USF
UNIVERSITY OF SOUTH FLORIDA
LAKELAND

FINAL SUPPORTING INVENTORY AND ANALYSIS

USF LAKELAND CAMPUS

2005-2015 MASTER PLAN

State Project No. BR-509

AUGUST 2006

VOLUME II

USF LAKELAND CAMPUS MASTER PLAN
USF-509

FINAL SUPPORTING INVENTORY AND ANALYSIS

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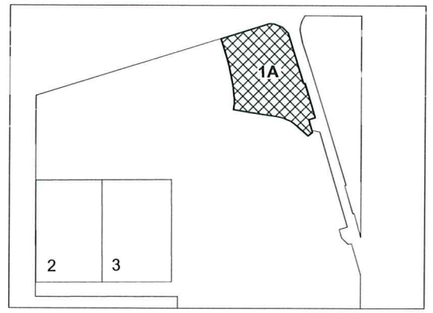
- BOUNDARY OF ADJACENT HOLDINGS
- PROPOSED DONATION AREA BOUNDARY
- 75 — ELEVATION CONTOURS
- WETLANDS
- QUALITY UPLAND HARDWOODS
- WETLANDS TO BE DEVELOPED
- VIEWS

KEY MAP



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0 500 1000 1500 2000

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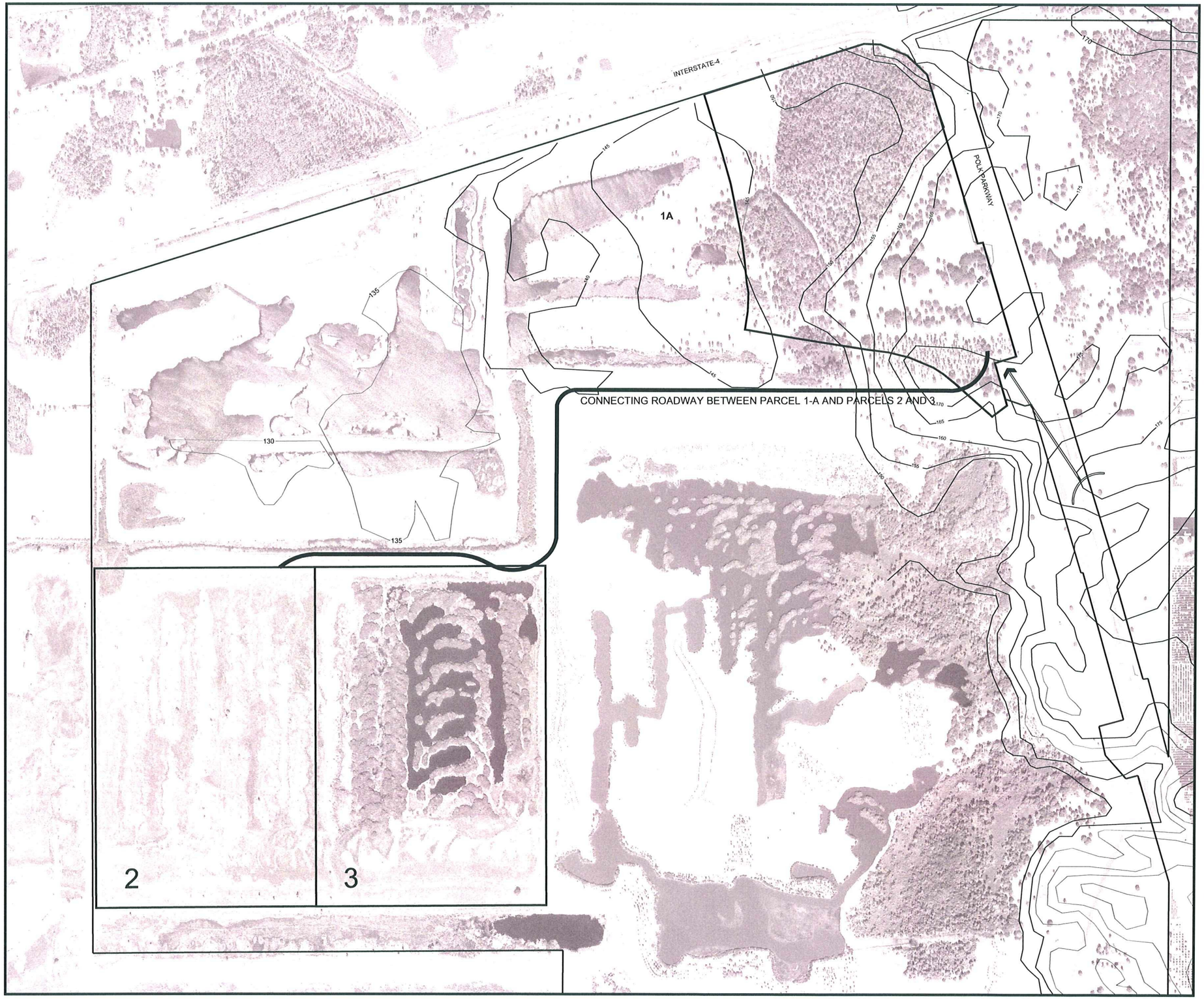
FIGURE NUMBER 3.2

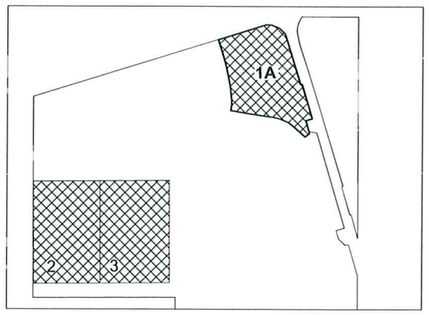
ACTIVITY AND LINKAGE LOCATIONS



LEGEND:

- BOUNDARY OF ADJACENT HOLDINGS
- PROPOSED DONATION AREA BOUNDARY
- 75 — ELEVATION CONTOURS
- 1A - MAIN ENTRANCE
- 2 - FUTURE DEVELOPMENT
  - HOUSING
  - RECREATION
  - PARKING
- 3 - ROOKERY
  - NON-DEVELOPABLE

KEY MAP



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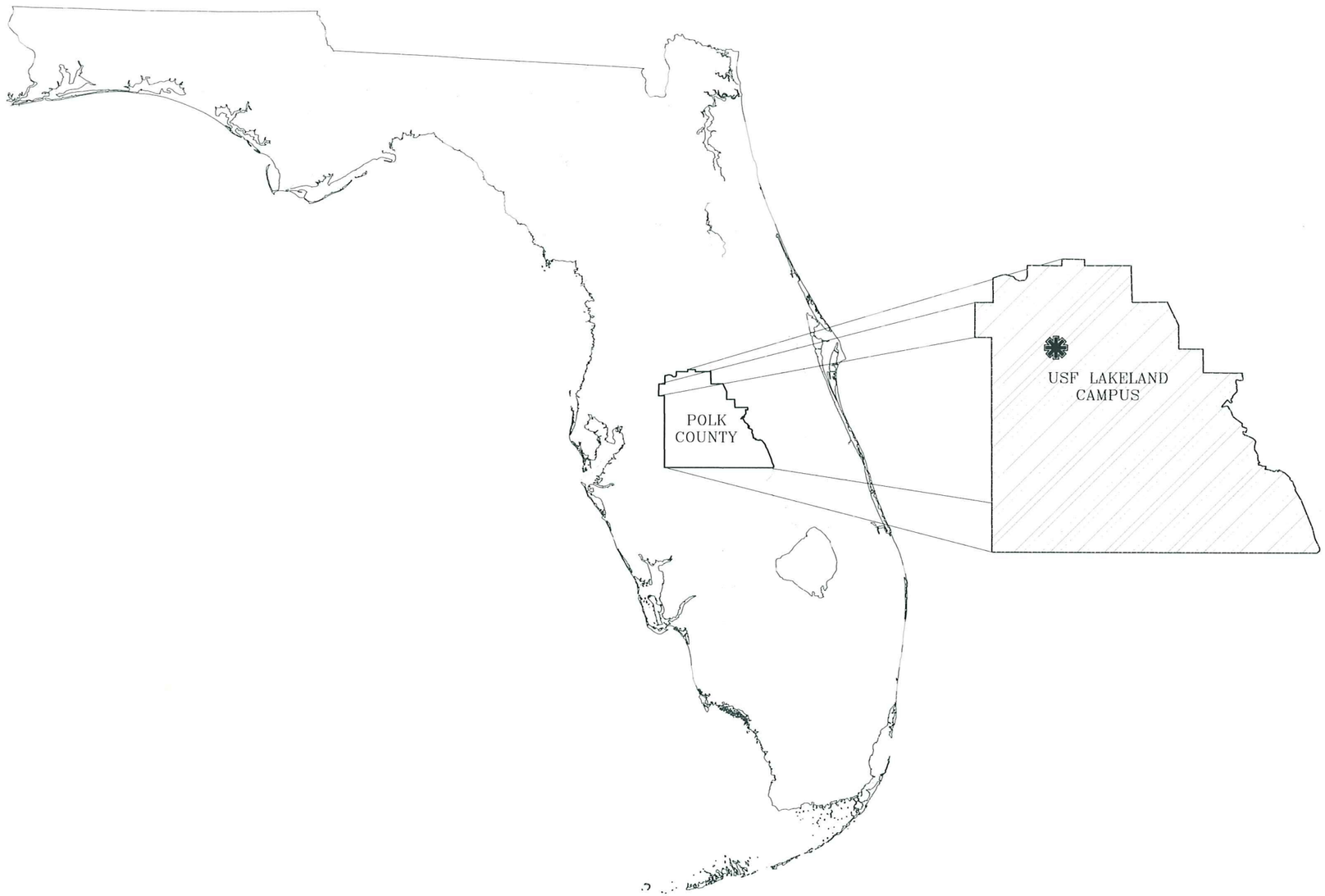

FIGURE NUMBER 4.1

STATE OF FLORIDA LOCATION MAP

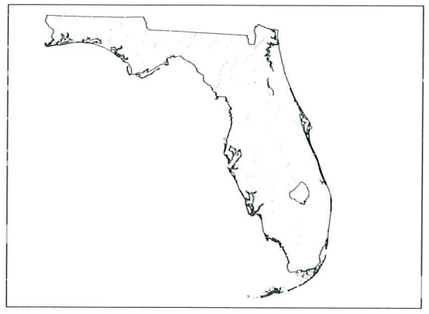

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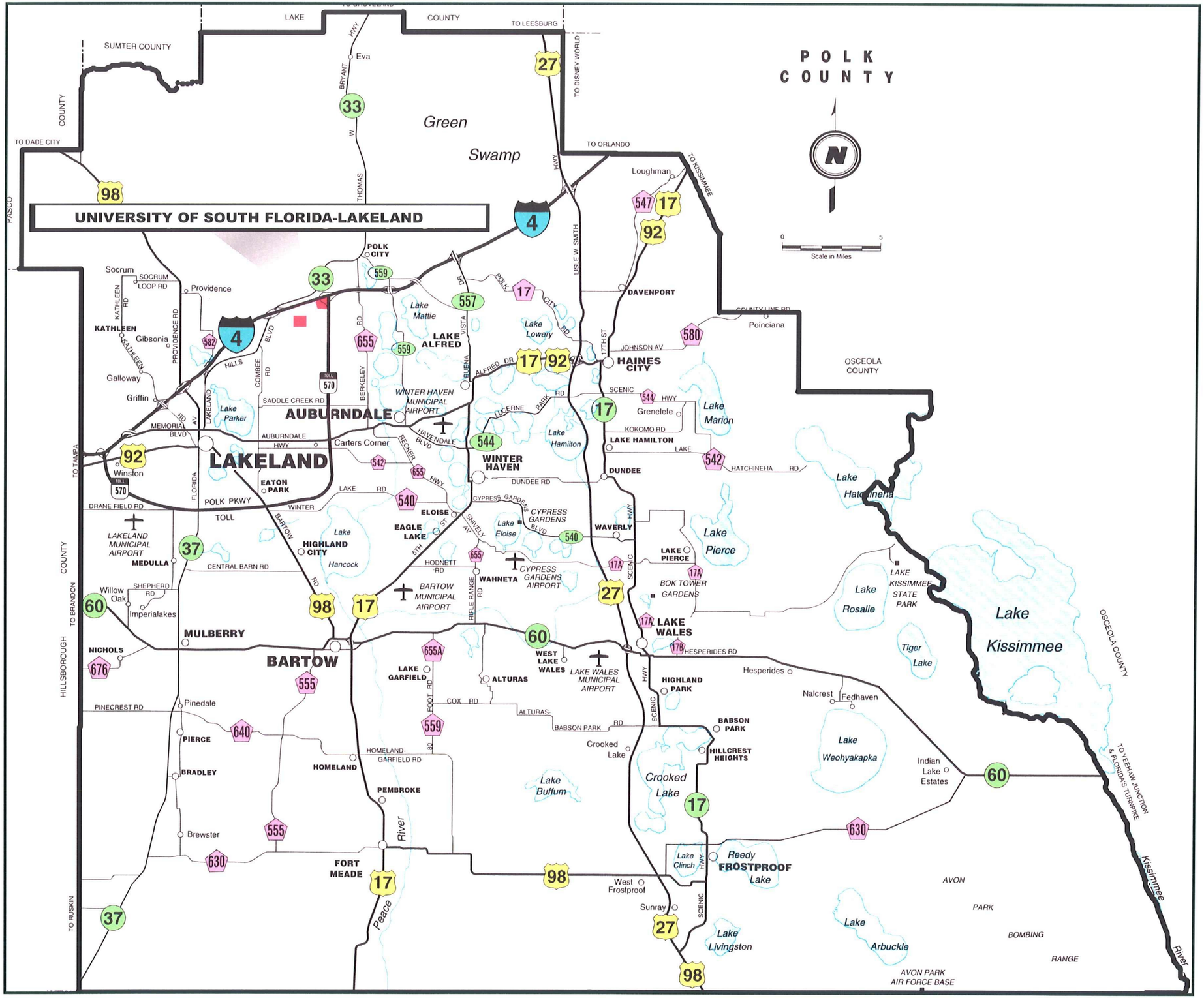
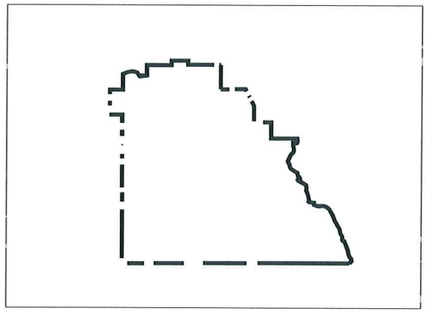
FIGURE NUMBER 4.2

HOST COMMUNITY MAP



KEY MAP



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0 2.5 5.0 7.5 10.0

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LEGEND:

- 4 — INTERSTATE HIGHWAY
- 17 — U.S. HIGHWAYS
- 557 — STATE ROADS
- 547 — COUNTY ROADS

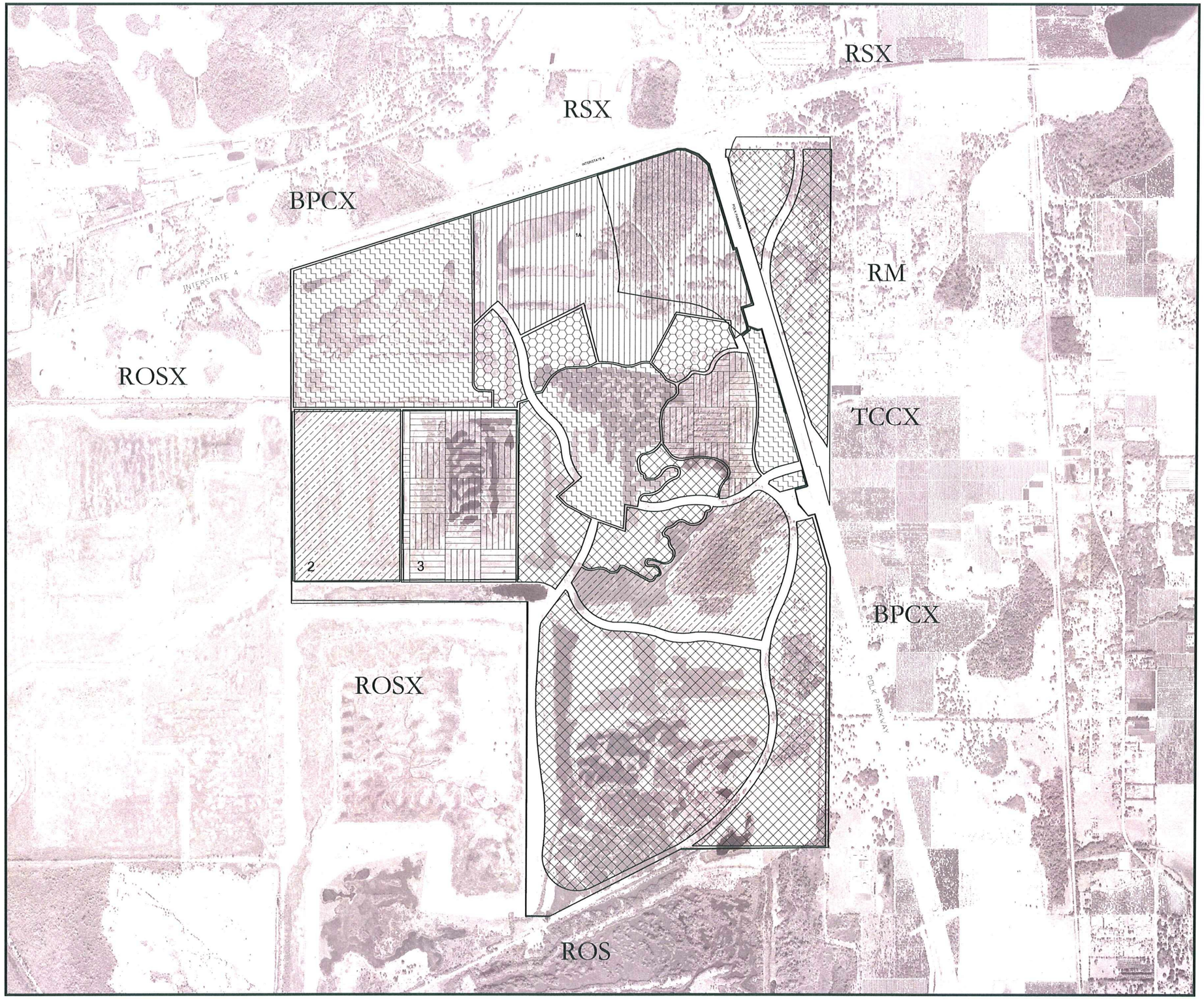


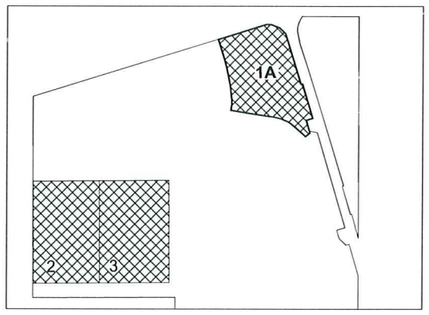
FIGURE NUMBER 4.3

CONTEXT AREA LAND USE AND ZONING MAP

LEGEND:

- BOUNDARY OF ADJACENT HOLDINGS
- PROPOSED DONATION AREA BOUNDARY
- SINGLE FAMILY RESIDENTIAL
- MULTI-FAMILY RESIDENTIAL
- COMMERCIAL / RETAIL
- UNIVERSITY / RESEARCH PARK
- RECREATION AREA
- CONSERVATION AREA

KEY MAP



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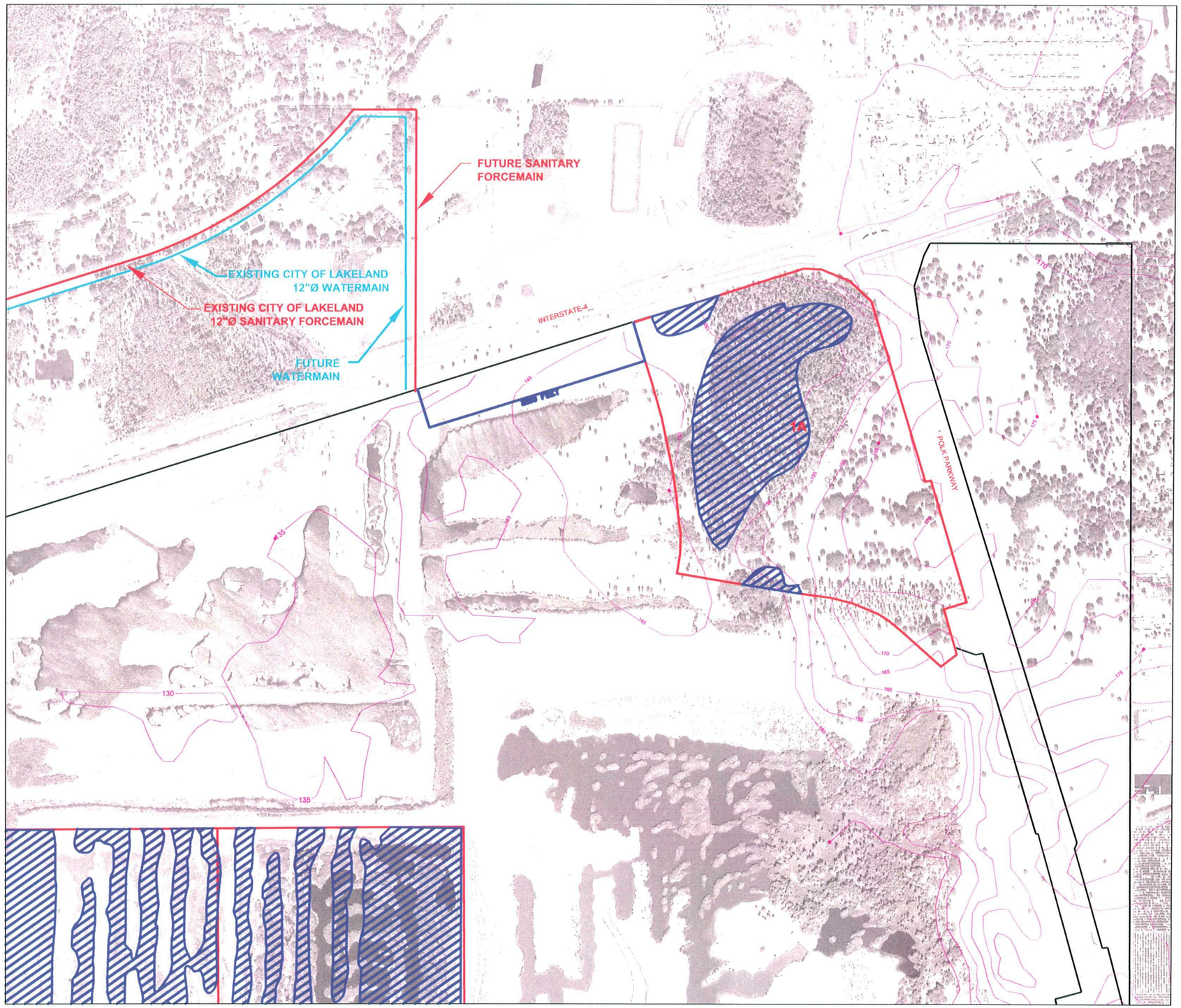


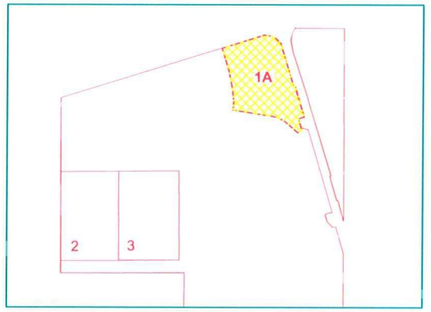
FIGURE NUMBER 9.1

EXISTING INFRASTRUCTURE AND TOPOGRAPHY MAP

LEGEND:

- BOUNDARY OF ADJACENT HOLDINGS
- PROPOSED DONATION AREA BOUNDARY
- 75 — ELEVATION CONTOURS
- EXISTING DRAINAGE DITCH
- ZONE A - NO BASE FLOOD ELEVATIONS DETERMINED PARCEL 1A

KEY MAP



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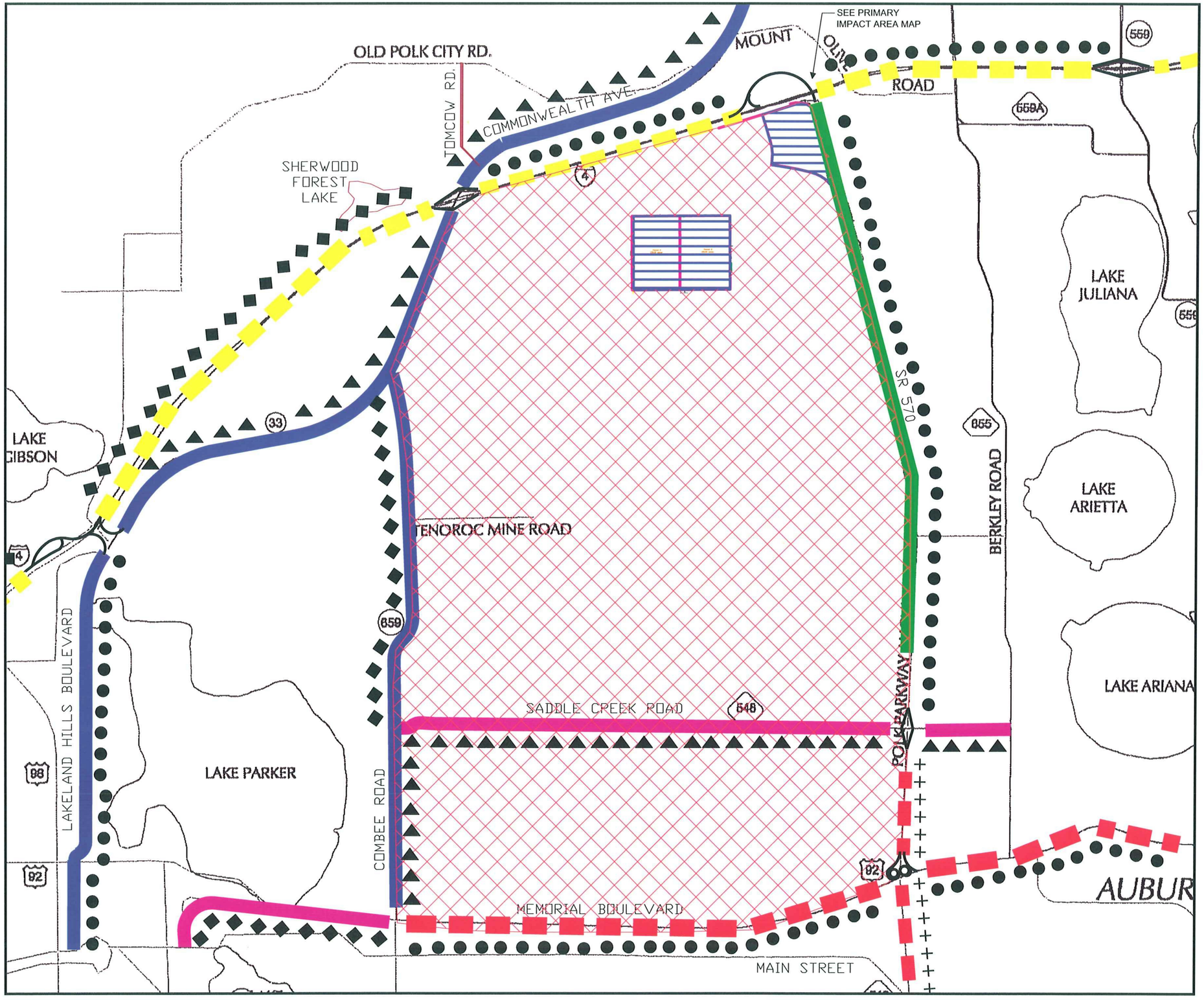


FIGURE NUMBER 11.1

CONTEXT AREA ROADWAYS

(PA) PRINCIPAL ARTERIAL
- 6 LANE DIVIDED
- 4 LANE DIVIDED
- 2 LANE UNDIVIDED

(MA) MINOR ARTERIAL
- 2 LANE UNDIVIDED

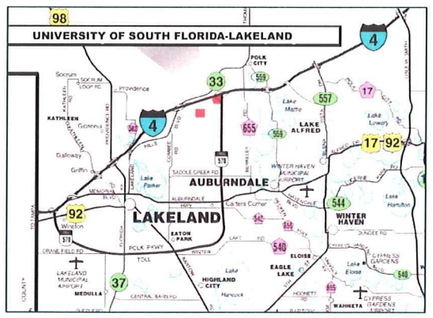
URBAN COLLECTOR
- 2 LANE UNDIVIDED

LEVELS OF SERVICE
- A
- B
- C
- D

CONTEXT AREA

USF PARCELS

SOURCE: Polk Transportation Planning Organization, 5/31/06



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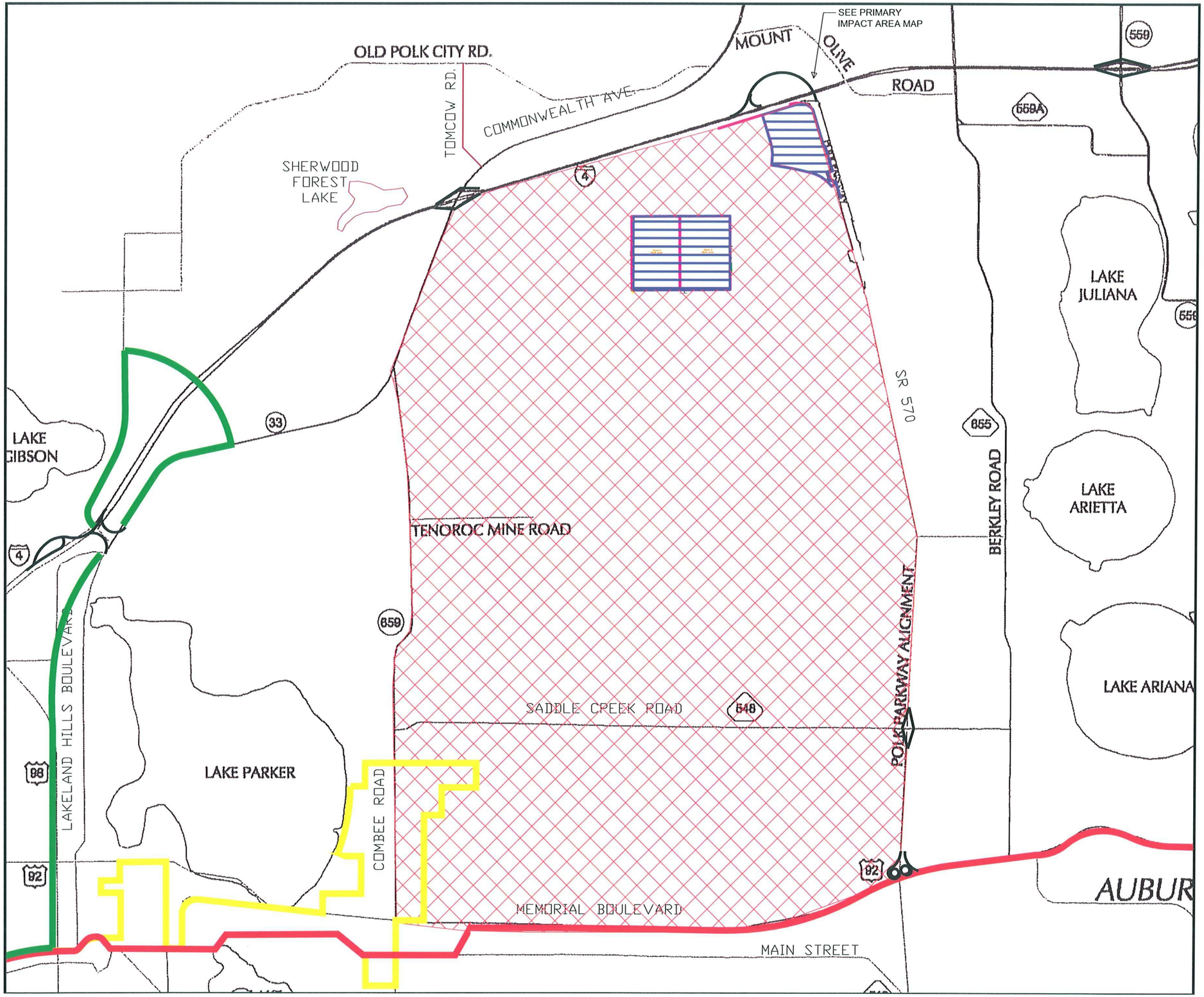


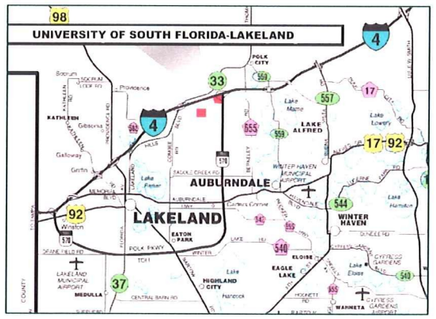
FIGURE NUMBER 11.2

CONTEXT AREA TRANSIT ROUTES

ROUTE #

- 11-EAST MAIN/ COMBEE RD.
- 12-WINTER HAVEN/ AUBURNDALE
- 52-NORTH FLORIDA AVENUE
- CONTEXT AREA
- USF PARCELS

SOURCE: LAKELAND AREA MASS TRANSIT DISTRICT, CITRUS CONNECTION, 2006



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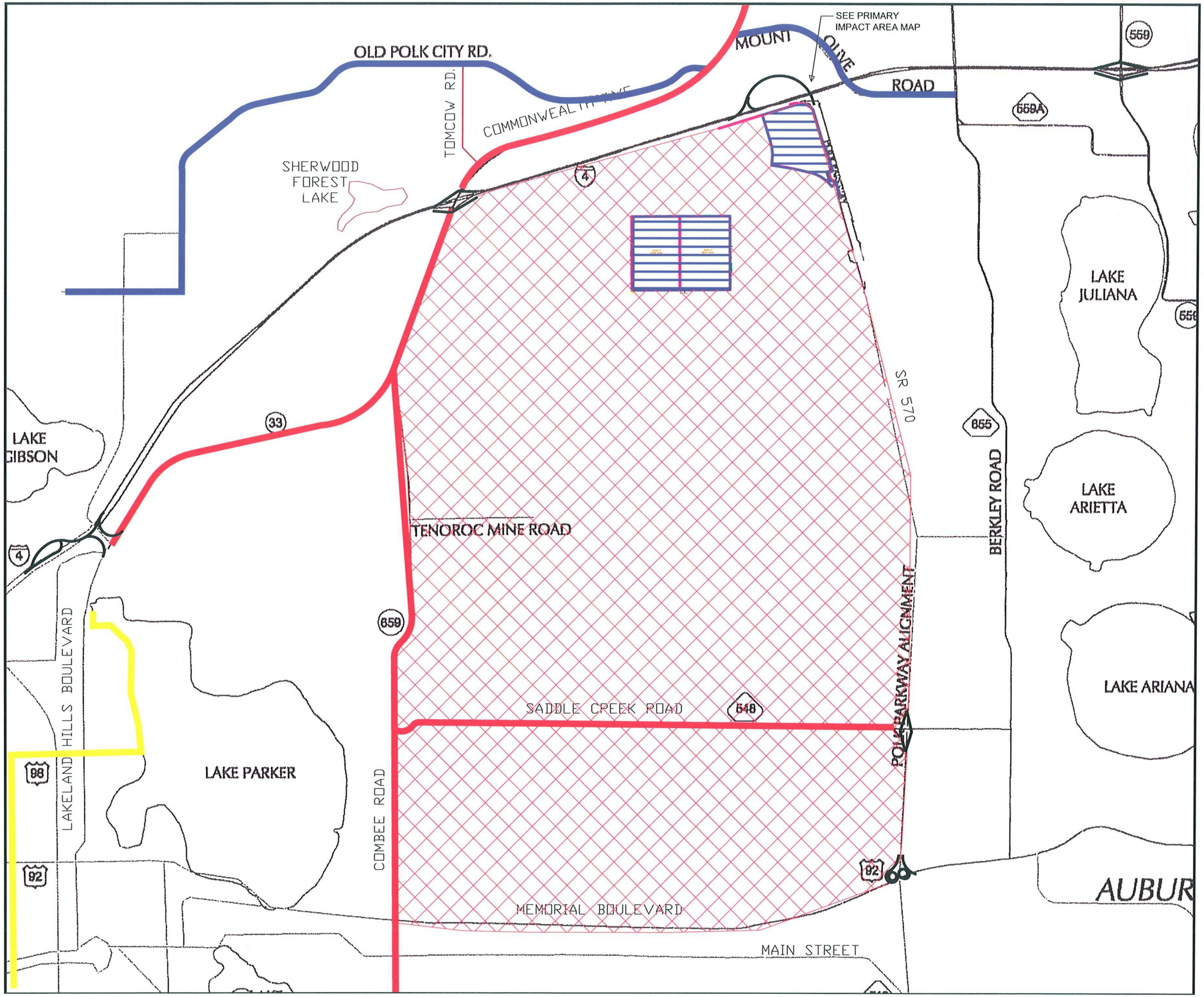


FIGURE NUMBER 11.3

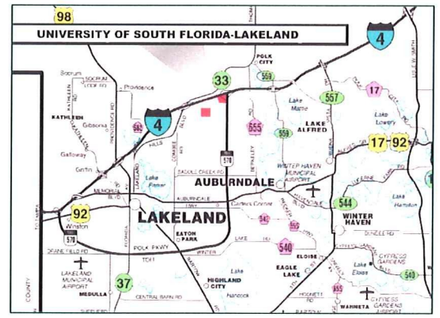
PEDESTRIAN AND NON-VEHICULAR CIRCULATION

- LIGHT TRAFFIC ROADS SUITABLE FOR BICYCLES
- MEDIUM TO HEAVY TRAFFIC ROADS SUITABLE FOR BICYCLES

(HEAVY TRAFFIC ROADWAYS HAVE AT LEAST 4FT. PAVED SHOULDER).

