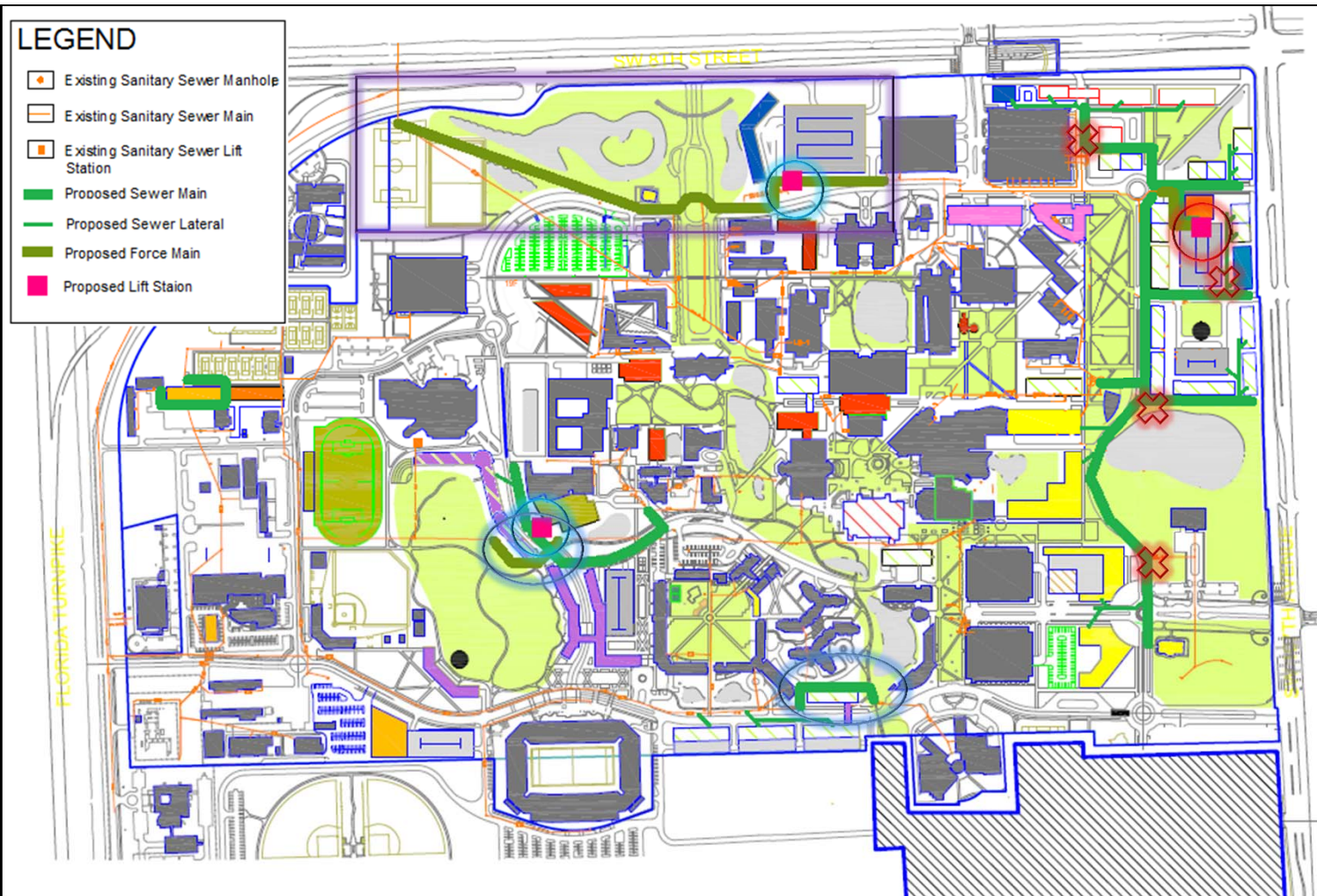
POTABLE WATER



- Provide looped system for water service.
- Where possible, eliminate existing system “dead ends.”
- Re-routing of existing water mains where there are conflicts with proposed building footprint.
- Roadway alignment improvements may require re-alignment of water mains.

Infrastructure, Utilities & Maintenance Issues

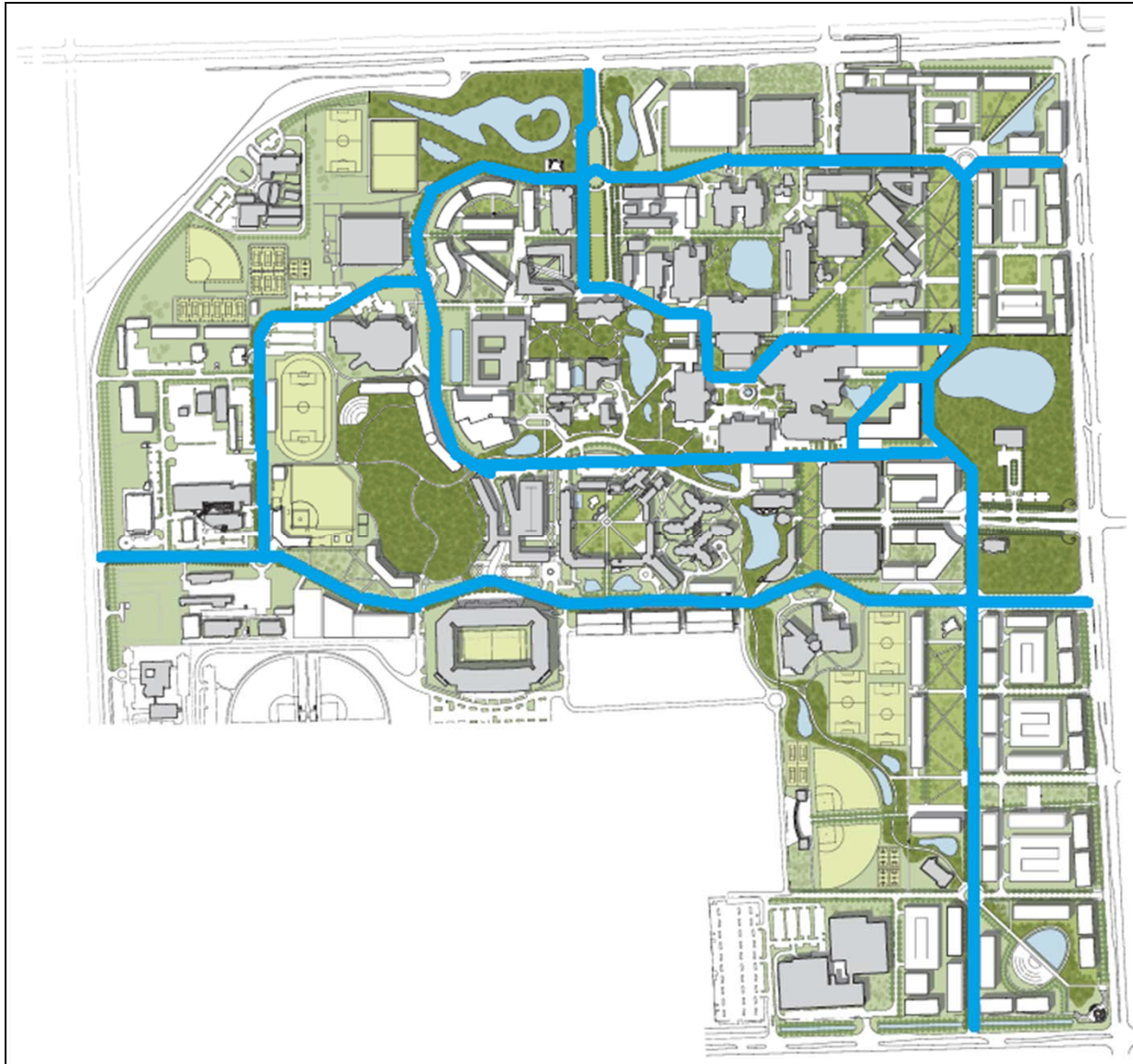
SANITARY SEWER



- Installation of Master Lift Station LS-E1 and decommission of LS #2, LS #3, LS #6 and LS #9.
- Provide Lift Station for PG6 and possibly for Expanded University Housing.
- Extend 10" DIP force main located along SW 10th Street to NW corner of MMC.
- Re-routing of existing force main / sewer main where there are conflicts with proposed building footprint.

Infrastructure, Utilities & Maintenance Issues

UTILITY CORRIDORS



- Based on Vision Plan
- Areas specifically designated for utility infrastructure.
- Reduce project costs by avoiding future utility re-routing.

