



FLORIDA  
INTERNATIONAL  
UNIVERSITY

FLORIDA INTERNATIONAL UNIVERSITY

# CAMPUS MASTER PLAN UPDATE 2010-2020

Work Session #2

03 OCTOBER 2012

PERKINS+WILL

# FOCUS GROUP 5

# Focus Group 5

## Group 5 Infrastructure, Utilities & Maintenance

Amir Mirmiran, Steering Committee Advocate

Nick DiCiaccio (Facilities)

Bobby Grillo (Information Technology)

Danny Paan (Construction)

College of Engineering Representative (Infrastructure)

FPL Representative

Sergio Garcia and Jose Soto (WASAD)

Jose Rodriguez (AHC)

Amaris Beza (FIU Student-Civil Engineering)

Devon Barroso (FIU Student-MEP Engineering)

Gene Kluesner, P+W

James Tatone, Affiliated Engineers – Electrical/IT

Daniel Cesar, AEI – Chilled Water

Rodrigo Pigna, Miller Legg, Infrastructure

# Focus Group 5

## Group 5 Infrastructure, Utilities & Maintenance

### Typical items to be discussed at each Focus Group:

- Provide overview of Campus Master Plan process, project schedule, and meetings
- *Review and prioritize pertinent Evaluation and Appraisal Report (EAR) issues per group element(s)*
- *Key Issues that are important to You* - bring information to meeting to share with group
- Studies or Initiatives underway that would be helpful to incorporate in master plan
- Discuss additional university strengths, weaknesses, opportunities and threats
- Confirm Best Practices



# Focus Group 5

## Group 5 Infrastructure, Utilities & Maintenance

### Utilities & Maintenance Focus (Affiliated Engineers)

- Chilled Water
- Electrical Service
- Information Technology

### Infrastructure Focus (Miller Legg)

- Potable Water
- Sanitary Sewer System
- Stormwater Management
- Solid Waste

# Focus Group 5

## Group 5 Infrastructure, Utilities & Maintenance – EAR Agenda Items

### Utilities/Facilities Maintenance

- “Each Florida College and State University shall strive to reduce its campus wide energy consumption by 10%” The reduction may be obtained by either reducing the cost of energy consumed or by reducing total energy usage or a combination of both.
- Some alternate sources of energy have been considered , i.e. co-gen, thermal storage, etc. Master Plan needs to include an executive summary indicating the results of the consideration.
  - Thermal energy storage not feasible due to high load factor, real estate and the amount of time required to make ice or chilled water
  - Potential: Co-gen plant not feasible due to lack of heat load but may be considered for medical and research district.
  - Geo-exchange has been considered and is not feasible.

# Focus Group 5

## Group 5 Infrastructure, Utilities & Maintenance – EAR Agenda Items

### Utilities/Facilities Maintenance

- FPL requirements for building standards → FPL incentives
  - ~~Thermal Energy Storage~~
  - High Efficiency Chillers → Incentives vary based on equipment
  - Demand Control Ventilation → Incentives vary
  - Energy Recovery Ventilation → FPL incentives available if not required by code
  - Lighting upgrades
  - Demand response program – **CILC Rate is closed at this time**

# Focus Group 5

## Group 5 Infrastructure, Utilities & Maintenance – EAR Agenda Items

### Utilities/Facilities Issues to Address

- Chilled water deficiencies in the south portion of the campus.
- A new satellite plant should be considered for the 2020 plan.
- Natural gas service recently added (approx. two years ago)
- Centralized steam generation may be considered for the medical and research district.
- Defined utility corridors. FPL has a blanket easement in lieu of prescriptive easements.
- Biscayne Bay may be branded as the “environmental” campus.
- IT has sufficient bandwidth capacity for future growth. Need to identify bandwidth requirements in the master plan.
- New data center considered for location in the Student Complex Center.