- MULTI USE TRAIL
- CONTEXT AREA
- USF PARCELS

SOURCE: Polk County Bicycle suitability map, Transportation Planning Organization, 2006



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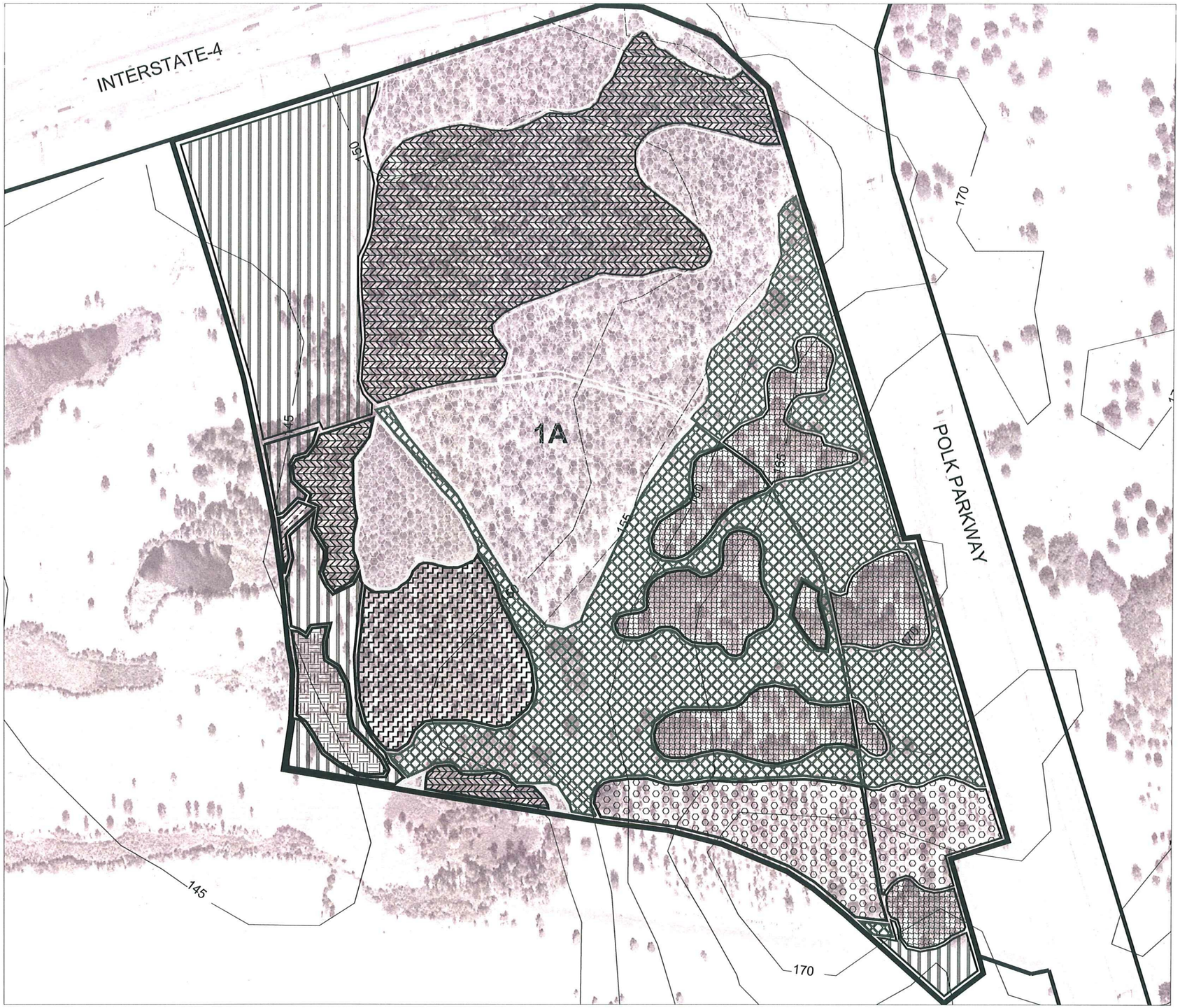


FIGURE NUMBER 13.1

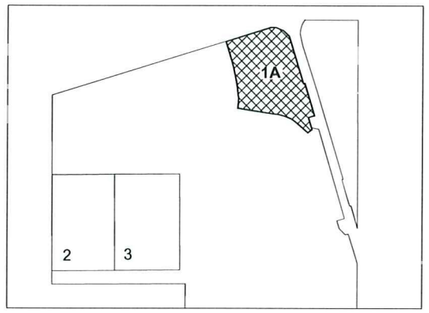
EXISTING VEGETATION AND HABITAT MAP

LEGEND:

- BOUNDARY OF ADJACENT HOLDINGS
- PROPOSED DONATION AREA BOUNDARY
- 75 ELEVATION CONTOURS
- EXISTING DRAINAGE DITCH

160 / 166	211 22.98 ACRES
160 / 618	411 36.65 ACRES
160 / 743	411 / 211 9.89 ACRES
165 / 211 49.22 ACRES	425 7.96 ACRES
165 / 534 0.23 ACRES	427 15.16 ACRES
165 / 618	511
165 / 641 1.93 ACRES	611 26.97 ACRES
165 / 743	

KEY MAP



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1.0 ACADEMIC MISSION OF THE UNIVERSITY ELEMENT

PURPOSE

The purpose of this element is to describe the present and future academic mission of the University, which provides the basis for the physical recommendations of the campus master plan.

(1) DATA REQUIREMENTS. This element shall be based on the following data or information:

a) University mission statement as described in the most recent edition of the State University System (SUS) of Florida Master Plan.

Vision

The University of South Florida Lakeland will be a university of choice in central Florida, providing innovative and interdisciplinary undergraduate and graduate programs in an inclusive, research-oriented and learner-centered academic community.

Mission

The University of South Florida Lakeland is dedicated to ***Excellence, Innovation and Collaboration***:

Excellence

- Faculty who are nationally recognized scholars and practitioners
- An active, engaging, learner-centered academic environment
- The development of locally and nationally recognized programs in **5** areas of distinction and competitive advantage: 1) community health and wellness, 2) education, 3) entrepreneurship and economic development, 4) manufacturing engineering, and 5) information technology.

Innovation

- Research, inquiry and new technologies to advance knowledge and promote creative enterprise
- Interdisciplinary and distance education programs

Collaboration

- With schools and community colleges to advance access to high quality education meeting current and future needs of a changing community and global society
- With businesses and industries to develop a highly skilled and globally competitive workforce
- With communities and community agencies to enhance the welfare, vitality and standard of living of the region and state

b) Description of USF Lakeland service area(s).

The primary service area for the USF Lakeland Campus is Polk, Highlands and Hardee Counties, and includes the Florida High Tech Corridor. U.S. Census Bureau, Enterprise Florida, and the University of Florida Bureau of Economic and Business Research show regional population growth projections for the Year 2020 increasing to 643,307 for Polk County, Highlands County to 121,900 and Hardee County to 50,800.

c) Supplemental policies of the President defining the University's mission.

The mission of USF Lakeland as a Regional Campus.

As a comprehensive regional campus of the University of South Florida, USF Lakeland provides undergraduate, graduate and continuing professional education programs in five areas of distinction in response to the rapidly changing community and economic development of the central Florida region that it serves. These areas are: 1) community health and wellness, 2) education, 3) entrepreneurship and economic development, 4) manufacturing engineering, and 5) information technology.

Beliefs

USF Lakeland is committed to the principle that education liberates individuals from ignorance and dogmatism, frees them for critical and reflective thought and for wise and effective action. USF Lakeland is committed to developing knowledgeable and skilled citizens who exercise reason, ethical decision making and socially responsible action in the pursuit of individual and community interests. USF Lakeland builds partnerships to collectively address community needs and resolve community problems. USF Lakeland develops community leadership necessary to achieve the economic opportunity, vitality and enhanced quality of life envisioned by the communities we serve.

(2) ANALYSIS REQUIREMENTS. This element shall provide, at a minimum, the following analyses:

a) **A description of how the University's mission has changed (or not) since its inception.**

The USF Lakeland mission of providing a variety of complete undergraduate and graduate degrees is focusing on the application of research and new technologies to advance creativity, entrepreneurship and community and economic development. The focusing of the campus mission responds to the challenges of social, community and economic development in a rapidly changing and technology driven world, and in particular, to a geographic region anticipated to grow by 1.3 million in the next 10 years and situated at the western gateway to the emerging Florida High-Tech Corridor

b) A description of how the University's mission has changed since the last master plan was prepared.

Not applicable.

c) A description of how the University fulfills or accomplishes the roles established by the Department of Education, Division of Colleges and Universities for the State University System.

Mission as a Regional Campus:

USF Lakeland is positioned in a geographic region anticipated to grow by 1.3 million in the next 10 years and situated at the western gateway to the emerging Florida High-Tech Corridor. An area once driven by citrus farming and phosphate mining is rapidly becoming a national warehousing and distribution center with increasing needs for advanced technology. In addition social and community development needs highlight the importance of post-secondary education to provide access to higher skill and higher wage jobs and to enhance the quality and standard of living in the region. Our challenge as a regional campus is to provide access to baccalaureate, post-baccalaureate, graduate and continuing professional education for the many anticipated new citizens of the communities we serve, and to meet the increasing need for new knowledge, skills, research, technology and creativity for a rapidly changing economy and regional development.

2.0 ACADEMIC PROGRAM ELEMENT

PURPOSE

The purpose of this element is to describe the existing and planned future development of academic programs at the University and among its various colleges and schools.

(1) DATA REQUIREMENTS. This element shall be based on the following data:

a) Headcount enrollment, undergraduate and graduate, for last available Fall term (2003), by campus.

b) FTE enrollment, undergraduate and graduate, for each college and by campus (Fall 2003).

Table 2.1: Headcount and Full Time Equivalent (FTE) Enrollment by College and Campus

ACADEMIC YEAR	CURRENT FTE	TOTAL HEADCOUNT
Fall 2005	647	1,294

Source: USF Fact Book 2003-2004, Florida Benchmarking Data, July 2004

c) Headcount enrollment by major, for each college and campus (Fall 2005).

Table 2.2: Majors for Colleges on Campus

	UNDERGRADUATE	GRADUATE
Arts & Sciences	471	25
Business	341	8
Education	100	107
Engineering	124	5
Information Technology	57	
Undergraduate Studies	58	

Source: USF Lakeland Institutional Research

d) Headcount in non-fundable programs (e.g., continuing education).

e) Headcount enrollment of all other activities which generate facility usage, by campus and by college.

Information was unavailable to complete this requirement.

f) Inventory of all degree programs by college (Fall 2005).

Table 2.3 Degree Programs by College

Arts and Sciences	BACCALAUREATE	MASTERS	DOCTORATE
Criminology	BA		
Interdisciplinary Social Sciences	BA		
Psychology	BA		

Arts and Sciences	BACCALAUREATE	MASTERS	DOCTORATE
Social Work	BSW	MSW	

Business	BACCALAUREATE	MASTERS	DOCTORATE
General Business	BS		

Education	BACCALAUREATE	MASTERS	DOCTORATE
Counselor Education		MA	
Educational Leadership		MEd	
Elementary Education	BS		
Reading Education		MA	
Special Education	BS		

Engineering	BACCALAUREATE	MASTERS	DOCTORATE
Computer Information Systems	BSIS		
Industrial Engineering	BSIE		

Undergraduate Studies	BACCALAUREATE	MASTERS	DOCTORATE
Leadership Studies (Minor)	Minor		
Information Technology	BSIT		
IT Certification	Certificate		

Source: USF Lakeland Office Institutional Research February 2004

g) Distribution of faculty and staff (Fall 2005).

Table 2.4 Distribution of Total Headcount of Faculty and Staff (full and part-time)

	FACULTY (Part and Full Time)	STAFF	ADMINISTRATION	TOTAL
Arts & Sciences	24	1	1	26
Business	10	2	1	13
Education	21	5	3	29
Engineering	8	3	1	12
Undergraduate Studies	13	2	1	16
Academic Support	0	19	6	25
Administrative Services	0	8	3	11
Other Offices	0	11	6	17
Total	76	51	22	149

Source: USF Lakeland Office of Institutional Research February 2004

(2) ANALYSIS REQUIREMENTS. The element shall provide, at a minimum, the following analyses for the planning time frame:

a) Excluding major new professional or doctoral programs, and within the constraints of the projected enrollment, provide projections of anticipated academic degree programs for Year 05 and Year 10.

Table 2.5 Proposed Degree Programs by College

Arts and Sciences	BACCALAUREATE	MASTERS	DOCTORATE
Criminology	BA / BSAS		
Interdisciplinary Social Science	BA		
Psychology	BA		
Social Work	BSW		
Gerontology	BSAS		
All other Arts and Sciences	Misc BA/BS		
Graduate Social Work		MSW	
Graduate All other Arts and Sciences		Misc. Masters	

Business	BACCALAUREATE	MASTERS	DOCTORATE
General Business Administration	BS		
General Business	BSAS		
Graduate Business Administration		MBA	

Education	BACCALAUREATE	MASTERS	DOCTORATE
Elementary Education	BS		
Special Education	BS	MA	
Early Childhood Development	BSAS		
All other Education	Misc. BS/BA		
Counselor Education		MA	
Educational Leadership			M.Ed.
Reading Education		MA	
All other Education Graduate		Misc. Masters	

Engineering	BACCALAUREATE	MASTERS	DOCTORATE
Industrial Engineering	BSIE	MS	
Information Systems	BSIS		
Industrial Engineering	BSAS		
All other Engineering	Misc. BS/BA		

Public Health	BACCALAUREATE	MASTERS	DOCTORATE
Nutrition	BS	MS	
Health Services Administration	BS		

Undergraduate Studies	BACCALAUREATE	MASTERS	DOCTORATE
Information Technology	BSIT/BSAS	MA	
Leadership Studies	Minor		

Source: USF Lakeland 2006-2011 Strategic Plan

b) Distribution of projected FTE enrollment by campus, undergraduate and graduate.

c) Based on projected FTE enrollment, distribute anticipated student headcount by campus for Year 05 and Year 10 of the planning time frame

Table 2.6 Projections for Future Student Enrollment (Year 5 and Year 10)

STUDENT ENROLLMENT	2009-10	2014-15
FTE	1,736	4,344
HEADCOUNT	3,472	8,688

Source: USF Lakeland Institutional Research, Rickes and Associates, March 2005

d) From this projected headcount enrollment in Year 5 and Year 10, estimate the proportion of enrollment represented by:

On-campus resident students, off-campus students residing within 1 mile of campus and all other off-campus students.

This information does not exist at this time. A special study will be required to obtain this data after the new campus has been established and development has begun in the area. As of this writing no housing exists within one mile of the campus location, and no housing exists on the campus. Thus current headcount numbers would reflect the number of all other off-campus students.

3.0 URBAN DESIGN ELEMENT

PURPOSE

The purpose of this element is to develop an understanding of the overall physical form of the development within the University and its relationship to the surrounding community, and based on this understanding, provide conceptual principles for the organization of future development on the campus.

(1) DATA REQUIREMENTS. This element shall be based, at a minimum, on the following data and/or information:

a) A description of the spatial form of existing development on the campus and in the context area. This description shall consist of one or more diagrammatic analysis maps and companion narrative describing the following:

1. **Campus open spaces character - a qualitative description of the existing spatial organization, enclosure, activity, and symbolic associations.**
2. **Campus visual structure - a qualitative identification of existing visual landmarks, edge conditions, entrances, building location and orientation, mass and scale, landscape character, ground level functional character, etc.**

b) An inventory of existing building service areas, service entrances, trash collection points, etc.

c) An identification of existing high activity buildings and spaces.

d) An identification of existing functional linkages, i.e., major pedestrian, auto or other linkages.

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

e) A description of the character of existing buildings and open spaces within the context area. This description shall include one or more diagrammatic analysis maps and companion narrative describing the visual structure and open space character of the area.

The primary service area for the USF Lakeland Campus is Polk, Highlands and Hardee Counties, and includes the Florida High Tech Corridor (FHTC). The USF Lakeland Campus is presently located in a somewhat rural area and has few buildings within the context area with a discernable character of architectural style.

There are numerous historic buildings within downtown Lakeland, Florida. Notable detailing within Lakeland's exemplary parks might be reflected in campus detailing of plazas, courtyards and other site amenities. With this opportunity to create a spatial quality for a new campus, attention must be given to establishing a hierarchy of spaces. From courtyards and plazas, to unstructured open spaces, to centralized "common" areas, the intent to create these "memorable" spaces will be highly prioritized during the establishment of a campus plan.

(2) ANALYSIS REQUIREMENTS. This element shall provide, at a minimum, the following analyses:

a) An analysis of the evolution of the development pattern of University buildings and open spaces.

The initial design of a new campus such as the USF Lakeland Campus affords university personnel and planners the opportunity to master plan for the initial phase of campus development as an integral part of a comprehensive plan for the entire campus build-out. This long-range plan will allow future campus development to remain flexible in reacting to changing dynamics while adhering to a coherent set of aesthetic and philosophic guiding principles.

In establishing a stringent set of design standards the USF Lakeland Campus may evolve in an orderly, structured manner that remains true to the founding principles that determine the institution's identity. As short-range plans are determined in the light of comprehensive long-range planning it allows some measure of discretion and resolution for future planning efforts.

When a long-range plan is in place, sufficient information is available for evaluating change and growth to ensure that the campus plan can be modified in an orderly, thoughtful manner.

b) An identification of and assessment of the advantages and disadvantages of alternative spatial configurations by which future development on the campus may be organized. This analysis shall include consideration of methods to improve energy efficiency and alternatives for coordinating the pattern of buildings and spaces along the University/community boundary.

Alternate spatial configurations were considered in the development of campus build-out scenarios. Each of the concepts offers differing campus arrangements for campus facilities, vehicular circulation, open space and preserved vegetation. The primary variables of the three concepts are: the location of a perimeter loop road and the number of campus entrances, the amount of open space and preserved areas available and the realization of views from offsite onto the campus. Factors that affect the final determination of the master plan concept are: parking garages being utilized in the initial development or future phases of development and how the phasing of on-campus housing, open space and recreational facilities will be determined.

Other desirable features of the intended planning approach, include the creation and enhancement of site axis within the campus and the placement of signature architectural elements in strategic locations for off site university visibility. A proposed multi-functional building is being considered as a significant facility in initial campus development. This will be the hub of campus development and it should be easily recognized, accessible and centrally located.

The desire to preserve existing site tree canopies where feasible and to maintain an existing vegetative buffer along Interstate 4 must be balanced with the benefits of other campus development goals. Specific planning elements envisioned for the physical campus plan include the preservation of offsite view corridors to the USF Lakeland campus from Interstate 4 at the northwest and northeast corners of the site. Another essential organizing element envisioned for campus development is the establishment of strong internal axes that afford dramatic views on campus and into the campus from offsite locations. Proposed axes may be defined by entry gates, colonnades, tree plantings, lighting and building placements. (See Figure 3.1: Site Dynamics).

c) An identification and assessment of alternative future activity location and linkage concepts for the campus and the context area.

The campus property is bordered on the west and south by vacant land that is part of the Williams DRI. It is bordered on the north by a high voltage power line easement and Interstate 4. The Polk Parkway forms the eastern property boundary. The relative compactness of the property for the USF Lakeland campus necessitates the judicious planning of the site to ensure accommodation of all planned functions for final build-out of the site. (See Figure 3.2: Activity Location and Linkages Concept).

The determination of the final projected headcount may be limited by the developable acreage that can be feasibly developed at a reasonable cost. There are two additional properties, Parcel 2 and Parcel 3, each previously mined parcels that are highly disturbed and are a considerable distance from the subject property. Parcel 2 has the greater potential for development, but would require considerable cost for site improvements. Development of these parcels is not an immediate consideration at this time.

Access to the USF Lakeland Campus from CR 570 is limited by its proximity to the Interstate 4 interchange. FDOT standards (described in 11.0 Transportation Element) require that a campus entry road be located several hundred feet south of the proposed campus core at the northeast end of the existing DRI site. There is potential to create access roads to the adjacent land uses within the Williams DRI.

4.0 FUTURE LAND USE ELEMENT

PURPOSE

The purpose of this element is to describe the existing and future land use pattern to be developed on USF Lakeland and to address how this land use pattern will be coordinated with that planned by the host community.

(1) DATA REQUIREMENTS. This element shall be based on the following data:

a) A description of the location(s) of University facilities within the State.

The proposed USF Lakeland Campus is located in the southwest quadrant of the intersection of Interstate 4 and Polk Parkway, in Lakeland, Polk County, Florida. (See Figure 4.1: State of Florida Location Map).

b) A description of the location of University facilities within the host community including an identification of all facilities on University lands not under the jurisdiction or operation of the State University System.

The proposed USF Lakeland Campus is located seven miles north east of the City of Lakeland and six miles northwest of the City of Auburndale. USF Lakeland does not currently have any Campus facilities within the host community. (see Figure 4.2: Host Community Location Map).

c) Student enrollment projections as prescribed in the General Requirements section of this Guideline.

Table 4.1 Projected Future Student Enrollment

STUDENT ENROLLMENT	2009-10	2014-15
FTE	1,736	4,344
HEADCOUNT	3,472	8,688

Source: USF Lakeland Institutional Research, 2006-2011 Strategic Plan

d) A legal description of the property within the University's jurisdiction and a description of the land acquisition program under which the property was obtained.

Legal Description (effective December 17, 2004):
Parcel 1A: A portion of Sections 7 and 18, Township 27 South, Range 25 East, Polk County, Florida, described as follows: Commence at the intersection of the south line of said Section 7 with the westerly line of the Polk Parkway Limited Access Right of Way; thence run North 89°02'27" West along said Westerly right of way line, a distance of 10.52 feet; thence South 50°16'35" West, as distance of 263.36 feet to an intersection with a non-tangent curve concaved to the Southwest and having a radius of 1800.00 feet; thence Northwesterly along said curve to the left through a central angle of 37°33'39", an arc distance of 1180.00 feet, (chord equals 1158.99 feet bearing equals North 56°33'07" West) to the beginning of a compound curve concave to the Southwest and having a radius of 12912.16 feet; thence Northwesterly along said curve to the left through a central angle of 08°23'12", an arc distance of 1890.00 feet, (chord equals 1888.31 feet

bearing equals North 79°31'32" West); thence North 06°16'52" East, a distance of 259.17 feet to the beginning of a curve concave to the West and having a radius of 2000.00 feet; thence Northerly along said curve to the left through a central angle of 23°28'50", an arc distance of 819.63 feet, (chord equals 813.90 feet bearing equals North 05°27'33" West); thence North 17°11'58" West, a distance of 1326.60 feet to the Southerly line of lands lying conveyed to the City of Orlando Utilities Commission in Official Records Book 2057, Page 646; thence North 72°48'11" East along said Southerly line, a distance of 1847.00 feet to the Westerly right of way line of the aforesaid Polk Parkway Limited Access Right of Way; thence along said Limited Access Right of Way lines the following twelve (12) courses; (1) thence South 87°42'34" East, a distance of 38.47 feet to the beginning of a curve concave to the South and having a radius of 812.23 feet; (2) thence Southeasterly along said curve to the right through a central angle of 45°20'58", an arc distance of 642.88 feet, (chord equals 626.23 feet bearing equals South 62°47'29" East); thence South 17°12'54" East, a distance of 1795.36 feet; (4) thence North 72°47'32" East, a distance of 50.00 feet; (5) thence South 17°12'54" East, a distance of 1000.00 feet; (6) thence North 72°47'06" East, a distance of 10.00 feet; (7) thence South 17°12'54" East, a distance of 213.00 feet; (8) thence South 72°47'06" West, a distance of 248.00 feet; (9) thence South 17°12'54" East, a distance of 381.30 feet; (10) thence South 74°29'53" East, a distance of 227.01 feet; (11) thence North 72°47'32" East, a distance of 57.01 feet; (12) thence South 17°12'54" East, a distance of 73.30 feet to the Point of Beginning. Containing 171.20 acres.

Parcel 2: A portion of Section 13, Township 27 South, Range 24 East, Polk County Florida, Florida, described as follows: Commence at the southwest corner of said Section 13; thence North 00°22'02" West along the west line of said Section 13 a distance of 250.00 feet to the Point of Beginning, thence continue North 00°22'02" West along said west line a distance of 3427.00 feet; thence North 89°37'40" East a distance of 2242.00 feet; thence South 00°22'02" East a distance of 3427.00 feet; thence South 89°37'40" West a distance of 2242.00 feet. Containing 176.38 acres.

Parcel 3: A portion of Section 13, Township 27 South, Range 24 East, Polk County, Florida, described as follows: Commence at the southwest corner of said Section 13; thence North 00°22'02" West along the west line of said Section 13 a distance of 250.00 feet; thence North 89°37'40" East a distance of 2242.00 to the Point of Beginning; thence North 00°22'02" West a distance of 3427.00 feet; thence North 89°37'40" East a distance of 2338.00 feet, thence South 00°22'02 East a distance of 3427.00 feet; thence South 89°37'40" West a distance of 2338.00 feet to the Point of Beginning. Containing 183.90 acres.

Land Acquisition Program:

In response to a growing service area and the need to accommodate the attendant growth in higher education degree programs, USF Lakeland is developing a Campus Master Plan for an additional campus that offers capabilities for future expansion, more academic programs and better integration with the community.

USF Lakeland initiated an Additional Campus Site Land Donation Plan, inviting proposals for charitable gifts of property, permanent endowment, and site improvements to create an expansion of its educational services in Central Florida to a new primary, comprehensive campus for USF Lakeland.

The Campus Master Plan Design Team, consisting of master planners, environmentalists, civil engineers, transportation experts, real estate attorneys and aviation experts, were tasked with the development of Comparative Site Analysis report. Documentation consisted of a comparative information inventory, preliminary data collection, and preliminary data analysis for each of the five land donor sites selected for consideration.

Presented with findings for the five sites, the USF Lakeland Acquisition Committee recommended the selection of land to be donated by Williams Acquisition Holding Company, Inc.

e) A discussion of title interest held by the Board of Trustees of the Internal Improvements Trust Fund (including reservations and encumbrances such as leases).

The original *Agreement for Donation of Land* (Agreement) was signed on November 22, 2005 between the University of South Florida Board of Trustees and Williams Acquisition Holding Company, Inc. and can be found on file with USF Lakeland administration. The *Agreement for Donation of Land* was then renegotiated and resigned on January 23, 2006 and is on file with USF Lakeland Administration and the Office of General Counsel, USF System. Title transfer for this land is expected on or about October 31, 2006 pursuant to the Agreement.

f) Designated single-use or multiple-use management, as defined in Chapter 18-4.003, Florida Administrative Code, for the property.

USF Lakeland is ultimately designated for single use management as a University in the USF System and in the State University System.

g) A description of alternative (non-educational) uses of the leased premises considered by the University but never adopted, if appropriate.

No such uses have been considered or adopted.

h) Proximity of University property to other significant local, state or federal land or water resources, as identified in adopted plans.

The Lakeland Regional Medical Center is located off of Lakeland Hills Boulevard, approximately eight miles west and three miles south of the proposed USF Lakeland property. Providence Fire Department, Station No. 1 and Station 2 and Polk County Fire Station No. 7 in Lakeland are all located within 10 miles of the property. The City of Bartow, located less than eight miles south, serves as the county seat and is a major intermodal agricultural center. Lakeland, a major warehousing and distribution center is located less than eight miles southwest of the property. Cultural centers located within eight miles of the property include Winter Haven – NE Recreational and Cultural Center and Florida Center For Language and Culture in Winter Haven. A number of historical sites and public parks are also located within a five-mile radius of the property. Examples are Saddle Creek Park, as well as the Lake Parker and Lake Ridge Recreation Areas.

i) Statement as to whether the University property is within an aquatic preserve or a designated area of critical state concern or an area under study for such designation.

The parcel (Parcel 1A) proposed for the development of the USF Lakeland Campus has not been designated as an aquatic preserve or of critical state concern or under study for such a designation.

j) A description of existing land uses and zoning for the context area.
Land use categories shall be identified on the existing land use map or map series and described in accordance with categories adopted by the local government in their Comprehensive Plan.

The City of Lakeland's Future Land Use Map uses generalized land use categories to describe anticipated growth patterns over the next 10 years. The context area is shown as primarily having single-family residential land uses and agriculture land uses. (See Figure 4.3: Context Area Land Use and Zoning Map.

(k) The following generalized land uses on University property shall be shown on the existing land use map or map series:

1. **Academic Use;**
2. **Support Use;**
3. **Residential Use;**
4. **Recreational and Open Space Uses;**
5. **Utilities Use;**
6. **Parking Use;**
7. **Vacant or Undeveloped Land;**
8. **Research Use;**
9. **Conservation Areas; and**
10. **Other public facilities**

l) If the University determines it necessary to utilize other categories of land use, or to combine categories of land use, such categories or combinations of categories shall be shown on the existing land use map or map series and clearly identified in the legend.

m) The approximate acreage and general range of density or intensity of use shall be provided in tabular form for the gross land area included in each existing land use category.