Engineering Center



Infrastructure, Utilities & Maintenance Issues

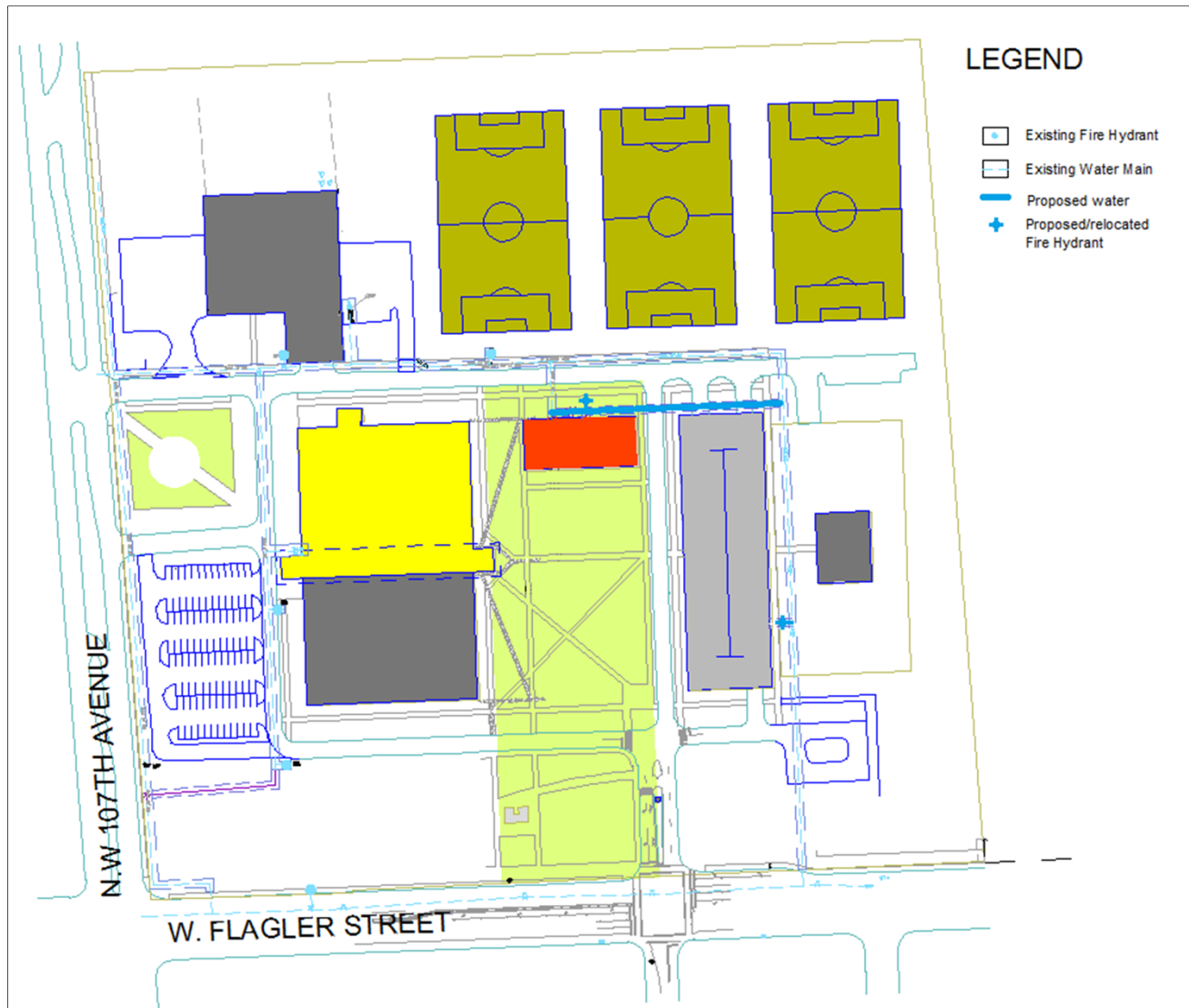
STORMWATER MANAGEMENT



- Series of solid pipe and exfiltration trench surrounding proposed development.
- Connect to existing stormwater management system where possible.

Infrastructure, Utilities & Maintenance Issues

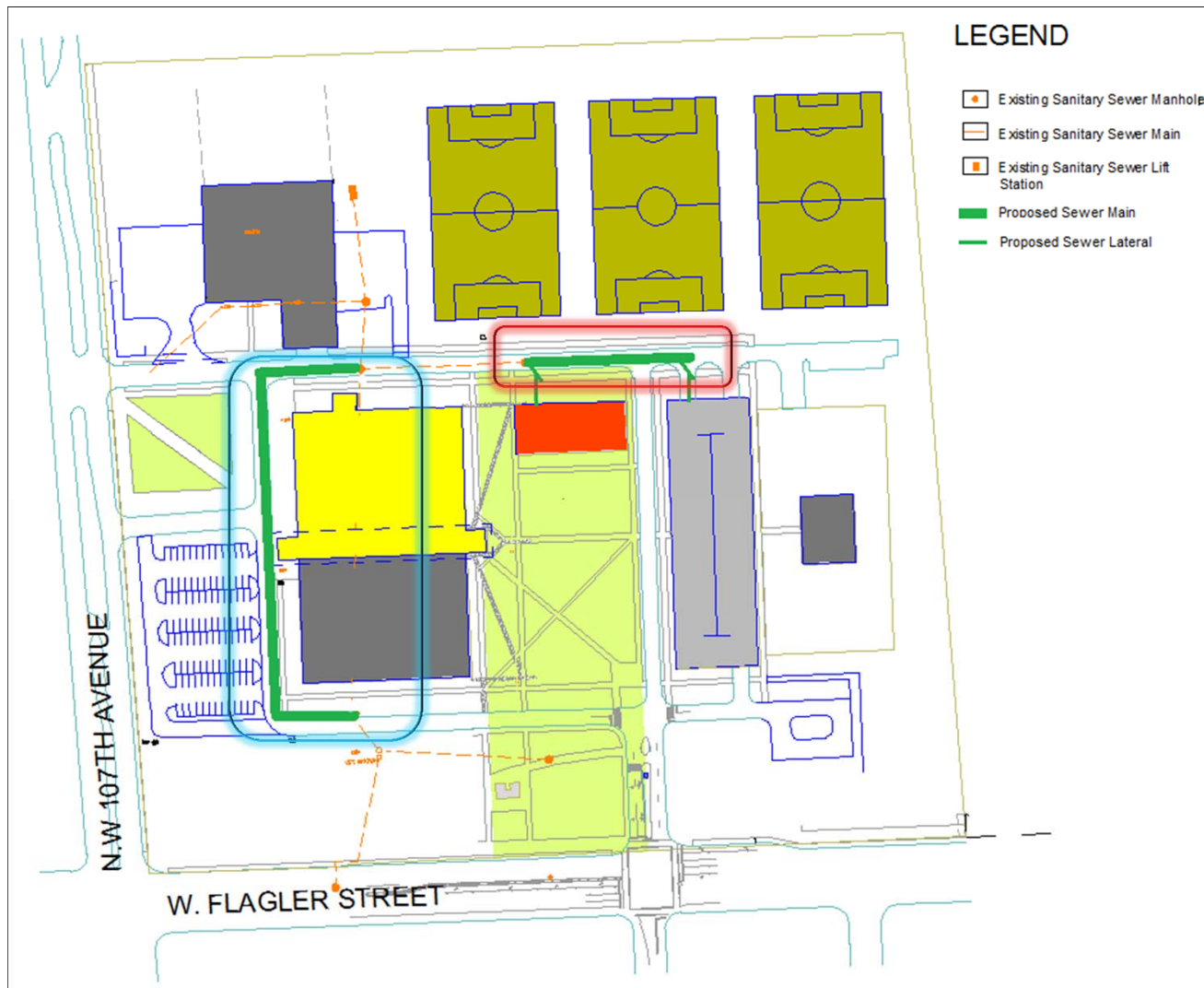
POTABLE WATER



- Provide looped system for water service.
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- Re-routing of existing water mains where there are conflicts with proposed building footprint.