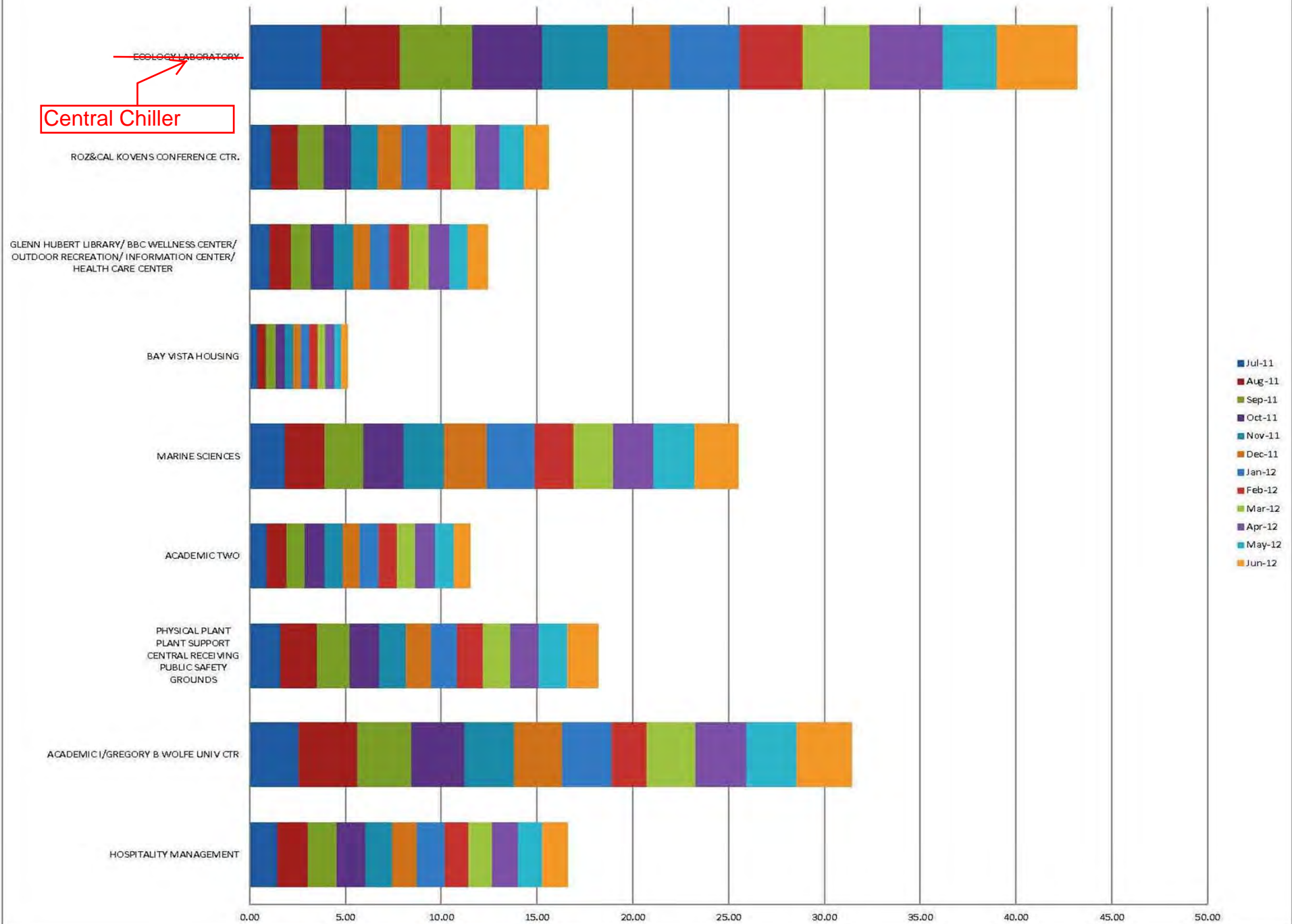
# Focus Group 5

## Group 5 Infrastructure, Utilities & Maintenance – EAR Agenda Items

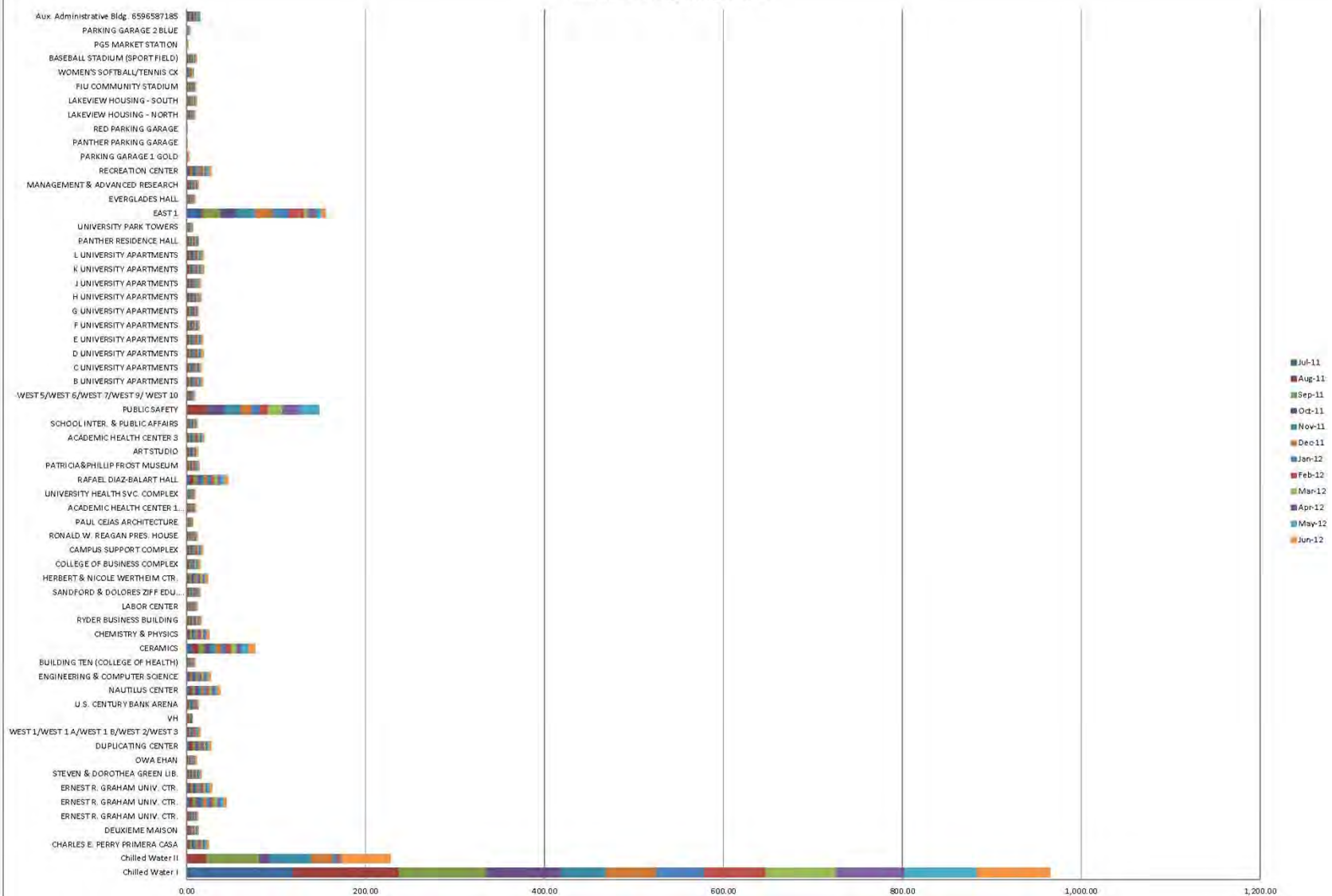
### Utilities/Facilities Issues to Address

- Chilled water BTU meters installed for 21 buildings on MMC and 1 building at BBC.
- Chilled water energy will be assumed to develop the energy usage index for each building where metering information is not available.
- The chilled water demand is not available on the existing meters. Chilled water demand for future buildings will be assumed to predict chilled water plant capacity requirements.
- FPL metering information for FY2011-2012 has been received.
- Electrical Energy Usage Index and Power Density for each building will be used to predict the future growth.