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

n) The following natural resources shall be shown on the existing land use map or map series:

1. **Beaches and shores;**
2. **Surface waters;**
3. **Wetlands;**
4. **Native vegetative areas; and**
5. **Minerals and soils.**

See 13.0 Conservation Element for a delineation of the natural resources found on the proposed USF Lakeland Campus.

o) Historic and archaeological resources (including all sites listed in the Florida Site File of the National Register of Historic Places) shall be shown on the existing land use map or map series.

A study developed by MSCW, Inc. provides a more detailed account of any known historic or archaeological resources found at the proposed USF Lakeland Campus property. This

report is on file at USF Lakeland Campus office of the Associate Vice President for Campus Planning and Development.

(2) ANALYSIS REQUIREMENTS. This element shall be based upon the following analyses which support the campus master plan.

a) An analysis of the amount of land that will be required to accommodate the planned future enrollment of the University including:

1. **The categories of land use and their densities or intensities of use;**
2. **The estimated gross acreage for each category; and**
3. **A description of the methodology used. The methodology should be based on floor area ratio (F.A.R.) or other acceptable means of establishing the relationship between land requirements and building areas.**

An analysis of standards set forth by other elements of this Inventory and Analysis indicate that the University should not require additional land to accommodate future growth for this ten-year planning period. The University acquisition of 171.50 acres from the Williams Acquisition Holding Company will meet the needs of the University's projected enrollment of students within the ten-year period.

Undeveloped Uplands. There is approximately 171.50 acres of undeveloped uplands in Parcel 1A that could potentially be used for University facilities. This total land area is adequate to accommodate the University's projected land use needs within the planning period. However, many of these upland areas contain ecological features that are sensitive to development. Therefore, the USF Lakeland Campus Master Plan's 4.0 Future Land Use Plan will address specific upland areas that might be preserved and other areas that could be developed with minimal environmental impact. The recommendations of the Future Land Use Plan will effectively reduce the total acreage of undeveloped uplands available for construction.

Housing. The first phase of housing will provide approximately 500 bed spaces. With 180,000 square feet associated with these bedspaces, the University will need to utilize approximately 2.5 acres for residential housing.

Recreation and Open Space. The University currently has approximately 64.8 acres in Parcel 1A designated for the potential use as recreation and open space land use. University standards call for 10 acres of active recreation and open space per 1,000 students. The University will be able to meet its current standard scale requirement requiring no additional acreage. Lands designated for this land use should provide the necessary area to meet the recreation and open space land use requirements. The Future Land Use Plan found in the campus master plan document illustrates potential Recreation and Open Space land use.

Support. Proposed Support facilities will comprise 552,400 net square feet on 2.3 acres. Some of the undeveloped upland areas at the perimeter of the proposed campus core can be designated for support facilities. As the campus core expands and becomes more dedicated to strictly academic land use, an exterior location is the most desirable.

Academic. Proposed Academic land use, will be comprised of 1,071,500 net square feet on 7.4 acres, and can be accommodated for the planning period by the current land area available. It is anticipated that this land use will remain primarily within the campus core in Parcel 1A. The planned future facilities are to be located within the campus core.

Wetlands. There are currently 28 acres of existing wetlands within Parcel 1A. Because of the condition of these wetlands and their eminent developability based upon USF Lakeland's agreement with Williams Acquisition Holding Company, Inc., the existing wetlands will be utilized in ways that can benefit the campus' aesthetic character, yet follow the University's academic mission.

Parking. Parking ratios will be initially assessed at a 2:1 space ratio (two students to every one space). As headcount increases, this ratio will begin to move more to a 3:1 ratio and possibly increase. Parking will utilize approximately 20.0 acres. Initial development will have to accommodate projected headcount because of the lack of surrounding development and accessibility issues. As the campus growth patterns increase and suitable surrounding development follows suit, better opportunities for transit systems, bikeways or other alternative methods of transportation will be introduced.

b) An analysis of projected future space and building needs for academic facilities, developed in the "Analysis Requirements" of the Academic Facilities Element.

c) An analysis of projected future space and building needs for support facilities, developed in the "Analysis Requirements" of the Support Facilities Element.

Table 4.2 Projected Academic and Support Space and Building Needs

Space Types	Year 5		Year 10		Grossing Factors
	1,736 FTE 3,472 Headcount		4,344 FTE 8,688 Headcount		
	NASF	GSF	NASF	GSF	
Classrooms	25,316	39,000	62,581	97,000	65%
Teaching/Research Labs	22,688	41,000	56,674	103,000	55%
Offices (Faculty)	25,772	40,000	77,277	119,000	65%
Offices (Administrative)	40,311	62,000	49,407	76,000	65%
Library/Study	59,575	92,000	95,475	147,000	70%
Auditorium/Exhibition	18,846	27,000	37,908	54,000	70%
Gymnasium	21,853	31,000	56,674	81,000	70%
Student Center	32,982	47,000	47,987	69,000	70%
Food/Merchandising	21,425	31,000	51,297	73,000	70%
Campus Support Services	26,500	38,000	68,029	97,000	70%
Health Care	1,736	3,000	4,344	7,000	65%
Total	297,004	451,000	607,644	923,000	
ASF/FTE & GSF/FTE	171	260	140	212	
Residential			250,000	358,000	1,000 beds 70%
Faculty		186		404	
Administrative/Staff		294		496	

Source: Rickes Associates, February 28, 2005

d) An analysis of existing vacant and undeveloped land on the University campus to determine its suitability for use, including where available:

1. Gross vacant or undeveloped land area;

Parcel 1A consists of 171.2 acres of undeveloped land, Parcel 2 consists of 176.38 acres and Parcel 3 consists of 83.90 acres.

2. Soils;

The *Soil Survey of Polk County, Florida* (U. S. Department of Agriculture, Soil Conservation Service, November, 1990) indicates that the soil types within the subject property include Arents-Water complex (11), Samsula muck (13), Tavares fine sand, 0 to 5 percent slopes (15), Smyrna and Myakka fine sands (17), Immokalee sand (21) and Arents, 0-5% slopes (68). Tavares fine sand is a well-drained sandy soil found on uplands. The Smyrna and Myakka sands and Immokalee sand are moderately well drained to poorly drained soils found in flatwoods. Samsula muck is a very poorly drained soil found in swamps, marshes and flatwoods depressions. The Arents are soils of disturbed areas (i. e., mined sections). Tavares fine sand is an upland soil. Samsula muck is a hydric soil while the remainder of the soil types may be considered hydric soils under certain circumstances by the state and federal regulatory agencies. Initial soil conditions analyses was conducted as a component of the site selection process to determine the most suitable land donation offer for the new campus. These results can be found the Comparative Site Analysis report dated July 14, 2003 and is on file at USF Lakeland.

3. Topography;

The proposed USF Lakeland Campus is located on the western edge of the Winter Haven Ridge physiographic region of Florida and was historically characterized by rolling sandhills interspersed with pine flatwoods, forested swamps and solution depression lakes. Elevations at the property range from approximately +165 feet NGVD to under +150 feet NGVD. Surface drainage is generally to the southwest through strip-mined areas to Saddle Creek, a major headwater tributary of the Peace River. The Peace River flows south and west ultimately discharging to the Gulf of Mexico at Punta Gorda.

4. Natural resources; and

Five (5) upland and five (5) wetland vegetative communities are found at the subject property. Upland plant communities include improved pasture, pine flatwoods, live oak hammock, temperate hardwood hammock and spoil berms. Bay swamp, willow swamp, freshwater marsh, reservoirs, holding ponds and ditches comprise the wetland types. The vegetative community types present at the subject property are described below. This map was developed based on the Florida Land Use, Cover and Forms Classification System (FLUCFCS) (FDOT, January, 1999). The number in parenthesis is the corresponding FLUCFCS identification number for the subject land use/land cover type.

5. Historic and archaeological resources

The Department of Anthropology of the University of South Florida (USF) in June of 2003 conducted a Cultural Resource Assessment of the subject property. The assessment revealed that there is a high probability of finding archaeological sites at the unmined portion of Parcel 1. Four known sites exist, or have been known to exist within the Williams DRI property boundary. Three of the sites were destroyed either

by phosphate mining or during the construction of the Polk Parkway. One site, Saddle Creek 1 (8Po6106) is located adjacent to Parcel 1A. According to the USF assessment, the Tallahassee Master Site File has classified the site as not significant.

The Saddle Creek 1 site was discovered during a Cultural Resource Assessment of the Williams DRI property in 1999. The assessment did not recommend further archaeological testing or preservation of the site due to the paucity of artifacts discovered.

e) An analysis of opportunities for redevelopment and for elimination of uses that are inconsistent with the University's character and proposed future land uses.

There are no inconsistent land uses with those proposed for the USF Lakeland Campus.

f) A finding as to whether each planned use of University property is consistent with the adopted conceptual State Lands Management Plan.

No inconsistencies with the planned uses have been identified or noted to date.

g) If the analysis in 2 (a) - (e) indicate that the existing University campus will not provide sufficient capacity to accommodate the future needs of the University, an analysis shall be undertaken identifying how much additional land would be required to meet future needs including:

1. **The categories of land use and their densities or intensities of use;**
2. **The estimated gross acreage for each category; and**
3. **A description of the methodology used. The methodology should be based on floor area ratio (FAR) or other acceptable means of establishing the relationship between land requirements and building areas**.

An analysis of standards set forth by other elements of this Inventory and Analysis indicate that the University should not require additional land to accommodate future growth for this ten-year planning period. The University acquisition of 171.50 acres from the Williams Acquisition Holding Company will meet the needs of the University's projected enrollment of students within the ten-year period.

h) An assessment as to whether any portion of the University property should be declared surplus for release by the University for use or disposal by the State.

No property held by USF Lakeland should be declared surplus for release at this time. Future right-of-way requirements may allow USF Lakeland to release such areas in cooperation with the host community in order to receive additional benefits or improvements on or near the campus. USF Lakeland will continue to cooperate to the greatest extent possible in handling these matters with the host community, particularly as they relate to future transportation and infrastructure improvements.

i) In the event additional land is determined to be necessary for the future development of the University, an analysis of the context area adjacent to the University shall be undertaken to identify potential land areas for such expansion. This analysis shall consider, at a minimum, the following:

1. **Existing land use;**

   Refer to (1)(a) and Figure 4.2.

2. **Property values;**

   Property values for those parcels identified for acquisition is contained within analysis response (2)(g).

3. **Constraints that may limit future development;**

   All development on future acquired parcels will be done with adherence to all requirements and restrictions imposed by the USF Lakeland Campus Master Plan. Further constraints may be imposed by the adopted Polk County Comprehensive Plan and/or the City of Lakeland.

4. **Future proposed land use;**

   Proposed future land uses for any acquisition parcels may include Academic, Research, Housing, Recreation and Open Space and Parking.

5. **Building conditions (if appropriate);**

   No funds have been appropriated to make a determination on the condition of existing structures on any parcels recommended for acquisition.

6. **Property Ownership**

   Existing property ownership is known to exist on surrounding parcels. USF Lakeland will inventory the extent of this ownership at a later date.

7. **Potential Acquisition and Relocation Costs**

   A study will be needed to determine the extent of ownership and potential acquisition/relocation costs.

j) In conjunction with the analysis conducted in 2 (i), an analysis shall be undertaken identifying and evaluating alternatives to additional land acquisition. At a minimum, this analysis should address:

1. **Potentials for increasing development height, intensity or density on the campus.**

   At this time, USF Lakeland does not envision a need to increase the existing development parameters.

2. **Potentials for increasing the utilization of existing and future academic spaces to reduce future facility needs in order to fit within existing land resources.**

   Not applicable.

3. **Potentials for reducing the planned future student enrollment.**

   USF Lakeland does not plan on reducing student enrollment over the course of this planning period.

4. **Potentials for transfer of programs to existing University satellite sites.**

   There are no plans for transferring academic programs, to an existing University satellite site since the USF Lakeland Campus serves the University of South Florida as a satellite site. The transfer of identified academic programs in the future is possible.

5. **Transfer of programs to other existing institutions (community colleges, etc.) which may have excess land development capacity.**

   USF Lakeland has no immediate plans to transfer programs to other existing institutions, which may have excess land development capacity.

k) An analysis of constraints that may limit the amount or location of future land use development on the University campus including:

1. **Areas of vegetation, surface waters, wetlands or wildlife habitat protected by State or Federal regulations;**

   These issues and areas are discussed at length in 13.0 Conservation Element.

2. **Areas encumbered by Federal land use development restrictions related to airports or other Federally regulated facilities in the vicinity of the University;**

   No such encumbrances are known to exist.

3. **Areas encumbered by flood hazard areas as defined by the Federal Emergency Management Agency (FEMA);**

   Federal Emergency Management Agency (FEMA) mapping indicates isolated Zone A flood hazard areas within Parcel 1A and more significant flood hazard areas on Parcels 2 and 3. In each case, the areas are delineated as having no 100-year flood elevations determined.

   Should development be proposed within any areas identified as flood hazard areas special design considerations, with respect to floodplain compensation due to filled areas and floor levels constructed above the 100 year flood elevation, would need to be considered. In Zones A and X, where the 100 year flood elevation is undetermined, flood studies would also be required.

4. **Areas encumbered by stormwater management or other utility requirements or easements; and**

   Stormwater Management: Based on the site observations and a review of the USGS Quad Maps, Parcel 1A does not appear to have any significant constraints to development as a result of topography or drainage. Parcel 2, due to its wetland areas and Flood Hazard issues, offers major constraints for development. Parcel 3 is presently not developable and is expected to remain in its unreclaimed state.

   Utility Requirements or Easements: Due to the fact the USF Lakeland property is a reclaimed mine site, special design considerations will be required for all areas of Zone B2 where it is proposed to locate underground utilities, road and parking areas and building structures. These design considerations involve special construction techniques including dewatering, surcharging of the soil, additional bedding

requirements and/or subsoil removal and replacement for utilities and roads and deep foundation systems, such as driven piles, for buildings.

5. **Areas on the University campus identified by the host community in its comprehensive plan to be developed for a particular land use or uses.**

   The campus is designated as an Institutional land use. This use is not anticipated to change and would require a land use amendment by the host community.

6. **Areas encumbered by electromagnetic radiation, nuclear radiation, explosion or other catastrophic hazards.**

   No such encumbrances are known to exist.

7. **Areas encumbered by existing buildings or other facilities considered likely to remain for the planning period.**

   No such encumbrances are known to exist.

l) An analysis of off-campus constraints that may limit the amount or location of future land use development on the University campus including:

1. **The availability of public facilities and services to serve new development (electricity, potable water, sanitary sewer, stormwater management, etc.)**.

   Public facilities, primarily infrastructure and utility requirements, are specifically discussed in 9.0 General Infrastructure Element and 10.0 Utilities Element. Electricity, potable water and sanitary sewer needs are anticipated to be provided for by the host community as they are now. Stormwater management requirements for new facilities at USF Lakeland will be subject to an Environmental Resource Permit (ERP) permitting process and will presumably fall under the jurisdiction of the regional water management district.

2. **Traffic capacity on roadways within the context area adjacent to the University. Traffic counts of origin/destination studies will be used to generate data.**

   Transportation needs are discussed in greater detail with 11.0 Transportation Element. Traffic capacity level-of-service standards for roadways within the context area have already been established by the host community. USF Lakeland will similarly establish a level-of-service standard for roadways within the campus perimeter.

3. **Other constraints.**

   No other constraints other than those imposed by Florida Statute or those to be negotiated in future Interlocal Agreements or Memorandum of Understanding with the host community are known to exist.

m) An analysis of the goals, objectives and policies adopted by the host community in their comprehensive plan related to development of land uses in the context area.

Table 4.3 Analysis of City of Lakeland's "Future Land Use Element"

CITY POLICY	ANALYSIS
GOAL: To provide for the best possible organization of land uses to meet the physical, cultural and economic needs of the present and future population in a manner that will maintain or improve the quality of the natural and man-made environment.	
Objective 1: A future land use classification system has been developed and used for locating uses on the Future Land Use Map projecting the publicly approved arrangement of land uses for a ten year period with a formal review and revision at least every five years.	
Policy 1G The City of Lakeland has designated City owned public buildings and grounds and other public, semi-public, and institutional land uses as "Public Institutional" (PI) on the future land use map based in the generalized criteria …… which includes a provision allowing public school uses as a permitted principal use in all land use categories…. Public schools area encouraged to locate near urban residential areas where the public facilities exist to support the new school.	USF Lakeland chose the site for its new university based on a multitude of criteria including the provision of future development opportunities within the context area and the land use designation that supports institutional land use. Residential development is planned for the surrounding lands, which will fulfill that criteria.
Policy 1.H: The City of Lakeland has, on its Future Land Use Map, indicated areas where major public facilities needed to support future development can be located within the Public Buildings and Grounds and Institutional Uses PI future land use category so that suitable land is reserved and available.	USF Lakeland campus is located in close proximity to major roadway intersections, which provides easy access for public safety, security and emergency response services.
Policy 1J: By 2003, the City shall consider land development regulations such as increased minimum setbacks for structures and signs for proposed development subject to impact for a roadway project….	USF Lakeland will adhere to minimum setback requirements to allow for clearance and non-obstruction for signage and roadway projects based on criteria established through state university system requirements.
Objective 3: Location of future land use on the Future Land Use Map will give consideration to and be dependent upon the availability of public facilities and services.	
Policy 3A; The City of Lakeland will direct development to areas where public facilities and services are available or are projected to be available.	USF Lakeland site selection criteria for the development of a new campus was based on the availability of adequate public facilities and services.
Objective 4: Location of uses on the Future Land Use Map is based on the existing and projected availability of adequate transportation facilities.	
Policy 4A: Permitted future development will not result in the deterioration of levels of services for the traffic circulation system below than acceptable level as adopted through the Traffic Circulation Element of this comprehensive plan.	As a requirement of the USF Lakeland Master Plan, analysis was completed for the anticipated impacts on the existing transportation network. No additional impacts were projected beyond what is being anticipated over the ten-year period.
Policy 4B: The Future Traffic Circulation Map designates new facilities or improvements to existing facilities necessary to support uses proposed on the Future Land Use Map.	The development of the USF Lakeland Campus and location of its entrance roadways was determined by the availability of facilities within the host community.

5.0 ACADEMIC FACILITIES ELEMENT

PURPOSE

The purpose of the element is to ensure provision of academic facilities to meet University needs during the planning period.

(1) DATA REQUIREMENTS. This element shall be based on the following data:

a) Projections of future student enrollment developed in the analysis requirements of the Academic Program Element.

Table 5.1 Projections of Future Student Enrollment

STUDENT ENROLLMENT	2009-10	2014-15
FTE	1,736	4,344
HEADCOUNT	3,472	8,688

Source: USF Lakeland Institutional Research, Rickes and Associates, April 2005

b) An inventory of existing building spaces used for academic functions. The inventory shall identify net and gross square feet and shall identify, at a minimum, the following academic uses:
1. **classroom space;**
2. **teaching laboratory space;**
3. **research laboratory space; and**
4. **library space.**

c) Existing space utilization.

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

d) Space use standards of the SUS for classroom, teaching laboratory, research laboratory and library space types. (ASF Assignable Square Footage).

The space use standards referred to as "Rickes Associates Guidelines" in Table 5.2 were developed from synthesizing best practices. The space use standards referred to as "Interpolated Tampa Factors" were provided by the University of South Florida and are drawn from current space generation factors used by the USF Tampa campus. These factors are multiplied by USF Lakeland student FTEs to obtain results.

Table 5.2 Space Use Standards for Academic Space Types

SPACE TYPE BY CATEGORY	RICKES ASSOCIATES		INTERPOLATED TAMPA SPACE FACTORS
	FORMULA	SPACE FACTOR	
Classroom	= WSCH X (25 ASF ÷ (67% X 35 Hours))	**1.07 per WSCH**	**11.81 ASF per FTE**
Teaching Laboratory			**20.08 ASF per FTE**
College of Arts & Sciences	= WSCH X (50 ASF ÷ (80% X 20 Hours))	3.13 per WSCH	
College of Business	= WSCH X (30 ASF ÷ (80% X 20 Hours))	1.88 per WSCH	
College of Education	= WSCH X (45 ASF ÷ (80% X 20 Hours))	2.81 per WSCH	
College of Engineering	= WSCH X (100 ASF ÷ (80% X 20 Hours))	6.25 per WSCH	
Information Technology	= WSCH X (100 ASF ÷ (80% X 20 Hours))	6.15 per WSCH	
Leadership Studies	= WSCH X (30 ASF ÷ (80% X 20 Hours))	1.88 per WSCH	
Nutrition & Dietetics	= WSCH X (85 ASF ÷ (80% X 20 Hours))	5.31 per WSCH	
Research Laboratory			**33.83 ASF per FTE**
College of Arts & Sciences	= 300 ASF X FTE-Researcher	300 per FTE-R	
College of Business	= 75 ASF X FTE-Researcher	75 per FTE-R	
College of Education	= 75 ASF X FTE-Researcher	75 per FTE-R	
College of Engineering	= 300 ASF X FTE-Researcher	300 per FTE-R	
Information Technology	= 300 ASF X FTE-Researcher	300 per FTE-R	
Leadership Studies	= 75 ASF X FTE-Researcher	75 per FTE-R	
Nutrition & Dietetics	= 300 ASF X FTE-Researcher	300 per FTE-R	
Library (Study Area)			**17.37 ASF per FTE**
Study Space	= 35 ASF X (15% FTE + 10% FTEF)		
Stack Space	= 0.1 ASF X Volumes	0.1 per Volume	
Processing Space	= 25% of Study and Stack Space		
Office Space	= FTE X (Office + Conference + Service)		64.67 ASF per FTE
Vice President	= FTEN X (300 ASF + 50 ASF + 25 ASF)	375 per FTEN	
Associate Vice President	= FTEN X (240 ASF + 50 ASF + 25 ASF)	315 per FTEN	
Dean	= FTEN X (240 ASF + 50 ASF + 25 ASF)	315 per FTEN	
Academic Administrator	= FTEN X (150 ASF + 50 ASF + 25 ASF)	225 per FTEN	
Director	= FTEN X (150 ASF + 50 ASF + 25 ASF)	225 per FTEN	
Faculty	= FTEN X (140 ASF + 0 ASF + 25 ASF)	165 per FTEF	
Staff	= FTEN X (120 ASF + 0 ASF + 25 ASF)	145 per FTEN	

Note: ASF = Assignable Square Footage; WSCH = Weekly Student Contact Hours; FTE = Full-Time Equivalent students; FTEF = Full-Time Equivalent Faculty.

Source: USF Lakeland Institutional Research, Rickes and Associates, March 2005

e) Existing total credit hours for each campus or satellite facility.

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

(2) ANALYSIS REQUIREMENTS. This element shall be based, at a minimum, on the following analyses:

a) A projection of future student credit hours distributed by campus or satellite facility.

Table 5.3 Projected Student Credit Hours (Fall Semester)

CREDIT HOURS BY DISCIPLINE	2004 STUDENTS	2009 STUDENTS	2014 STUDENTS
College of Arts & Sciences	4,045.4	11,480.0	34,683.5
College of Business	2,192.9	5,788.8	10,715.6
College of Education	4,078.4	4,889.9	13,728.1
College of Engineering	1,370.2	2,437.9	6,457.3
Information Technology	1,853.8	3.002.5	4,021.1
Leadership Studies	440.9	514.7	1,097.2
Nutrition & Dietetics	263.8	896.0	2,305.8
TOTAL	14,245.5	29,009.9	73,008.7

Note: Credit hours for 2004 are estimated from the credit hours by discipline for USF-Tampa. A ratio of credit hours to FTE was determined for USF-Tampa. This ratio was then used to estimate the credit hours for USF Lakeland based on projected FTE assuming a similar distribution of enrollment.
Source: USF Lakeland Institutional Research, Rickes and Associates, March 2005

b) A projection of future Weekly Student Contact Hours (WSCH) distributed by campus or satellite facility.

Table 5.4 Projected Weekly Student Contact Hours (Fall Semester)

CONTACT HOURS BY DISCIPLINE	2004 STUDENTS		YEAR 5 STUDENTS		YEAR 10 STUDENTS	
	WSCH Classroom	WSCH Laboratory	WSCH Classroom	WSCH Laboratory	WSCH Classroom	WSCH Laboratory
College of Arts & Sciences	3,034.0	1,011.3	8,610.0	2,870.0	26,012.6	8,670.9
College of Business	2,192.9	219.3	5,788.8	578.9	10,715.6	1,071.6
College of Education	3,262.7	815.7	3,912.0	978.0	10,982.5	2,745.6
College of Engineering	1,096.2	342.5	1,950.3	609.5	5,165.8	1,614.3
Information Technology	1,483.0	463.4	2,402.0	750.6	3,216.9	1,005.3
Leadership Studies	352.7	88.2	411.8	102.9	877.7	219.4
Nutrition & Dietetics	197.9	66.0	672.0	224.0	1,729.4	576.5
TOTAL	11,619.5	3,006.5	23,746.8	6,113.9	58,700.6	15,903.6

Note: Lecture and Laboratory Contact hours for 2004 are estimated from the credit hours by discipline shown in Table 5.3. A ratio of credit hours to weekly student contact hours for lecture and lab each was determined. This ratio was then used to estimate the contact hours based on projected FTE assuming a similar distribution of enrollment to USF-Tampa.
Source: USF Lakeland Institutional Research, Rickes and Associates, March 2005

c) A projection or assumptions about the future space utilization for the space types identified in the DATA REQUIREMENTS section of this element.

d) A projection of future net academic space need based on the future WSCH and ASF distributed by campus or satellite facility.

Table 5.5 Projections for Future Net Academic Space Needs

Space Type	2009-10		2014-15	
	1,736 FTE 3,472 Headcount		4,344 FTE 8,688 Headcount	
	Rickes Associates Guidelines	Interpolated Tampa Factors	Rickes Associates Guidelines	Interpolated Tampa Factors
Classroom	25,316	20,502	62,581	51,303
Teaching Laboratory	22,688	34,859	56,674	87,228
Library	49,575	30,154	86,243	75,455
Research Laboratory	12,535	58,729	28,195	146,958
Office Space	66,083	112,267	126,684	280,926

Source: USF Lakeland Institutional Research, Rickes and Associates, March 2005

e) A projection of future academic gross building area needs.

Table 5.6 Projections for Future Academic Gross Building Area Needs

Space Type	2009-10		2014-15	
	1,736 FTE 3,472 Headcount		4,344 FTE 8,688 Headcount	
	Rickes Associates Guidelines	Interpolated Tampa Factors	Rickes Associates Guidelines	Interpolated Tampa Factors
Classroom	40,506	32,803	100,130	82,085
Teaching Laboratory	36,301	55,774	90,678	139,661
Library	79,320	48,246	137,989	120,728
Research Laboratory	20,056	93,966	45,112	235,133
Office Space	105,732	179,627	202,694	449,482

Note: Square foot shown includes a 1.6 multiplier for reflecting gross square feet.
Source: USF Lakeland Institutional Research, Rickes and Associates, March 2005

f) An analysis translating the future net and gross building area requirements into building "increments." The basis for this analysis shall be fully described and shall be based on considerations of funding, prototypical building sizes, or other logical and replicable method of calculation. The analysis should also consider whether future new space needs would be best accomplished through renovations or additions to existing facilities.

The projected growth of students at USF Lakeland has determined that the construction of facilities occur in building increments of 150,000 to 300,000 GSF. These building increments were established in conjunction with the legislative funding requests with regard to efficient building mass and height. This is in response to campus visibility from the Interstate 4 corridor and its responsiveness to future campus development.

6.0 SUPPORT FACILITIES ELEMENT

PURPOSE

The purpose of this element is to ensure the provision of support facilities to meet University needs during the planning period.

(1) DATA REQUIREMENTS. This element shall be based on the following data.

a) An inventory of existing building spaces used for support facilities. The inventory shall identify net and gross square feet and shall identify at a minimum the following support uses:
1. **Administrative Offices of the University;**
2. **Physical Plant Facilities;**
3. **General Auxiliary Facilities (day care, service, etc.); and**
4. **Student Support Services and Activities.**

b) An inventory of all University owned or managed intercollegiate athletic facilities and intramural athletic facilities identifying:
1. **The number of ballfields, courts, etc.**
2. **The estimated usage of each site (frequency and number of people-both University and non-University users).**
3. **The total acreage of each site or facility.**

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

c) Projections of future student enrollment developed in the analysis requirements of the Academic Program Element.

Table 6.1 Projections for Future Student Enrollment

STUDENT ENROLLMENT	2009-10	2014-15
FTE	1,736	4,344
HEADCOUNT	3,472	8,688

Source: USF Lakeland Institutional Research, Rickes and Associates, March 2005

d) Space use standards of the State University System (SUS) for Administrative Office, Physical Plant, General Auxiliary and Student Support Service space types.

The space use standards referred to as "Rickes Associates Guidelines" in Table 5.2 were developed from synthesizing best practices. The space use standards referred to as "Interpolated Tampa Factors" were provided by the University of South Florida and are drawn from current space generation factors used by the USF Tampa campus. These factors are multiplied by USF Lakeland student FTEs to obtain results.

Table 6.2 Florida Board of Education Space Use Standards for Support Facilities

SPACE TYPE BY CATEGORY	RICKES ASSOCIATES		INTERPOLATED TAMPA SPACE FACTORS
	FORMULA	SPACE FACTOR	
Special Use Space			
Instructional Media	= 5 ASF X FTE (10,000 minimum)	5 ASF per FTE	0.99 ASF per FTE
Gymnasium/Athletics	= 12.1 ASF X FTE + 1.8 ASF X Staff Count		4.96 ASF per FTE
General Use Space			
Assembly/Exhibition	= 16,000 ASF + 7 ASF X (FTE+FTEF+FTEN)		3.00 ASF per FTE
Student Support			0.60 ASF per FTE
Food Service	= 10 ASF X (FTE + FTEF + FTEN)		0.00 ASF per FTE
Student Union	= [(25,000 ASF) + (5 ASF X (FTE – 1,000))] x 1.15		0.00 ASF per FTE
Support Space			
Central Computer (EDP)	= 4,500 ASF minimum		
Physical Plant	= 8% of the ASF of all other space types		5% of all other space

Note: ASF = Assignable Square Footage; FTE = Full-Time Equivalent students; FTEN = Full-Time Equivalent Staff; FTEF = Full-Time Equivalent Faculty.

Source: USF Lakeland Institutional Research, Rickes and Associates, April 2005

e) Existing space utilization for the support facilities space types listed in (1) a) above:

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

(2) ANALYSIS REQUIREMENTS. This element shall be based, at a minimum, on the following analyses:

a) A projection of future support service activities, identifying new or expanded activity requirements, distributed to the campus or satellite facility where the future activities are planned to occur, and

b) An analysis of the future needs of the athletic department for intercollegiate athletic facilities, intramural and casual-use athletic facilities.

The USF Lakeland Campus will accommodate future support service activity needs with the provision of a Student Center, Information Commons, Gymnasium and Physical Plant. See Table 6.4 for future needs for recreational facilities.

c) A projection or assumption about the future space utilization, for the space types identified in the DATA REQUIREMENTS section of this element.

Table 6.3 Projection of Future Support Service Activities

Space Type	YEAR 5		YEAR 10	
	1,736 FTE 3,472 Headcount		4,344 FTE 8,688 Headcount	
	Rickes Associates Guidelines	Interpolated Tampa Factors	Rickes Associates Guidelines	Interpolated Tampa Factors
Special Use Space	31,853	10,329	65,906	25,847
General Use Space	73,253	6,250	137,184	15,638
Support Space	27,472	13,655	70,228	34,168

Source: USF Lakeland Institutional Research, Rickes and Associates, April 2005

d) A projection of future net support space needs (or land area requirements for athletic facilities).

Table 6.4 Land Area Requirement for Recreational Facilities

CAMPUS	RECREATIONAL FACILITIES NEEDS (ACRES)
Parcel 1A	73.6

e) A projection of future support facility gross building area needs.

Table 6.5 Projection of Future Support Facility Gross Building Area Needs

Space Type	YEAR 5		YEAR 10	
	1,736 FTE 3,472 Headcount		4,344 FTE 8,688 Headcount	
	Rickes Associates Guidelines	Interpolated Tampa Factors	Rickes Associates Guidelines	Interpolated Tampa Factors
Special Use Space	50,964	16,527	105,449	41,355
General Use Space	117,204	9,999	219,494	25,021
Support Space	43,956	21,847	112,365	54,668

Note: Square foot shown includes a 1.6 multiplier for reflecting gross square feet.

f) An analysis translating the future net and gross building area requirements into building "increments". The basis for this analysis shall by fully described and shall be based on considerations for funding, prototypical building sizes or other logical and replicable method of calculations. The analysis should also include consideration of whether future new spaces needs would be best accomplished through renovations or additions to existing facilities.