Infrastructure, Utilities & Maintenance Issues

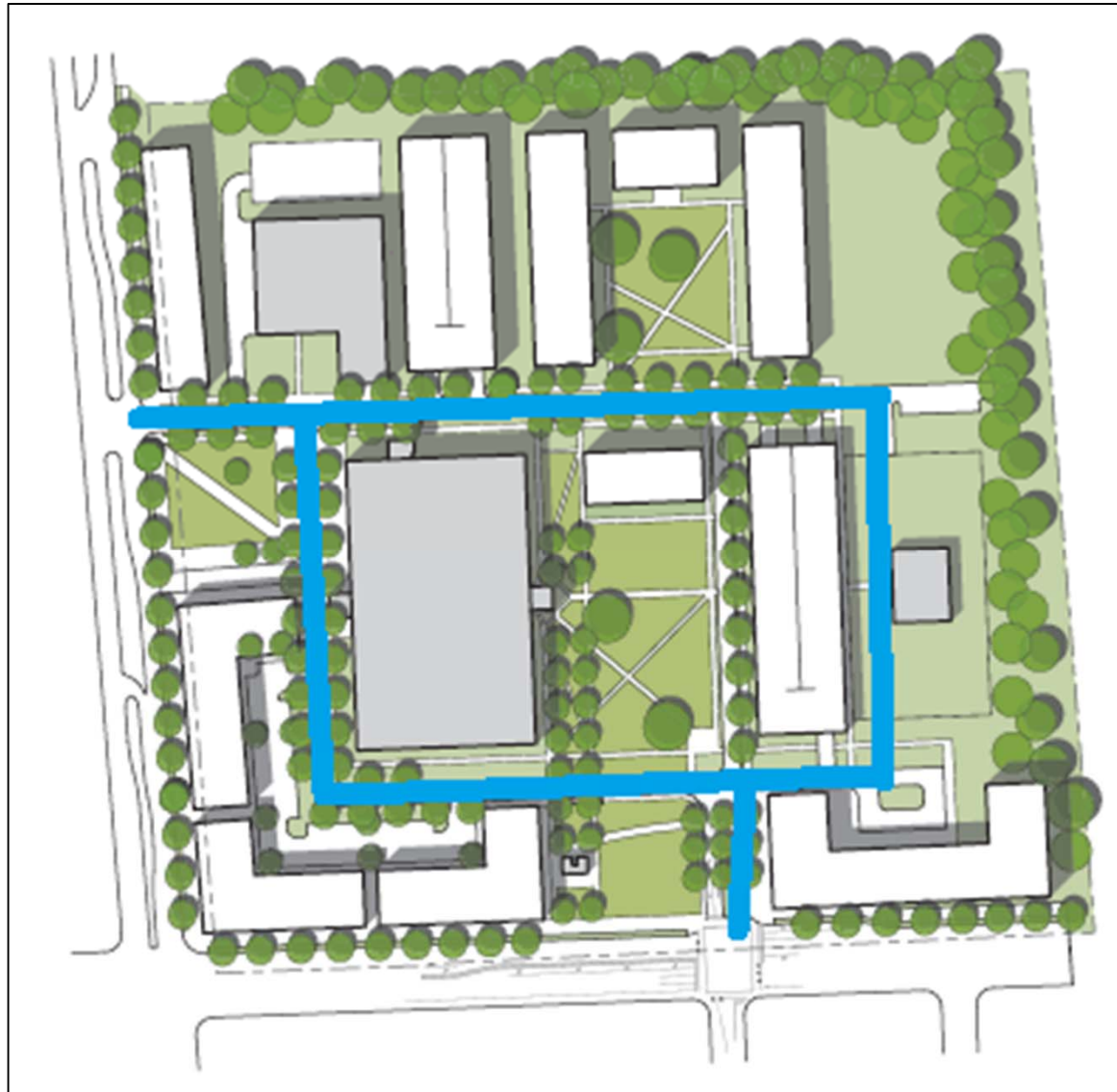
SANITARY SEWER



- Existing Lift Station may need to be upgraded to serve additional flow from proposed improvements.
- Provide sewer main extension to serve new academic building and parking garage.
- Location of sewer main extension subject to change; location is dependent on existing depth of sewer main.
- Re-route sewer main located under existing main building, due to first-floor build-out.

Infrastructure, Utilities & Maintenance Issues

UTILITY CORRIDORS



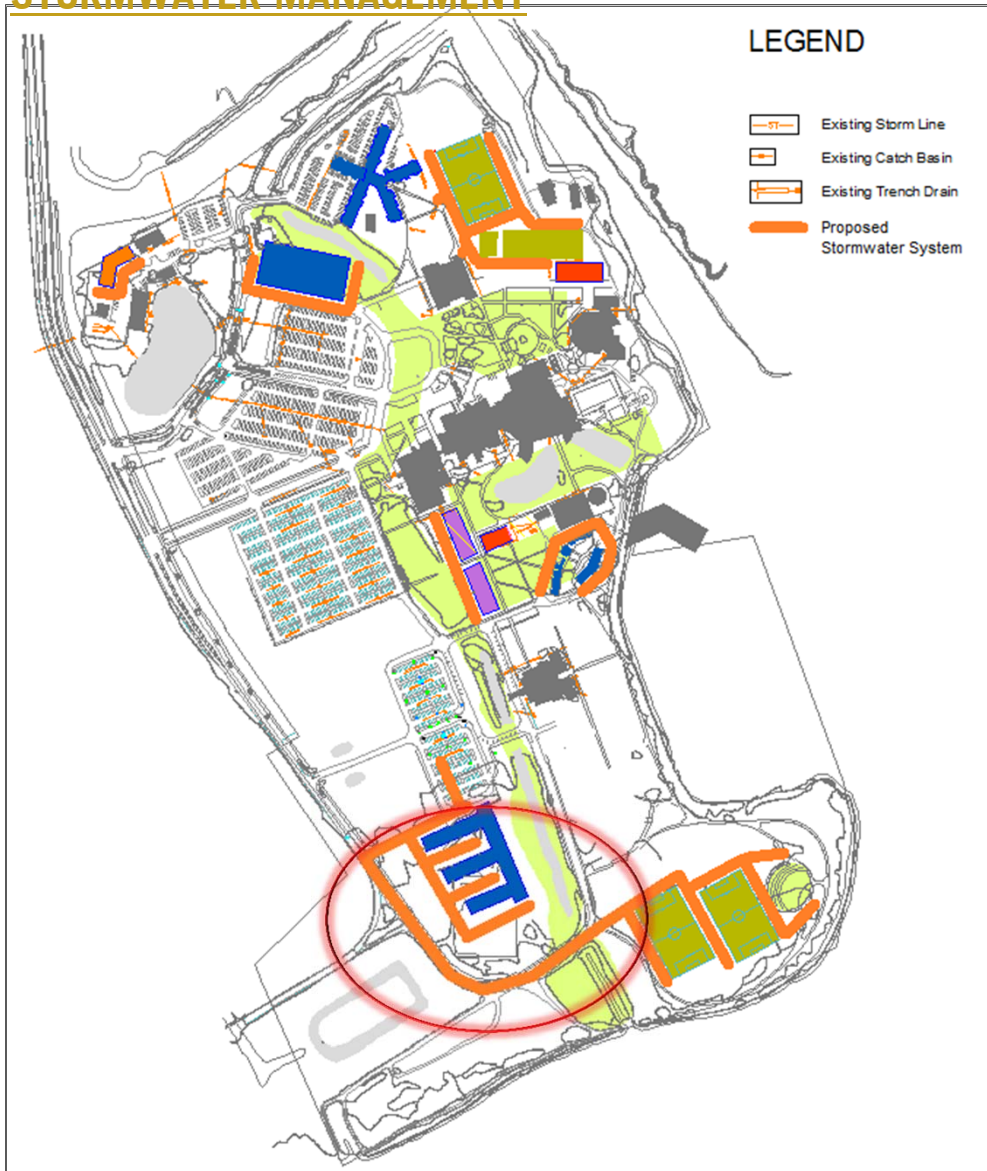
- Based on Vision Plan
- Areas specifically designated for utility infrastructure.
- Reduce project costs by avoiding future utility re-routing.