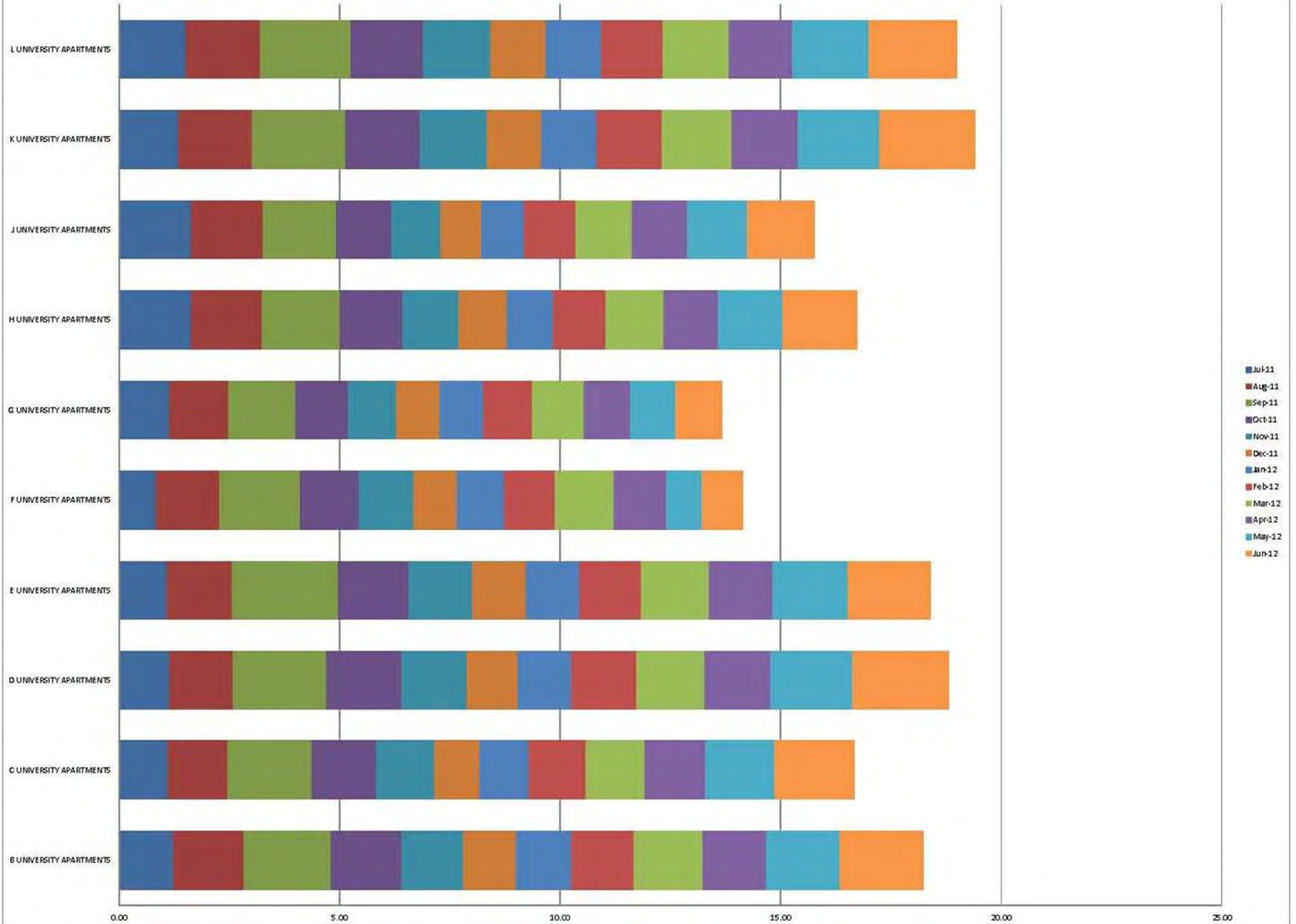
### Electrical Energy Usage Index



### Electrical Energy Usage Index

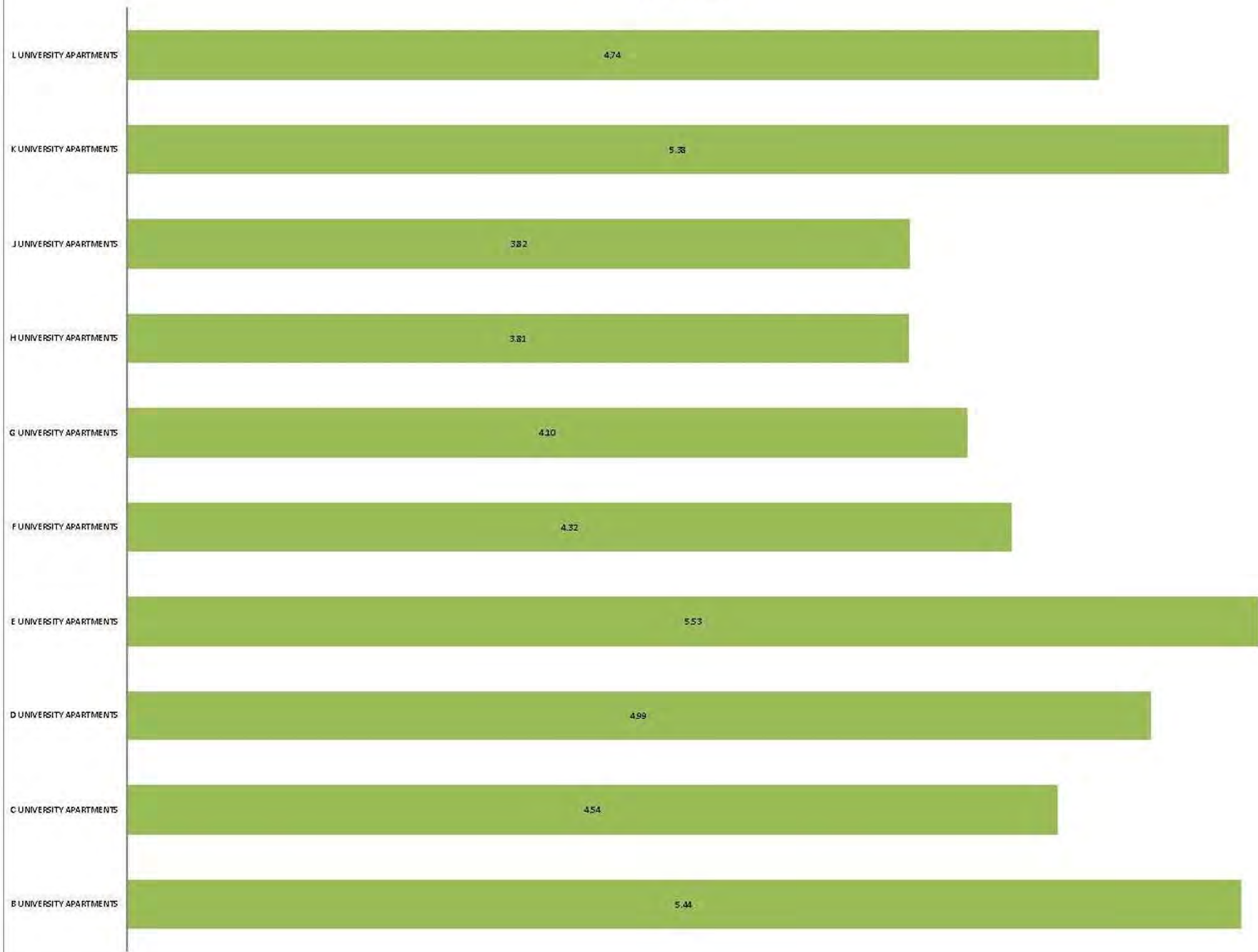


Electrical Energy Usage Index



### Building Peak Power Density

■ Peak Power Density



# Focus Group 5

## Group 5 Infrastructure, Utilities & Maintenance – EAR Agenda Items

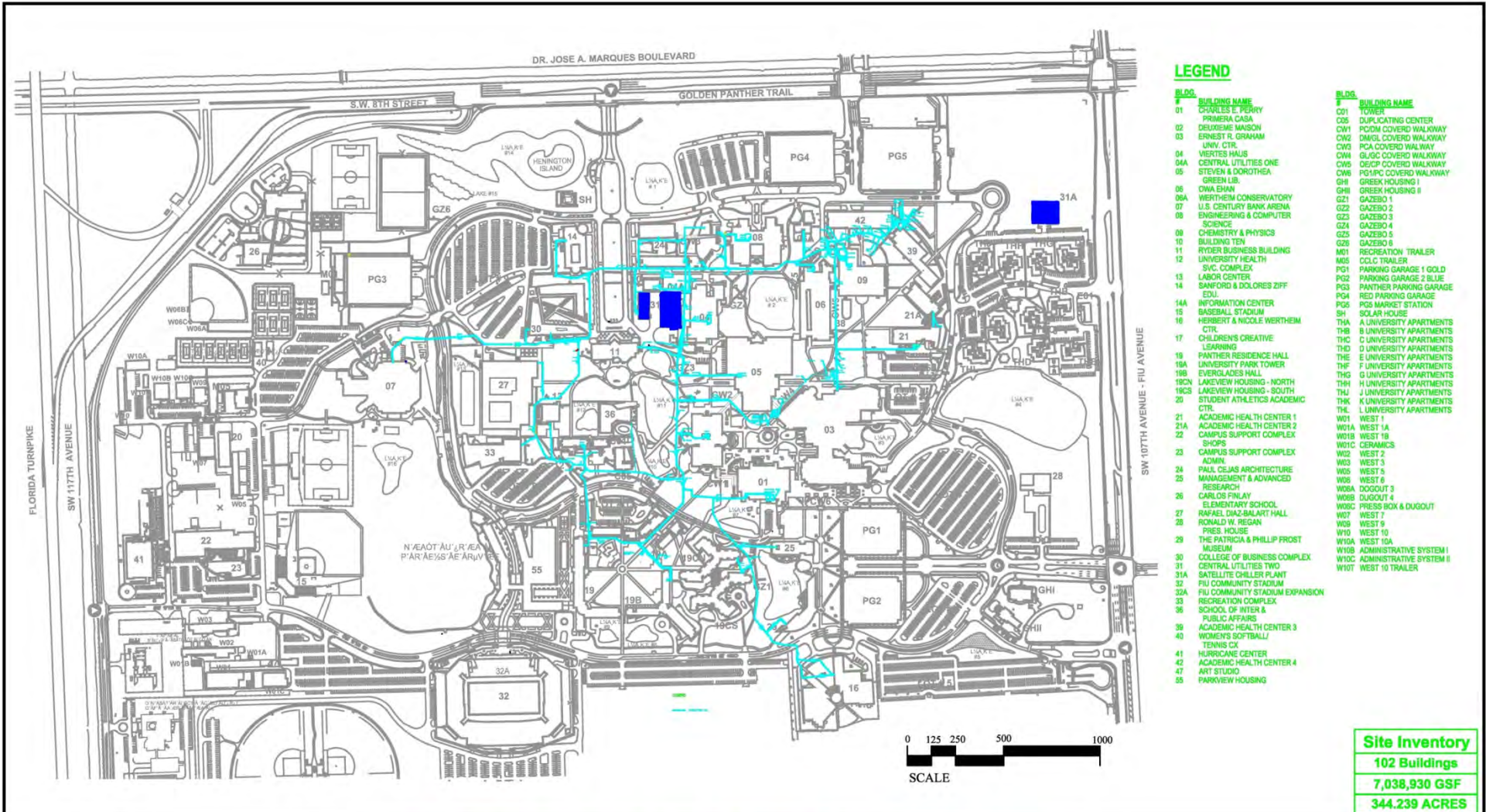
### Utilities/Facilities Maintenance

- Wireless service has been requested to be “more friendly”, i.e. easier access.
- Expand range of wireless availability to outdoor areas.
- Ensure wireless capabilities are upgraded to keep on the cutting edge of technology.
- New data center plan