Table 6.7 Projected Support Space and Building Needs

Space Types	YEAR 5		YEAR 10		Grossing Factors
	1,736 FTE 3,472 Headcount		4,344 FTE 8,688 Headcount		
	NASF	GSF	NASF	GSF	
Teaching/Research Labs	22,688	41,000	56,674	103,000	55%
Offices (Faculty)	25,772	40,000	77,277	119,000	65%
Offices (Administrative)	40,311	62,000	49,407	76,000	65%
Library/Study	59,575	92,000	95,475	147,000	70%
Auditorium/Exhibition	18,846	27,000	37,908	54,000	70%
Gymnasium	21,853	31,000	56,674	81,000	70%
Student Center	32,982	47,000	47,987	69,000	70%
Food/Merchandising	21,425	31,000	51,297	73,000	70%
Campus Support Services	26,500	38,000	68,029	97,000	70%
Health Care	1,736	3,000	4,344	7,000	65%
Total	297,004	451,000	607,644	923,000	

Source: Rickes Associates, February 28, 2005

g) An assessment of the adequacy of the existing intercollegiate, intramural and casual-use athletic facilities to meet the future needs for athletic facilities.

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Analysis section of this document.

7.0 HOUSING ELEMENT

PURPOSE

The purpose of this element is to ensure the provision of housing facilities on the University campus and within the host community adequate to meet the needs of the projected University enrollment.

(1) DATA REQUIREMENTS. This element shall be based on the following data:

a) An inventory of the total number of existing beds provided by the University on campus for undergraduate student use, identifying, if appropriate, optimum and maximum capacities, distributed by building and location (satellite campuses or facilities).
b) An inventory of the total number of existing beds provided on campus for graduate students.
c) An inventory of the total number of existing housing units, by type, provided on campus for married students.
d) An inventory of other existing student housing provided on campus (fraternities and sororities, etc.), identifying numbers of beds provided in each such facility.
e) An inventory of historically significant housing on campus.
f) A description of the existing types of housing provided on campus (apartment, dormitory, suites, etc.).
g) An inventory of any University provided housing located off campus, identifying number of beds, types of units and whether the facilities are rented or owned by the University.
h) Estimates of the number of undergraduate, graduate and married students housed on campus, and in University facilities located off campus.

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

i) Estimates of the number of full-time students housed off campus in non-University provided rental housing and the number of rental housing units occupied.

Because there is no data available concerning the number of students living off-campus at home, the following assumption have been made for off-campus projection purposes. Since no on-campus housing is currently available for USF Lakeland students, it is assumed that all students are considered to be living in some type of off-campus facility.

j) An inventory of the host community's rental housing supply by rental range as described in the host community's comprehensive plan or other best available data.

Table 7.1 Polk County Rental Housing Supply

Location	Median Rent
0 – Bedroom	$ 437
1 – Bedroom	$ 482
2 – Bedroom	$ 555
3 – Bedroom	$ 704
4 – Bedroom	$ 826

Source: Shimberg Center for Affordable Housing, HUD Fair Market Rent, 2005

(2) ANALYSIS REQUIREMENTS. This element shall be based, at a minimum, on the following analyses:

a) An analysis of existing University policies regarding the percentage of students for which on-campus housing is provided.

No specific policy exists; however, it is understood that USF Lakeland has projected a goal of a minimum of 5 percent of the full-time equivalent (FTE) student enrollment in on-campus housing. 500 bed spaces are planned within the ten-year planning period and 1,000 bed spaces are anticipated for campus buildout, however, adjacent development could offer housing opportunities for USF Lakeland students and provide the University with the ability to expand academic facilities.

b) A projection of the number of students to be housed on campus in University-provided facilities based on the existing policies for provision of on-campus housing. This projection shall include a description of handicap-accessible beds/units.

For Phase Two campus development, USF Lakeland will offer 500 beds with a variety of unit types for a diverse type of student. Since undergraduate and graduate students could potentially have different needs, the housing offered could include studio and efficiency privates, two bedroom privates, four bedroom privates, one bedroom doubles, two bedroom double and two bedroom quads. All units will apartment style with private bathrooms and kitchens. Each building will contain a laundry room, interior gathering areas and a common area courtyard

c) A projection of the numbers of students to be housed in non-University provided facilities on campus (fraternities, sororities, etc.).

As this is a new campus, USF Lakeland currently has no active on-campus fraternities and sororities. During this initial phase of development, USF Lakeland will undertake measures to develop appropriate plans for on-campus fraternities and sororities.

d) An analysis of the existing housing provided on campus.

1. **Age of buildings that house students and programs to retrofit or replace aged structures.**
2. **Physical condition of those buildings.**
3. **The existing rate structure charged for on-campus housing.**

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

e) An estimate of the number of additional on-campus housing units, by type, necessary to meet the needs described in Subparagraph (2) (a) (apartment, suite, dormitory, etc.).

The goal of the USF Lakeland Campus is to house a minimum of 5 percent of the full-time equivalent (FTE) students. 500 bed spaces will be available on campus within the ten-year planning Phase Two campus development will consider the first housing facilities to be constructed on campus. No additional traditional dormitory-style residence halls are anticipated at this time.

f) An analysis of potential on-campus sites and of the capacity of these sites (beds). This analysis shall describe the method used to translate total beds required into building and site requirements.

The proposed site for Phase Two campus development to accommodate the first housing facilities is yet to be determined. There has been discussion about mixing residential and academic land uses

for a future housing site. Another potential goal for future housing sites would consider relating housing to a new recreational center and unstructured open spaces.

g) A projection of the number of students that will be housed off campus in facilities provided by others (private market housing).

With an estimated FTE enrollment of 4,350 by Year 2013 and 500 bed spaces to be provided within the ten-year planning period, 3,850 FTE students will be housed in off campus facilities.

h) An assessment of the student impacts on the occupancy of the host community's rental stock.

Without detailed analysis of the number of students who will commute versus those renting within the host community, there is insufficient data to complete this requirement.

8.0 RECREATION AND OPEN SPACE ELEMENT

PURPOSE

The purpose of this element is to ensure the provision of adequate and accessible recreation facilities and open space to meet the future needs of USF Lakeland.

(1) DATA REQUIREMENTS. This element shall be based, at a minimum, on the following data:

a) An inventory of all existing privately-owned, state-owned, or local government-owned recreational facilities and open spaces within the context area. The following shall be identified for each site.

1. **The types of uses provided (activity based or resource based).**
2. **The types of recreation facilities (ballfields, courts, etc.) provided.**
3. **The estimated usage at each site (frequency and number of people).**
4. **The total acreage at each site.**

Table 8.1 Recreational Facilities within the USF Lakeland Service Area

FACILITIES	TYPES OF USES PROVIDED	TYPES OF RECREATION FACILITIES	TOTAL ACREAGE
Saddle Creek Park	Activity and resource	Picnic facilities, ball field, playground, fishing, nature trial, shooting range, boat ramps, campground	N/A
Adair Park	Activity	Playground, ball field, picnic facilities, swimming pool	N/A
Bryant Stadium	Activity	Football stadium	N/A
Curtis Peterson Park	Activity and resource	Picnic facilities, boat ramp, ball fields, bike path	
Dobbins Park	Activity	Playground, picnic facilities, ball fields	
Glendale Park	Activity	Playground, all purpose court	
Handley Field	Activity	Playground, all purpose court	
Henley Field	Activity	Baseball field	
John Jackson Park	Activity	Playground, park, courts	
Lake Bonny Park Boat Ramp	Resource	Boat ramp, fishing	
Lake Hollingsworth	Activity and resource	Boat ramp, trail, water skiing	
Lake Hunter	Activity and resource	Walkway, fishing pier, boat ramp, picnic facilities	
Lake Morton	Resource	Waterfowl sanctuary, scenic walkway	
Lake Parker Recreation Area	Activity and resource	Picnic facilities, play area, fishing, boat ramp	N/A

Table 8.1 Recreational Facilities within the USF Lakeland Service Area (continued)

FACILITIES	TYPES OF USES PROVIDED	TYPES OF RECREATION FACILITIES	TOTAL ACREAGE
Lake Wire	Resource	Waterfowl sanctuary	N/A
Lake Ridge Recreation Center	Activity	Recreation programs	N/A
Scott Kelly Recreation Complex	Activity	Pools, tennis courts	N/A
Sertoma Park	Activity and resource	Boat ramp, picnic facilities, fishing	N/A
Simpson Park	Activity	Playground, recreation center, court, picnic, pool	N/A
Southwest Softball Complex	Activity	Softball fields	N/A
Tigertown Complex	Activity	Ball fields, multipurpose building	N/A
Veterans Park	Activity	Playground, courts, ball fields	N/A
Winston Park	Activity	Ball fields, open play area	N/A
Westside Park	Activity	Softball complex, picnic facilities, playground, court	N/A
Tenoroc Fish Management Area	Activity and resource	Fishing, hiking, horseback riding, picnic facilities, shooting range	7,332 acres
Carter Road Park	Activity	Soccer and baseball fields, mountain bike trails	N/A
Gator Creek Reserve	Resource	Hiking trails, nature study	1,084 acres
Lakeland Highlands Scrub	Resource	Hiking trails, picnic facilities	551 acres
Aldine Combee Park	Activity	Picnic facilities, ball fields, open play areas	N/A
Banana Lake Park	Resource	Boat ramp, fishing pier, picnic facilities, walking trail	N/A
Christina Park	Activity and resource	Picnic facilities, ball fields, playground, open play area	N/A
Crystal Lake Park	Activity and resource	Picnic facilities, open play area, fishing pier, canoe access	N/A
Hunt Fountain	Activity	Picnic facilities, ball fields, courts, playground, horse arena	N/A

Source: The Ledger Guide to Polk, March 2004.

b) An inventory of all University-owned or managed recreation sites, open spaces, incidental recreation facilities, parks, lakes, forests, reservations, freshwater or saltwater beaches;

1. The estimated usage of each site;
2. The total acreage of each site or facility;

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document. However, USF Lakeland has no additional sites for the uses noted.

c) A description of the level of service standard(s) established by the host community for each type of recreation facility described in the comprehensive plan of the jurisdiction.

The goal, objective and policy statements in the Recreation and Open Space Element of the Lakeland Comprehensive Plan are consistent with the requirements of Chapter 163, Florida Statutes, and with the goals and Policies of the Central Florida Comprehensive Regional Policy Plan.

GOAL: To ensure adequate recreation and open space opportunities for all sectors of the community and enhance the quality of life Lakeland offers through the development of attractive parks and open spaces.

Objective 1: Provide a supply and variety of recreation opportunities to meet public need and respond to adopted level of service standards within the planning period.

Policy 1A: The City of Lakeland will adhere to minimum level of service standards for the provision of recreation sites and facilities including a minimum 3 acres of park/open space (scenic, neighborhood and community parks) per 1,000 population with 50% of this acreage in active facilities such as community and neighborhood parks and a minimum of one recreation complex per 30,000 population.

d) A description of any University-owned recreational facilities or open spaces that have been incorporated in the Recreation and Open Space Element of the host community's comprehensive plan.

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document. However, USF Lakeland has no additional sites for the uses noted. However, future University -owned recreational facilities and open spaces will be considered as a component of the host community's comprehensive plan.

(2) ANALYSIS REQUIREMENTS. The element shall be based, at a minimum, on the following analyses:

a) An analysis of the projected needs for recreation and open space facilities required to meet the needs of the future University population (students, faculty and staff) based on University standards and calculations or established level of service standards.

University standards call for 10 acres of active recreation and open space per 1,000 students. With a projected enrollment of 8,701, the University will be able to meet its current standard scale requirement requiring no additional acreage. Campus land designated for passive and active recreation uses should provide the necessary area to meet the recreation and open space land use requirements. The Future Land Use Plan found in the campus master plan illustrates potential Recreation and Open Space land use within this area.

b) Assessment of the adequacy of the existing recreational facilities and open spaces to meet the projected needs of the University (on-campus and off-campus) including a description of the extent to which off-campus facilities may meet some or all of the University projected needs.

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for this Analysis requirement.

c) An assessment of opportunities for alternative future facility siting in order to conserve the supply and character of campus open space.

No additional lands within the campus core will be made available for future recreational facilities. If a determination by USF Lakeland is made requiring the addition of these types of facilities, Parcel 2 of the original acquired land for the USF Lakeland Campus will be studied for its viability and feasibility of providing the land necessary.

d) An analysis of planned future recreation and open space facilities, as adopted by the host community in their comprehensive plan or best available data.

With the proposed development planned for the land to the south of the USF Lakeland Campus, the potential may exist for alternative facility siting for recreation and open space to minimize any additional impact on the campus property. The Town Center development currently being considered in the Williams Acquisition Holding Company, Inc. development plan directly south of the proposed University site could provide gathering areas, plazas and some civic oriented open space. The recreation and open space programming efforts for the USF Lakeland Campus has not been finalized and coordination with the adjacent development will continue in order to ensure the adequate provision of these facilities be made available to USF Lakeland.

9.0 GENERAL INFRASTRUCTURE ELEMENT

The purpose of this element is to ensure adequate provision of public facilities and services required to meet the future needs of USF Lakeland, including the following:

a) Ensure provision of adequate stormwater management capacity to protect the welfare of both the University's and host community's residents and prevent water damage to public and private property;

b) Ensure provision of sufficient potable water to meet anticipated University needs;

c) Ensure provision of adequate sanitary sewer and treatment capacity to meet anticipated University needs; and

d) Ensure provision of adequate solid waste handling and disposal capacity to meet anticipated University needs.

Stormwater Management Sub-Element

(1) DATA REQUIREMENTS. This sub-element shall be based, at a minimum, on the following data requirements:

a) An inventory of all public and private facilities and natural features which provide stormwater management for the campus, including detention and retention structures, storm drainage pipe systems, natural stream channels, rivers, lakes, wetlands, etc.

b) For facilities shared with the host community, a description of the proportional capacity of the facility required to meet existing University needs, including a description of any capacity that may have been previously allocated to the University by the host community.

c) The following data shall be included for the stormwater management facilities identified in (1) a):

1. **The entity having operational responsibility for the facility;**
2. **The geographic service area of the facility and the predominant types of land uses served by the facility;**
3. **The design capacity of the facility;**
4. **The current demand on the capacity of the facility;**
5. **The level of service provided by the facility.**

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

d) Major natural stormwater management and hydrological features shall be identified and included on a map.

The USF Lakeland campus will be located within the Peace River Basin of the Southwest Florida Water Management District (SWFWMD). The property slopes from the southeast corner to the west and northwest corner of the site with a grade difference of 25 feet ranging from elevation 170 to elevation 145. Presently there are no stormwater management systems on the site.

Present surface drainage flows from southeast to the northwest and west onto the adjacent property owned by Williams Acquisition Holdings Company, ultimately discharging to the Tenoroc Fish Management Area (FMA), head waters of the Peace River.

It has also been identified that there is cross site drainage flow that originates on the east side of the Polk Parkway, passes through a culvert under the roadway and then flows across the northern portion of the site from east to west.

Presently the FEMA FIRM Panel 12105C190F, dated December 20, 2000, indicates a "Zone A" (100 year flood plain with no established elevation) within the proposed USF Lakeland campus area. Under the agreement between USF and Williams Acquisition Holdings Company this FEMA map will be corrected with a Letter of Map Revision establishing the 100 year flood elevation and reconfiguring the flood zone to a shallow area of flooding confined to a 0.7 acre pond area on the west side of the site.

(2) ANALYSIS REQUIREMENTS. This sub-element shall be based, at a minimum, on the following analyses:

a) A facility capacity analysis, by geographic service area, indicating capacity surpluses and deficiencies for:

1. Existing conditions, based on the facility design capacity and the current demand on facility capacity;

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

2. The end of the planning time frame, based in the projected demand at current level of service standards for the facility, projected student populations and land use distributions, and any available existing surplus facility capacity.

The surface water management system for the USF Lakeland campus will be designed to meet or exceed the drainage criteria as established by the Southwest Florida Water Management District and the City of Lakeland. It will not be dependent on any Saddle Creek attenuation proposal.

The Level of Service to be provided by the surface water management system will be retention and attenuation to not exceed the pre-development flow quantity and rate for the 25 year/24 hour storm event, and quality treatment of the first 1inch of storm runoff over the entire site.

Based on this Level of Service, the stormwater design criteria, as they apply to this project, can be divided into the following categories:

i. Quality Treatment of Stormwater (Pollution Abatement) - The stormwater management system will provide pollution abatement volume for treatment of stormwater runoff. The system for this treatment will be located on Parcel 1A on lands owned by USF Lakeland.

ii. Quantity Treatment of Stormwater (Attenuation) – The stormwater management system will provide attenuation of stormwater with retention ponds located on lands to the west owned by Williams Acquisition Holdings, Inc.

iii. Discharge – Discharge from USF Lakeland detention ponds will be channeled onto the adjacent lands owned by Williams Acquisition Holdings Company. These discharge amounts will be included in a Master Drainage Plan, to be developed by Williams.

The surface water management system, consisting of the two separate pond systems (Abatement and Attenuation), will be permitted with USF Lakeland as the applicant and final operational authority.

The surface water management system shall be designed so that it does not adversely impact hydrologically related environmental functions of any adjacent wetlands. In addition, alternative stormwater design provisions may be applied if receptive to affected State Agencies in an effort to address regional environmental objectives.

b) The general performance of existing stormwater management facilities, evaluating the adequacy of the current level of service provided by the facility, the general condition and expected life of the facility, and the impact of the facility upon adjacent natural resources.

This Master Plan is for the development of a new campus for US -Lakeland, thus no existing campus is considered for the Inventory section of this document.

c) An analysis of the problems and opportunities for stormwater management facility expansion or replacement to meet projected needs of the University.

The agreement between USF and Williams Acquisition Holding Company, Inc. addresses, in detail, the surface water management system for the USF Lakeland Campus. The key points concerning the surface water management system are listed below:

- USF shall be responsible for providing full water quality treatment (pollution abatement) for Parcel 1A in accordance with Southwest Florida Water Management District and the City of Lakeland criteria prior to discharge off Parcel 1A site.

- USF shall provide reasonable/ similar points of discharge onto Williams's property to the west based on existing drainage patterns associated with Parcel 1A.

- USF shall be responsible for maintaining conveyance of any existing offsite drainage through Parcel 1A, by whatever permittable means necessary, so as not to cause adverse impacts to the surrounding adjacent properties. The flow from a cross-property conveyance system shall be included in the master drainage plan for the William's property beyond the USF site.

- This cross site drainage will be designed to either (i) bypass the stormwater ponds on the Williams Property and be conveyed to the ultimate outfall location, or (ii) be taken into the stormwater ponds on the Williams Property. It is not anticipated to provide any treatment on parcel 1A for cross site drainage. It is only intended to convey the drainage through the site to the Williams property. If the drainage is taken into the stormwater ponds on the Williams Property, water quality treatment and stormwater attenuation will be provided within their ponds.

- Stormwater attenuation for the treated discharge from Parcel 1A shall be designed in accordance with Southwest Florida Water Management District and the City of Lakeland criteria to not exceed the pre-development flow and rate for the 25 year/24 hour design storm event. Location and sizing of required attenuation ponds, to be constructed on the William's property for this purpose, will be identified and encumbered by a drainage easement in favor of USF.

- Williams will be responsible for all costs associated with the construction of these attenuation ponds and for the conveyance to these ponds from the discharge points along the USF site. If for some reason, stormwater attenuation cannot be provided within the Williams Property, attenuation will be provided within USF Parcel 3. Williams will be responsible for all costs

associated with the conveyance of the treated runoff from Parcel 1A as well as any construction costs associated with stormwater attenuation within Parcel 3.

- Williams will provide non-exclusive drainage easements to USF, and any additional operation and maintenance entity (i.e., City of Lakeland, CDD, etc.), for access and maintenance of the USF outfall system from the westerly boundary of Parcel 1A to and through the stormwater attenuation areas to be located on the Williams Property. The location and size of such easements will be provided in accordance with future approved construction plans for these systems and City of Lakeland development regulations/ subdivision standards.

d) Existing regulations and programs which govern land use and development of natural stormwater management features shall be analyzed, including the strengths and deficiencies of those programs and regulations in maintaining the functions of natural stormwater management features.

There are various federal, state and local regulations governing land use and development of drainage features.

Federal legislation known as the "Water Quality Act of 1987" amended the Clean Water Act and provided federal provisions for the permitting of stormwater drainage. These provisions state that all stormwater discharges to waters of the United States from construction activities, which disturb a total land area of 1.0 or more acres, must be authorized by a National Pollution Discharge Elimination System (NPDES) permit from the United States Environmental Protection Agency.

Federal Emergency Management Agency (FEMA) regularly updates and publishes Flood Insurance Rate Maps (FIRM) to establish eligibility for federal flood insurance.

The U.S. Army Corps of Engineers and the State of Florida Department of Environmental Protection have overlapping dredge and fill permitting criteria concerning the protection of wetland habitats and function.

Southwest Florida Water Management District has regulatory responsibility for stormwater discharge consumptive use, and surface water management permits. For the majority of projects in Polk County, the Department of Environmental Resource Management (DERM) has been delegated stormwater permit responsibilities.

Potable Water Sub-Element

(1) DATA REQUIREMENTS. This sub-element shall be based, at a minimum, on the following data requirements:

a) An inventory of existing potable water facilities on the campus indicating location and sizes of main distribution lines.

b) For facilities shared with the host community, a description of the proportional capacity of the facility required to meet existing University need, including a description of any capacity that may have been previously allocated to the University by the host community.

c) The following data shall be included for the potable water facilities identified in (1) a):

1. **The entity having operational responsibility for the facility;**
2. **The geographic service area of the facility and the predominant types of land uses served by the facility;**
3. **The design capacity of the facility;**
4. **The current demand on the capacity of the facility;**
5. **The level of service provided by the facility.**

d) Major potable water and hydrological features shall be identified and included on a map.

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

2) ANALYSIS REQUIREMENTS. This sub-element shall be based, at a minimum, on the following analyses:

a) A facility capacity analysis, by geographic service area, indicating capacity surpluses and deficiencies for:

1. Existing conditions, based on the facility design capacity and the current demand on facility capacity;

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

2. The end of the planning time frame, based in the projected demand at current level of service standards for the facility, projected student populations and land use distributions, and any available existing surplus facility capacity.

The water supply system will be designed for the following Levels of Service for Total Demand (GPD) and Peak Flow rates (GPM):

- 17 GPD per FTE student
- 18 GPD per staff and faculty member
- 88 GPD per resident
- Fire flow of 1,500 GPM for 4 hours at 40 psi minimum pressure.

Total water demand and peak flows will be as follows:

I) Phase I, 2009-10 - 1,736 FTE students- single building of 150,000 Gross Sq. Ft.,
   a. Total demand – 44,000 GPD
   b. Peak flow rate – 1,700 GPM

ii) Phase II, 2014-15 - 4,344 FTE students - additional 1M Gross Sq. Ft, and a Student residence of 500 beds.
   a. Total demand – 170,000 GPD
   b. Peak flow rate – 2,100 GPM

iii) Complete Build Out - 7,515 FTE students - additional 900,000 Gross Sq. Ft,
   a. Total Demand - 250,000 GPD
   b. Peak Flow Rate - 2,400 GPM

The campus site will be serviced by a 16 inch diameter City of Lakeland watermain that proceeds north along SR 33 to the intersection of Old Polk City Road, under Interstate 4 and to the north east corner of the site.

A second point of service to the site will be along the site access road from SR 33, through the Williams Acquisition Holding Company lands. This additional service to the site will create a cross connection to the service loop on campus. With the proper valve configuration of this loop, total flexibility of the potable water service will be obtainable.

On site, the potable water distribution system will consist of a single closed loop watermain

supplying both domestic and fire protection water to each facility. This loop will also service the fire hydrants on site.

The City of Lakeland has expressed interest in utilizing a portion of the USF Lakeland potable water system as part of their loop serving the entire William's site. To achieve such, there would be required up-sizing of the water mains on the USF site and there would be an associated cost sharing arrangement with the City.

Water services will run in Utility Corridors along with Sanitary and Storm Sewer lines.

Non potable water supply, for irrigation purposes, may utilize shallow aquifer wells and/or stormwater detention ponds and/or municipal wastewater effluent or "reuse water". Presently reuse water is not available at the site. Water conservation will be enhanced through the choice of drought tolerant landscaping.

Installation of a non potable (reclaimed) water system should be considered for future provision of reclaimed water for irrigation.

Ownership of the potable water system may be assumed by the City of Lakeland.

All permitting of the potable water system will be through Florida Department of Environmental Protection.

b) The general performance of existing potable water facilities, evaluating the adequacy of the current level of service provided by the facility, the general condition and expected life of the facility, and the impact of the facility upon adjacent natural resources.

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

c) An analysis of the problems and opportunities for potable water facility expansion or replacement to meet projected needs of the University.

The City of Lakeland has confirmed that there is adequate capacity in their system to provide the required demand and flow rate for Phases I and II only but not for the complete Build Out. Potable water supply beyond the first two phases cannot be guaranteed by the City due to current water use permit limitations imposed by SWFWMD.

d) A description of the campus underground hydrology, including its potential for use as a potable water source.

The potable water service to the site, both for domestic use and fire protection will be provided by the City of Lakeland at two points of service. Underground hydrology will not be utilized as a source for potable water.

e) An analysis of existing local, state and federal regulations governing potable water systems.

Federal Regulations: The Federal Safe Drinking Water Act (Public Law 93-523) establishes operating standards and quality controls for the protection of public water supplies. As directed by this Act, the Environmental Protection Agency (EPA) has established minimum drinking water standards, to which every public water supply system must conform. Included are "primary" standards required for public

health, and "secondary" standards which are recommended to attain a higher aesthetic quality of water.

State Regulations: In accordance with federal guidelines, the Florida Safe Drinking Water Act (Sections 403.850 -403.864, F.S.) has been adopted, which designates the Florida Department of Environmental Protection (DEP) as the state agency responsible for the regulation of drinking water. The DEP has therefore promulgated rules classifying and regulating public water systems, including mandatory water treatment criteria (Chapter 17-550. F.A.C.). The DEP enforces both the primary and secondary water quality standards for public water supplies in Florida.

Local Regulations: As a State University System, Division of Colleges and Universities facility, USF Lakeland is subject to the State Uniform Building Code for Public Educational Facilities and exempt from local regulations. Section 6A-2.012, F.A.C. states,

"All educational facilities constructed by a board ... are hereby exempt from all other state, county, district, municipal, or local building codes, interpretations, building permits and assessments of fees for building permits, ordinances and impact fees or service availability fees."

Rule 6A-2.001(48), F.A.C., however, states that educational facilities are not exempt from assessments "...for that length and size of line actually needed to service the educational or ancillary plant on that site".

See Figure 9.1: Existing Infrastructure and Topography Map for these identifications.

Sanitary Sewer Sub-Element

(1) DATA REQUIREMENTS. This sub-element shall be based, at a minimum, on the following data requirements:

a) An inventory of existing sanitary sewer systems on the campus indicating location and sizes of main collection lines.

b) For facilities shared with the host community, a description of the proportional capacity of the facility required to meet existing University need, including a description of any capacity that may have been previously allocated to the University by the host community.

c) The following data shall be included for the sanitary sewer facilities identified in (1) a):

1. **The entity having operational responsibility for the facility;**
2. **The geographic service area of the facility and the predominant types of land uses served by the facility;**
3. **The design capacity of the facility;**
4. **The current demand on the capacity of the facility;**
5. **The level of service provided by the facility.**

d) Major sanitary sewer facilities shall be identified and included on a map.

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

2) ANALYSIS DATA REQUIREMENTS. This sub-element shall be based, at a minimum, on the following analyses:

a) A facility capacity analysis, by geographic service area, indicating capacity surpluses and deficiencies for:

1. **Existing conditions, based on the facility design capacity and the current demand on facility capacity;**

   This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

2. **The end of the planning time frame, based in the projected demand at current level of service standards for the facility, projected student populations and land use distributions, and any available existing surplus facility capacity.**

   The wastewater system will be designed for the following Levels of Service for Total Wastewater generated (GPD) and Peak Flow rates (GPM):

   - 14 GPD per FTE student
   - 15 GPD per staff and faculty member
   - 75 GPD per resident

   Total Wastewater generated and peak flows will be as follows:

   II) Phase 1, 2009-10, 1,736 students – a single building of 150,000 Gross Sq. Ft., FTE
   a. Total wastewater generated – 36,000 GPD
   b. Peak flow rate – 125 GPM

   iv) Phase II, 2014-15 - FTE 4,344 students - additional 1M Gross Sq. Ft., and a student residence of 500 beds.
   a. Total waste water generated – 140,000 GPD
   b. Peak flow rate – 490 GPM

   v) Complete Build Out - FTE 7,515 students - additional 900,000 Gross Sq. Ft,
   a. Total wastewater generated – 210,000 GPD
   b. Peak Flow Rate – 725 GPM

   The wastewater generation and peak flow rate is based on 85% of the water demand and peak flow rate.

   The campus site will be serviced by a City of Lakeland force main that proceeds north along SR 33 to the intersection of Old Polk City Road, under Interstate 4 and easterly in the FDOT right of way to the north west corner of the site. The City of Lakeland has confirmed that there is adequate capacity in their force main system and the North Side Wastewater Treatment Plan to accommodate the projected Phase I and Phase II flows.

   The sanitary sewer system, on site, will consist of a gravity collection system, servicing all buildings, and will flow to the northwest where it will deposit into a City of Lakeland owned lift station. The lift station will be constructed to City of Lakeland standards and connect to the City of Lakeland supplied force main.

   Sanitary services will run in Utility Corridors along with Storm Sewer lines and water mains.

   Ownership of the sanitary sewer system, including any lift stations, will be assumed by the City of Lakeland if constructed to their standards.

b) The general performance of existing sanitary sewer facilities, evaluating the adequacy of the current level of service provided by the facility, the general condition and expected life of the facility, and the impact of the facility upon adjacent natural resources.

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

c) An analysis of the problems and opportunities for sanitary sewer facility expansion or replacement to meet projected needs of the University.

Refer to clause a) above.

d) An analysis of existing local, state and federal regulations governing sanitary sewer collection and treatment systems.

Federal Regulations: The Federal Pollution Control Act (PL 92-500) is the controlling national legislation relating to the provision of sanitary sewer service. The goal of this act is the restoration and/or maintenance of the chemical, physical and biological integrity of the nation's waters. The act established the national policy aimed at implementing area-wide waste treatment and management programs to ensure adequate control of pollutant sources.

State Regulations: At the State level, the Florida Department of Environmental Protection (DEP) is responsible for compliance with federal and state regulations within Florida. Florida's Safe Drinking Water Act provides for the regulation of public water systems. The act is administered under Chapter 17-22, F.A.C. which contains State standards for potable water.

Local Regulations: As a State University System, Division of Colleges and Universities facility, USF Lakeland is subject to the State Uniform Building Code for Public Educational Facilities and exempt from local regulations. Section 6A-2.012, F.A.C. states,

> "All educational facilities constructed by a board ... are hereby exempt from all other state, county, district, municipal, or local building codes, interpretations, building permits and assessments of fees for building permits, ordinances and impact fees or service availability fees."

Rule 6A-2.001(48), F.A.C., however, states that educational facilities are not exempt from assessments "...for that length and size of line actually needed to service the educational or ancillary plant on that site".

See Figure 9.1: Existing Infrastructure and Topography May for these identifications.

Solid Waste Sub-Element

(1) DATA REQUIREMENTS. This sub-element shall be based, at a minimum, on the following data requirements:

a) An inventory of existing solid waste collection and disposal systems on the campus indicating facilities for the storage and/or disposal of hazardous and medical wastes.
b) The amount of solid waste generated by the University.
c) For facilities shared with the host community, a description of the proportional capacity of the facility required to meet existing University need, including a description of any capacity that may have been previously allocated to the University by the host community.
d) The following data shall be included for the solid waste collection and disposal facilities identified in (1) a):
   1. The entity having operational responsibility for the facility;
   2. The geographic service area of the facility and the predominant types of land uses

served by the facility;

3. **The design capacity of the facility;**
4. **The current demand on the capacity of the facility;**
5. **The level of service provided by the facility.**

e) Major solid waste collection and disposal facilities shall be identified and included on a map.

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

2) ANALYSIS DATA REQUIREMENTS. This sub-element shall be based, at a minimum, on the following analyses:

a) A facility capacity analysis, by geographic service area, indicating capacity surpluses and deficiencies for:

1. Existing conditions, based on the facility design capacity and the current demand on facility capacity;

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

2. The end of the planning time frame, based in the projected demand at current level of service standards for the facility, projected student populations and land use distributions, and any available existing surplus facility capacity.

The Level of Service for Solid Waste generation will be based on the City Of Lakeland Concurrency requirements.

Non residential solid waste will be based on area of buildings and the following table

- 45,000 Sq. ft. 248 pounds/day
- 1,000,000 Sq. Ft. 5,500 pounds/day

Residential solid waste will be based on 5 pounds/resident/day

Total solid waste generation will be as follows:

III) Phase 1 2009-10 - FTE 1,736 students - single building of 150,000 Gross Sq. Ft.,
   a. Total solid waste generated – 830 pounds/day

vi) Phase II, 2014-15 - FTE 4,344 students - additional 1M Gross Sq. Ft., and a student residence of 500 beds.
   a. Total solid waste generated – 8,840 pounds per day

vii) Complete Build Out - FTE 7,515 students - additional 900,000 Gross Sq. Ft,
   a. Total solid waste generated – 13,890 pounds per day

b) The general performance of existing solid waste collection and disposal facilities, evaluating the adequacy of the current level of service provided by the facility, the general condition and expected life of the facility, and the impact of the facility upon adjacent natural resources.

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

c) An analysis of the problems and opportunities for solid waste collection and disposal facility expansion or replacement to meet projected needs of the University.