Biscayne Bay Campus



Infrastructure, Utilities & Maintenance Issues

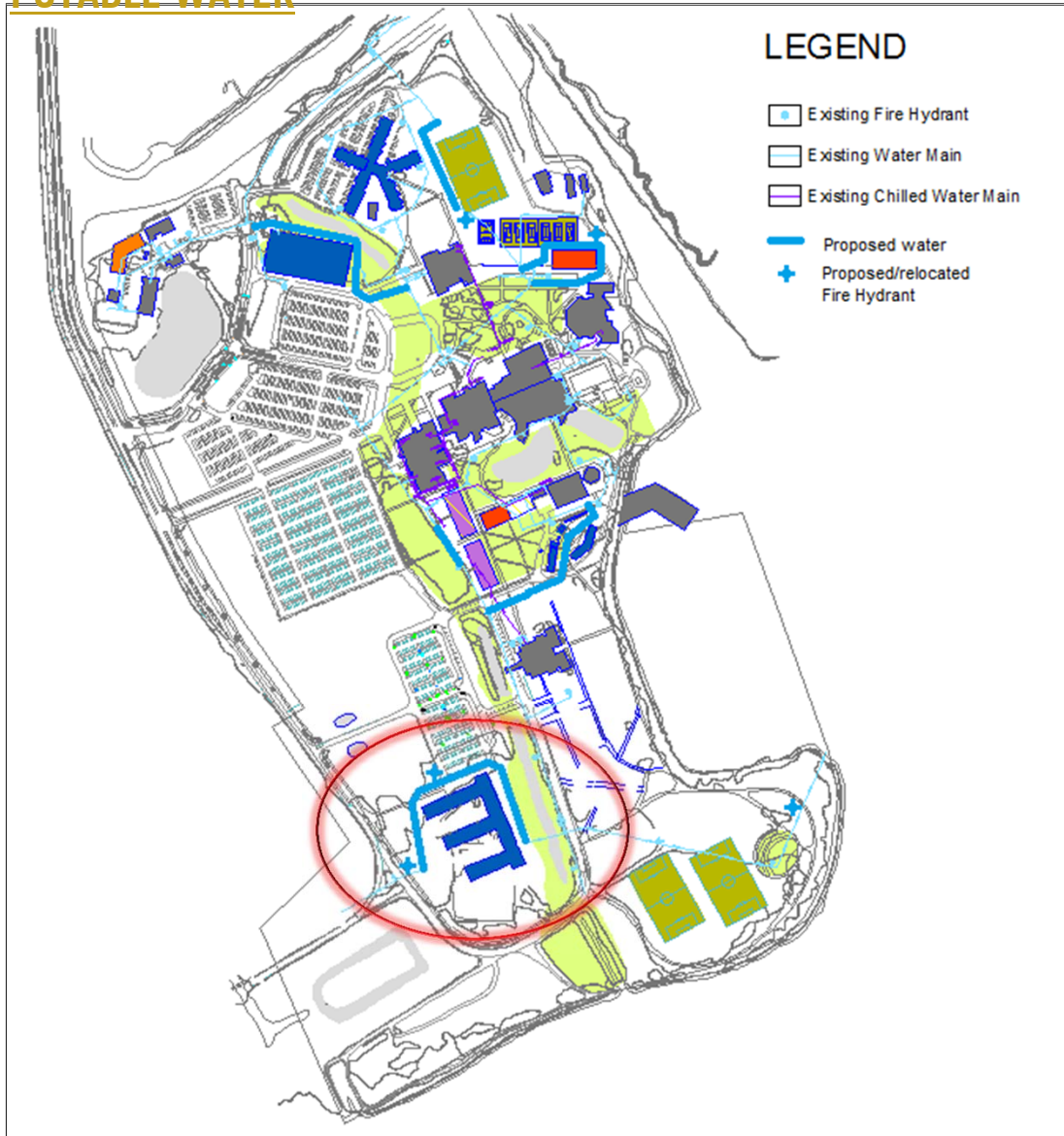
STORMWATER MANAGEMENT



- Series of solid pipe and exfiltration trench surrounding proposed development.
- Connect to existing stormwater management system where possible.
- Provide stormwater management system along roadway improvement on south side of campus.

Infrastructure, Utilities & Maintenance Issues

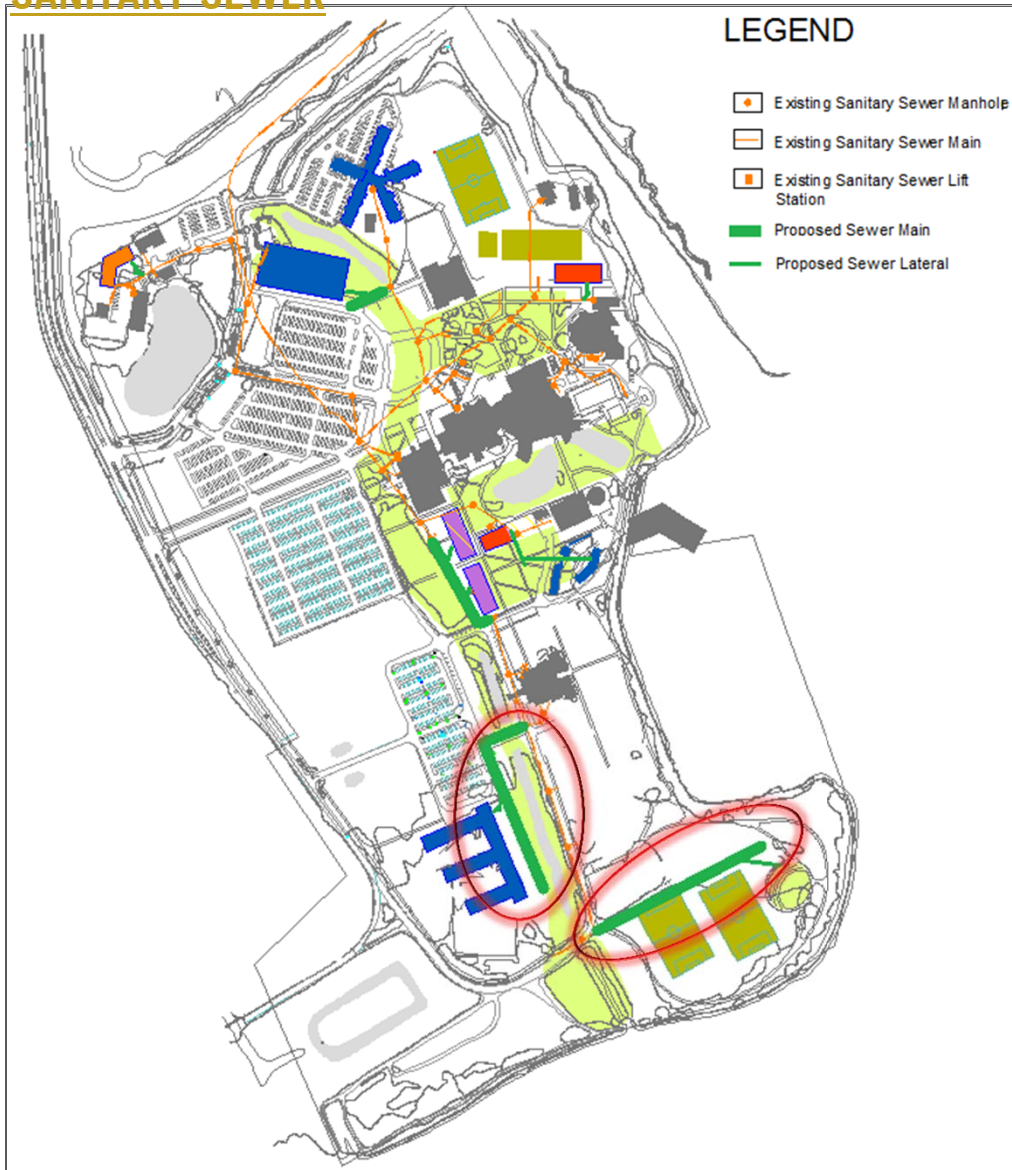
POTABLE WATER



- Provide looped system for water service.
- Where possible, eliminate existing system “dead ends.”
- ~~Re-routing~~ of existing water mains where there are conflicts with proposed building footprint.

Infrastructure, Utilities & Maintenance Issues

SANITARY SEWER



- Existing Lift Station may need to be upgraded to serve additional flow from proposed improvements.
- Sewer main needs to be extended south to serve proposed Magnet/Charter school.
- Sewer main needs to be extended east to serve proposed Amphitheater

Infrastructure, Utilities & Maintenance Issues

UTILITY CORRIDORS



- Based on Vision Plan
- Areas specifically designated for utility infrastructure.
- Reduce project costs by avoiding future utility re-routing.

MEP/IT Utilities

Modesto Maidique Campus



Concept Plan – Chilled Water Capacity

Chilled Water System

Current Campus Chilled Water (CW) Plant Capacity

- Main CW Plant (Current) 7,500 Tons
- Sub/Sec CW Plant (Current) 3,000 Tons
- NW Satellite CW Plant (Current) 3,000 Tons
- Total Current CW Plant Capacity 13,500 Tons

Available Chilled Water (CW) Plant Expansion Capacity

- Main CW Plant (Future Growth) 0 Tons
- Sub/Sec CW Plant (Future Growth) 1,500 Tons
- NW Satellite CW Plant (Future Growth) 4,500 Tons
- Total Current Chiller Plant Capacity 6,000 Tons

Total Existing CW Plant Capacity including Future Growth

19,500 Tons

Total Existing CW Plant Capacity with N+1 Redundancy

18,000 Tons



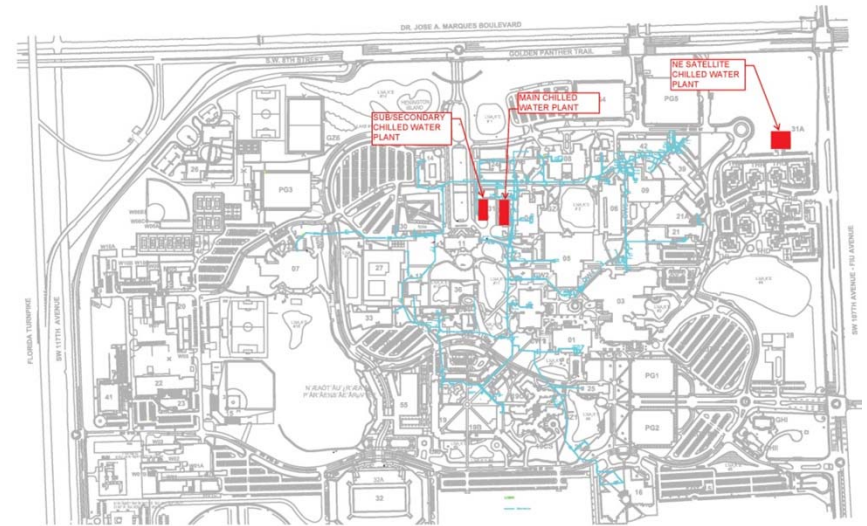
Concept Plan – Chilled Water Capacity

Current Campus Chilled Water (CW) Plant Capacity

- Total Current CW Plant Capacity 13,500 Tons
- Estimated CW Peak Demand (incl. SCC and Stempel Complex) 12,000 Tons
- Remaining Current Capacity 1,500 Tons
(Provides N+1 Redundancy – No available capacity)