# Modesto Maidique Campus

## Chilled Water Distribution Plan



**FLORIDA INTERNATIONAL UNIVERSITY**  
**- MODESTO A. MAIDIQUE CAMPUS - CHILLED WATER DISTRIBUTION -**

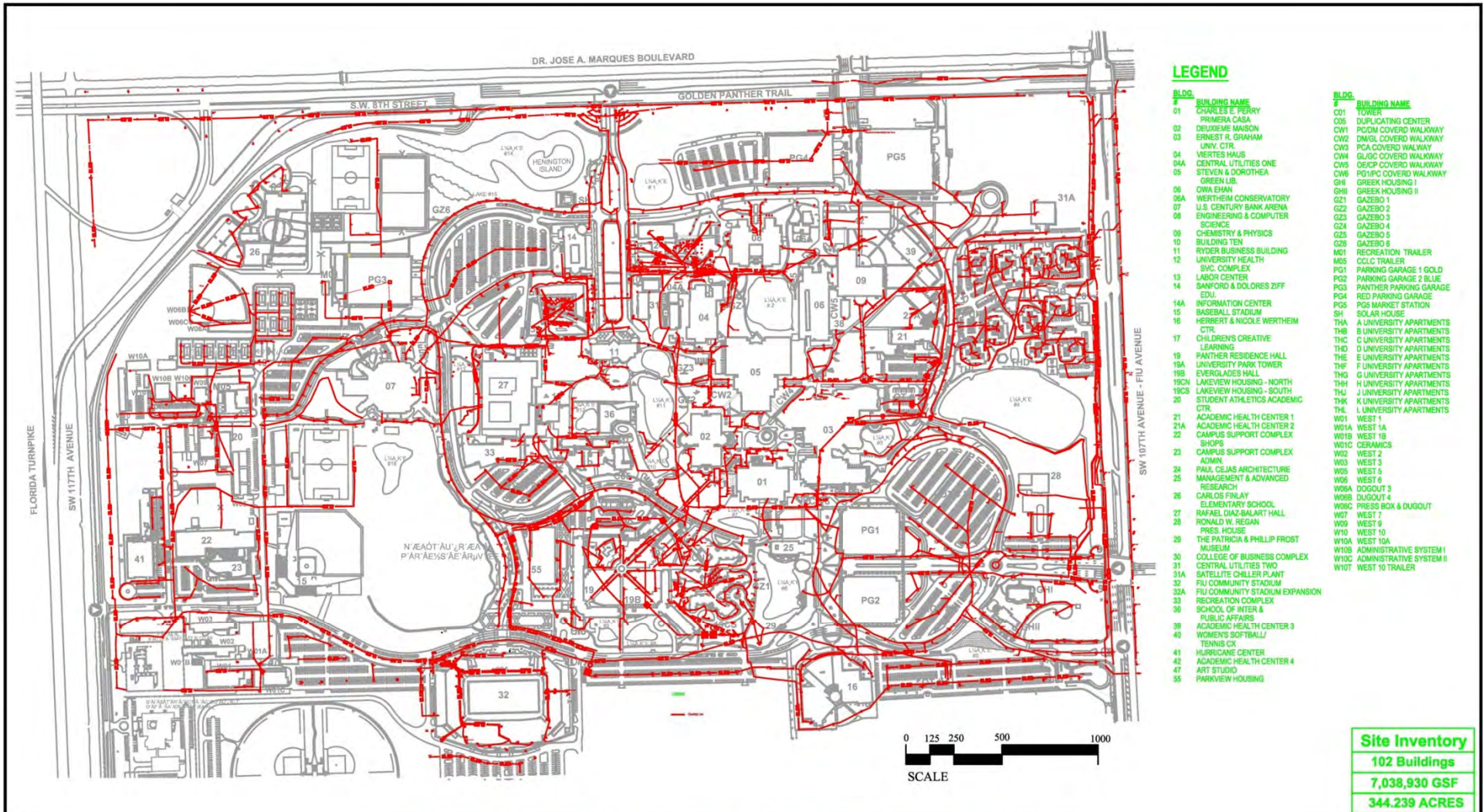


JULY 9, 2012



# Modesto Maidique Campus

## Electrical Distribution Plan



**FLORIDA INTERNATIONAL UNIVERSITY**  
**- MODESTO A. MAIDIQUE CAMPUS - ELECTRICAL DISTRIBUTION -**

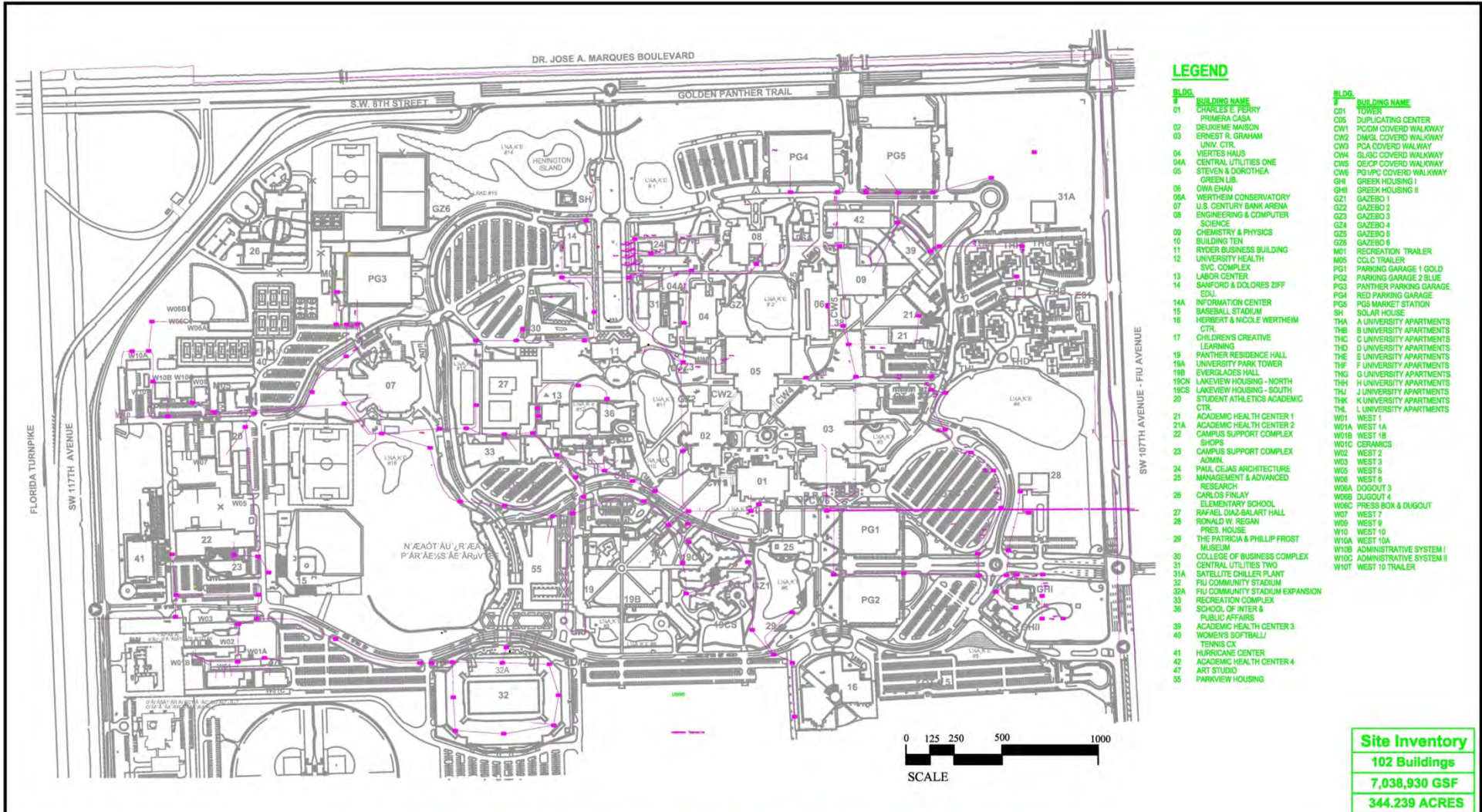


JULY 9, 2012



# Modesto Maidique Campus

## Communications Plan



# Focus Group 5

## Homework

- ✓ Provide 5 examples of **strengths** and 5 examples of **weakness** related to Infrastructure, Utilities, & Maintenance at FIU. These can be in the form of images and / or narratives. (Potable Water; Sanitary Sewer System; Stormwater Management; & Solid Waste)
- ✓ Amaris Beza & Stuart Grant.

# Focus Group 5

## HOMEWORK: FIU INFRASTRUCTURE ELEMENT STRENGTHS

### **LEED Certification Consciousness**

New buildings on campus, like the SIPA building at MMC, are dedicated to being LEED-Certified. This is a great way for the university to implement better “green” energy practices.



### **Commitment to new construction projects at MMC**

FIU is always improving and adding new infrastructure to accommodate for a growing student body. Construction is always present around the campus. This shows the university is dedicated to using the available space in its property.





# Focus Group 5

## HOMEWORK: FIU INFRASTRUCTURE ELEMENT STRENGTHS

### **Ample recycling on campus**

FIU does a great job at providing recycling bins around campus. This is an important issue in solid waste management with such a large student population.



### **General maintenance adequacy**

As an FIU student, it has been apparent that the maintenance crew does a good job cleaning around campus. In my 4 years attending the university, I have never seen an area blatantly neglected in terms of maintenance.





# Focus Group 5

## HOMEWORK: FIU INFRASTRUCTURE ELEMENT WEAKNESSES

### **Lack of localized Facilities Office**

The absence of a single localized Facilities Office makes it somewhat difficult to contact and communicate with Facilities staff in the university.

### **Lack of facilitation for commuter students**

Most FIU students commute to school, creating a major problem with traffic and leaving a large imprint on the university's greenhouse gas emissions. Poor public transportation is a large contributor to this problem. Other universities, such as Harvard University, provide public transportation to students throughout the city of Cambridge, MA through buses..

**FIU** | FLORIDA INTERNATIONAL UNIVERSITY | Facilities Management

**Links**

- » [FIU Home](#)