At this point in time USF Lakeland cannot determine what, if any, hazardous wastes will be generated. If hazardous wastes are generated they will be disposed of according to Division of Environmental Health and Safety policies.

d) An analysis of existing local, state and federal regulations governing solid waste collection and disposal systems.

Federal Regulations: The federal government regulates solid waste in order to minimize the potential for environmental impacts, and to encourage resource recovery. The U.S. Environmental Protection Agency (EPA) reviews solid waste management facilities for air and water quality impacts. The U. S. Army Corps of Engineers, along with the Florida Department of Environmental Protection (DEP), regulate filling activities in wetlands. The 1976 Federal Resource Conservation and Recovery Act (PL 94-580) removed the regulatory constraints that impeded resource recovery in order to encourage states to conserve materials and energy.

The Resource Conservation and Recovery Act also addresses the regulation of hazardous wastes. Pursuant to this Act, EPA has set forth guidelines and standards for the handling of hazardous wastes, and directs state agencies, including Florida's DEP, to regulate hazardous waste management. To aid in hazardous waste management financing, the EPA "Superfund" Program was established by the Comprehensive Emergency Response and Compensation Liability Act of 1980. This Act provided EPA with the funds to respond to sites requiring clean-up and emergency mitigation, and allows local governments to apply for funding of their hazardous waste management projects.

State Regulations: The environmental impacts of solid waste are regulated at the state level by the Florida Department of Environmental Protection (DEP). The DEP follows the solid waste management guidelines set forth in Rule 17-701, F.A.C. when permitting solid waste facilities. Specifically, the DEP has established evaluation criteria for the construction, operation, closure and long-term care of landfills. The agency also regulates the handling, classification and disposal of wastes, as well as resource recovery operations.

The 1974 Florida Resource Recovery and Management Act (Chapter 403.701, F.S.) required each county to prepare a Solid Waste Management Plan. In 1988 this Act was amended by the Solid Waste Management Act to establish state goals, regulations and programs for a host of solid waste activities. A central focus of the amendment is recycling. It mandates that counties recycle thirty percent of their total municipal solid waste by December 1994, and requires counties and municipalities to have initiated recycling programs by July 1, 1989. No more that half of the 30% can be met with yard trash, white goods, construction debris and tires. It requires that, at minimum, a majority of newspaper, aluminum cans, glass and plastic must be separated from the solid waste stream and offered for recycling. The State imposes deadlines for the separate handling of various special wastes, including construction and demolition debris, yard waste, white goods and used batteries and oil, to divert their disposal away from the landfills. Composting of other mechanically treated solid waste and yard trash is also encouraged.

Additionally, the new law requires municipalities to determine the full cost of solid waste management, to update it annually, and to provide this cost information to consumers. Other changes include the establishment of a Solid Waste Management Trust Fund to encourage innovative solutions to solid

waste management and recycling, and encouragement of the use of enterprise funds to operate solid waste services.

The environmental impacts of solid waste disposal facilities are addressed in the extensive permitting requirements at the state and federal levels. Potential impacts of solid waste facilities on air and water quality are reviewed by the U.S. Environmental Protection Agency and the Florida Department of Environmental Regulation.

e) An assessment of opportunities or available and practical technologies for the reduction, recycling and re-use of solid waste generated by the University. Investigation of emerging technologies to address this issue is encouraged.

Recycling Opportunities: It is recommended that USF Lakeland adopt policies for recycling or causing to be recycled the following materials: paper, phone books, aluminum cans, motor oil, oil filters, cooking oils, auto batteries and wooden pallets, plastics, steel cans, glass and white goods.

Solid Waste Management Trust Fund: The Florida Department of Regulation administers the Solid Waste Management Trust Fund as a source of money for grants to local governments for solid waste management, recycling, and public education; for demonstration projects, college and university research, and to administer the Department's solid waste management programs.

The Solid Waste Management Trust Fund also is used for demonstration grants and research into the proper management and recycling of solid waste, including used oil, waste tires, manufacture of plastic foam products, disposal of white goods, disposal of seafood wastes, the use of rubber from used tires and plastics in building materials and in transportation, and for composting.

During the development of the solid waste goals, objectives and policies consideration will be given to formulation of a policy whereby FIU will seek to participate in the Solid Waste Management Trust Fund Program.

f) An analysis of the terms of any agreements for the collection and/or disposal of University-generated solid waste, including allocated capacity and duration of service. Identify any future limitations on University development resulting from these factors.

General Contract Provision: The bid solicitation and selection process should be subject to the general conditions as established by USF Lakeland's purchasing department. The contract should contain supplemental conditions which are not germane to the specific solid waste removal and disposal operations.

Trash Removal: A waste management company should be under contract to provide trash removal services.

Recycling Collection Services: The designated waste management company will be under contract with USF Lakeland to provide compacting and recycling services.

10.0 UTILITIES ELEMENT

PURPOSE

The purpose of this element is to ensure adequate provision of utility services required to meet the future needs of the University including the following:

a) Ensure provision of adequate hot water and chilled water supply to meet future University needs;

b) Ensure provision of adequate electric power supply and other fuels to meet Future University needs;

c) Ensure provision of adequate supplies of natural gas or other fuels to meet future University needs; and

d) Ensure provision of adequate supply and distribution facilities for telecommunication systems required to meet future University needs.

Hot Water and Chilled Water Sub-Element

(1) DATA REQUIREMENTS. This sub-element shall be based, at a minimum, on the following data requirements:

a) An inventory of the existing hot water and chilled water distribution systems on the campus indicating locations and sizes of main distribution lines.

b) The following data shall be included for the hot water and chilled water facilities identified in (1) a):

1. **The entity having operation responsibility for the facility;**
2. **The geographic service area of the facility and the predominant types of land uses served by the facility;**
3. **The design capacity of the facility;**
4. **The current demand on the capacity of the facility;**
5. **The level of service provided by the facility.**

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

(2) ANALYSIS DATA REQUIREMENTS. This sub-element shall be based, at a minimum, on the following analyses:

a) A facility capacity analysis, by geographic service area, indicating capacity surpluses and deficiencies for:

1. **Existing conditions, based on the facility design capacity and the current demand on facility capacity;**

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for this requirement.

2. **The end of the planning time frame, based in the projected demand at current level of service standards for the facility, projected student populations and land use**

distributions, and any available existing surplus facility capacity.

A representative of the Florida Department of Health indicated that there is sufficient capacity in the municipal water treatment plant for the supply of potable water to the USF Lakeland campus, based on currently anticipated municipal growth rates. It was also indicated that the City of Lakeland is constructing a second water treatment facility.

A 16-inch water main has been installed north of Interstate I-4 along State Road 33 to Old Polk City Road, with the intent of proceeding under Interstate I-4 into the southern portion of the DOT right of way. It is expected that this work will be complete prior to completion of this study. At this point the water service will be terminated with a valve and will be some 1800 feet from the western limit of donated Parcel 1A.

As described for the potable water sub-element, sufficient potable water to meet projected demand for the entire campus, including make-up water requirements for chilled water and heating water generation and distribution systems, shall be provided through cross-connected mains from the City of Lakeland. Chilled water plant sizing and expansion capability shall meet projected load requirements through design.

b) The general performance of existing hot water and chilled water facilities, evaluating the adequacy of the current level of service provided by the facility, the general condition and expected life of the facility, and the impact of the facility upon adjacent natural resources.

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for this requirement.

c) An assessment of opportunities or available and practical technologies to reduce University energy consumption. Investigation of emerging technologies to address this issue is encouraged.

Alternative sources of energy (cogeneration), as well as thermal storage, and other energy conservation measures shall be considered for the reduction of University energy consumption. Utility planning, especially for the production and distribution of chilled water, shall consider available options to conserve energy through sustainable design. The design phase for facility chilled water and heating plant shall include a full life-cycle analysis of available energy conservation options in the production and distribution of chilled water as well as the options for central and local heat generation and heat recovery.

Electrical Power and Other Fuels Sub-Element

(1) DATA REQUIREMENTS. This sub-element shall be based, at a minimum, on the following data requirements:

a) An inventory of the electrical power supply distribution system on the campus indicating locations and sizes of main distribution lines.
b) An inventory of any other fuel storage or distributions facilities on the campus indicating their location, size and sizes of main distribution lines (if applicable).
c) The following data shall be included for the electrical power distribution system facilities identified in (1) a):
1. The entity having operational responsibility of the facility;

TECO is responsible for service within the USF Lakeland area.

2. **The geographic service area of the facility and the predominant types of land uses served by the facility;**
3. **The design capacity of the facility;**
4. **The current demand on the capacity of the facility;**
5. **The level of service provided by the facility.**

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

(2) ANALYSIS DATA REQUIREMENTS. This sub-element shall be based, at a minimum, on the following analyses:

a) A facility capacity analysis, by geographic service area, indicating capacity and the current demand on facility capacity;

1. **Existing conditions, based on the facility design capacity and the current demand on facility capacity,**

   This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for this requirement.

2. **The end of the planning time frame, based in the projected demand at current level of service standards for the facility, projected student populations and land use distributions, and any available existing surplus facility capacity.**

   Any increased capacity needed for the projected student populations will be determined through ongoing analyses and communication with the provider of services. Changes in technology, applicability and energy conservation will be a determining factor in the need for addition capacity.

b) The general performance of existing electrical power and other fuel facilities, evaluating the adequacy of the current level of service provided by the facility, the general condition and expected life of the facility, and the impact of the facility upon adjacent natural resources.

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for this requirement.

c) An assessment of opportunities or available and practical technologies to reduce University energy consumption. Investigation of emerging technologies to address this issue is encouraged.

All electrical power distribution system should be extended to all long-term program improvements through the above master electrical feed systems. Specific routing and sizing should be evaluated when more details are known about these long-term program improvements.

Telecommunications Systems Sub-Element

(1) DATA REQUIREMENTS. This sub-element shall be based, at a minimum, on the following data requirements:

a) An inventory of the existing telecommunications system(s) serving the campus, including but not limited to:
   1. Telephone;
   2. Computer network(s);
   3. Radio;
   4. Microwave;
   5. Satellite transmission/reception.

b) An inventory of electromagnetic fields (if any) emanating from any telecommunications transmitter that pose a hazard to persons or equipment.

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(2) ANALYSIS DATA REQUIREMENTS. This sub-element shall be based, at a minimum, on the following analyses:

a) A facility capacity analysis, by geographic service area, indicating capacity and the current demand on facility capacity;

1. Existing conditions, based on the facility design capacity and the current demand on facility capacity,

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for this requirement.

2. The end of the planning time frame, based in the projected demand at current level of service standards for the facility, projected student populations and land use distributions, and any available existing surplus facility capacity.

Any telecommunication extensions for planned building expansions will follow the established path of transmitting via fiber optic cables and distributing to end users via a copper based twisted pair network. Four inch communication conduit ductbanks should be used to extend an existing cable plant to service any building expansions.

b) The general performance of existing telecommunications systems and facilities, evaluating the adequacy of the current level of service provided by the facility, the general condition and expected life of the facility, and the impact of the facility upon adjacent natural resources.

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for this requirement.

Network technology has undergone a rapid evolutionary process over the course of the last decade. Today, organizations still rely on separate network infrastructures to transmit data and voice traffic. The challenge of integrating voice and data networks is becoming a rising priority for many organizations. USF Lakeland will plan to take advantage of the synergies gained by converging data and voice onto a single multiservice IP network. An IP-based network that

integrates data and voice introduces the opportunity to a new world of technologies that increases productivity and provides a more efficient allocation of resources. This multiservice network will serve USF Lakeland's communication needs well into the future.

In order to achieve the multiservice network, the communication conduit infrastructure needs to be reevaluated. A proposed conduit layout of four-inch communication conduit duct-banks will provide redundancy among core buildings on the campus and a single conduit path for the boundary buildings on the campus. The conduit layout could be made more robust by providing redundancy to every building on campus.

c) An assessment of potential electromagnetic hazards resulting from facilities required to meet future telecommunications needs of the University, and an analysis of practical ways to mitigate such hazards.

Information was not available to complete the required response.

11.0 TRANSPORTATION ELEMENT

PURPOSE

The purpose of this element is to plan for future motorized and non-motorized traffic circulation systems to ensure the provision of adequate transit, circulation and parking facilities to meet future University needs; to ensure the provision of adequate pedestrian and non-vehicular circulation facilities to meet the future needs of the University; and to coordinate the location of these facilities planned in the host community in the context area.

Transit, Circulation and Parking Sub-Element

(1) DATA REQUIREMENTS. This sub-element shall be based, at a minimum, on the following data requirements:

a) An inventory of existing on-campus parking facilities, which identifies:

1. **Spaces allocated to students, faculty staff and visitors.**
2. **Spaces available for special event parking (football, basketball, baseball, swimming, auditoriums, performing arts facilities, concert halls, conference centers, etc.).**
3. **Existing surface (including on-street parking) and multi-level parking facilities which identifies their location and capacity (map, tabular, narrative).**

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b) An inventory or estimate of the amount of student, faculty and staff parking off campus, and a description of parking locations.

This Master Plan is for the development of a new campus for USF Lakeland; thus, no existing campus is considered for the Inventory section of this document.

c) An inventory of accident locations and number of accident occurrences on campus and in the context area.

On Campus: This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

Context Area: The context area for the USF Lakeland site is essentially the Williams Acquisition Holdings, Inc. (hereinafter referenced as 'Williams') DRI tract. It, too, is under development at this time and, thus, has no crash experience associated with the site.

The Florida Highway Patrol, Polk County Sheriff's Office and the Lakeland Police Department are being contacted, requesting data on crash experience within the following parameters.

- Polk Parkway East (SR 570): Memorial Boulevard (US 92/SR 600)) to I-4
- Combee Rd (CR 659): Memorial Blvd (US 92/SR 600) to SR 33 (Lakeland Hills Blvd/ Commonwealth Ave)
- I-4 (SR 400): SR 33 (Commonwealth Ave/Lakeland Hills Blvd, Exit #38) interchange to Polk Parkway East (SR 570) interchange (Exit #41)
- Memorial Blvd (US 92/SR 600): Polk Parkway East (SR 570) to Combee Rd (SR 659)
- SR 33 (Commonwealth Ave/Lakeland Hills Rd): Combee Rd (SR 659) to I-4 (SR 400)

- Saddle Creek Rd (CR 549): Combee Rd (SR 659) to Berkley Road (CR 655)

Information from the Polk County Traffic Engineering Office was not possible to obtain. A recent fire destroyed their records.

The context area considered for the transportation element of the master plan is described by the following boundaries:

- Memorial Boulevard (US92) – between Combee Road and Polk Parkway to the south
- Combee Road (SR659)– between Memorial and SR 33 to the west
- Lakeland Hills Boulevard (SR33) – between Combee Road and Interstate 4 to the west
- Interstate 4 – between SR 33 and Polk Parkway to the north
- Polk Parkway (SR570)– between Interstate 4 and Memorial Boulevard (US92)

d) The existing classification of roadways on the campus, utilizing definitions used by the host community in its local comprehensive plans, or a classification determined by the University, which is correlated to the classification system of the host community.

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

e) Existing roadway classifications in the context area including designated fire lanes and fire routes on campus.

On Campus: This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

Context Area: The roadways listed below are of two types. Primary Access facilities are those that provide direct access to the University/Williams DRI development area. For this reason, both the roadway classification and its access management classification are provided. Secondary Access roadways are those that intersect the Primary Access facilities. These Secondary Access facilities are important for their role in distributing the University traffic to the surrounding area. However, since they do not provide direct access to the site, their Access Management designation is not significant and, therefore, is not provided.

Table 11.1 summarizes the main characteristics of the roadways surrounding the campus and Williams DRI site. The Link number shown correlates to the 2005 Polk County Roadway Network Database, prepared by the Polk Transportation Planning Organization, which is the source of the information shown. Where two lines of data are provided, they correspond to the links listed above and appear in that order.

Saddle Creek Rd (CR 546) can also be considered a Secondary Access roadway. Having an east-west orientation, Saddle Creek Rd is located immediately south of Teneroc, between the Williams DRI and USF – Lakeland site and Memorial Blvd (US 92/SR 600). It terminates on the west at Combee Rd (SR 659) and on the east at Berkeley Rd (CR 655). There is an interchange along Polk Parkway (SR 570) at Saddle Creek Rd .

Saddle Creek Rd (CR 546) is a 2-lane undivided roadway that is classified as an Urban Collector. Based on a review of the Polk County access management material, it appears that the access management classification of the facility is Class 6, with driveway spacings of approximately 265 feet. The bi-directional volume on the facility is 9,900.

Saddle Creek Rd (CR 546) is identified as Link 4050 on the Polk County Roadway Network Database.

Roadway (functional) classification information for the context area is also depicted on Figure 11.1: Context Area Roadways.

f) The current levels of service (LOS) of the roadways on campus and within the context area.

On Campus: This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

Context Area: Table 11.2 lists the links of the surrounding roadway network that were reviewed for levels of service. These are the same links shown in Table 11.1, with the addition of Saddle Creek Road (CR 546). The links are described by the limits used in the County's Roadway Network Database, many of which extend beyond the limits of the project's study area. In addition to the Level of Service determined for the link, the minimum Level of Service permitted for the facility per the adopted Comprehensive Plan standards is provided. Context area level of service information is also depicted on Figure 11.1: Context Area Roadways.

Table 11.1 Summary of Existing Roadway Characteristics

Characteristics	Primary Roadways		Secondary Roadways		
	Polk Pkwy (SR 570)	Combee Rd (SR 659)	I-4 (SR 400)	Memorial Blvd (US 92 SR 600)	SR 33 (Common-wealth Ave)
	Link 7402 *Link 7401*	*Link 7301* *Link 7302*	*Link 5506*	*Link 5306*	*Link 5602*
Roadway Characteristics					
No. of Lanes [1]	2-Und 4-Frwy	2-Und 2-Und	6-Frwy	4-Div	2-Und
Functional Classification [2]	PA	MA	PA	PA	MA
Access Mgmt Classification [3]	1	3	1	5	NK
Traffic Volume (AADT)	3,500 6,000	14,200 11,500	63,900	33,600	16,100

[1] Explanation of Abbreviations
Frwy – Freeway
Und – Undivided
Div – Divided

[2] Functional Classifications
PA - Principal Arterial
MA – Minor Arterial

[3] 1 – Limited Access, no direct access to adjacent property
3 – Access to adjacent property is restrictive, tightly controlled, with driveway spacings at no less than 660 feet.
5 – Access to adjacent property is limited, driveway spacings at no less than 440 ft and signals each ½-mile
NK – Not Known

Source: Polk Transportation Planning Organization: January 28, 2005

Table 11.2 Context Area Roadway Levels of Service

Roadway Segment Description	Link No.*	Level of Service **	
		Standard	*Assessed*
Polk Parkway East (SR 570)			
I-4 Interchange to CR 546 (Saddle Creek Rd)	7402	C	B
CR 546 (Saddle Creek Rd) to US 98 (Bartow Rd)	7401	C	A
Combee Rd (SR 659)			
US 92 (Memorial Blvd) to CR 546 (Saddle Creek Rd)	7301	D	C
CR 546 (Saddle Creek Rd) to SR 33 (Lakeland Hills Blvd)	7302	D	C
I-4			
SR 33 Interchange to SR 559 Interchange (Polk City Rd)	5506	C	B
US 92 (Memorial Blvd)			
Combee Rd (SR 659) to SR 655 (Recker Rd)	5306	D	B
Lakeland Hills Blvd/Commonwealth Rd (SR 33)			
I-4@Slocum Loop Rd past Combee Rd to I-4/SR 33 Interchange	5602	E	D
Saddle Creek Rd (CR 546)			
Combee Rd (SR 659) to Polk Parkway (SR 570)	4050	D	D

Source: Polk Transportation Planning Organization (TPO), May 31, 2006

Note: Link descriptions are as the appear in the Polk Roadway Network Database

* Link No. – per the 2005 Polk County Roadway Network Database, maintained by the Polk TPO

** Levels of Service were calculated for each direct of travel; value shown is the worse of the two Level of Service determinations if they are different

g) Traffic counts at all major University entrances/exists.

Because this is a new campus, counts are not feasible at this time. However, as part of the University's traffic and parking monitoring and maintenance procedures for this facility, annual traffic count and parking assessment programs will be established.

h) Existing University trip generation based on original survey data prepared for the campus master plan. Traffic counts and origin/destination studies will be used to generate data.

The City of Lakeland standard trip generation rates for colleges and universities is 2.38 daily trips per student, with 0.21 trips per student occurring during the peak hour. No differentiation is made as to student characteristics: commuting – full-time, commuting – part-time, or residential.

The new USF Lakeland campus will initially operate as a strictly commuter campus. On-site residential units will be built as the campus becomes established and student demand for such facilities increases. At the present time, the University anticipates having 500 housing units constructed by the 10th year (2014-15) of this Master Plan. The trips resulting from the application of the City's rates to the proposed headcounts for 2009-10 and 2014-15 are shown in Table 11.3a.

Table 11.3a. USF Lakeland Trip Generation, based on City of Lakeland Trip Generation Rates

	2009-10	2014-15
Headcounts –Students	3,954.00	8,701.00
Daily Trip Generation		
Daily Trip Generation Rate	x 2.38	x 2.38
Total Daily Trips Generated	***9,410.52***	***20,708.38***
Credited Daily Trips *	- 2,818.00	- 4,861.00
Total Daily Impact Trips	**6,592.52**	**15,847.38**
Peak Hour Trip Generation		
Peak Hour Trip Generation Rate	x 0.21	x 0.21
Total Peak Hour Trips Generated	830.34	1,827.21
Credited Peak Hour Trips *	-364.00	- 558.00
Total Peak Hour Impact Trips	**466.34**	**1269.21**

Sources: City of Lakeland Concurrency Determination Application 05/2002, pg 7 "Trip Generation Rates"
RS&H, 2005, Agreement for Donation of Land between Williams Acquisition Holding Company, Inc. and USF Board of Trustees, January 23, 2006.

The table makes reference to 'credited trips' – both daily and peak hour. Under the terms of the Agreement For the Donation of Land dated January 23, 2006 between the University of South Florida Board of Trustees and the Williams Acquisition Holding Company Inc. as part of the transfer of title was a transfer of trips that had been accounted for in the identification of transportation improvements to be provided by Williams under the terms of their Development Order from the City of Lakeland. Because the impacts of these portions of trips have already been accounted for, they are not considered 'new' trips to the surrounding roadway network.

The trip generation rates adopted by the City of Lakeland are those provided in the Institute of Transportation Engineers *Trip Generation*, 7th Edition (2003). Further research showed that, while the data was well-grouped, the sources were out-of-state, namely California, Delaware, New York and Oregon.

As a test of these trip rates, they were compared to rates developed for Florida's state university sites. In the late 1980's and early 1990's, the former Board of Regents sponsored an extensive analysis of trip generation and parking patterns at the 4-year universities that were then part of the State University System. A review was made of the campuses in existence when that initial study was performed.

- Examination of the travel (commuting) and resident characteristics of the various universities
- Review of the host communities' characteristics
- Review of the service district characteristics for each University

From this information, it was determined that the characteristics of the University of North Florida – as it was when the study was undertaken – most closely resemble the anticipated conditions of the USF Lakeland campus. UNF was a commuter university only at the time of the study, but has gradually added on-campus housing as the institution has continued to grow. Those trip generation rates are shown below.

Students
- Commuting 2.06
- Residential 1.03

Faculty & Staff 3.21

Visitor & Service (Student Trips + Faculty & Staff Trips) X 0.05

Also factoring into the actual loading of trips onto the external roadway network is the auto occupancy factor. In computer modeling of traffic for forecast purposes, the output is stated in peak season *person* trips, not average daily vehicle trips. For the hand calculation of trips to be used in determining the ZDATA 3 input values to represent the university, it is necessary to determine the vehicle occupancy – the factor that translates the person-trip values into vehicle-trips. The following auto occupancy rates would be applicable to USF Lakeland.

Students	1.05 (base year)	1.06 (2009-10)	1.07 (2014-15)
Faculty & Staff	1.12 (base year)	1.16 (2009-10)	1.22 (2014-15)

As with the City of Lakeland rates, the UNF trip generation rates are based on student, faculty and staff **headcounts**, and not on FTE (full-time equivalent) data. The same is true of all parking calculations. While FTE data are suitable for determining gross building and activity space requirements, they are not an appropriate data source for calculating traffic/transportation impacts. It should also be noted that the trip generation calculations are for the purpose of determining trips entering and leaving the campus. On-site trip generation, such as movement of maintenance vehicles about campus, is not reflected in the traffic volumes generated. Table 11.3b shows the estimate of trip generation using the BOR rates developed for the University of North Florida. The Florida-based study examined daily trip generation rates only.

Table 11.3b. USF Lakeland Trip Generation, Board of Regents Trip Generation Rates for UNF

	2009-10	2014-15
Headcounts –		
Students		
Residential		500.00
Commuting	3,954.00	8,701.00
Faculty/Staff/Administration	487.00	1,159.00
Visitors/Service (outside vendors) [a]		
Daily Trip Generation Rates		
Students		
Residential		1.03
Commuting	2.06	2.06
Faculty/Staff/Administration	3.21	3.21
Visitor/Service (outside vendors) [a]		
Auto Occupancy Rates		
Students		
Residential		1.07
Commuting	1.06	1.07
Faculty/Staff/Administration	1.16	1.22
Visitor/Service (outside vendors) [a]		
External Trips Generated		
Students		
Residential		481.31
Commuting	7,684.19	+ 15,788.84
Faculty/Staff/Administration	+ 1,347.65	+ 3,049.50
Visitor/Service (outside vendors) [a]	+ 451.59	+ 965.98
Total Daily Trips Generated	***9,483.43***	***20,285.63***
Credited Daily Trips *	- 2,818.00	- 7,679.00
Total Daily Impact Trips	**6,665.43**	**12,606.63**

Source: University of North Florida; *BR-052* (1993).
RS&H, 2005

The number of daily trips forecast to be generated using the City of Lakeland rates was then compared to the number of trips forecast to be generated using UNF rates. It was found that, differing by about one percent when only commuter students were considered, the difference in the two rates increased as the number of residential students increased. For this reason, a trip generation rate that is adjusted to reflect a Florida database and different travel behavior for commuting and residential students is recommended. The recommended rates are as follows.

Trips per commuting student: 2.4 trips/commuting student (headcount)
Trips per residential student: 1.0 trip/residential student (headcount)

The results of applying these daily trip generation rates is shown in Table 11.3c. A comparison of the daily trips forecast using these recommended rates and the number of trips forecast using the UNF rates is provided. No change in peak hour trip generation rates is suggested.

Table 11.3c. USF Lakeland Trip Generation, based on Recommended Trip Generation Rates (arising from Florida data sources)

	2009-10	2014-15
Headcounts –		
Students		
Commuting	3,954.00	8,201.00
Residential		500.00
Daily Trip Generation		
Daily Trip Generation Rates		
Commuting Students	x 2.40	x 2.40
Residential Students		x 1.00
Daily Trips Generated		
Commuting Students	9,489.60	19,518.38
Residential Students	+ 0.00	+ 500.00
Total Daily Trips Generated	***9,489.60***	***20,182.40***
Credited Daily Trips *	- 2,818.00	- 7,679.00
Total Daily Impact Trips	**6,592.52**	**13,029.38**
Comparison: Recommended Trip Rate/ UNF Trip Rate	0.07%	- 0.51%
Peak Hour Trip Generation		
Peak Hour Trip Generation Rate	x 0.21	x 0.21
Total Peak Hour Trips Generated	830.34	1,827.21
Credited Peak Hour Trips *	- 364.00	- 922.00
Total Peak Hour Impact Trips	**466.34**	**905.21**

Source: RS&H, 2005

i) Existing traffic analysis zones (TAZs) of the host local government within which University facilities are located.

In that the area of the USF Lakeland campus is previously undeveloped, it generated no trips and was only considered part of another TAZ insofar as it affected the location of the centroid for that particular TAZ. The adjacent TAZs to the project site are TAZ 265 and 276. The Williams DRI, of which the USF Lakeland property was formerly a part, was analyzed as a separate 'dummy TAZ.'

j) Established public transit or University-provided transit routes (including inter-campus routes) on campus and in the context area indicating location of stops, frequency of service and capacity of the vehicles.

Polk County has two transit districts that serve area citizens, Lakeland Area Mass Transit District (LAMTD) and Winter Haven Area Transit (WHAT). The USF Lakeland campus is not being constructed within the LAMTD nor WHAT. At the present time, three bus routes move through or very close to the University Context Area. Bus service for these routes is available Monday through Friday from 5:45am until 7:15pm and on Saturday from 7:15am until 6:15pm. The headway on most routes is every 30 or 60 minutes, depending upon the routes length. Typical bus capacity is from 30-35 people. Figure 11.2: Context Area Transit Routes shows the location of existing transit within and near the context area and they are described below. Bus route #52 is located in a 30- minute service area.

- **#11 – East Main/Combee Rd** – Portions of this route run along US 92 (SR 600/Memorial Blvd) south of the project site, travels north parallel to Combee Rd to Fish Hatchery Rd, turns west on Mineola Rd to Combee Rd, south on Combee Rd, west on Idlewild St, south again on E. Lake Parker Dr, east again on Lakeview then south on Meridian Ave. From there it returns to Memorial Blvd (US 92/SR 600) and points west of the study area. Route 11 extends from Downtown Lakeland, directly past the Greyhound bus station, past Florida Metropolitan University and Southeastern College.

- **#12 – Winter Haven/Auburndale** – While located on the southern border of the study area, the proximity of this route merited notice. This route runs parallel to the southern boundary of the study, along Memorial Blvd. (US 92) and Main Street (SR 542).Route 12 extends from Downtown Lakeland, directly past the Amtrak station, along Main Street to the Auburndale and Winter Haven area.

- **#52 – North Florida Avenue** – While technically located outside of the study area, this route also merits attention due to its proximity to the study area. This route extends from downtown Lakeland, directly past the Greyhound bus station, past Florida Metropolitan University northward to SR33/Lakeland Hills Blvd. north to I-4 and Old Combee Road.

General discussions with both USF Lakeland staff and area transit and transportation planning representatives indicate that they are amenable to working with the University to provide transit access for its residents to the school.

(2) ANALYSIS REQUIREMENTS. This sub-element shall be based, at a minimum, on the following analyses:

a) An analysis of the future parking needs for students, faculty and staff and types of special events for the planning period. This analysis shall consider both the present parking ratios and utilization rates and modified parking ratios that may be considered appropriate or optimum.

The City of Lakeland *Land Development Regulations*, Article 32 "Off-Street Parking and Loading Requirements" provides guidelines for the number of parking spaces to be provided for the new USF Lakeland campus, as shown in Table 11.4a.

Table 11.4a Parking Guidelines for "Colleges, Universities, etc.:" City of Lakeland *Land Development Regulations*

Land Uses	Minimum Off-Street Parking Requirement	Full Size/Compact Car Parking Spaces Ratio (stated as a percentage)
Educational		
Colleges, Universities, etc.	5 spaces/ classroom or admin. office	75/25
Dormitories	1 space/2 beds	100/0

Source: City of Lakeland *Land Development Regulations*, Article 32, Page 32.13; March 1993 with revisions RS&H, 2005

The Florida Department of Education (FDOE) procedures for analyzing space utilization patterns usually call for the estimates to be based on full-time equivalent student counts (FTEs), student contact hours and/or actual personnel counts. Therefore, it was necessary to make some gross assumptions to convert the square footage estimates that form the basis of the needs assessment, into actual "classroom" and "administrative office" units. The FDOE's own guidelines, stated in its manual, *State Requirements for Educational Facilities* (Chapter 6, Section 6.1, pages 158 and 159), were the bases for the assumptions made.

Assumptions:

- Net square footage (all facilities), multiplied by 1.3 = gross square footage (Gross square footage accounts for such areas as restroom, halls, lobbies, etc.)
- "Classroom," typical = 900 net square feet or 1,170 gross square feet
- "Educational Office," typical = 120 net square feet or 156 gross square feet
- "Administrative Office," typical = 200 net square feet or 260 gross square feet (Calculated as the average of the seven types of administrative offices identified by the FDOE guidelines.)

Applying the values identified in the list of Assumptions to the needs calculated for the students anticipated (See" Chapter 5: Educational Facilities Element" and "Chapter 6: Support Facilities Element" of this document), the number of classrooms and offices were determined for each of the forecast years. The results of those calculations are summarized in Table 11.4b.

Table 11.4b Parking and Trip Analyses for Calculation of Base Units

Land Uses	Basic Number of Units					
	2009-10			*2014-15*		
	Needs SF*	Divisor "*	Base Units	Needs SF*	Divisor "*	Base Units
Educational						
Colleges, Universities, etc.						
Classrooms	39,000	1,170	33.33	58,000	1,170	49.57
Office, Educational	40,000	156	256.41	79,000	156	506.41
Office, Administrative	62,000	260	238.46	14,000	260	53.85
Subtotal			**528.21**			**609.83**
Dormitories			**0**			**500**

Source: RS&H, 2005

* From Chapters 5 and 6 of this document, state as gross square footage

** Divisor = Size of base unit, stated in square feet, times the conversion factor of 1.3 to change "net" measurements to gross square footage

Applying the City of Lakeland's parking requirements to these numbers resulted in the following findings.