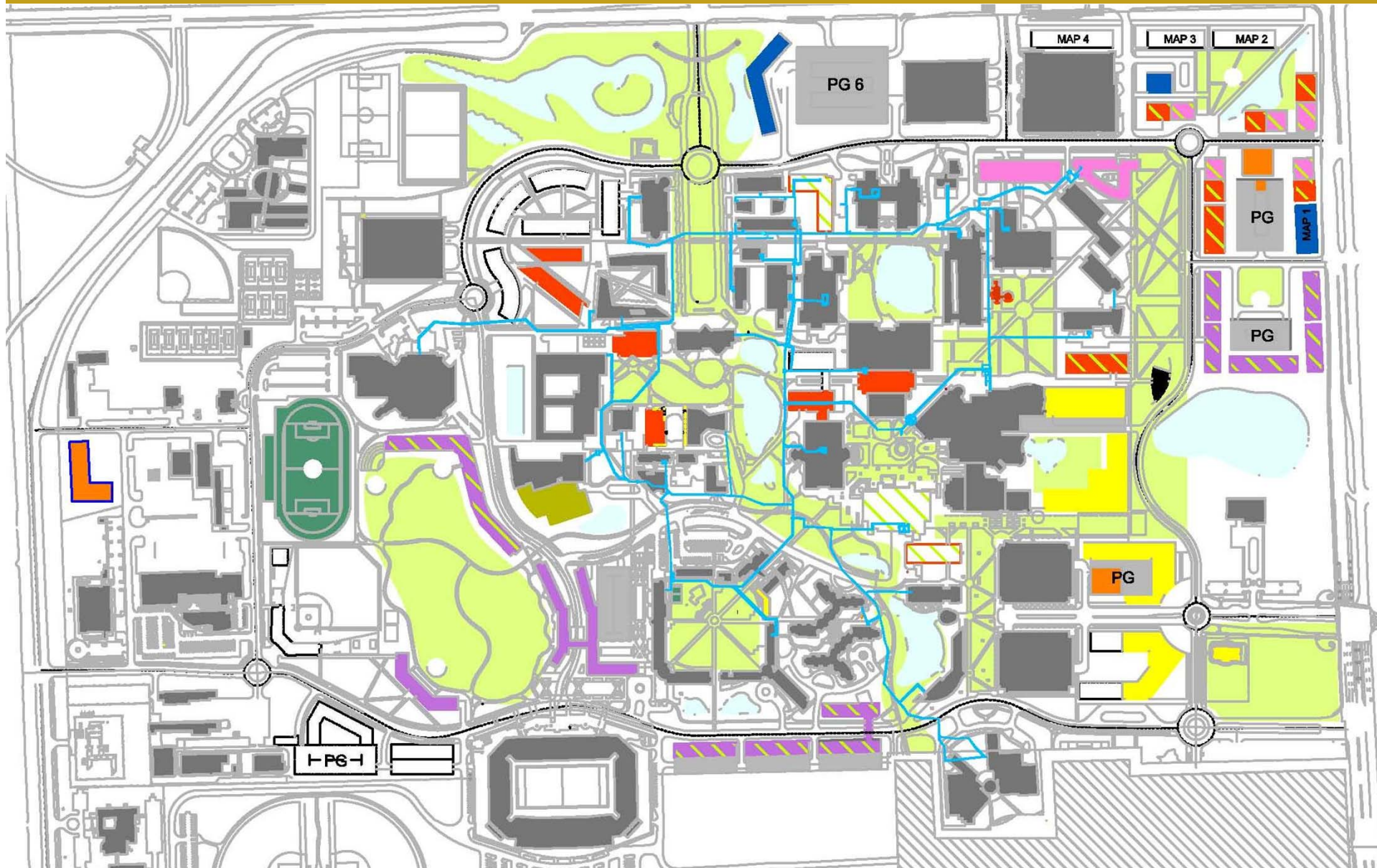
Current Campus Chilled Water Peak Demand Density

- The current campus chilled water system serves approximately 3 million square feet of conditioned space (including SCC and Stempel Complex)
- The estimated peak CW demand is 12,000 Tons



- Current Chilled Water Peak Demand Density ~ 250 SF/Ton
- Available Build-Out Capacity including redundancy - 6,000 Tons
- Additional Square Footage Allowable with Current Plants - 1,500,000 SF