- » [FMD Home](#)
- » [FIU Phonebook](#)

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**Maintenance Director's Office**

The Facilities Operations Staff is comprised of administrative and trades personnel covering a wide variety of areas in support of the mission of the Department. The responsibility of this unit is to provide a physical environment that will enable our institution to accomplish its broader educational mission. This environment consists of all university buildings and grounds and other campus facilities. This section initiates repair orders, receives repair orders from the university community and oversees all routine and extraordinary buildings and grounds maintenance functions. This includes all University moves and coordination and event set up of university sponsored events.

**Location**

Campus Support Complex Building



# Focus Group 5

## 2005 – EAR Issues & Major Recommendations

### Infrastructure

- ✓ Update the level of service for potable water, sanitary sewer, and solid waste based on actual consumption patterns.
- ✓ Continue to interconnect water bodies at University Park, Biscayne Bay Campus, and the Engineering Center to eliminate isolated subbasins and minimize the possibility of overburdening or underutilizing any one subbasin.
- ✓ *Work with WASD and the host communities to assure there is **sufficient capacity** to meet the water consumption needs of future development at FIU*
- ✓ Continue to make improvements to the sanitary sewer system at all FIU sites in order to address infiltration and inflow deficiencies
- ✓ Expand recycling programs to include the Wolfsonian Museum and Annex

# Focus Group 5

## 2010 – EAR Issues & Major Recommendations

### Infrastructure:

- *Address **old infrastructure** to correct existing deficiencies and to meet the future needs of the University*
- Make sustainable building techniques and enforcement of smoke free areas a best practice in the Campus Master Plan
- Facilitate LEED Certification for new construction and for renovation, operation and maintenance; to help ensure competitive recruitment and retention
- Develop best Practice plans and procedures for storm water control and treatment to prevent pollution of groundwater, untreated runoff into surrounding waterways and to prevent flooding of low-lying areas and adjacent properties
- As part of the solid waste goals, objectives and policies, attention should be given to policies which lead to the implementation of programs for the recycling of white materials goods
- Develop partnerships, goal, objectives, and policies for the University to participate in the Solid Waste Management Trust Fund.