Land Use Category	Parking Requirements, per Phase *2009-10*	*2014-15*
Classrooms and Offices		
Classrooms	167	248
Office, Educational	1,1282	2,532
Office Administrative	1,192	269
Dormitories	0	250
Subtotal, per phase	***2,641***	***3,299***
Total, Both Phase	**5940**	

A test was performed to assess the reasonableness of this number of parking spaces. The Land Development Code of each host community having one of the state's 10 universities were examined: Miami-Dade County – Florida International University (FIU), Tampa – University of South Florida (USF), Orange County – University of Central Florida (UCF), Jacksonville – University of North Florida (UNF), Tallahassee/Leon County – Florida Agricultural and Mechanical University (FAMU) and Florida State University (FSU), Pensacola/Escambia County – University of West Florida (UWF), Ft. Myers – Florida Gulf Coast University (FGCU), Palm Beach County – Florida Atlantic University (FAU) and Gainesville – University of Florida (UF). The number of parking spaces required for the Lakeland campus, had it been located in their respective communities, were determined. The results of this investigation are shown in Table 11.4c. Stetson University in Deland, Florida, was also included because the American Planning Association has identified it as an example of "Best Practices Design."

Table 11.4c Comparable Community Parking Requirements

Locale	Institution	*2009-10*	*2014-15*	*Total*	*Comments*
Miami-Dade	FIU	2,317	2,631	4,947	
Tampa	USF	1,977	2,374	4,351	
Orange County	UCF	2,128	2,110	4,238	
Jacksonville	UNF	1,990	2,306	4,296	
Tallahassee/Leon County	FSU & FAMU	1,558	1,792	3,350	
Pensacola/Escambia Cty	UWF				*Also uses classrooms*
Ft. Myers	FGCU	1,771	1,769	3,540	
Palm Beach County	FAU	2,987	2,839	5,826	
Gainesville	UF	*Unique characteristics: high use of alt travel modes*			
Deland	Stetson	1,798	2,003	3,801	

Source: Local Government *Land Development Code*s
R&SH, 2005

The numbers of parking spaces required for each of the planning phases at these institutions were then analyzed to ascertain high, median and low rates, as well as the average rate. These values are shown below.

Range Highlights	**2009-10**	**2014-15**	**Total**
Low	1,558	1,769	3,350
Median	1,977	2,110	4,238
High	2,987	2,839	5,826
Mean	2,036	2,203	4,239

The City of Lakeland Parking Requirements would necessitate construction of more parking spaces in Phase 2 of campus development and more total parking spaces than would be required by any other community hosting a state university. Because of this, it was decided that the parking requirements for the site would be re-examined, using land use-specific parking requirements for the different land uses about campus. These guidelines, found on pages 32.7 – 32.15 of the City's *Land Development Regulations*, are shown in Table 11.4d

Table 11.4d Parking Guidelines for Related Land Uses, City of Lakeland *Land Development Regulations*

Related Land Uses	Minimum Off-Street Parking Requirement	Full Size/Compact Car Parking Spaces Ratio (stated as a percentage)
Offices	1 ps/200 GSF	75.00%
Housing, Institutional	1 ps/2 beds	100.00%
Library	1 ps/300 GSF	75.00%
Auditorium	1 ps/3 person	75.00%
Gymnasium	1 ps/3 person	75.00%
Food/Merchandising		
Retail	1 ps/300 GSF	75.00%
Restaurant - Seats	1 ps/4 seats +	75.00%
Restaurant - Employees	1 ps/2 employee	75.00%
Utilities (Support Services)	1 ps/1.1 employee	75.00%
Health Care	1 ps/150 GSF	75.00%

Source: City of Lakeland *Land Development Regulations*, Article 32, March 1993 with revisions, RS&H, 2005

These land uses also required that some assumptions be made about the facilities use so that these standards might be applied. The following is a list of the assumptions made and, when possible, the basis for these assumptions.

Assumptions

- Conversion of net square footage to gross square footage accomplished by multiplying net value by 1.3.
- Both Educational and Administrative Offices to be treated as **Offices**.
- Auditorium to seat 1,000.
- Gymnasium to seat 2,000.
- Retail space calculated per FDOE guidelines *State Requirements for Educational Facilities* (Chapter 6, Section 6.1, pages 158 and 159). The number of students, stated as FTE, multiplied by 0.5 yielded retail need (see Part 10 "Other Assignable Spaces: Merchandising Facilities – Bookstore"), stated as net square footage. This was then converted to a gross square foot value.
- Dining area calculated as follows: gross square feet (from Chapter 6), less retail space, divided by (14 x 1.3), per "Other Assignable Spaces: Dining – cafeteria, including kitchen" yields the number of seats.
- Number of eating establishment employees calculated as 1 front room employee per 8 seats and 1 kitchen employee per 8 seats, or 1 employee for every 4 seats.
- All non-administrative and non-faculty employee were considered support staff and used as the basis for the calculation of the number of 'utility' parking spaces.

Applying the values identified for the alternate land use descriptions to the needs calculated in Chapters 5 and 6 of this document produced the number of units to be used in determining the parking needs for the site. The results of the parking assessment is provided in Table 11.4e.

Table 11.4e Calculation of Parking Requirements for Alternate Land Uses

Land Uses	Basic Number of Units					
	2009-10			***2014-15***		
	Base Unit	#Units/ Parking Space	Amount Parking Required	Base Unit	Divisor *	Amount Parking Required
Offices - SF	102,000	200	510	93,000	200	465
Housing, Institutional – beds				500	2	250
Library – SF	92,000	300	307	55,000	300	183
Auditorium – seats				1,000	3	333
Gymnasium – seats	2,000	3	667			
Food/Merchandising						
Retail – SF	1,285	300	4	1,542	300	5
Restaurant – Seats	1,633	4	408	2,223	4	556
Restaurant – Employees	426	2	204		2	278
Utilities – Employees	157	1.1	143	108	1.1	98
Health Care – SF	3,000	150	20	4,000	150	27
Subtotal, per phase			***2263***			***2195***

Source: RS&H, 2005

Only one of the categories required special handling to determine a base unit that was compatible with the city's parking regulations. The "Health Care" category most closely correlates to the City's "Clinic" category. However, parking spaces for "Clinics" were based on

the number of employees and the number of examining rooms, both unknown quantities for the University's proposed facilities. However, other "Health Care" categories within the city's parking regulations used 1 parking space per 150 square feet of building area. This standard was applied to the University's "Health Care" facility.

These standards resulted in per-phase subtotals (2,263 and 2,195) and 10-year total (4,458) parking requirements that were only slightly higher than the median value of parking requirements for state university host communities statewide. Based on these findings, the following recommendations are made.

1. The Jacksonville *Land Development Code*'s requirements for determining the number of parking spaces produced numbers that were closest to the median value of the parking space requirements for state university host communities statewide. Its requirements are also similar to those produced by analyzing each of the university's proposed land uses individually within the *Lakeland Development Regulations* parking requirements. Therefore, the University will apply the City of Jacksonville's standards to the proposed land uses to determine the by-phase parking spaces required at the proposed site.

2. The City of Lakeland should consider amending its parking requirements for colleges to be compatible with the FDOE spatial needs assessment procedures.

3. The City of Jacksonville *Land Development Code* parking requirements for colleges and universities are stated below.

    - 0.40 parking spaces per commuting student
    - 0.50 parking spaces per residential student
    - 0.85 parking spaces per employee

The results of applying this standard at the University of South Florida Lakeland site can be seen in Table 11.4f.

Table 11.4f USF Lakeland Parking Requirements using City of Jacksonville Parking Standards

Parking Calculation Base Units	1 Parking Space Per X Base Unit	2009-10		2014-15	
		# Units	# PS Req	# Units	# PS Req
Commuting Students	0.40 Student	3,954	1,582	4,247	1,699
Residential Students	0.50 Student	0	0	500	250
Employees	0.85 Employee	480	408	420	357
Subtotal, by phase			1,990		2,306
Total, both Phases					4,295

Source: City of Jacksonville *Land Development Code*
RS&H, 2005

b) An analysis of the amount of land required to provide the amount of parking calculated in (2) a).

The density and intensity of land development are shown in "Chapter 4.0 Land Use Element" of this document. Parking areas would be 0.80 or 80% of each acre developed for parking purposes would be of impervious material. This is true of both surface parking lots and multi-level parking structures. As shown in the analysis immediately preceding this, the University will require nearly 2,000 spaces by the end of its first phase (Year 2009-10) with another 2,300 spaces by the end of the second phase for a total in the Year 2014-15 of 4,295 spaces.
It is recommended that at least 2,000 of those spaces be provided in parking structures from the outset. The recommended construction scheme is for the 1,990 spaces required for Phase 1 be provided as one 1,000-space parking garage and 990 surface parking spaces.

Phase 1
At a density of 125 parking spaces on each of 4 floors per acre, the parking garage will require at least 2 acres. At a density rate of 90 spaces per acre for surface lots, the 990 surface parking will require another 11 acres of land area.

Phase 2
Using the same densities as above, the second parking garage will require an additional 2 acres, with another 14.53 acres dedicated to surface parking.

The total land requirements to accommodate parking are 4 acres for parking garages and 25.53 acres for surface parking for a total of 29.53 acres dedicated to parking alone.

If the second phase provides a third 1,000 space parking garage, the amount of land dedicated to parking garages increases to 4 acres while the requirement for surface parking is reduced to only 3.42 acres. The total acreage dedicated to parking under this scenario is reduces to a total of 6 for parking garages and 14.42 for surface parking for a total of 20.42 acres dedicated to parking.

c) An assessment of the capacity of University lands to accommodate the amount of parking calculated in (2) a), including a determination of how much of the parking would have to be provided in structures.

The campus has the capacity to accommodate all of the parking required on the identified site, particularly if structured parking is incorporated as a part of the parking needs solution. The following are four different parking scenarios for the campus. The first demonstrates the impact of employing on surface parking. Each successive scenario adds parking structures.

Surface Parking Spaces Only

Phase I: 1,990 spaces ÷ 90 spaces/acre = 22.11 acres

Phase II: 2,306 spaces ÷ 90 spaces/acre = 25.62 acres

Total 4,295 spaces ÷ 90 spaces/acre = 47.72 acres [1]

One 1,000-space parking garage per phase, with the remainder surface parking

Phase I:	1,990 spaces:	1,000 spaces @ 500 spaces/acre of parking garage (2.0 acres)
		+ 990 spaces ÷ 90 spaces/acre = 11.00 acres *Total: 13.0 acres*
Phase II:	2,306 spaces:	1,000 spaces @ 500 spaces/acre of parking garage (2.0 acres)
		+ 1,306 spaces ÷ 90 spaces/acre = 14.51 acres *Total: 16.51 acres*
Total	4,295 spaces:	2,000 spaces @ 500 spaces/acre of parking garage (4.0 acres)
		+ 2,205 spaces ÷ 90 spaces/acre = 25.50 acres ***Total: 29.50 acres***

One 1,000-space parking garage in Phase I, Two 1,000-space parking garages in Phase II

Phase I:	1,990 spaces:	1,000 spaces @ 500 spaces/acre of parking garage (2.0 acres)
		+ 990 spaces ÷ 90 spaces/acre = 11.00 acres *Total: 13.0 acres*
Phase II:	2,306 spaces:	2,000 spaces @ 500 spaces/acre of parking garage (4.0 acres)
		+ 306 spaces ÷ 90 spaces/acre = 3.40 acres *Total: 7.40 acres*
Total	4,295 spaces:	3,000 spaces @ 500 spaces/acre of parking garage (6.0 acres)
		+ 1,205 spaces ÷ 90 spaces/acre = 13.39 acres ***Total: 19.39 acres***

1. Sums may not appear exact due to rounding.

As the most land-conserving measure, two 1,000-space parking garages could be constructed per phase. Recognizing that vendors, some visitors and some handicapped parking may require surface access, it is recommended that 5% of all parking, as a minimum, be provided in surface lots. While this would require

the actual over-building of spaces during the first phase of construction, the overage would be absorbed into the total required acreage for Phase Two and later years of the university's expansion.

Most Land-Conservative Measure

Phase I:	1,990 spaces:	2,000 spaces @ 500 spaces/acre of parking garage (4.0 acres) + 100 spaces (5%) ÷ 90 surface spaces/acre = 1.11 acres *Total: 5.11 acres*
Phase II:	2,306 spaces:	2,000 spaces @ 500 spaces/acre of parking garage (4.0 acres) + 196[2] spaces ÷ 90 spaces/acre = 2.18 acres *Total: 6.18 acres*
Total	4,295 spaces[1]:	4,000 spaces @ 500 spaces/acre of parking garage (8.0 acres) + 295 spaces ÷ 90 spaces/acre = 3.29 acres ***Total: 11.29 acres***

1. Sums may not appear exact due to rounding.
2. 196 = 306 – 100 – 10, where 100 = the surface parking constructed in Phase I and 10 - the 'overage' in parking structure spaces provided in Phase I

d) An analysis of practical methods to accommodate the amount of parking calculated in (2) a) on the University campus, including at a minimum:

1. **Reducing the number of permits issued.**
2. **Increasing utilization.**
3. **Increasing use of public or University-provided transit.**

During the University's first decade of operation, it will be difficult to decrease use of individual automobiles to access the campus. The service area for the University is large, covering 5 counties, of which 4 are primarily rural-density counties. Until there is sufficient demand for initiating transit options to these distant locations, the personal automobile will provide the best means of accessing the campus.

In addition, living options near the campus, such as is proposed as part of the reconfigured Williams DRI, will not be immediately available to potential students. Again, as the University grows and the demand for such living arrangements, as well as viable employment near the University, comes on line as the Williams developments are absorbed into the Polk County economy, alternate access to the campus, such as walking, bike-riding and transit, will become more viable.

The limited developable acreage on site suggests that the more structured parking made available, the more expansion potential is possible at this site. At the present time, the University anticipates no more than 25,000 students at this location at full buildout, anticipated to occur no sooner than at least 10 years beyond the horizon year of this plan. However, as other campuses in the state University system reach their maximum student-carrying potential, there may be pressure on this location to increase the number of students it serves. Using the most land-conservative measures for parking provides the University with the greatest flexibility for these decisions in the future.

The University is also in a prime location to share the cost of structured parking with other partners. The transit-oriented development on the south side of the campus may be interested in sharing the cost of an initial parking structure, perhaps reserving the use ground floor spaces for "Town Center" businesses while the University used the upper floors. This would serve the "Town Center" by allowing it to preserve a more transit-oriented layout, while permitting the number of businesses, their customer base, and the number of residential units to grow sufficiently for the "Town Center" to implement cost-effective transit options, without the "Town Center" having to make temporary provisions for surface parking.

The area immediately west of the campus is designated as a future technology park. This presents another option for sharing structured parking costs. It may be possible to configure a parking garage such that, instead of constructing a 1,000-space garage exclusively for University use, a 2,000-space garage is constructed, with half of the spaces available for use or long-term lease to businesses locating in the Tech Park, allowing the new businesses to develop at greater densities since they will not have to provide either surface parking or the costs associated with permitting and mitigating the addition of a several acres of impervious surface to their development.

Two other mechanisms can be considered for generating parking structures funding, both of which would be internal to the University. At the present time, USF Lakeland students are sharing the facilities of the Polk County Community College where no costs are levied for parking. The University has the option of levying a 'parking fee' with the present enrollment as part of semester's general fees structure to be used as leverage for the funding needed to finance parking structures at the new campus. Similarly, fees may be generated throughout the USF system, where several other sites have the maximum amount of parking already provided. These system-wide funds could be used to 'seed' a parking structures fund at the USF Lakeland campus, to be repaid through fees charged on a per-student basis or from fees charged to the public who attend University events..

The specific number of parking garages to be built at the University, as well as the mechanisms to be used in funding same, will be determined by the University's administration following a full examination of all funding options available to it.

e) An analysis of off-campus lands in the context area that may be available for University parking and the parking capacity of those sites.

Sufficient parking will be provided on campus to forestall any use of off-campus facilities.

f) An analysis of the impacts of off-campus University parking on the context area and the alternatives for minimizing these impacts.

Not Applicable: See immediately preceding response.

g) An analysis of the projected traffic volumes/capacities and levels of service on University roads in the context area, including an analysis of the traffic circulation model used by the host community in projecting traffic circulation in the context area.

Projected traffic volumes for roadways within the USF Lakeland Campus are obtained from the latest Williams DRI, dated November 2005. The planned phases for USF Lakeland Campus Master Plan are 2009-10 (phase I) and 2014-15 (phase II).

On Campus:
According Williams DRI Question 21(Transportation), there will be a total of 23,479 daily trips for USF campus in year 2015. These vehicle trips will access the proposed USF campus via three campus roadways. The three entry/exit roadways for the proposed campus are on the east, center and west ends of the campus. It was assumed that the traffic entering and exiting the proposed campus will use these three roadways equally, which results in approximately 7,800 vehicles on each of these two-lane roadways which corresponds to level of service (LOS) of C using FDOT Generalized LOS Table 4-1, FDOT Quality/ LOS Handbook (2002).

Context Area:
The impact and circulation of traffic to off-campus roadways in the context area was addressed by the Williams DRI. According Williams DRI, Question 21 (Transportation) report, page 14, "To estimate the traffic to be generated by the USF property, the socioeconomic data for the campus was entered into the FSUTMS model in zone number 624."

Page 42 of the report states, "No roadway segment will be significantly and adversely impacted in Phase 1 [2010]." Also page 44 of the report states, "The following summarizes the roadway segments that will be significantly and adversely impacted in Phase 2 [2015]:

- SR 33 (Project Entrance to Socrum Loop Road)
- CR 659/Combee Road (US 92 to CR 546)

An arterial analysis of the segment of CR 659 from SR 33 to US 92 may indicate a higher Service volume and an acceptable Level of Service. Similarly, the segment of SR 33 from Socrum Loop Road to CR 659 may meet an acceptable Level of Service with an arterial analysis. However, it is likely that the segment between the project driveway and CR 653 [CR 659/Combee Rd] will not meet its Level of Service Standard and may require widening."

h) An analysis of improvements that would be required to on-campus roadways to meet the future traffic circulation needs of the University.

All of the roadways on campus will be classified as local roadways, serving to connect the campus parking facilities with access roadways.

Other than the construction of the new two-lane roadways within proposed campus, no additional improvements will be needed to campus roadways in the USF Lakeland Campus Master Plan, for Phases I and II.

i) An analysis of improvements that would be required to off-campus roads in the context area, based on the additional traffic projected to be generated by the University.

As mentioned in part (g) above, off-campus improvements were addressed by revised Williams DRI, Question 21 (Transportation). According to the Williams DRI, the total daily trips associated with the USF campus for year 2015 are 23,479, while the USF Lakeland Campus Master Plan Supporting Inventory and Analysis estimates the year 2015 daily trips generated to be 20,708, 2,771 trips less than suggested by the Williams DRI. This suggests that the impact to off-campus roadways will be less than addressed by Williams DRI dated November 2005.

Page 42 of the DRI report states, "No roadway segment will be significantly and adversely impacted in Phase 1 [2010]." Also page 44 of the report states, "The following summarizes the roadway segments that will be significantly and adversely impacted in Phase 2 [2015]:

- SR 33 (Project Entrance to Socrum Loop Road)
- CR 659/Combee Road (US 92 to CR 546)

An arterial analysis of the segment of CR 659 from SR 33 to US 92 may indicate a higher Service volume and an acceptable Level of Service. Similarly, the segment of SR 33 from Socrum Loop Road to CR 659 may meet an acceptable Level of Service with an arterial analysis. However, it is likely that the segment between the project driveway and CR 653 [CR 659/Combee Rd] will not meet its Level of Service Standard and may require widening."

Additionally, the roadways between the campus and the surrounding roadway network are the responsibility of the Williams DRI and would most likely be classified as collector roadways, once the roadways become part of the community roadway network. As yet, these roadways do not exist.

j) An analysis of additional public or University-provided transit that will be required to meet the future needs of the University for the planning period.

This Master Plan is for the development of a new campus for USF Lakeland, thus there is no existing public transit or university-provided transit for the campus. However, the USF Lakeland Campus Master Plan envisions transit service to the new campus, as mentioned in several master plan policies, including several objectives in the Transportation Element (11.1, 11.2, 11.5, 11.7), as well as the Intergovernmental Coordination Element (i.e., Policy 12.3.6). It is anticipated that transit, often a viable transportation alternative, may potentially enhance the ability of future students, staff and visitors to access the new campus (particularly for those with mobility limitations).

USF Administration is open to working with the host communities on issues related to mass transit. USF Administration is open to potential mass transit opportunities and transit related discussions within the surrounding Williams DRI and the broader region. Currently, no formal agreement regarding transit exists between USF and the City of Lakeland, the Lakeland Area Mass Transit District) nor any other host community. However, as stated, USF Administration is open to discussions with the host community to ensure the proper planning and integration of transit to serve the USF Lakeland campus. This includes discussions related to petitioning the LAMTD to ensure future transit service availability and ensuring adequate shelter placement.

Additionally, the USF Administration supports the completion of the Williams DRI East-West Collector Road (Pace Road) before the campus opens in 2009-10. This proposed 2-lane roadway is listed in the Draft Year 2030 Highway Needs Plan of the Polk Transportation Planning Organization (10/13/05) from SR33 to the Mount Olive Road Extension, however it is not listed in the Plan's Committed Transportation Projects listing for FY 2005 - 2010. This proposed roadway would be an important link to connecting the campus with potential expanded LAMTD transit routes, improving roadway travel connection to the campus. Route #52 appears to be a candidate for potential expansion along the proposed east west roadway, to the university. The USF Administration envisions that potential future transit service to the new campus would potentially enter the campus from the easternmost campus entry, off of the future East-West Roadway, and loop around future university housing.

If the Williams DRI East-West Collector Road is not open before 2010, there are other existing roadways that can be utilized for extended transit routes to the USF campus.

USF can request to have specific areas included in the Lakeland Area Mass Transit District (LAMTD). The first step to this process is to submit a letter to the LAMTD outlining which areas the University is requesting be added to the bus service area. This letter is presented to the LAMTD board for their approval. If they should choose to approve the request, a resolution is passed and forwarded to the City of Lakeland. Once the City of Lakeland receives LAMTD's resolution to include areas to the bus transit route; a City ordinance is passed.

k) An analysis of the opportunities to implement transportation system management and transportation demand management techniques and strategies to minimize off-site impacts on roadways within the context area, including:

Based on the analysis described in section 2 g) of this document, it is not anticipated that there will be any significant and adverse off-site impacts to the roadways within USF Lakeland's context area for phase I (2010). In phase II (2015), the analysis describes two potential roadway segments within the context area, to the southwest of the planned campus, that may be impacted, depending upon results of more detailed arterial analysis and one roadway segment that may need to be widened.

1. **Operational modifications.**
   There may be opportunities to coordinate traffic access improvements at the entrances/exits of the campus and along context area roadways that lead to the campus, with the City of Lakeland and/or Polk County. Traffic signalization coordination, transit lane dedication, turn restrictions and access management are examples of transportation system management (TSM) techniques and strategies that may offer improvements to potential future off-site impacts to the context area.

2. **Improved utilization of public or University-provided transit.**
   The USF Administration is open to exploring potential opportunities related to Transportation Demand Management (TDM) techniques and strategies to minimize potential off-site impacts within the context area. These TDM strategies and techniques may encourage the use of transit. Examples are listed below.
   - Parking pricing strategies designed to encourage the use of other modes of travel, such as transit.
   - Convenient and safe pedestrian oriented linkages between transit stops/shelters and campus origins/destinations.
   - Developing transit shelters/stations/stops at appropriate context area and on campus locations.

   Additionally, transit lane dedications along with traffic signal priority and/or pre-emption are potential TSM strategies that aim to decrease transit travel time and encourage transit use.

3. **Improvement of pedestrian and non-vehicular circulation facilities.**
   The USF Lakeland campus will provide opportunities for safe pedestrian movement around the campus as well as providing linkages to the proposed development to the south. As the campus environment matures, there will be opportunities to re-evaluate the non-vehicular circulation system and improve or modify it functionality to enhance safe circumnavigation throughout the campus and within the community.

4. **Increasing the number of students living on campus.**
   The provision of on-campus housing will provide 500 beds in Phase II. Beyond this timeframe, student enrollment, demand and financial available for more on-campus housing will dictate this need. Development of housing in the DRI to the south of campus will provide housing options. Due to the physical limitations of the campus property in Parcel 1A, the design of multi-story housing facilities will also be a factor in the provision of more housing.

5. **Academic scheduling modifications.**
   The USF Administration is open to exploring potential TDM strategies and techniques related to academic scheduling modifications that may help to decrease potential traffic on context area roadways during peak period travel time. This includes scheduling more classes during non-peak hours.

6. **Traffic management system approaches.**
   As previously mentioned, traffic signalization coordination, transit lane dedication, turn restrictions and access management are examples of TSM techniques and strategies that may offer improvements to potential future off-site impacts to the context area.

7. **Jobs-housing balance concepts.**
   The provision of housing for students, faculty and staff in close proximity to the campus could provide this balance of an easy commute and convenience. The ability to live in close proximity to one's employment has always been an attractive option when looking for housing. Quality of life is enhanced when time-effeciency is factored into a reduced

commute and family life. The availability of housing within an easy distance to the campus could be an attractive advantage when recruiting the most promising faculty to the university.

l) The planned location of future facilities identified in the Academic Facilities, Support Facilities and Utilities Elements, with accompanying parking to serve these facilities.

Surface parking and an internal circulation for maintenance vehicles has been incorporated into the design of the USF Lakeland Master Plan. Service areas have been located directly adjacent to the facilities for ease of accessibility. This same system is also to serve as the primary means of circulation and building access for disabled persons.

Pedestrian and Non-Vehicular Circulation Sub-Element

(1) DATA REQUIREMENTS. This sub-element shall be based, at a minimum, on the following data:

a) An inventory of existing pedestrian and non-vehicular facilities on the University campus(es) illustrating the location, size and surface material of the facilities.

This Master Plan is for the development of a new campus for USF Lakeland; thus, no existing campus is considered for the Inventory section of this document.

b) The planned location of future facilities identified in the Academic Facilities, Support Facilities and Utilities Elements.

This Master Plan is for the development of a new campus for USF Lakeland; thus, no existing campus is considered for the Inventory section of this document. Planned campus buildings are concentrated to a central core of the campus, with parking facilities and a perimeter loop roadway located to the perimeter. A student center, multi purpose building is located in the center and is planned for completion during Phase I. Other facilities, including university housing, a parking structure and a physical plant are planned for Phase II. Residential housing is to be initially accommodated in the southeast portion of the campus site, outside of the loop road. The parking structure is located on the perimeter of campus, just inside the loop road, to the west of housing and near the student center. The physical plant is located on the north of the campus site, outside of the loop road.

c) An inventory of existing pedestrian and non-vehicular circulation facilities located within the context area.

Roadways with light traffic that are considered suitable for non-vehicular circulation by bicycle that are in the context area are Lakeland Hills Boulevard (SR33), Old Polk City Road and Mount Olive Road (Bicycle Suitability Map, Polk Transportation Planning Organization – TPO, 2/25/04) . SR 33 runs north and south to the west of Lake Parker connecting with Combee Blvd before an interchange with Interstate 4. SR 33 has a paved shoulder that is at least 4 feet wide and considered suitable for bicyclist by the Polk TPO. Old Polk City Road runs somewhat parallel to Interstate 4 to the north and connects with SR33. Mount Olive Road connects with SR 33 just northeast of Old Polk City Road and continues south of Interstate 4 to Berkley Road. Neither Old Polk City Road nor Mount Olive Road have a paved shoulder, but are also considered suitable for bicyclist by the Polk TPO.

Roadways with medium traffic, or heavy traffic with paved shoulders at least 4 feet long, which are considered suitable for non-vehicular travel by bicycle and located in the context area are Combee (SR 659) and Saddle Creek (SR 546) Roads (Polk TPO, 2/25/04). Memorial Blvd (US 92) is a roadway with heavy traffic and/or considered dangerous for bicycle travel. There are no roadways within the context area with bicycle lanes, according to the Bicycle Suitability Map.

According to information depicted in the Draft 2030 Transportation Needs Plan (Polk TPO, Oct.2005), there are no existing major context area roadways with existing sidewalks located on both sides of the road. Specifically, Lakeland Hills Blvd. (SR33), Combee Road (SR 659), Saddle Creek Road (SR 546) and Memorial Boulevard (US 92) do not have existing sidewalks on either one or both sides of the road. Polk County TPO information also indicates that there is a multi use trail/Greenway Connector to the west of the context area, located just west of Parker lake.

Figure 11.3: Pedestrian and Non-Vehicle Circulation shows the location of existing roadways that are suitable for bicycle use, as well as the location of a multi use trail within/near the context area.

d) An inventory of the planned pedestrian and non-vehicular circulation facilities located in the host community in the context area, illustrating the location, size and function planned for each facility as identified in the host community Bicycle Plans or other related documents.

The Draft 2030 Transportation Needs Plan (Polk TPO, Oct.2005) indicates that a few of the Plan's top 100 strategic bicycle needs are located in the southeast corner of the context area, just east of Combee Road (SR 659), between Saddle Creek (SR 546) and Memorial (US 92). This same document indicates a top 100 strategic pedestrian need along Saddle Creek (SR 546), the entire width of the context area. Additional strategic pedestrian needs are located in the southeast corner of the context area, just east of (and including)Combee Road (SR 659), between Saddle Creek (SR 546) and Memorial (US 92). Finally, approximately three strategic multi-use trail needs are located throughout the context area. The needs mentioned above are not listed as committed transportation projects. Additionally, a detailed description of the needs mentioned above is not provided in the Draft Plan.

e) An inventory of existing problem areas on-campus related to pedestrian and non-vehicular circulation. Data must include statistics on accidents involving, and violent crimes committed against pedestrians and bicyclists on-campus and in the context area. Statistics must include type of crime or accident, location and time of occurrence. Data on violent crimes must indicate gender of victim and suspect(s).

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

(2) ANALYSIS REQUIREMENTS. This sub-element shall provide, at a minimum, the following analyses for the planning period:

a) An analysis of the amount and type of pedestrian and non-vehicular circulation facilities that will be required to meet the needs of projected University enrollment including the basis for this analysis.

Planned pedestrian and non-vehicular circulation will be of sufficient magnitude to accommodate peak loads of pedestrian traffic. These planned linkages will facilitate walking and non-vehicular travel throughout key public areas of the campus. Major pedestrian linkages should be a minimum of ten feet wide. Bicycle circulation facilities should also be planned, including the provision of bicycle racks at campus facilities and continuous, identifiable bicycle lanes along campus roadways, with pavement markings and signage.

The Proposed Transportation Overview Map of the USF Lakeland Campus Master Plan describes the planned pedestrian linkages to meet completion of Phases I and II of the campus master plan. This map shows pedestrian linkages connecting outer campus entrances/exits located at context area roadways to the inner campus core of academic and support areas. Planned parking areas and residential housing are also linked to the campus core via pedestrian linkages.

b) An analysis assessing the need for pedestrian and non-vehicular circulation facilities in the context area with reference to those facilities serving areas of off-campus student housing, or other off-campus student activities.

USF Administration will coordinate the need for pedestrian and non-vehicular circulation facilities in the context area with its host community, including the City of Lakeland, Polk County and FDOT to create a safer pedestrian and non-vehicular environment for students along off-campus roadways. As campus development occurs over phases I and II, the university endeavors to link the campus to off campus sidewalks and/or multi-use /greenway trial systems. Additionally, convenient and safe pedestrian oriented linkages between transit stops/shelters and the campus will encourage transit use to and from the university.

The Transportation Element of the Lakeland Comprehensive Plan(available from the city's website, 6/2006) states that "typical sections for all public and privately funded collector and arterial roadways…shall include five–foot sidewalks on one or both sides of the street and include standard-width bicycle lanes, where appropriate".

c) An analysis of lighting conditions along pedestrian and non-vehicular circulation routes to identify areas where lighting is inadequate.

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for this requirement.

12.0 INTERGOVERNMENTAL COORDINATION ELEMENT

PURPOSE

The purpose of this element is to identify and resolve incompatible goals, objectives, policies and development proposed in campus master plans and to determine and respond to the need for coordination with adjacent local governments, and regional and state agencies. Intergovernmental coordination shall be utilized to the extent required to carry out the provisions of this Guideline.

(1) DATA REQUIREMENTS. This element shall be based, at a minimum, on the following data:

a) An inventory of all host and affected governments and other units of local government providing services but not having regulatory authority over the use of land, independent special districts, water management districts, regional planning councils, and state agencies with which the University coordinates or which provides services to the University. This inventory shall also include regional or state agencies with land use or environmental regulatory authority, and authorities, independent special districts, and utility companies, which provide services to the University.

Table 12.1 provides an inventory of the agencies and regulatory authorities with whom USF Lakeland interacts as it carries out this portion of its mission on behalf of the Florida Board of Governors. These agencies serve as the primary coordination/jurisdictional agency(s). It should be noted that the agency coordination described in Table 12.1 reflects the historical coordination mechanisms and not those required to meet the goals, objectives and policies of the USF Lakeland Comprehensive Master Plan.

Table 12.1 Host Community Government Agencies

CITY	**REGIONAL**
City of Lakeland	Southwest Florida Water Management District (SWFWMD)
COUNTY	Central Florida Regional Planning Council (CFRPC)
Polk County	**FEDERAL**
STATE	U.S. Army Corps of Engineers (ACOE)
Florida Department of Environmental Protection (DEP)	U.S. Environmental Protection Agency (USEPA)
Florida Department of Community Affairs (DCA)	Federal Highway Administration (FHA)
Florida Department of Transportation (DOT)	
Florida Board of Governors	

b) For each entity listed in (1) a), the element shall briefly describe the existing coordination mechanisms indicating the subject, the nature of the relationship and the office with primary responsibility for coordination.