Concept Plan – Chilled Water Distribution



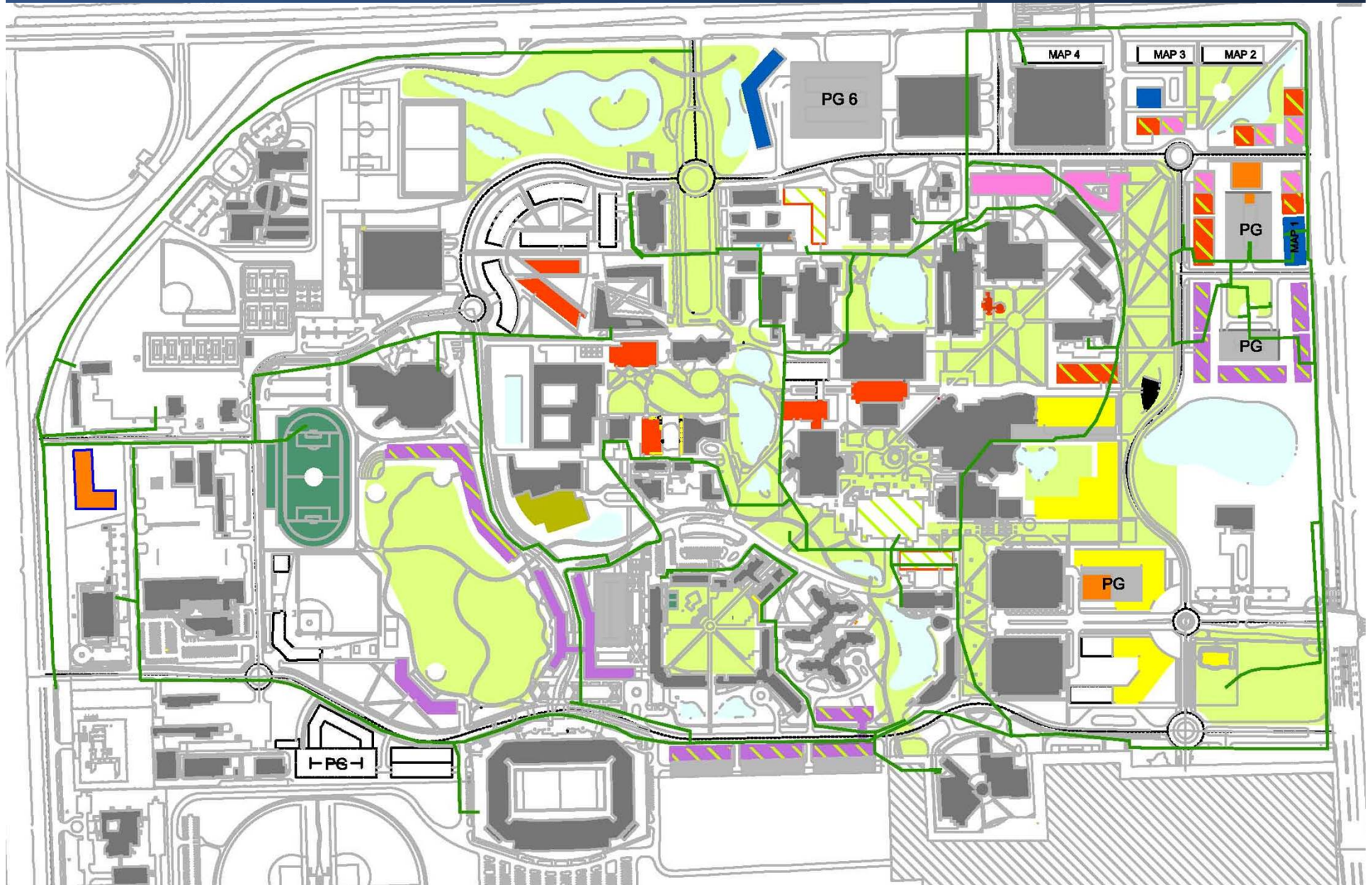
Concept Plan – Electrical Capacity

Electrical Power and Other Fuels System

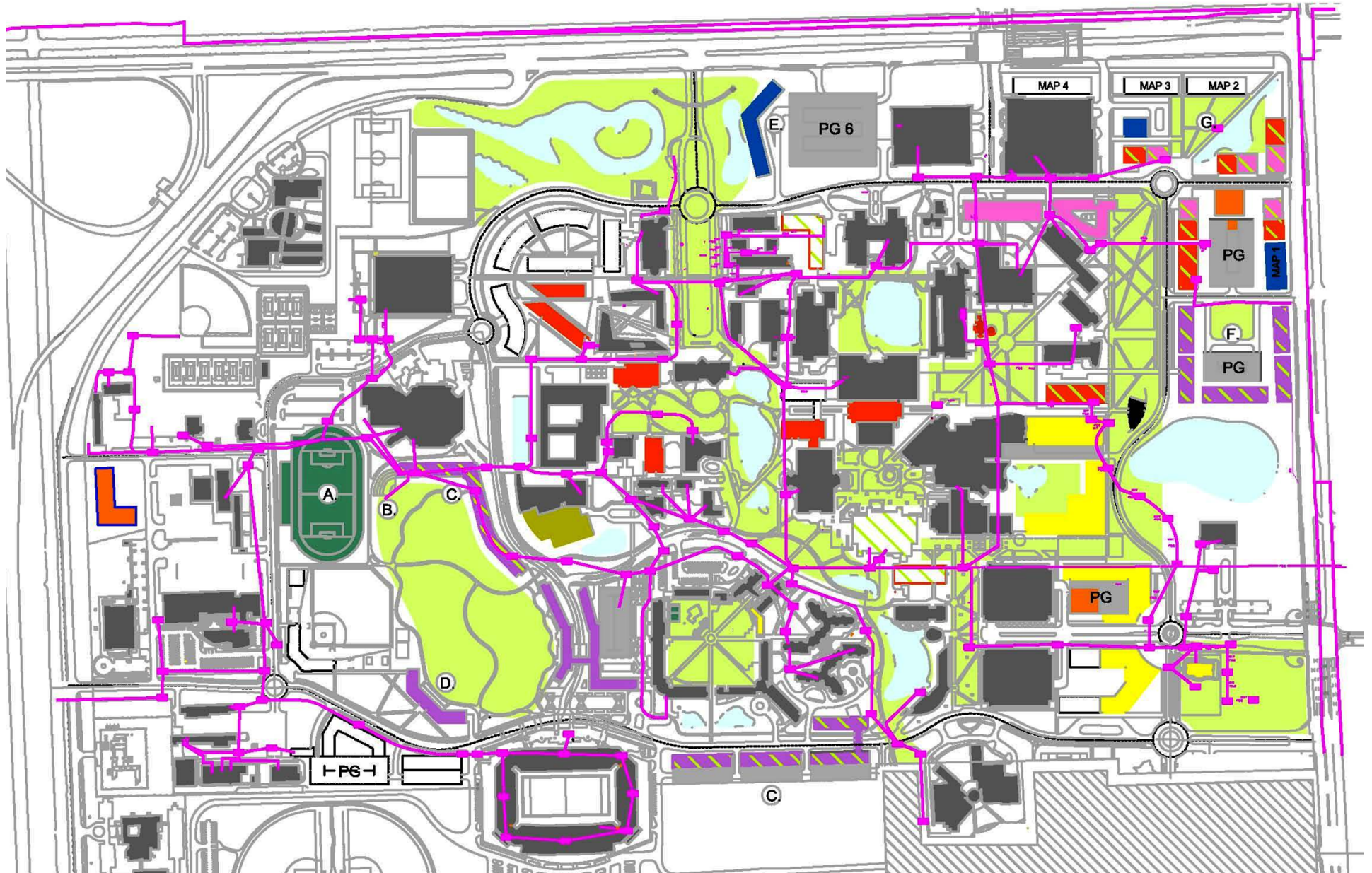
- The annual peak demand recorded between July 2011 and June 2012 was 23,670 KW (April 2012).
- The current electrical distribution has sufficient capacity for campus growth. FP&L will ensure appropriate level of service to all campus buildings.
- The current electrical distribution serves approximately 6.5M square feet of buildings.
- The Main Chiller Plant is on the CILC (Commercial/Industrial Load Control) Rate. Interruption of service has been called 3 to 4 times in the past 2 years. FP&L provides warning 4 hours prior to interruption of service. The CILC rate provides value to FIU.
- **Current Campus Electrical Demand Density ~ 3.6 W/sf**



Concept Plan – Electrical Distribution



Concept Plan - Telecommunications



Biscayne Bay Campus



Concept Plan – Chilled Water Capacity

Chilled Water System

The BBC chilled water system consists of one chilled water plant.

- Main Chiller Plant
 - Centrally located on campus in WUC
 - Three centrifugal chillers
 - Chiller #1 Carrier 1,200 Tons
 - Chiller #2 Trane 1,280 Tons
 - Chiller #3 McQuay 600 Tons
 - Main Chiller Plant Capacity 2,480 Tons
 - Chiller #3 is currently out of commission. Refrigerant had been removed from chiller.
 - Existing demand is approximately 600 Tons
 - Remaining available capacity is 600 Tons with the remaining 1,280 Ton Chiller as N+1 Redundancy



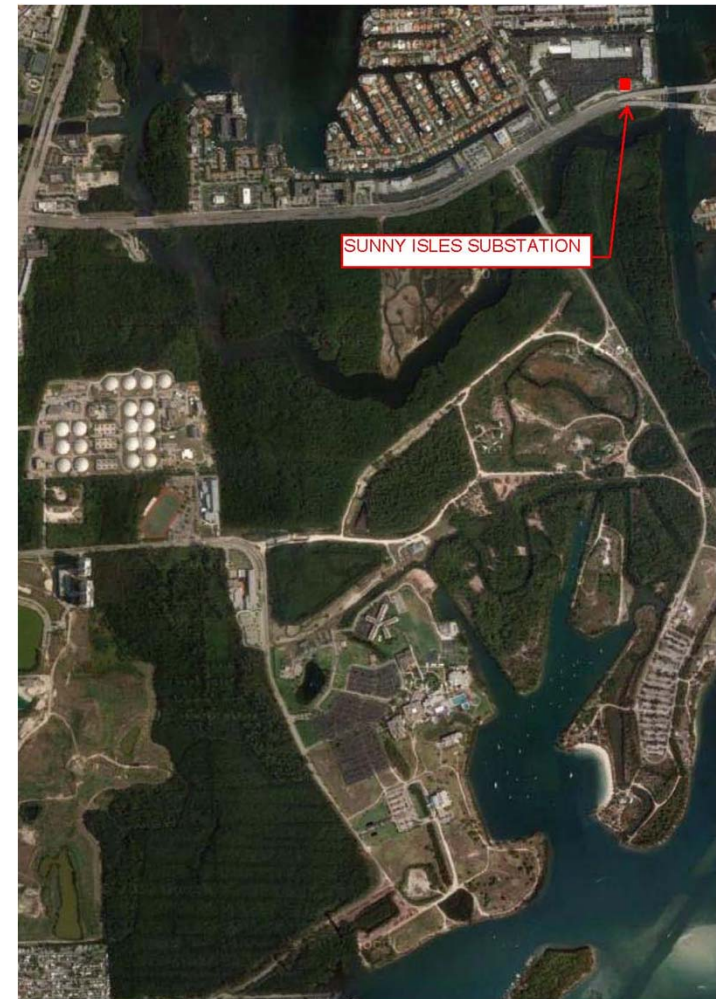
Concept Plan – Chilled Water Distribution



Concept Plan – Electrical Capacity

Electrical Power and Other Fuels System

- Florida Power and Light provides electrical service to the campus from two 13.2 KV feeders originating from the Sunny Isles (Sp?) Substation
- Each feeder has sufficient capacity to serve the entire campus.
- One feeder is designated as the primary service feeder. The other feeder is designated as an alternate feed with an automatic throwover switch to maintain power in the event one feeder fails.
- Florida Power and Light is responsible for maintaining the level of service to accommodate future growth on campus.



Concept Plan – Electrical Distribution



Concept Plan – Telecommunications Distribution



Engineering Center



Concept Plan – Chilled Water Capacity

Chilled Water System

The EC chilled water system consists of one chilled water plant

- Main Chiller Plant

- Three centrifugal chillers

- Chiller #1 Trane 1,300 Tons
 - Chiller #2 Trane 1,300 Tons
 - Chiller #3 York 1,000 Tons

- Main Chiller Plant Capacity 3,600 Tons

- Existing demand is approximately 600 Tons

- Remaining available capacity is 2,000 Tons with the remaining 1,000 Ton Chiller as N+1 Redundancy



Concept Plan – Electrical Capacity

Electrical Power and Other Fuels System

- Florida Power and Light provides electrical service from two feeders originating from two separate substations, Flagami Substation and Sweetwater Substation, which serves the Main Classroom Building.
- The two feeders are manually selectable in the event of a power failure via a manual tie circuit breaker.
- The Wall of Wind is served from a single feeder originating from the Flagami Substation.