# Focus Group 5

## Regulatory & Permitting Agencies & Host Communities

### **Sept 18, 2012 - Miami-Dade County Water & Sewer Department**

- ✓ Intergovernmental Affairs Section
- ✓ New Customer Division
- ✓ Planning

### **Sept 26, 2012 - Miami-Dade County Permitting, Regulatory and Economic Resources (FKA - Environment and Regulatory Affairs - PERA)**

- ✓ 2010 Florida Building Code / Flood Protection Standards

### **Oct 2, 2012 - Miami-Dade County Water Control Section**

TBD – City of North Miami

TBD – Miami-Dade County Public Works and Waste Management



# Focus Group 5

## INFRASTRUCTURE ISSUES RAISED IN OTHER FOCUS GROUPS

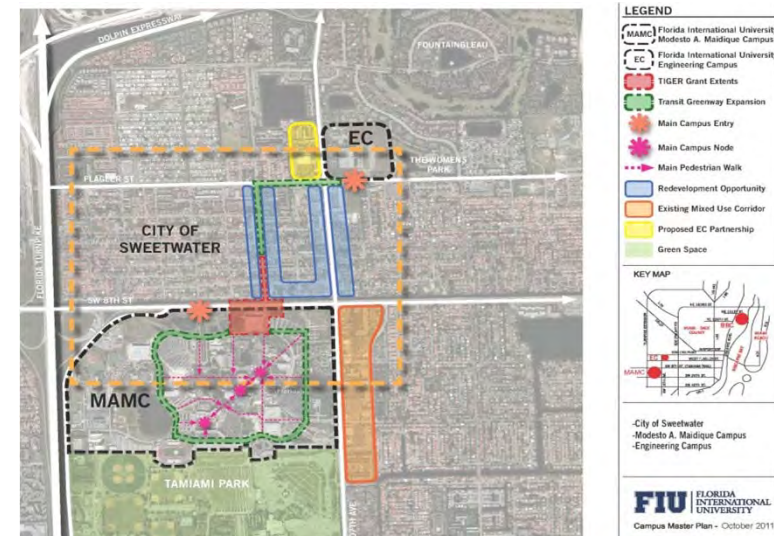
### Group 1- Academic Mission, Academic Program & Academic & Research Facilities:

All undergraduates or College of Education  
moved to BBC

Hospital / Clinic located at BBC

### Group 2 - Open Space, Recreation, Land Use, Conservation & Coastal Management :

BBC is very vulnerable to sea level rise in  
the future. Current faculty housing location  
may be in risk zone. **2010 FBC March 9,**  
**2012**



# Focus Group 5

## INFRASTRUCTURE ISSUES RAISED IN OTHER FOCUS GROUPS

### **Group 3 Urban, Architectural & Landscape Design Guidelines:**

LA - Retention / Stormwater Elements

County Fair Property – 2030 (WASD?!)

Phasing & Implementation Issues

Project Coordination

### **Group 4 Housing, Support Facilities & Student Life:**

Potential land swap w/ County





# Focus Group 5

## **Group 6 Transportation, Parking, Transit, Bicycle & Pedestrian:**

Coordination with: 1. Metro rail expansion;  
2. Access Roads; 3. Traffic circles / signals