Subject 1. To assure existing and proposed land uses are compatible with the host communities land use plan element.

Description
In order to maintain the land use compatibility between the University and the host community a reciprocal review of development plans on and adjacent to the campus should be instituted. In order to maintain land use compatibility, a program of reciprocal review should be instituted to provide a mechanism that allows input from potentially affected entities as part of formal land use review procedures.

Coordinating Mechanisms
The host communities have Future Land Use Elements adopted in accordance with Chapter 163, Florida Statutes. All amendments to the future land use plan map must undergo statutory review and the public hearing process as set forth in the Florida Statutes

Primary Entities
City of Lakeland
Polk County
University of South Florida
Florida Board of Governors

The Nature of the Relationship
Chapter 163 Florida Statutes, comprehensive plan amendment process gives the University formal standing to comment on land use issues related to amendments to Comprehensive Plans. The host community are not required to coordinate the review of public or private land development proposal that are in accordance with the adopted land use plan local zoning ordinances and land development regulations with the University.

Subject 2. Expansion of Land Resources Available for University Facilities after the Projected Buildout date.

Description

Due the finite land resources available for University expansion due to environmental constraints on the proposed campus property, and recognizing that the USF Lakeland Campus is constrained from any potential expansion by major roadways to the north and east, the University should initiate short and long term agreements for the use of lands owned by the Williams Acquisition Holding Company, Inc. for University facility purposes.

Primary Entities
City of Lakeland
Polk County
University of South Florida
Florida Board of Governors
Williams Acquisition Holding Company, Inc.

3. Availability of Sanitary Sewage Collection and Treatment Capacity

Primary Entities
Polk County
City of Lakeland

Nature of the Relationship
The City of Lakeland for developing and operating the county-wide sanitary sewage collection and disposal system. Environmental regulations regarding sewer connections and septic tanks are administered and enforced by the Florida Department of Environmental Resources Management (DERM). USF Lakeland shall routinely forward engineering plans for water and sewer improvements to the City of Lakeland and DERM for review. Comments are generally received only on the water component of the building design.

4. Development Review

Description

The present procedure for the review of on-campus engineering and permitting requirements is for USF Lakeland to submit engineering plans to DERM, City of Lakeland and the host community as applicable. These plans are reviewed on an informal basis, comments are received, however, no permits are issued. Although agreements exist for the provision of water to the campus, no formal review procedure or master agreement exist for the review and permitting of infrastructure improvements or reviewing the availability of facilities and services provided by the host government. In addition, the University is not required to submit building plans to the host community or receive building permits or certificates of occupancy.

Chapter 1013.30, Florida Statutes establishes provisions for campus planning and concurrency management that supersedes the requirements of Part II of Chapter 163, Florida Statutes. The growth management provisions established in the Florida Statutes were adopted in recognition of the unique relationship between campuses of the State University System and the local governments in which they are located. The statute recognizes that while the University provide research and educational benefits of state wide and national importance, and provide substantial educational, economic and cultural benefits to the host communities, the campus may also have an adverse impact on the public facilities, services and natural resources of local government.

Chapter 1013.30 F.S. requires the University to prepare and adopt campus master plans of which this element is a component. Upon adoption of the campus master plan in accordance with 163.3184(15), and within 270 days, the Florida Board of Governors must forward a draft campus development agreement. This development agreement must address the following public facilities and services; roads, sanitary sewer, solid waste, drainage, potable water, solid waste, drainage, parks and recreation and transportation. The development agreement must identify the level-of-service standard established by the host community, identify the entity that will provide the service to the campus, and describe any financial arrangements between the Florida Board of Governors and other entities relating to the provision of the facility or service.

The development agreement must determine the impact of existing and proposed campus development reasonably expected over the terms of the agreement (a minimum of five years) on the services and facility which the proposed campus will create or to which it will contribute. All improvements to facilities or services which are necessary to eliminate any identified deficiencies must be specifically identified in the development agreement. The Florida Board of Governors' "fair share" cost associated with remediating any of the facility or services deficiencies identified and attributed to University impacts must be stated. Chapter 1013.30, F.S. requires that the Florida Board of Governors assume responsibility for payment of the cost for remediation of the facility or services deficiencies. The Statute allows the fair share payment to be accomplished either by: 1) paying a fare share of the required improvement identified in the development agreement or 2) taking on full responsibility for the improvement or improvements identified in the development agreement and agreed to between the host local government and the Florida Board of Governors, the total cost which equals the "fair share" attributed to the University's impacts.

Coordinating Entities

Primary:
Southwest Florida Water Management District
Florida Department of Community Affairs
Florida Board of Governors

Secondary:
Southwest Florida Regional Planning Council
Florida Department of Environmental Protection
Florida Department of Transportation
Florida Department of State

Florida Fish and Wildlife Conservation Commission

Coordinating Mechanism
Chapter 1013.30, Florida Statutes

Nature of the Relationship
Primary:
The agencies, municipalities and City of Lakeland are the entities that provide services and facilities, which support the University. USF Lakeland will utilize the off-site services and utilities and therefore has a proportionate impact of these services. The Florida Board of Governors and USF Lakeland are required to prepare the Campus Master Plan in accordance with the provisions contained in Chapter 1013.30, F.S. This statute requires the University to identify the proportionate impact of the host community and County's facilities and to mitigate these impacts.

Secondary:
In addition to the host communities and the water management district, the agencies identified as being secondary coordinating mechanisms will review the contents of the campus master plan for consistency with the requirements for the development of campus master plans. The findings contained in the campus master plans will provide the basis for identifying services and facility deficiencies and establishment of the University "fair share" commitments.

(2) ANALYSIS REQUIREMENTS. The element shall be based, at a minimum, on the following analysis.

a) The effectiveness of existing coordination mechanisms described in (1) b), such as intergovernmental agreements, joint planning and service agreements, special legislation and joint meetings or work groups which are used to further intergovernmental coordination.

With the development of USF Lakeland's first campus master plan, the Campus can parallel its efforts to develop as the surrounding host community continues its dynamic growth, community interaction and long-range planning. The ability of the City of Lakeland to supply basic services to the USF Lakeland campus will determine the rate of growth, as well as the ability of the campus to accommodate anticipated growth while respecting and managing the naturally occurring resources of uplands, wetlands and wildlife and vegetation. Interaction with the context area through sound land planning efforts, constructive interaction with the FDOT and the coordination with the City of Lakeland, will be the key to successful growth and development at the campus.

With this level of coordination, the City of Lakeland, many of its citizens and USF Lakeland administrators will work very closely throughout Central Florida's growth. These entities will partner in the development of the campus and the area surrounding the campus. Each party sees the other as having an integral role in their combined success: the University helps each city to attract new businesses; new businesses and their new technologies encourage the University to respond with educational opportunities to train students to new career opportunities and to advance the level of training for current employees. The informal nature of the close, continuing alliance between the city and the University has served them well.

The University's relationship with jurisdictional agencies has also been positive throughout the existence of the University. USF Lakeland will continue to respect the unique natural environment in which it will be located. By working well with such permitting/jurisdictional agencies as Florida Department of Environmental Protection (and its predecessor agencies, the Florida Departments of Natural Resources and of Environmental Resources), Southwest Florida Water Management District and Florida Fish and Wildlife Conservation Commission, USF Lakeland will continue to grow--adding new facilities and serving more students--while preserving wetland and habitat areas.

b) Specific problems and needs within each of the campus master plan elements which would benefit from improved or additional intergovernmental coordination and means for resolving those problems and needs.

With the completion of the USF Lakeland Campus Master Plan and establishing goals, objectives and policies, the Campus is creating a more formalized relationship with intergovernmental agencies and its host community. In addition, the master plan will periodically review those agencies with which it routinely communicates and identifies policies requiring the expansion of existing intergovernmental coordination mechanisms or establishment of new ones, it describes recommended internal coordinating.

c) Growth and development proposed in comprehensive plans in the area of concern and a comparison with the appropriate regional policy plan in order to evaluate the needs for additional planning coordination.

Review of the City of Lakeland Comprehensive Plan indicates that steady growth in both population and employment is forecast for the Polk County area over the next decade. Within the immediate context area of the Campus, commercial, residential and retail development is planned to the south with the Williams DRI development.

13.0 CONSERVATION ELEMENT

PURPOSE

The purpose of this element is to ensure the conservation, protection and wise use of all natural ecosystems and natural resources on the University campus and in the context area.

(1) DATA REQUIREMENTS. This element shall be based, at a minimum, on the following data:

a) An inventory of the following existing and environmental resources, where present on the University campus and within the context area:

The proposed USF Lakeland campus is comprised of three disjunct tracts. The eastern tract is referred to as Parcel 1A and is approximately 171 acres in size. The western tracts are divided into two parts of roughly equal size referred to as Parcels 2 and 3. Parcel 2 is approximately 176 acres and is situated in the western half of the aforementioned tract. Parcel 3 occupies the eastern half of the tract and is about 184 acres in size. Reclaimed mined lands characterize approximately one-sixth of Parcel 1A. The remainder of the parcel has not been mined. Parcel 2 is entirely reclaimed mine land while Parcel 3 is totally unreclaimed mined land.

1. Rivers, lakes, bays, wetlands (including estuarine marshes), and bottom lands;

Historically the general area is characterized by rolling sandhills interspersed with pine flatwoods, forested swamps, marshes and solution depression lakes. Currently the unmined portion of Parcel 1A is characterized by improved pasture, pine flatwoods, temperate hardwood hammock, live oak hammock and disturbed, forested wetlands. The extreme western portion (i. e., the reclaimed mine) is currently pasture and linear open water ponds with a shrubby fringe. Parcel 2 is reclaimed mine lands consisting of linear, slightly elevated spoil piles colonized by Brazilian Pepper (Schinus terebinthifolius) alternating with shrubby wetlands. Parcel 3 is unreclaimed mined land characterized by large linear spoil piles colonized by Brazilian Pepper alternating with open water areas. Other anthropogenic influences at the subject property include fencing, trail roads and ditches.

Surface drainage is generally either to the southwest through strip-mined areas to Saddle Creek, a major headwater tributary of the Peace River or northward to the Green Swamp. The Peace River flows south and west ultimately discharging to the Gulf of Mexico at Punta Gorda. The Green Swamp is the headwaters of the Withlacoochee River, which flows northwestward discharging to the Gulf of Mexico at Yankeetown.

Vacant land borders all three parcels of the proposed USF Lakeland property, however Interstate 4 and the Polk Parkway are located a short distance from the northern and eastern property line of Parcel 1A, respectively. Generally, lands to the south and west of Parcel 1A as well as the extreme western end of Parcel 1A have been mined including Parcels 2 and 3 of the subject property. The Tenoroc State Fish Management Area is located a short distance southwest of the proposed USF Lakeland property.

2. Floodplains;

Federal Emergency Management Agency (FEMA) mapping indicates Zone A flood hazard areas within revised Parcel 1A of the proposed USF Lakeland property and more significant flood hazard areas on Parcels 2 and 3. In each case, the areas are delineated as having no 100-year flood elevations determined.

Should development be proposed within any areas identified as flood hazard areas,

special design considerations, with respect to floodplain compensation due to filled areas and floor levels constructed above the 100-year flood elevation would need to be considered. To determine the 100-year Base Flood Elevation (BFE) in Zone A, where the 100year flood elevation is undetermined, an hydraulic analysis would need to be carried out and approval obtained from FEMA for a Flood Insurance Rate Map (FIRM) amendment.

3. Known unique geological features (springs, sinkholes, etc.)

Parcel 1A lies in an area where sinkhole development poses a moderate-intermediate risk of sinkhole development. A site-specific investigation is recommended prior to development.

Parcels 2 and 3 are wholly contained within previously mined areas. Both areas are located in the Bartow Embayment geomorphic province very close to its boundary with the adjacent Winter Haven Karst geomorphic province. Both of these geomorphic provinces have been very active areas of sinkhole occurrence within historic time. However, in this vicinity, only two sinkhole occurrences are listed in the database over a period of 35 years in an area of 25 square miles within the Bartow Embayment geomorphic province; an occurrence rate of 0.0023 sinkholes per square mile per year. This number could be under-reported because a majority of the land is reclaimed phosphate mines, which might mask the karstic erosion process. The proposed USF Lakeland property lies in an area where sinkhole development poses moderate-intermediate risk. A site-specific investigation is recommended prior to development.

4. Existing mitigation sites,

No mitigation sites currently exist at the proposed USF Lakeland property. The prior mining operation had restrictions upon development of reclaimed lands, which were effective until September 17, 2000. The obligations were fulfilled and the development restrictions subsequently removed.

Future wetland mitigation associated with the campus development may include onsite or offsite options. The proposed USF Lakeland Campus property is positioned within the service area of the Boran Ranch Wetland Mitigation Bank located in De Soto County. Therefore, if approved by the regulatory agencies, credits could potentially be acquired from this bank as compensatory mitigation for the unavoidable wetland impacts. Since the campus property is located within the service area of the proposed Clear Springs Mitigation Bank, credits could be acquired from this bank also once it receives a permit and achieves operational status.

5. Fisheries, wildlife marine habitats and vegetative communities, indicating dominant species present and species listed by Federal, State or local agencies as endangered, threatened or species of special concern;

Five-(5) upland and six (6) wetland vegetative communities are found on the USF Lakeland property. Upland plant communities include improved pasture, pine flatwoods, live oak hammock, temperate hardwood hammock and spoil berms. Bay swamp, willow swamp, freshwater marsh, reservoirs, holding ponds and ditches comprise the wetland types. The vegetative community types present at the subject property are described below. The existing land use/cover types within the study area are depicted in Figure 13.1: Vegetation and Habitat. This map was developed based on the Florida Land Use, Cover and Forms Classification System (FLUCFCS) (FDOT, January, 1999). The number in parenthesis is the corresponding FLUCFCS identification number for the subject land use/land cover type.

Uplands

Reclaimed Land/Improved Pasture (165/211); Improved Pasture (211)

Pine flatwoods or Florida sandhills natural communities historically characterized areas of the proposed USF Lakeland property currently occupied by improved pasture. In unmined areas of Parcel 1A, Bahia grass (Paspalum notatum) is the dominant species present with some dog fennel (Eupatorium capillifolium), pawpaw (Asimina sp.) and a few remnant slash pines (Pinus elliottii). Live oak (Quercus virginiana) hammocks are scattered throughout the pasture. A stand of large pines is located within the pasture in the southeastern part of Parcel 1A. In previously mined upland areas on the remainder of the proposed USF Lakeland property with the exception of the interior spoil piles of Parcels 2 and 3, Bahia grass is still dominant however more ruderal species of grasses and weeds are also present. Common associated species in these areas include broom sedge (Andropogon sp.), ragweed (Ambrosia artemisiifolia), Spanish needles (Bidens alba), fanpetal (Sida sp.) and dog fennel. Depressions in the pasture in these areas are colonized by soft rush (Juncus effusus).

Pine Flatwoods (411)

Pine flatwoods at the proposed USF Lakeland property are limited to five(5) highly disturbed remnants at Parcel 1A. All are located on unmined portions of the parcel. One is located at the northern end of the parcel adjacent to I-4 and the powerline easement. It is bordered on the south by forested wetlands. The largest remnant is centrally located on Parcel 1A and is bordered on the north by the aforementioned forested wetland. The third remnant is situated at the west-central part of the site adjacent to the reclaimed mine land. It is separated from the previously mentioned large remnant by an unpaved trail road and a fence. The remaining two remnants are located at the southwestern edge of the parcel adjacent to a forested wetland. The northern and centrally located remnants are dominated by slash pine which forms an open canopy with some sweet gum (Liquidambar styraciflua) and water oak (Quercus nigra). Groundcover varies from open areas of Bahia grass to moderate coverage of saw palmetto (Serenoa repens), blackberry (Rubus argutus), caesarweed (Urena lobata) and gallberry (Ilex glabra) to dense sections of muscadine grape (Vitis rotundifolia). In the southern remnants adjacent to the reclaimed mine area and forested wetland, the slash pines have been removed and the groundcover consists of a dense growth of blackberry and muscadine grape.

Live Oak Hammock (427)

The oak hammock community type is found scattered throughout the pasture in the unmined portion of Parcel 1A. Live oak (Quercus virginiana) is the dominant species present forming a closed canopy. Groundcover is composed of sapling live oak and ruderal weed species.

Temperate Hardwood Hammock (425)

Temperate hardwood hammock is located in the southwestern part of Parcel 1A. Laurel oak (Quercus laurifolia), water oak and live oak are the dominant species present forming a closed canopy. Sweetgum is a minor canopy component. Groundcover vegetation is sparse due to the reduced light penetration and soil compaction by cattle. Common flora present include caesarweed, dog fennel and other ruderal species.

Unreclaimed Land/Reclaimed Land/Spoil Berms (160/165/743)

Spoil berms are located in the mined areas of the subject property. Brazilian Pepper is the dominant vegetation of the spoil berms forming a dense covering. Reclaimed land generally has berms that are lower in elevation with more associated wetlands while the unreclaimed areas have larger spoil piles and more associated open water features.

Wetlands

Bay Swamp (611)

Two highly disturbed bay swamp remnants occur within Parcel 1A. The largest one is

located in the northern portion of the property extending from the northeast corner southwestward to the edge of the reclaimed mine land. The other remnant is situated at the southern property line and extends offsite onto the Williams DRI. In the former area, sweetbay (Magnolia virginiana) and loblolly bay (Gordonia lasianthus) are the dominant tree species present forming a moderately open canopy. Other associated canopy species include red maple (Acer rubrum) and sweetgum. The groundcover consists of wax myrtle (Myrica cerifera), Virginia willow (Itea virginica), Virginia chain fern (Woodwardia virginica) and bamboo vine (Smilax laurifolia). Surface water enters this wetland by sheet flow exiting via a ditch to the southwest. The hydrology of this wetland appears to have been severely impacted by the past mining activity at the subject property as well as the existing discharge ditch.

As previously mentioned, the latter bay swamp remnant extends offsite to the south. It has a more closed canopy of sweetbay with fewer associated red maples and loblolly bays. The western half of the canopy is covered by a dense growth of muscadine grape. Groundcover is sparse consisting of bamboo vine (Smilax laurifolia), Virginia willow and Virginia chain fern. This wetland discharges to the south by a small ditch to a larger east-west oriented ditch. The hydrology of this wetland also appears to have been severely impacted by the past mining activity as well as the existing discharge ditch.

Reclaimed Land/Willow Swamp (165/618)
Willow swamp is the dominant wetland system of Parcel 2. Willow (Salix caroliniana) is the most common species forming dense stands. Other species present include primrose willow (Ludwigia peruviana), cattail (Typha latifolia) and hempvine (Mikania scandens).

Reclaimed Land/Freshwater Marsh (165/641)
Depressions in the pasture on reclaimed mined areas of the proposed USF Lakeland property are colonized by soft rush marsh. Saltbush (Baccharis halimifolia) and willow have invaded portions of these marshy areas.

Reclaimed Land/ Reservoirs Less Than 10 Acres (165/534)
Smaller ponds are located on the previously mined areas of the proposed USF Lakeland property. Generally, open water is the dominant feature with the marsh fringe composed of a dense zone of either wax myrtle or Brazilian Pepper. One pond on the west central edge of Parcel 1A has a dense growth of sedge (cf. Rhynchospora sp.). This pond extends offsite.

Unreclaimed Land/ Holding Ponds (160/166)
This category includes the large ponds occupying the unreclaimed mined areas of Parcel 3. Like the ponds found on reclaimed lands, open water is the dominant feature with the marsh fringe composed of a dense zone of either wax myrtle or Brazilian Pepper. Torpedo grass (Panicum repens) and pennywort (Hydrocotyle umbellata) are common littoral zone species present.

Ditches (511)
Ditches are located on Parcel 1A. Dominant vegetation of the ditches includes pennywort, Asiatic pennywort (Centella asiatica), cattail and soft rush.

Wildlife
The Endangered Species Act of 1973, as amended by Public Law 97-304 of February 1983 provides for the protection and conservation of endangered and threatened species of plants and animals. Other federal and state laws also provide governmental agencies the power to regulate endangered and threatened species and their habitats.

The Florida Department of Agriculture and Consumer Services (FDA) lists plants as

endangered, threatened, or commercially exploited. FDA has the authority through Chapter 581, FS, to regulate the species on this list (regulated plant index). However, this chapter pertains to the plant industry and protects the native flora from unlawful harvesting. It is unlawful to harvest or destroy an endangered plant on the regulated plant index without permission of the landowner and a FDA permit. If a plant is threatened or commercially exploited, then only permission from the landowner is needed. Exemptions to this regulation include:

1. The clearing or other disturbance of land for agricultural or silvicultural purposes, fire control measures, or required mining assessment work;
2. The clearing or removal of regulated plants from a canal, ditch, survey line, building site, or road or other right-of-way by the landowner or his or her agent; and
3. The clearing of land by a public agency or a publicly or privately owned public utility when acting in the performance of its obligation to provide service to the public.

As previously mentioned the intent of the FDA listing is to protect native flora from unlawful harvesting by the nursery industry. The plants on the FDA list that may indeed be threatened or endangered biologically are also listed by the U. S. Fish and Wildlife Service (FWS). An FDA listing without a concurrent FWS listing means that plants are common, but desirable enough as landscaping material to be placed in jeopardy by over exploitation, thereby necessitating the Chapter 581, FS, regulations.

The state and federally listed species potentially occurring at the subject property were determined through consideration of known species ranges and habitat requirements as well as a cursory site inspections in April/May 2003. Literature searches included the *Statewide Matrix of Habitats and Distribution by County of Rare/Endangered Species in Florida* which is published by the Florida Natural Areas Inventory (FNAI) as well as a search of the FNAI computer database, the *Florida's Endangered Species, Threatened Species and Species of Special Concern, Official Lists,* which is published by the Florida Fish and Wildlife Conservation Commission (FWC), the FWC's Eagle Nest Locator and Waterbird Colony Locator web sites and the FWS web site. Wildlife observed during the April/May 2003 site reviews are listed in Table 13-1

Table 13.1 Wildlife Species or Signs of Their Presence Observed at the USF Lakeland Property During April/May 2003 Site Inspection

Common Name	Scientific Name	Habitat
Invertebrates		
Mosquito	Family Culicidae	ubiquitous
Bull Ant	xxxx	pasture
Fire Ant	Solenopsis sp.	pasture
Dragonfly	Order Odonata	ubiquitous
Grasshopper	Order Orthoptera	ubiquitous
Love Bug	Plecia nearctica	pasture
Sulfur	Phoebis sp.	pasture; wetland edge
Gulf Fritillary	Dione vanillae nigrior	pasture; wetland edge
Spicebush Swallowtail	Papilio troilus ilioneus	bay swamp fringe; pine flatwoods
Zebra Swallowtail	Eurytides marcellus	oak hammock; pasture
Eastern Tiger Swallowtail	Papilio glaucus australis	wetland edge
Crablike Spiny Orb Weaver	Gasteracantha elipsoides	oak hammock; pine flatwoods; wetland edge
Fish		
Eastern Mosquito Fish	Gambusia affinis holbrooki	pond
Reptiles & Amphibians		
Alligator	Alligator mississippiensis	pond; marsh
Gopher Tortoise	Gopherus polyphemus	abandoned orange grove; oak hammock

Green Tree Frog +	Hyla cinerea	bay swamp
Southern Leopard Frog	Rana sphaenocephala	marsh; ditch; pond
Pig Frog +	Rana grylio	marsh; ditch; pond
Birds		
Cattle Egret	Bubulcus ibis	marsh; shrub swamp; forested swamp; lakes; ditches
Great Egret	Ardea alba	marsh; shrub swamp; forested swamp; lakes; ditches; pasture
Great Blue Heron	Ardea herodias	marsh; shrub swamp; forested swamp; lakes; ditches; pasture
Little Blue Heron	Egretta caerulea	marsh; shrub swamp; forested swamp; lakes; ditches
White Ibis	Eudocimus albus	marsh; shrub swamp; forested swamp; lakes; ditches
Glossy Ibis	Plegadis falcinellus	marsh; shrub swamp; forested swamp; lakes; ditches
Common Moorhen	Gallinula chloropus	pond; lake
Black- necked Stilt	Himantopus mexicanus	marsh
Water Turkey	Anhinga anhinga	marsh; shrub swamp; pond
Double-crested Cormorant	Phalacrocorax auritus	shrub swamp; forested swamp; lakes
Black Vulture	Coragyps atratus	pasture
Turkey Vulture	Cathartes aura	pasture; oak hammock
Osprey	Pandion haliaetus	marsh; pond
Northern Bobwhite	Colinus virginianus	pasture
Mourning Dove	Zenaida macroura	pasture
Red- headed Woodpecker	Melanerpes erythrocephalus	pine flatwoods
Red-bellied Woodpecker	Melanerpes carolinus	oak hammock pasture; pine flatwoods
Great Crested Flycatcher	Myiarchus crinitus	oak hammock; pasture
Blue Jay	Cyanocitta cristata	oak hammock; wetland edge; pasture
American Crow	Corvus brachyrhynchos	pasture; marsh
Northern Mockingbird	Mimus polyglottos	pasture; wetland edge; oak hammock
Gray Catbird	Dumetella carolinensis	wetland edge
Brown Thrasher	Toxostoma rufum	shrubby wetland edge
Loggerhead Shrike	Lanius ludovicianus	pasture
European Starling	Sturnus vulgaris	pasture; apparent nesting in snag
Common Yellowthroat	Geothlypis trichas	bayhead
Eastern Meadowlark	Sturnella magna	pasture
Boat-tailed Grackle	Quiscalus major	marsh
Red-winged Blackbird	Agelaius phoeniceus	marsh; pond
Northern Cardinal	Cardinalis cardinalis	oak hammock
Eastern Towhee	Pipilo erythropthalmus	shrubby wetland edge; pasture
Mammals		
Nine-Banded Armadillo *	Dasypus novemcinctus	pasture; pine flatwoods
Marsh Rabbit	Sylvilagus palustris	shrubby wetland edge
Sherman's Fox Squirrel	Sciurus niger shermani	pine pasture
Eastern Gray Squirrel	Sciurus carolinensis	oak hammock; pasture; wetland edge
Raccoon*	Procyon lotor	ditch; marsh
Feral Hog *	Sus scrofa	pasture; wetland edge

*tracks; ** burrow/den/nest; *** unable to distinguish whether species observed is listed southeastern American kestrel or more common American kestrel; +vocalization; ++ scat; ^ scent; ~ deceased

No endangered or threatened plant species listed by both FWS and FWC are known to occur at the subject property or were observed during the site inspection. The subject property is not located within any area designated as critical habitat by FWS. However, the subject property does lie within the range of the following state and/or federally listed fauna:

Herpetofauna

American Alligator (Alligator mississippiensis) State (S), Species of Special Concern (SSC) Federal (F), Threatened/Similarity of Appearance [T (S/A)]
Gopher Tortoise (Gopherus polyphemus) S, SSC
Gopher Frog (Rana capito) S, SSC
Sand Skink (Neoseps reynoldsi) S, Threatened (T); F, T
Blue-tailed Mole Skink (Eumeces egregius lividus) S, T; F, T
Short-tailed Snake (Stilosoma extenuatum) S, T
Eastern Indigo Snake (Drymarchon corais couperi) S, T; F, T

Florida Pine Snake (Pituophis melanoleucus mugitus) S, SSC

Avifauna
Florida Grasshopper Sparrow (Ammodramus savannarum floridanus) S, Endangered (E)
Bald Eagle (Haliaeetus leucocephalus) S, T; F, T
Crested Caracara (Caracara cheriway) S, T
Southeastern American Kestrel (Falco sparverius paulus) S, T
Arctic Peregrine Falcon (Falco peregrinus tundrius) S, E
Florida Burrowing Owl (Speotyto cunicularia) S, SSC
Wood Stork (Mycteria americana) S, E; F, E
Florida Sandhill Crane (Grus canadensis pratensis) S, SSC
Limpkin (Aramus guarauna) S, SSC
Little Blue Heron (Egretta caerulea) S, SSC
Snowy Egret (Egretta thula) S, SSC
Tricolored Heron (Egretta tricolor) S, SSC
White Ibis (Eudocimus albus) S, SSC
Roseate Spoonbill (Ajaia ajaia) S, SSC

Mammals
Sherman's Fox Squirrel (Sciurus niger shermani) S, SSC
Florida Mouse (Podomys floridanus) S, SSC
Florida Black Bear (Ursus americanus floridanus) S, T

Listed wildlife species observed at the proposed USF Lakeland property during the April/May 2003 site reviews are listed in Table 13.2.

Table 13.2 Listed species observed or signs of their presence observed at the proposed USF Lakeland property during the April/May 2003 site reviews

Common Name	Scientific Name	State Status	Federal Status	Habitat
Reptiles				
Alligator mississippiensis	American Alligator	SSC	T (S/A)*	Rivers, wetlands and open water bodies
Gopherus polyphemus	Gopher Tortoise	SSC	--	pine pasture
Birds				
Egretta caerulea	Little Blue Heron	SSC	--	wetlands
Eudocimus albus	White Ibis	SSC	--	wetlands
Mammals				
Sciurus niger shermani	Sherman's Fox Squirrel	SSC	--	wetland fringe; forested uplands

Source: RS&H, 2003

American Alligator
The American Alligator is listed as a SSC by the FWC and is listed as threatened by the FWS due to its similarity of appearance to the American Crocodile (Crocodylus acutus). The American Alligator is a large aquatic reptile found in all types of permanent water bodies throughout the state.

The wetlands at the property provide suitable habitat for the American Alligator. A single American Alligator was observed in a pond immediately west of Parcel 1A during the field surveys. The adjacent mined lands adjacent to the subject property also provide denning and foraging habitat for the species.

The American Alligator population in Florida is no longer considered threatened by the

federal government but is listed as such due to its similarity of appearance to the American Crocodile. Because there are no American Crocodiles in Polk Counties, there is no possibility of confusing the two species and impacting the American Crocodile.

Gopher Tortoise
The Gopher Tortoise is listed as a SSC by the FWC and is not listed by the FWS. Preferred Gopher Tortoise habitat is dry, well-drained sandy soils, which allow for easy burrowing and support a plentiful supply of low-growing herbs and an open canopy. Typical habitat includes palmetto prairie, sand pine scrub, sandhill communities and xeric oak communities.

Active burrows were observed in the pine flatwoods/improved pasture of Parcel 1A during the April/May 2003 field reviews. Burrow density is low. No individuals were observed. The Gopher Tortoise was also documented at Parcel 1A during previous wildlife surveys for the Saddle Creek (Williams) DRI.

Gopher Frog
The Gopher Frog is listed as threatened by the FWC and is not listed by the FWS. In central Florida, the Gopher Frog is restricted to the Lake Wales Ridge and coastal xeric habitats. The Gopher Frog is found in sandhill communities and in sand pine scrub habitats and is a commensal species associated with gopher tortoise burrows. Gopher Frogs breed in shallow grassy ponds. The USF Lakeland property provides suitable habitat for the species. No Gopher Frogs or evidence of their presence was observed during the April/May 2003 site inspections.

Sand Skink and the Blue-tailed Mole Skink
The Sand Skink and the Blue-tailed Mole Skink are listed as threatened by both the FWC and FWS and are discussed together because of their similar habitat requirements. The Blue-tailed Mole Skink occurs on the Lake Wales Ridge in Polk, Highlands and Osceola Counties generally at an elevation of 100 ft NGVD or more. This skink is confined to the well-drained, sandy uplands occurring in sand pine scrub, rosemary scrub, oak scrub, turkey oak barrens, high pine and xeric hammock. Optimum habitat appears to be rosemary scrub and oak scrub, where the lizards move freely between the surface and subsurface in the loose sands. It is most frequently found just under the surface at a depth of one to two inches under fallen logs or palmetto fronds.

The Sand Skink is found only in Highlands, Polk, Lake and Marion Counties. It inhabits loosely packed sand on the high-elevation central Florida ridges. The primary habitat is rosemary scrub, oak scrub, scrubby flatwoods and turkey oak barrens. The Sand Skink is restricted to microhabitats with loose sand and sunny exposures. The Sand Skink's front legs are vestigial and its form of movement is "sand swimming". Because of its restrictive method of locomotion, the sand skink cannot live in areas with an abundance of plant roots (Moler, 1992) and is restricted to habitats with loose sand. Sand Skink habitat is characterized by an absence of ground covering grasses, an absence of a canopy, and the presence of scattered shrubs with areas of bare sand. Optimum Sand Skink habitat on the southern Lake Wales ridge is a rosemary bald within a scrub community, dominated by Florida rosemary (Ceratiola ericoides) and scattered scrub oaks.

The subject property is not located on the Lake Wales Ridge, however marginal habitat (i. e., the unmined portion of Parcel 1) for both of these species exists at the subject property. Generally either the habitat has been colonized by dense Bahia grass and therefore too overgrown or the habitat is not well drained enough to support a population. Therefore, the likelihood of occurrence of these species at the property is low. No Sand Skinks or Blue-tailed Mole Skinks or indicators of their presence were observed during the April/May 2003 field reviews.

Short-tailed Snake
The Short-tailed Snake is listed as threatened by the FWC and is not listed by the FWS. Optimal habitat for the species includes sandhill, xeric hammock and sand pine scrub. Short-tailed Snakes are burrowers and are rarely observed above ground. Little is known of the ecology of the species, however captive specimens have fed upon small snakes and lizards.