Concept Plan – Utilities Distribution





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DISCUSSION

Focus Group #5 - Key Questions

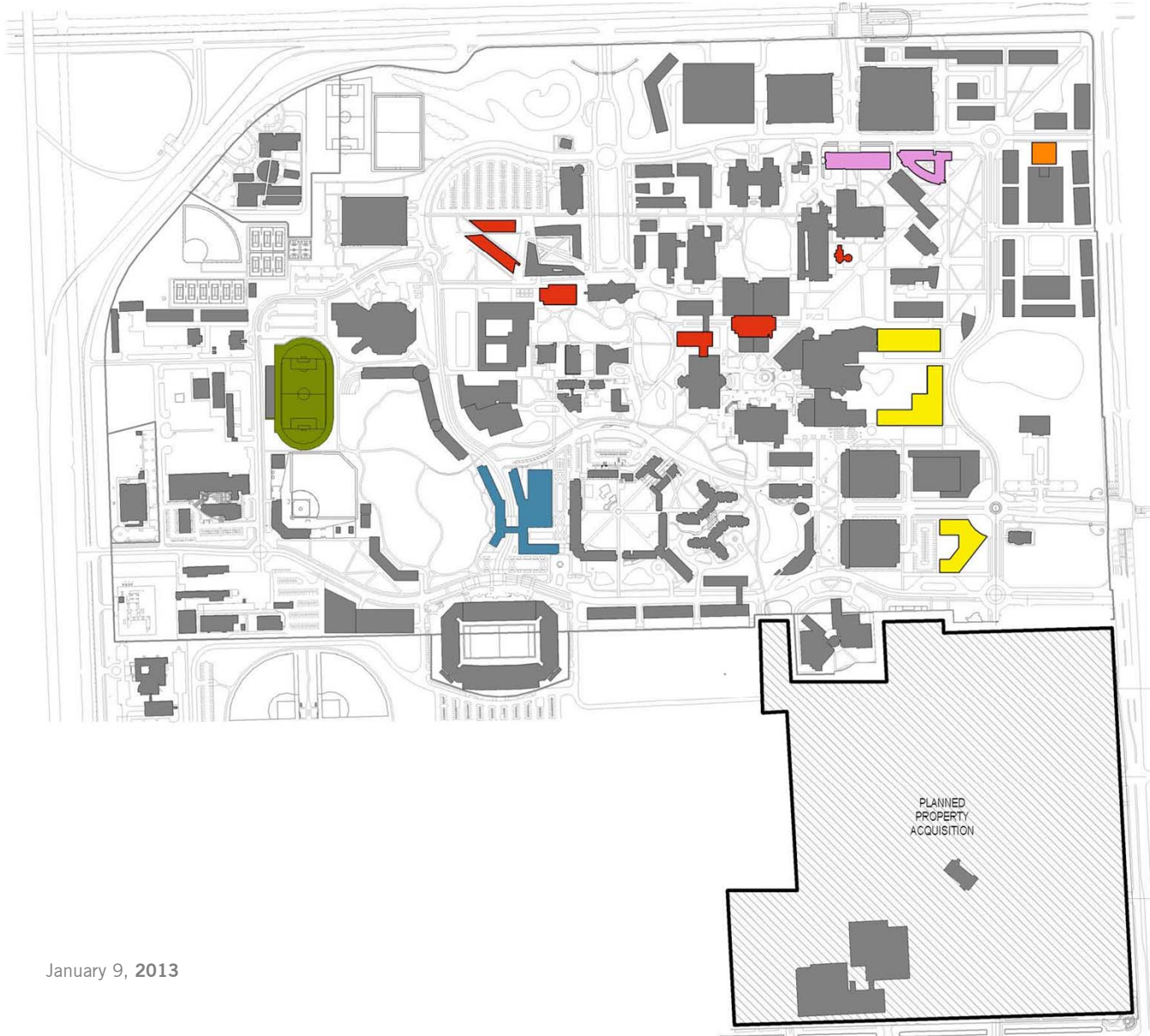
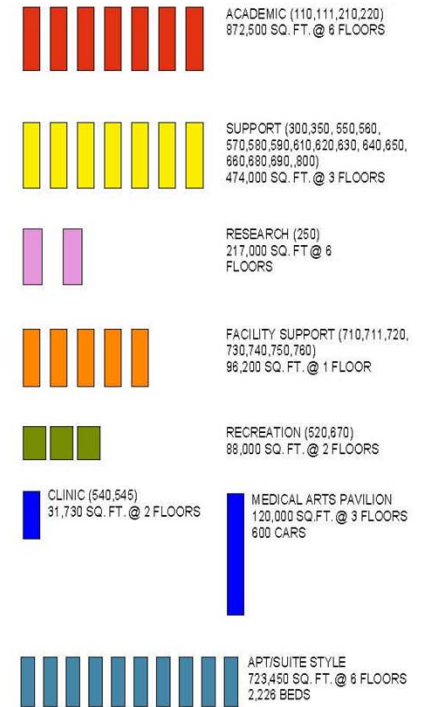
- Are new utility corridors feasible to establish?
- Are existing utility corridors feasible to expand / preserve?
- Do utility improvements support “mini-loops” and hubs?
- Do concepts conserve energy, water, waste and open space?
- Are stormwater management strategies viable?
- Does the utility framework position FIU for flexibility – can new sustainability innovations be adopted?