## **Group 7 Inter-governmental Coordination, Advancement & Alumni Affairs:**

Access to Medical school clinics and  
doctor's offices

Community access to campus cultural  
activities



# Modesto Maidique Campus

## Vision Plan



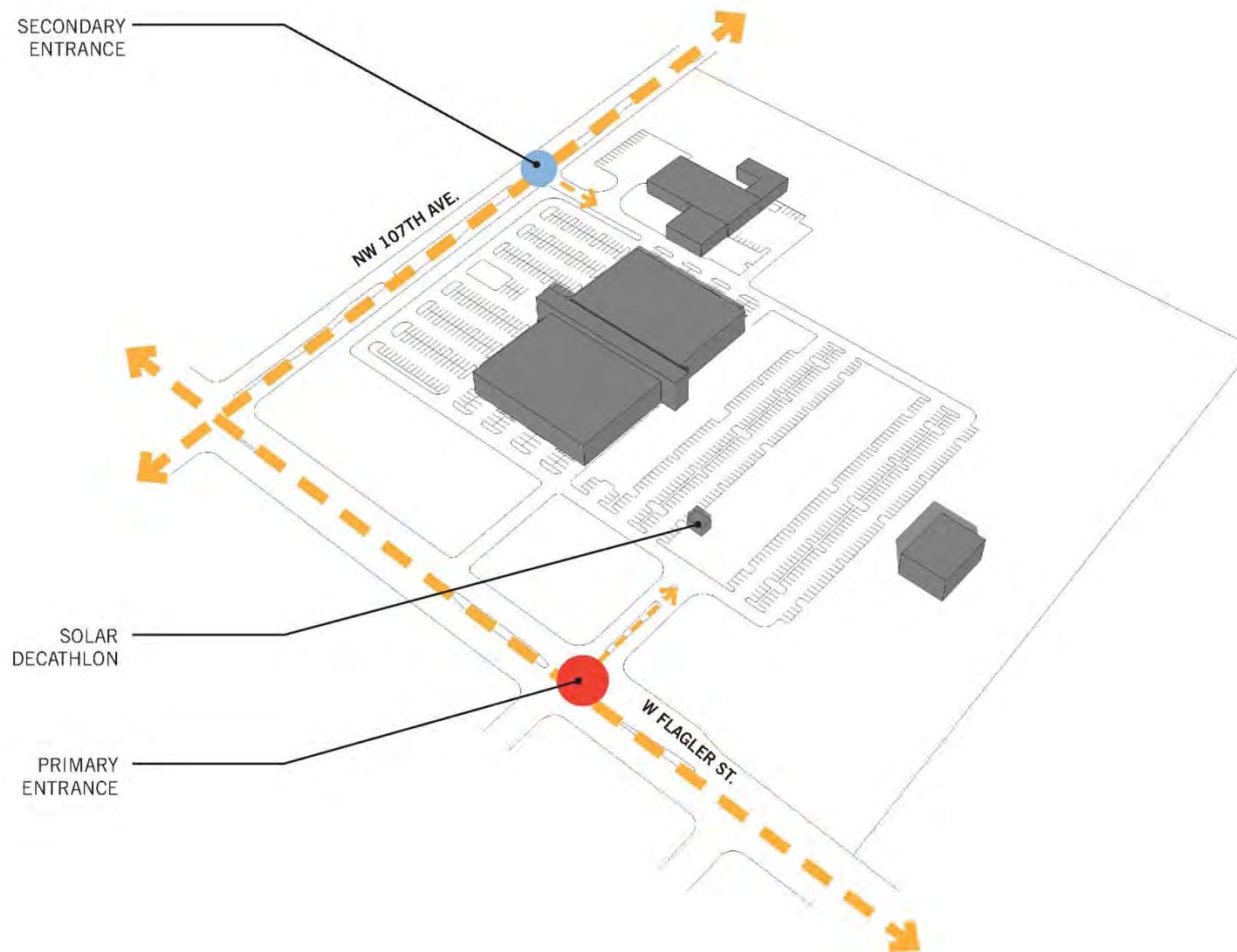


## UPDATES SINCE 2010



# Engineering Center

Existing



KEY MAP



FIGURE:  
Engineering Center  
3D Diagram-Existing

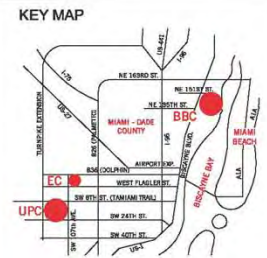
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Campus Master Plan-June 3,2009



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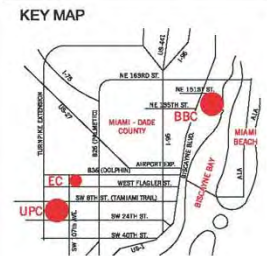
## 2015



**FIGURE:**  
Engineering Center  
3D Diagram-2015



# Vision Plan



**FIGURE:**  
Engineering Center  
3D Diagram-Vision



## Existing



**FIGURE:**

**Biscayne Bay**  
**3D Diagram-Existing**



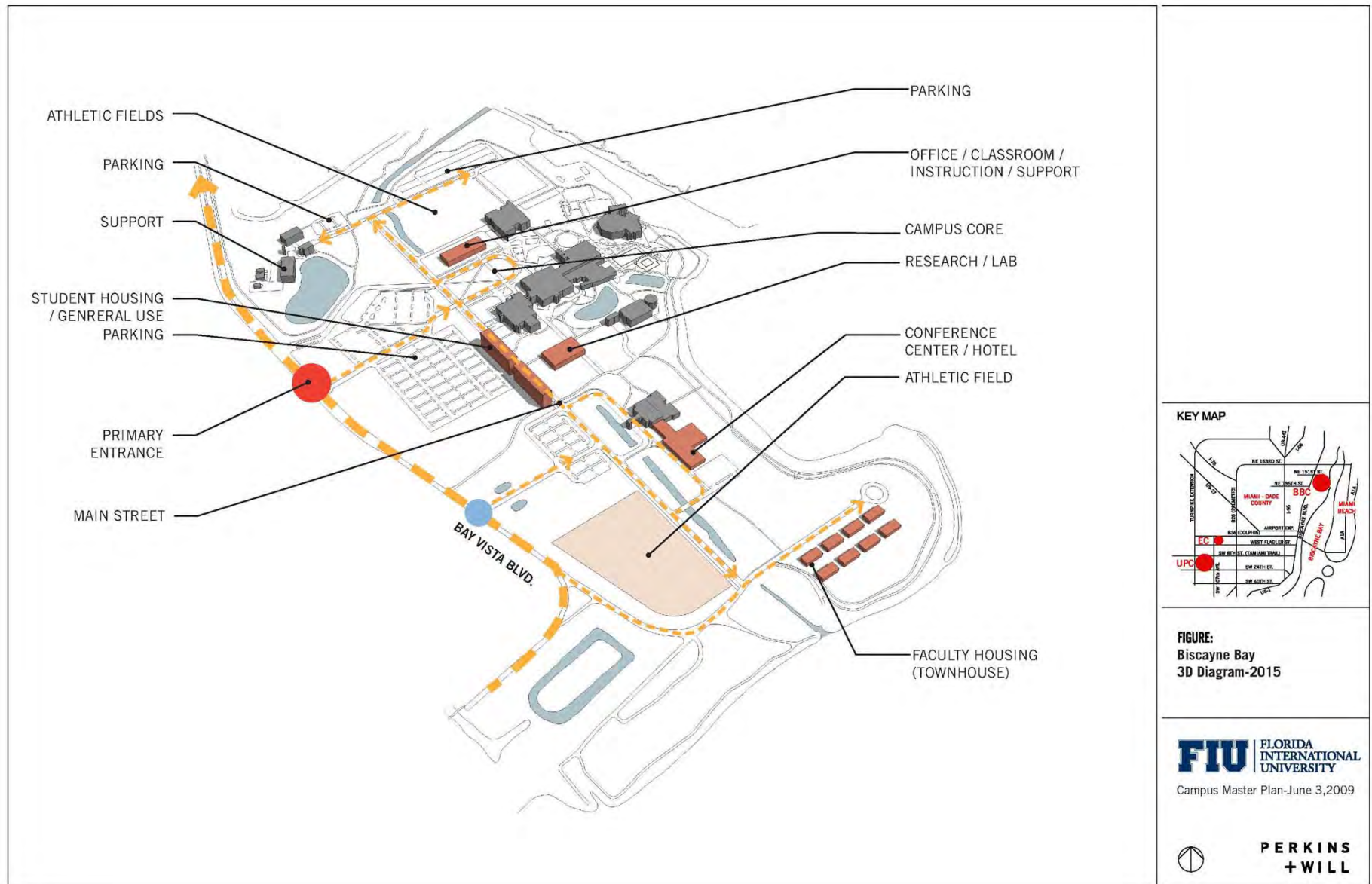
Campus Master Plan-June 3,2009



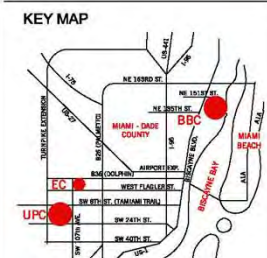
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# Biscayne Bay Campus

2015 Plan



# Vision Plan



**FIGURE:**  
Biscayne Bay  
3D Diagram-Vision