Additional Resources

MMC – 2020 Space Needs



SPACE NEEDS 2020



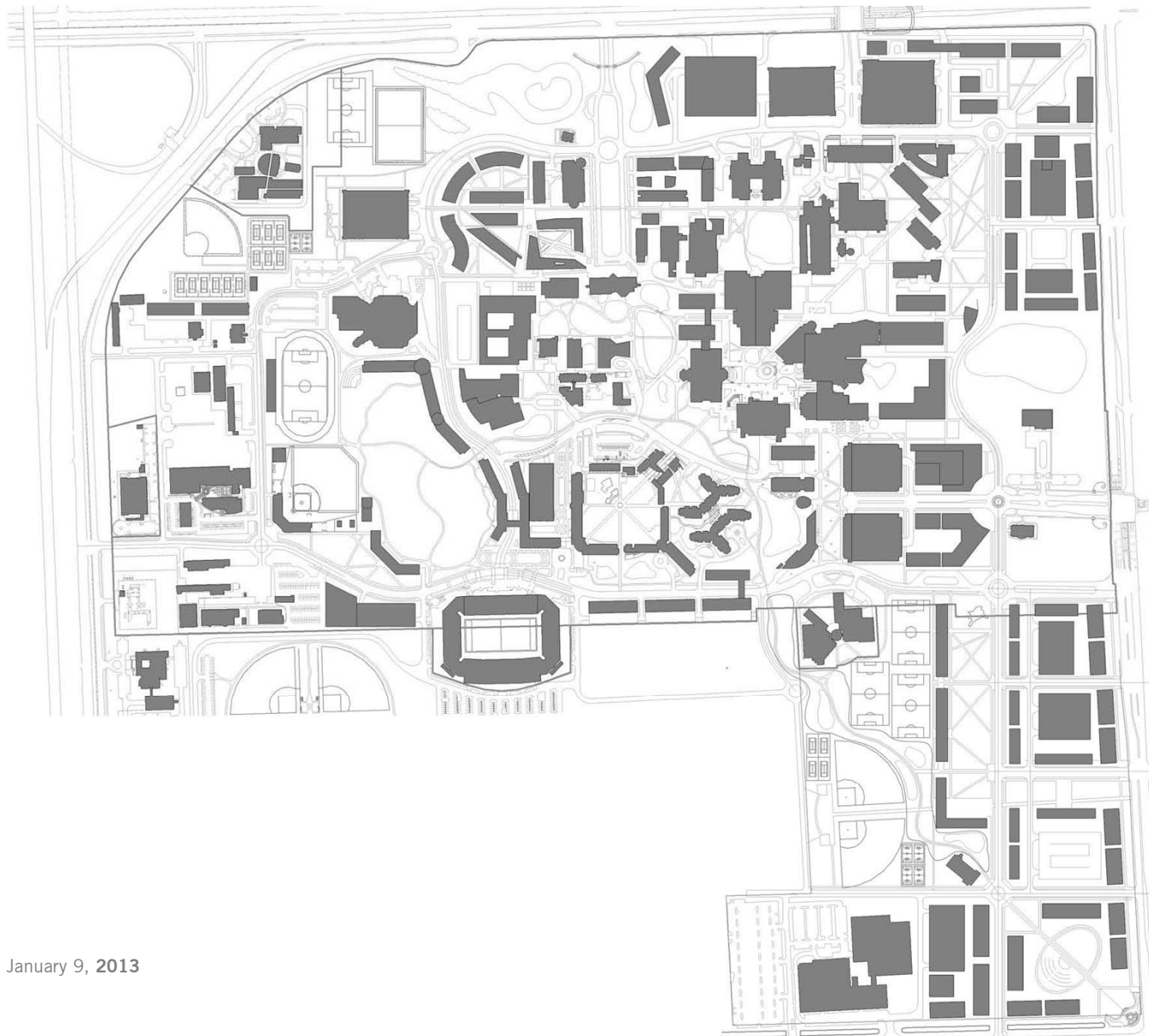
MODESTO MAIDIQUE CAMPUS

2020 SPACE NEEDS / PLANNED PROJECTS

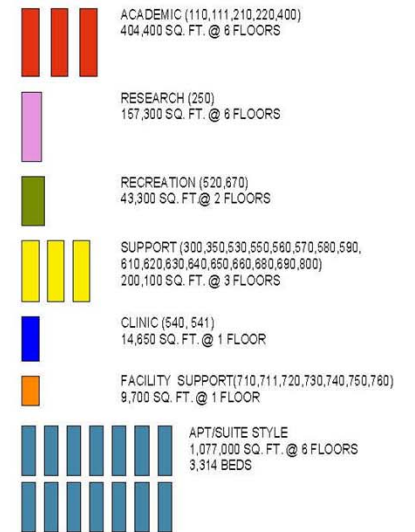


January 9, 2013

MMC – 2035 Space Needs



ADDED SPACE NEEDS 2035



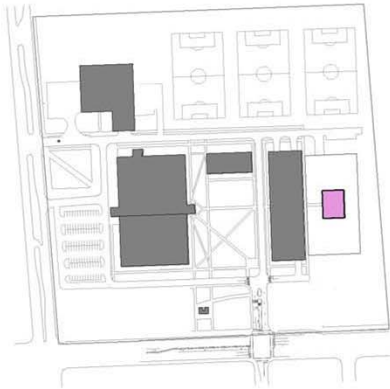
MODESTO MAIDIQUE CAMPUS

2035 SPACE NEEDS



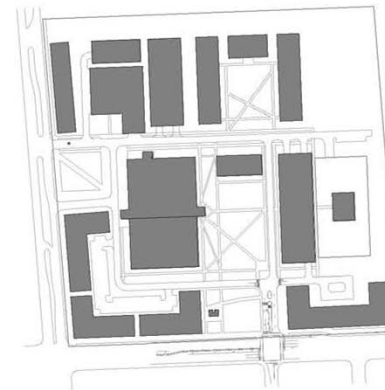
January 9, 2013

EC – 2020+2035 Space Needs



SPACE NEEDS 2020

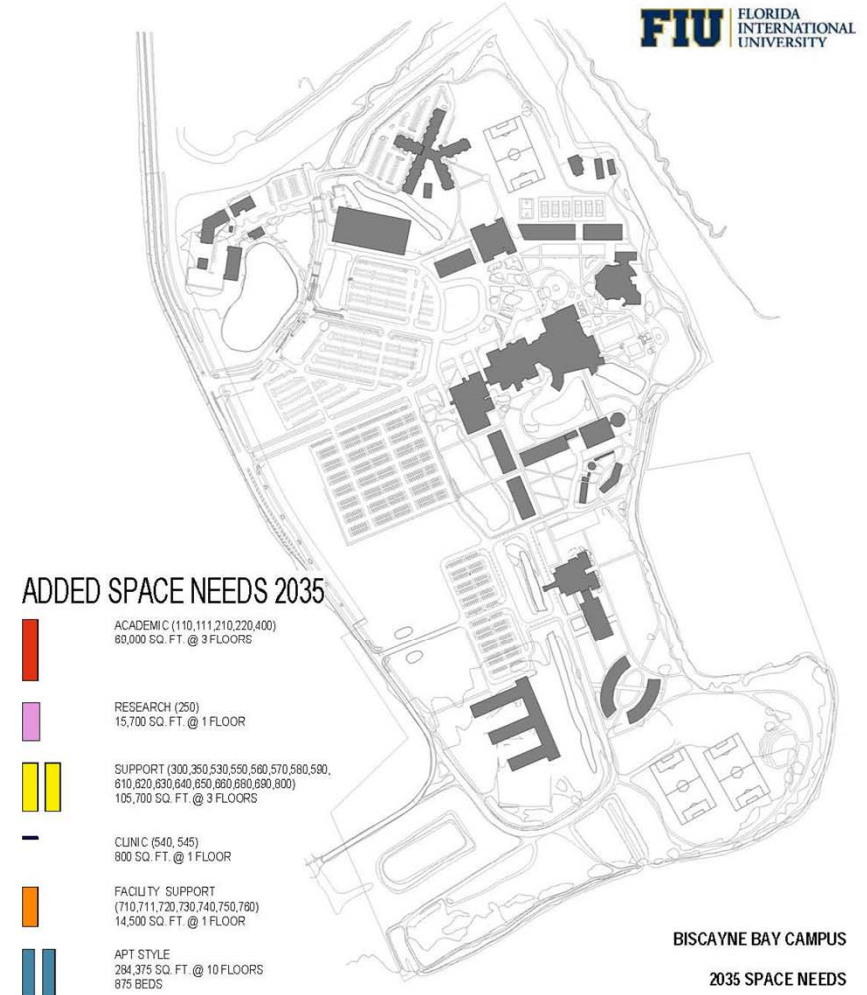
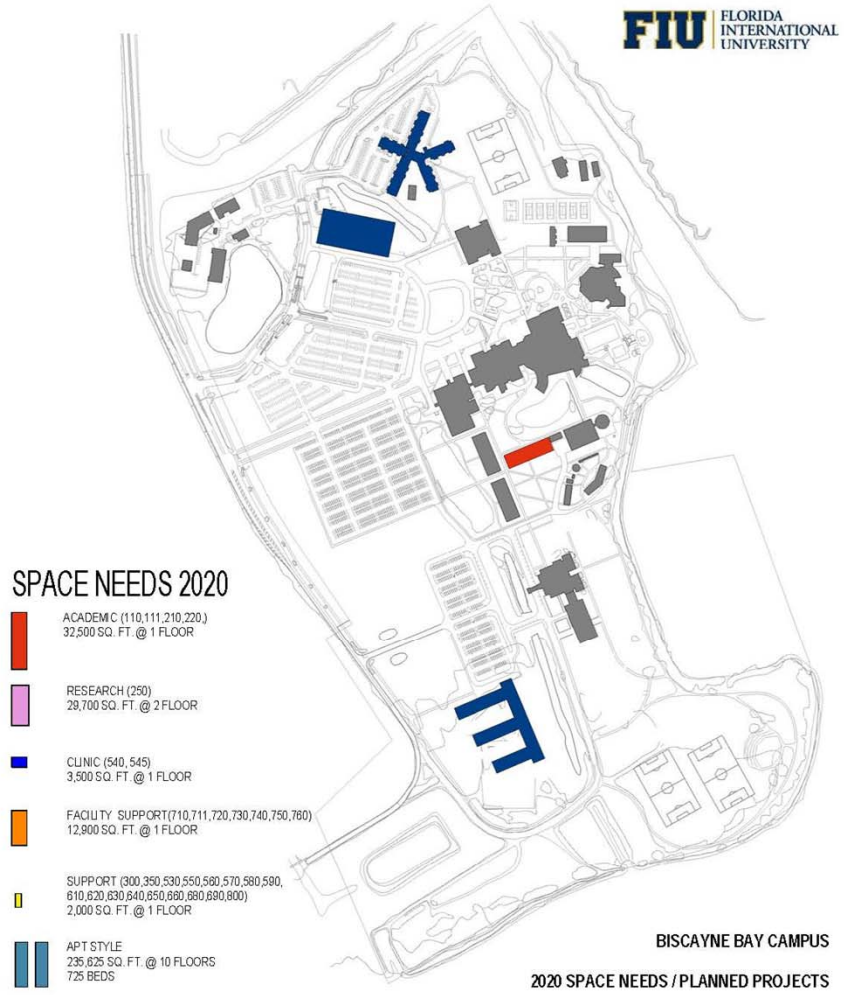
- ACADEMIC (110,111,210,220)
46,600 SQ. FT. @ 2 FLOORS
- RECREATION (520, 670)
2,900 SQ. FT. @ 1 FLOOR
- FACILITY SUPPORT (710,711,720,730,740,750,760)
7,800 SQ. FT. @ 1 FLOOR



ADDED SPACE NEEDS 2035

- ACADEMIC (110,111,210,220,400)
37,700 SQ. FT. @ 2 FLOORS
- RECREATION (520,670)
1,000 SQ. FT. @ 1 FLOOR
- SUPPORT (300,350,530,550,560,570,580,590,610,620,630,640,650,660,680,690,800)
18,600 SQ. FT. @ 1 FLOORS
- FACILITY SUPPORT (710,711,720,730,740,750,760)
4,300 SQ. FT. @ 1 FLOOR

BBC – 2020+2035 Space Needs



January 9, 2013

PERKINS+WILL