The unmined portion of Parcel 1A provides marginal habitat for the species. Therefore, the likelihood of occurrence of the species at the subject property is low. No Short-tailed Snakes or evidence of their presence was observed during the April/May 2003 wildlife survey.

Eastern Indigo Snake
The Eastern Indigo Snake is listed as threatened by both the FWC and the FWS. It inhabits a wide range of habitats, such as swamps, wet prairies, xeric pinelands and scrub areas. Eastern Indigo Snakes commonly use Gopher Tortoise burrows for shelter during the winter and to escape the heat during the summer.

Suitable habitat for the species exists at the property. No Eastern Indigo Snakes or signs of their presence were observed at the proposed USF Lakeland property during the April/May 2003 field reviews, however the species was observed circa 1999 immediately south and east of Parcel 1A during wildlife surveys conducted for the Saddle Creek DRI. Since Gopher Tortoise burrows were observed, there is the potential for Eastern Indigo Snakes to be encountered at the subject property.

Florida Pine Snake
The Florida Pine Snake is listed as a SSC by the FWC and is not listed by the FWS. It utilizes sandy habitats throughout northern and central Florida and along the Atlantic Coastal Ridge in south Florida. It is considered a commensal of Gopher Tortoise burrows. Ground-dwelling birds and their eggs, mice and pocket gophers are the primary food source.

No Florida Pine Snakes were observed at the proposed USF Lakeland property during the April/May 2003 field reviews. Because Gopher Tortoise burrows were observed at the subject property, it is possible that the species may be present.

Avifauna

Florida Grasshopper Sparrow
The Florida Grasshopper Sparrow is classified as endangered by the FWC and is not listed by the USFWS. It inhabits frequently burned, dry prairies interspersed with open areas that provide foraging habitat. All known populations occur on state and federal managed lands.

No Florida Grasshopper Sparrows or evidence of their presence were observed at the proposed USF Lakeland property or on adjacent properties. Only a small amount of marginal habitat for the species exists at the subject property and the known populations of the species are not located in the vicinity, therefore it is unlikely that the species inhabits the subject property.

Bald Eagle
The Bald Eagle is classified as threatened by both the FWC and the FWS. The Bald Eagle generally nests in large live trees near open bodies of water, which provide optimum foraging habitat. Fish are the primary food source, however, birds, small mammals and carrion are also consumed.

No Bald Eagles or their nests were observed during the April/May 2003 field reviews. According to the *Williams DRI Responses to the First Sufficiency Request for Additional Information* dated August 2000, four different nest sites have been utilized between 1984 and 1999 in the general vicinity of the subject property. Two of the nests were constructed on osprey nesting platforms attached to power poles adjacent to I-4. During the 1999-2000 nesting season a new nest was constructed in a pine tree in the center of Wetland F-3 within the Williams DRI boundary. This nest is approximately 2000' south of Parcel 1A of the subject property. This is the nest currently listed in the FWC database as Nest PO064. It was active during the 2001-2002 nesting season but was inactive the following nesting season (Jennifer Swan- FWC, personal communication).

Audubon's Crested Caracara

The Audubon's Crested Caracara is classified as threatened by both the FWS and the FWC. It is a large raptor that inhabits open areas, such as pasture and dry prairie, with cabbage palm (Sabal palmetto), cabbage palm/live oak hammocks and shallow ponds and sloughs. Cabbage palms are the preferred nesting trees. The Audubon's Crested Caracara exhibits an opportunistic feeding behavior. The diet consists of carrion, as well as a wide assortment of invertebrates and small vertebrates.

At the time of the field reviews in April/May 2003, no Audubon's Crested Caracaras or their nests were observed at the proposed USF Lakeland property. The species may forage at the site but nesting is doubtful due to the paucity of mature cabbage palms, the preferred nest tree species.

Southeastern American Kestrel

The Southeastern American Kestrel is listed as threatened by the FWC and is not listed by FWS. It is a small falcon found throughout Florida in a variety of habitats including pine flatwoods, sandhill and open fields. Nesting takes place from March through June. A migratory population is present in Florida during the winter. Small invertebrates are the primary food source, but small mammals and reptiles are also taken. Abandoned woodpecker cavities in dead pine trees, also known as snags, are a common nesting site.

No Southeastern American Kestrels or their nests were observed at the proposed USF Lakeland property during the April/May 2003 site reviews. Numerous snags are present at Parcel 1A and exhibit extensive usage by cavity nesting avian species. A pair of Red-headed Woodpeckers (Melanerpes erythrocephalus) was observed nesting on the adjacent property near the eastern property line of Parcel 1A. Red-bellied Woodpeckers (Melanerpes carolinus) were also observed at Parcel 1A and are undoubtedly nesting at or near the subject property. European Starlings (Sturnus vulgaris) were observed apparently nesting in a snag in the pasture.

During the Saddle Creek DRI wildlife survey conducted between November 1998 and February 1999 Kestrels were observed near the eastern property line of Parcel 1A of the proposed USF Lakeland property. Due to the time of year it was impossible to determine whether the species observed was the listed Southeastern American Kestrel or the more common, unlisted winter resident of Florida, the American Kestrel (Falco sparverius sparverius). Subsequently extensive surveys of the Williams DRI, which included the proposed USF Lakeland property, for Southeastern American Kestrels were conducted during the nesting season between June 3 and July 7, 1999. The results were negative indicating that the species probably does not forage or nest at the property.

Arctic Peregrine Falcon

The Arctic Peregrine Falcon is listed as endangered by the FWC and is not listed by the FWS. The species utilizes primarily coastal habitat during winter migration. It does not

nest or breed in Florida. Small birds are the main food source. Open fields also provide foraging habitat.

No Arctic Peregrine Falcons were observed at the proposed USF Lakeland property during the April/May 2003 surveys. Because Arctic Peregrine Falcons typically migrate through Florida, they may forage at the subject property. However, the subject property is not an important staging area for this species.

Florida Burrowing Owl
The Florida Burrowing Owl is classified as a SSC by the FWC and is not listed by the FWS. It is a small, ground-dwelling owl that prefers well-drained, open habitats with short herbaceous groundcover. Insects are the primary food, however small reptiles, amphibians, small rodents, crayfish, spiders and carrion are also consumed. The species makes extensive use of underground burrows. In the spring the burrows are used for nesting while in the winter the primary function is protection from avian predators.

No Florida Burrowing Owls or evidence of their presence were observed during the April/May 2003 field reviews of the proposed USF Lakeland property. The drier portions of the pasture on Parcel 1A as well as the grassy berms in Parcels 2 and 3 provide suitable habitat for the species. Florida Burrowing Owls were observed during the wildlife survey for the Saddle Creek DRI. They were observed utilizing improved pasture similar to that found in Parcel 1A of the proposed USF Lakeland property. In fact the species and burrows were observed immediately east of the Polk Parkway.

Wood Stork
The Wood Stork is classified as endangered by both the FWC and the FWS. Wood Storks are large colonial-nesting wading birds. Primary nesting sites are cypress or mangrove swamps with foraging habitat consisting of marshes, ditches and flooded pasture.

No Wood Storks or their nests were observed during the April/May 2003 field reviews of the proposed USF Lakeland property. The ponds and associated littoral zones of the proposed USF Lakeland property provide foraging habitat for the species. Suitable nesting habitat may occur in the reclaimed mined lands of Parcel 2 as well as the unreclaimed mined lands of Parcel 3. A search of the FWC's Waterbird Colony Locator database indicated that the nearest rookery containing Wood Storks (#616316) is located approximately eleven miles southwest of the proposed USF Lakeland property west of Lake Hancock. The rookery has been active in the 1990's and contains about 90% Wood Storks.

Florida Sandhill Crane
The Florida Sandhill Crane is listed as threatened by the FWC and is not listed by the FWS. It inhabits freshwater marshes, prairies, pastures and shallow flooded open areas. Fish are the primary food item. Sandhill Cranes typically nest in shallow water of lakes, ponds and open marshes that are dominated by pickerelweed (Pontederia cordata), maidencane (Panicum hemitomon) and arrowhead (Sagittaria sp.).

No Florida Sandhill Cranes or nests were observed at the proposed USF Lakeland property during the April/May 2003 field reviews. The littoral zones of ponds and improved pastures within and adjacent to the proposed USF Lakeland property may provide suitable foraging habitat for the species. The littoral zones of ponds also provide potential nesting habitat. No Florida Sandhill Cranes were observed during the Saddle Creek DRI wildlife survey; however vocalization was heard during one occasion. According to the Willams DRI First Sufficiency Response, an FWC letter indicates that the species has been documented at the site. The developer contends that due to the

season, it was impossible to determine whether the species heard was the listed Florida Sandhill Crane subspecies or the unlisted migratory subspecies. It is unknown whether Florida Sandhill Cranes have been documented on any of the parcels of the proposed USF Lakeland property.

Limpkin, Little Blue Heron, Snowy Egret, Tricolored Heron, White Ibis, Roseate Spoonbill

These listed avian species are all classified as SSCs by the FWC and are not listed by the FWS. The preferred habitats include freshwater and brackish water wetlands, however, salt marshes are also utilized. Nesting is primarily accomplished in trees or shrubs in or adjacent to wetlands. Small fish and crustaceans are the primary food source.

The Little Blue Heron and White Ibis were observed foraging in the littoral zones of ponds at the proposed USF Lakeland property and adjacent lands during the April/May 2003 site reviews. The Limpkin, Snowy Egret, Tricolored Heron and Roseate Spoonbill can also be expected to utilize the wetlands at the proposed USF Lakeland property as foraging habitat.

Based on the on the Saddle Creek/Williams DRI data, a wading bird rookery is located on Parcel 3 of the proposed USF Lakeland property. The FWC's Waterbird Colony Locator database indicates a wading bird colony (#612106) in the same general area, as does the FNAI database (# 0359). According to the FWC database the rookery was active in the 1980's but inactive in the 1990's. The 1980's data indicates that the rookery contained >1000 birds of various species including the Water Turkey (Anhinga anhinga), Double-crested Cormorant (Phalacrocorax auritus), Great Egret (Ardea alba), Cattle Egret (Bubulcus ibis), Great Blue Heron (Ardea herodias), Glossy Ibis (Plegadis falcinellus), White Ibis and Little Blue Heron. While the presence and activity status of the rookery at Parcel 3 was not confirmed during the April/May 2003 site reviews, it is assumed by the elevated number of wading birds observed at Parcel 3 that the rookery is currently active and of large size as indicated by the historical data from the 1980's.

Mammals

Sherman's Fox Squirrel

The Sherman's Fox Squirrel is classified as a SSC by the FWC and is not listed by the FWS. The species prefers the Florida sandhills vegetative community type, but occurs on the margins of pine flatwoods, live oak forest and cypress ponds. Suitable habitat exists primarily at Parcel 1A at the proposed USF Lakeland property. A single Sherman's Fox Squirrel was observed in the pine flatwoods/improved pasture during the April/May 2003 site survey. Additionally, three adult Sherman's Fox Squirrels were observed at Parcel 1A during the Saddle Creek DRI wildlife survey in 1999.

Florida Mouse

The Florida Mouse is classified as a SSC by the FWC and is not listed by the FWS. It inhabits xeric upland communities with sandy soils such as scrub, sandhill and ruderal sites. The Florida Mouse is a documented commensal of the gopher tortoise, utilizing the burrow for protection from predators as well as adverse temperatures. The population of mice is highest in early successional stages of scrub and sandhill following fire, declining as the habitat becomes more dense and mesic in nature as it matures.

The Florida Mouse was not observed at the proposed USF Lakeland property during the April/May 2003 field reviews. The subject property contains marginal habitat. However, active Gopher Tortoise burrows were observed in the pine flatwoods/improved pasture of Parcel 1A. Because Gopher Tortoise burrows were observed at the subject property, it is possible that the species may be present. The Florida Mouse was not documented on-

site during the Saddle Creek DRI wildlife survey.

Florida Black Bear
The Florida black bear is classified as a SSC by the FWC and is not listed by the FWS. The Florida Black Bear prefers remote, forested areas. The more important types of forest include pine flatwoods, hardwood swamp, cypress swamp, cabbage palm forest, sand pine scrub and mixed hardwood hammock. Florida Black Bears are omnivorous, with vegetative material accounting for greater than 80 % of their diet.

The Lake Wales Ridge supports a small population of Florida Black Bears along the northern portion of Fisheating Creek in Glades County and extending north into Highlands County. The proposed USF Lakeland property is not located in primary or secondary bear habitat that is identified for this population.

The proposed USF Lakeland property is located at the intersection of I-4 and the Polk Parkway, two major highways. The site has been extensively altered by strip mining and to create improved pasture. The habitats present do not include large unfragmented forest and are therefore considered to be marginal for the species. No Florida Black Bears or evidence of their presence were observed during the Aril/May 2003 site reviews.

6. Wellfield cones of influence;

The City of Lakeland will provide potable water service to the proposed USF Lakeland Campus so there is no cone of influence for any potable water well on or adjacent to the property.

7. Aquifers and aquifer recharge areas;

Three water bearing aquifers are recognized in the area of the subject property in Polk County, Florida [SWFWMD, 1988]. These are the surficial aquifer system, the intermediate aquifer system, and the Floridan aquifer system. These aquifers are separated by confining layers which restrict the vertical movement of water between the aquifers.

The surficial aquifer system is primarily used for domestic and low volume irrigation supplies in Polk County. Recharge occurs directly from rainfall to the ground surface.

The intermediate aquifer system is primarily used for domestic supply in Polk County [SWFWMD, 1988]. Recharge occurs primarily in topographically high areas where confining beds are absent or penetrated by openings such as sinkholes.

The Floridan aquifer is the principal aquifer in Polk County and is the source of all major municipal, industrial, and irrigation water supplies. Recharge occurs in areas that may be many miles from where ground water is withdrawn from the Floridan aquifer system.

8. Air quality, including but not limited to the pollutants subject to National Ambient Air Quality Standards;

The United States Environmental Protection Agency (EPA) pursuant to the Clean Air Act (CAA) has established National Ambient Air Quality Standards (NAAQS) for six principal pollutants – ozone, particulate matter, carbon monoxide, sulfur dioxide, nitrogen oxides and lead.

Air quality in the vicinity of the proposed USF Lakeland Campus property is generally good due to the lack of industrial pollutant sources and limited transportation impacts. No air quality monitoring stations occur on the proposed campus property. The EPA has

designated Polk County, Florida as an attainment area for these six principal pollutants.

9. Surface water quality, including the water quality for each lake, river and other surface water, and the identification of any such water body designated as an Outstanding Florida Water;

Surface water runoff appears to be controlled primarily by topography and appears to discharge to the southwest toward the water-filled strip mines. Manmade drainage may influence the actual direction of surface water runoff. No streams or rivers were observed in the immediate area of the proposed USF Lakeland Campus property. Several lakes are found to the north across US Interstate 4.

10. Known septic tanks, grease traps, storage sites of hazardous, toxic or medical waste;

No known septic tanks are present at the proposed USF Lakeland Campus property.

11. Chemical and hazardous waste disposal systems;

No known chemical or hazardous waste disposal systems are present at the proposed USF Lakeland Campus property.

12. Surface and groundwater hydrology.

Surface drainage is generally to the southwest through strip-mined areas to Saddle Creek, a major headwater tributary of the Peace River. The Peace River flows south and west ultimately discharging to the Gulf of Mexico at Punta Gorda. Parcel 1A generally slopes to the southwest with the lowest elevations in the western portion. FEMA mapping indicates a flood hazard area delineated in this portion of the site. Parcel 2 consists of reclaimed land with some variation in topography and forested/shrub wetland areas and Flood Hazard issues. Parcel 3 is unreclaimed mined land and exhibits significant changes in topography with spoil piles and open water areas and wetlands. Overflow structures were observed in the wetland areas to act as an interconnection between the drainage areas. No streams or rivers were observed in the immediate area of the subject property. Several lakes are found to the north across US Interstate 4.

Three water bearing aquifers are recognized in the area of the subject property in Polk County, Florida [SWFWMD, 1988]. These are the surficial aquifer system, the intermediate aquifer system, and the Floridan aquifer system. These aquifers are separated by confining layers which restrict the vertical movement of water between the aquifers.

(2) ANALYSIS REQUIREMENTS. This element shall be based, at a minimum, on the following data:

a) For each of the resources identified in (1) a) identify existing commercial, recreational or conservation uses.

1. Rivers, lakes, bays, wetlands (including estuarine marshes), and bottom lands;

Rivers, lakes, bays and wetlands:

Commercial Uses: There will be no commercial uses in the lakes and surface waters naturally occurring or created as a result of campus development.

Recreational Uses: Any drainage ditches created as a result of campus development will be used primarily for water conveyance and drainage.

Conservation Uses: Conservation practices will continue to remain in those areas identified on the proposed USF Lakeland Campus property as environmentally sensitive.

Educational Uses: All habitats at the proposed USF Lakeland Campus property will be available for teaching purposes.

2. Floodplains;

Commercial Uses: There will be no commercial uses in the floodplain areas of the proposed campus property.

Recreational Uses: Any recreational uses in floodplain areas will be developed under the guidelines established for this particular land.

Conservation Uses: Conservation practices will be part of campus development as it pertains to floodplains and development guidelines will address types of development to occur.

Educational Uses: All habitats at the proposed USF Lakeland Campus property will be available for teaching purposes.

3. Known Unique Geologic Features;

Commercial Uses: There will be no commercial uses within those areas known for the potential for sinkhole development.

Recreational Uses: There will be no recreational uses within those areas known for the potential for sinkhole development.

Conservation Uses: Avoidance of those areas known for the potential for sinkhole development will occur.

Educational Uses: Those areas known for the potential for sinkhole development at the proposed USF Lakeland Campus property will be available for teaching purposes.

4. Wetlands;

Commercial Uses: There will be no commercial uses in the wetland areas within the proposed USF Lakeland Campus property.

Recreational Uses: Jogging/fitness trails will be created as part of campus development to take advantage of the naturally-occurring resources. Strict development guidelines will be in place to ensure the minimization of disturbance to those sensitive environmental areas.

Conservation Uses: The wetlands can provide both conservation and educational functions. Therefore, preservation, avoidance and restoration projects can be a part of a research-based program for the University.

Educational Uses: All habitats at the proposed USF Lakeland Campus property will be available for teaching purposes.

5. Fisheries, wildlife marine habitats and vegetative communities;

Commercial Uses: There will be no commercial uses in any of the existing vegetative communities in the proposed property.

Recreational Uses: For developable upland lands only, recreational uses associated with the vegetative communities can occur on the proposed property. Otherwise, preservation and avoidance of sensitive lands will occur.

Conservation Uses: Conservation practices will be adhered to preserve the integrity of Parcel 3 to be maintained as a rookery as well as all sensitive uplands and wetlands and not impacted by any development.

Educational Uses: All habitats at the proposed USF Lakeland Campus property will be available for teaching purposes.

6. Wellfield cones of influence;

Since the City of Lakeland will provide potable water service to the proposed USF Lakeland Campus so there is no cone of influence for any potable water well on or adjacent to the property.

7. Aquifers and aquifer recharge areas;

Commercial Uses: There will be no commercial uses in any of the aquifer and aquifer recharge areas.

Recreational Uses: No recreational uses will be developed to impede aquifers or aquifer recharge areas.

Conservation Uses: Conservation practices will be adhered to preserve the integrity of the aquifer and recharge areas.

b) For each of the resources identified in (1) a), assess the available and practical opportunities and methods for protection or restoration of those resources on University property.

1. Rivers, lakes, bays, wetlands (including estuarine marshes), and bottom lands;

Rivers and lakes:

Protection or restoration measures: Most of the lakes created as part of the proposed USF Lakeland Campus development will benefit from protection measures. Lakes will

have a littoral zone and benefit from grading measures to produce a shallower grade. This would permit the planting of littoral vegetation around the peripheries of the lakes with associated benefits to water quality and wildlife and would help to reduce safety hazards of steep-sided lakes. Most lakes on campus would benefit from the planting of native littoral zone plants. Such plantings would increase the value of the lakes as wildlife habitat, and, by absorbing excess nutrients could help prevent the occurrence of algal blooms. Removal of exotic vegetation from the shorelines of lakes is also desirable as a means of enhancing their value.

Wetlands:

Protection or restoration measures: Wetlands are already protected under SWFWMD and ACOE guidelines. These existing levels of protection are probably adequate to protect these wetlands. Littoral zone vegetation could be better protected by limiting the use of herbicides and pesticides within those portions of the campus that drain into lakes, and by selecting herbicides and pesticides with short environmental half-lives and low toxicity to non-target organisms. University maintenance staff should also be encouraged to restrict mowing near on campus lakes to encourage the growth of transitional wetland vegetation.

The wetland areas would benefit most from a reduced mowing regime, allowing the establishment of disturbance-sensitive wetland species, and allowing the development of mature, reproductive plant species would benefit these areas. Additionally, limiting the application of herbicides and pesticides would enhance the value of these areas as wildlife habitats.

Bottom Lands:

There are no bottom lands on the proposed campus.

2. Floodplains;

Protection or restoration measures: Should development be proposed within any areas identified as flood hazard areas special design considerations, with respect to floodplain compensation due to filled areas and floor levels constructed above the 100 year flood elevation, would need to be considered. In Zones A and X, where the 100 year flood elevation is undetermined, flood studies would also be required.

3. Known unique geological features;

Protection or restoration measures: Development will be minimized within those areas known for the potential for sinkhole development.

4. Existing mitigation sites;

Protection or restoration measures: The Clear Springs or Boran Ranch Wetland Mitigation Banks will be maintained as viable resources to the proposed USF Lakeland Campus property as development and expansion occurs. Credits will continue to be acquisitioned from these banks as compensatory mitigation for the unavoidable wetland impacts. Since the campus property is located within the service area of these banks credits may be purchased as compensatory mitigation. Clear Springs Mitigation Bank is currently not operational, however once it receives a permit and achieves operational status it may be utilized.

5. Fisheries, wildlife marine habitats and vegetative communities;

Protection or restoration measures: Non-wetland areas that serve as habitat for birds and other wildlife will be adequately protected. Wetlands provide the most of the significant habitat on campus property and will be adequately protected as well.

6. Wellfield cones of influence;

There are no well-field cones of influence on the proposed campus property.

7. Aquifers and aquifer recharge areas;

There are no significant aquifer recharge areas on campus or within the context area.

c) For each of the resources identified in (1) a), identify known sources and rates of discharge or generation of pollution.

8. Air quality, including but not limited to the pollutants subject to National Ambient Air Quality Standards;

There are no air quality monitoring stations close to the campus or context area; however, data from the closest stations indicate few if any air quality violations, and it is probable that the air quality parameters measured by Polk County are within legal limits on campus. Vehicular emissions are, no doubt, could be the only viable source of air pollution on the proposed campus property.

9. Surface Water Quality, including the water quality for each lake, river and other surface water, and the identification of any such water body designated as an Outstanding Florida Water;

Information regarding known sources and rates of discharge or generation of pollution was unknown, therefore, it is not possible to discuss the rates of discharge or generation of pollution with respect to the specific resources identified in part 1(a) of this section. Rather, we discuss known and potential sources of pollution, and their likely effects on some of those resources. Storm water runoff no doubt has some impact on surface water quality on the campus.

d) For each of the resources identified in (1) a), assess opportunities of available and practical technologies to reduce pollution or its impacts generated by University activities. Investigation of emerging technologies to address these impacts is encouraged.

In the absence of available data regarding pollution generated on campus or in the context area, it is not possible to recommend specific technologies to address these impacts. Strong consideration should be given to implementing air quality and water quality monitoring programs so that levels of pollutants generated by on campus activities can be documented and, if necessary, control technologies implemented.

e) An analysis of current and projected water needs and sources, based on the demand for industrial, agricultural and potable water use and the quantity and quality available to meet those demands. The analysis should consider existing levels of water conservation, use and protection and applicable policies of the water management district.

Storm water runoff from roadways, parking lots and impervious surfaces will most likely be the principal source of water pollution for the campus. Runoff from landscaped and grassed areas also, no doubt, contributes to water pollution. Presumably, fertilizers and pesticides will be used in maintenance of landscaped areas on campus. Storm water runoff no doubt has some impact on surface water quality on both campuses.

Strong consideration should be given to implementing water quality monitoring programs so that levels of pollutants generated by on-campus activities can be documented and, if necessary, control technologies implemented. 9.0 General Infrastructure Element presents more detailed analyses of current and projected water need and sources.

14.0 CAPITAL IMPROVEMENTS ELEMENT

PURPOSE

The purpose of this element is to evaluate the need for public facilities as identified in other campus Master Plan elements; to estimate the cost of improvements for which the University has fiscal responsibility; to analyze the fiscal capability of the University to finance and construct improvements; to adopt financial policies to guide the funding of improvements; and to schedule the funding and construction of improvements in a manner necessary to ensure that capital improvements are provided when required based on needs identified in the other campus Master Plan elements.

(1) DATA REQUIREMENTS. This element shall be based, at a minimum, on the following data requirements:

The following represents an effort to compile University and the Florida Board of Governors information relating to the data requirements for the Capital Improvements Element. The analyses requirements for this element are based upon planning and facility requirements derived from analysis of the other elements of the Master Plan and input received from USF Lakeland. This includes the identification of necessary or recommended capital improvements, projected operating costs and infrastructure requirements and impacts. Each of these areas cannot be addressed from a funding perspective by the Consultant, but should be evaluated each year hereafter to best facilitate the implementation of this plan by PECO/CITF monies and those made available by USF Lakeland. The data requirements are addressed below.

a) The element shall be based on the facility needs as identified in the other elements and shall support the future needs as identified in the future land use element.

Facility needs by building area requirements by space type are identified in Table 14.1.

b) An inventory of existing and anticipated revenue sources and funding mechanisms available for capital improvement financing, such as funds, state funds, federal funds, bonds, impact fees, gas tax, etc.

Capital improvements funding for the University currently comes from various revenue sources of which, Public Education Capital Outlay (PECO) and Capital Improvement Trust Fund (CITF) are the greatest contributing sources. The University of South Florida System and USF Lakeland currently rely on the following existing revenue sources and funding mechanisms for capital improvements:

- Public Education Capital Outlay (PECO)
- Capital Improvement Trust Fund (CITF)
- Auxiliary Revenue Bonds (housing, parking, etc.)
- Parking Decal Fees Auxiliary
- Student Health Fees Auxiliary
- Bookstore Auxiliary
- Food Service Auxiliary
- Other Auxiliaries
- Private Donations matched by Facilities Enhancement Challenge Grant Program
- Contracts and Grants for Sponsored Research. In addition to these existing sources, USF Lakeland currently has no other anticipated sources of revenue funding for future facilities proposed by this Master Plan.

Table 14.1 USF Lakeland Ten-Year Capital Improvement Plan

PROJECT	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	PROJECT COST	SOURCE OF FUNDING
Lakeland New Campus Phase I (Includes infrastructure)	$3,700,000	$1,700,000	$36,542,020	$23,812,047							$65,754,067	PECO
Lakeland New Campus Phase II				$9,438,638	$45,597,750	$45,000,000	$ 8,858,360				$108,894,748	
Central Utility Plant				$5,000,000								
Housing (500 Beds)					$47,600,000						$47,600,000	Bond
Parking Garage I						$13,500,000					$13,500,000	Bond
USF Research Enterprise Incubator Building					$50,000,000						$ 50,000,000	Private
TOTAL	**$3,700,000**	**$1,700,000**	**$36,542,020**	**$38,250,685**	**$143,197,750**	**$58,500,000**	**$8,858,360**				**$240,748,815**	

Source : USF Facilities Planning and Construction, dated 6-6-06

c) An inventory of operations and maintenance costs for existing facilities.

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

2)ANALYSIS REQUIREMENTS. The element shall be based, at a minimum, on the following analysis:

a) An analysis of current University practices that guide the timing and location of construction, extensions or increases in the capacity of University facilities.

Timing and location of new construction on campus is guided by master planning documents and the outcome of the annual update of the legislative budget request for the capital improvement plan. Additionally, a Capital Improvement Trust Fund project is prepared for student services projects while auxiliary facilities projects and facilities projects using other fund sources are generally planned on an "as needed" basis or as funding opportunities arise. Minor projects are funded annually for the specific purpose of renovations, repairs, maintenance and site improvements. Specific policy decisions regarding use of space, including existing and new facilities are channelled for approval through the University Space Committee as an advisory committee to the University President.

A budget estimate is pre-approved and updated annually for the purpose of assessing anticipated project costs including planning fees, construction, surveys, testing services, contingencies, furnishings and equipment.

b) An estimate of the cost of each of the on-campus capital improvements identified in the other plan elements, including consideration of inflation factors and the relative priority of need ranking.

Capital improvement costs are depicted in Table 14.1.

c) An estimate of the cost of future capital improvements that may be required off the University campus to support the future infrastructure and traffic functions of the University.

A description of off-campus capital improvements necessary to support the future traffic and utility functions of the University is provided in 11.0 Transportation Element. The provisions for utilities are described in 9.0 General Infrastructure Element.

d) A description of the basis of the cost estimates.

Cost estimates are based on the Florida Board of Governors cost data provided each year with instructions for preparation of the 5-year capital improvement plan. This data is compiled by the Florida Board of Governors. Projects selected for the database are classified by space type and averaged with ENR indexed adjustments for inflation and differences in the geographic locations of the University campuses throughout the state. Special facility type (e.g., athletic, recreational, greenhouse, infrastructure, etc.) are estimated based on contractor estimates, comparable projects of similar nature, or standard database publications such as ""R.S. Means," "Dodge Reports," or other widely accepted available data sources.

e) An assessment of the University's ability to finance capital improvements including:

The University will provide a forecast of revenues and expenditures for the planning period including an assessment of three (3)-year committed and ten (10)-year projected funds.

1. Forecasting of revenue and expenditures for the planning period.

a. 3-year committed.
b. 10-year projected.

See Table 14.1

2. Projection of operating costs for existing and future facilities.

See Table 14.1

3. Projections of other tax bases and revenue sources, such as impact and user fees.

Capital improvements funding for the University currently comes from various revenue sources of which, Public Education Capital Outlay (PECO) and Capital Improvement Trust Fund (CITF) are the greatest contributing sources. USF Lakeland will rely on other revenue sources and funding mechanisms for capital improvements including; auxiliary revenue bonds, parking decal fees, student health fees, bookstore, food service, other auxiliaries, private donations matched by Facilities Enhancement Challenge Grant Program and contracts and grants for Sponsored Research.

f) An analysis comparing the host community's and the University's cost estimates for future improvements generated by University infrastructure impacts.

All infrastructure impacts generated by USF Lakeland are contained within Campus lands. Host Community infrastructure capacities are adequate to serve future infrastructure needs of USF Lakeland. All costs of infrastructure impacts contained on Campus lands are the responsibility of the University of South Florida System, USF Lakeland, the Florida Board of Governors and the State University System. Infrastructure costs of special "shared-use" facilities may be assessed on a prorated basis.

15.0 ARCHITECTURAL DESIGN GUIDELINES ELEMENT

PURPOSE

The purpose of this element is to establish guidelines to assist in achieving a high level of quality in architectural design throughout the State University System (SUS).

(1) DATA REQUIREMENTS. This element shall be based, at a minimum, on the following data:

a) A general description of the existing campus/community architectural character including building style, scale, form, etc.
b) A description of architecturally significant historic buildings including style, age, etc.
c) A detailed inventory of existing material use, proportion, color, etc. for the following architectural elements:
1. Materials, 2. Color, 3. Architectural Detailing, 4. Style, 5. Scale, 6. Siting and 7. Image

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

(2) ANALYSIS REQUIREMENTS. This element shall be based, at a minimum, on the following analyses:

a) An assessment of the degree to which existing building designs are coordinated, and the degree to which they contribute to or detract from the present visual or functional quality of the University.

Due to the fact that this master plan is being developed for a new campus, data for the completion of this requirement does not exist. However, the USF Lakeland Final Master Plan's goals, objectives and policies establish criteria for the architectural components for the development of a new campus. The following briefly articulates the objectives for the building designs as well as the visual and functional quality of the University.

The basic objective of the architectural design guidelines will be to shape courtyards, arcades, colonades and streets with unifying architectural edges. Further, buildings should offer variation in color and material in contrast to the previously perceived monotonous and bland palette of materials, yet contribute to the unity and consistency of campus spaces framed by the buildings intended in the design guidelines. The plan will consider the basic guidelines as outlined within that will formulate an architectural theme and character to best parallel the academic mission of USF Lakeland to date.

Plan Framework for Design Guidelines

The master plan seeks to establish a framework that will guide and structure open space systems, visual linkages, movement patterns, appropriate building placement and orientation, and logical distribution of land uses. It is essential that the design of new buildings take into account guidelines for building siting as well as architectural treatment. Poorly sited buildings, no matter how well designed, will always be a detriment to the overall campus environment. The composition of the USF Lakeland campus, its buildings and landscape shall reflect the design and character of a cohesive campus. The objective of establishing architectural design guidelines is to establish design parameters for future development that will help to create a campus of coherence and beauty.

The master plan provides a diagrammatic framework for land use, open space, circulation, parking and building placement. The role of the design guidelines is to assure that the specific designs implemented within the master plan framework are consistent with and contribute positively to the overall campus development and to the larger community context. They will be used in an on-going design review process as a mechanism to guide and control the project design. Each new building on campus has two primary functions:

- To accommodate its program in a manner that is appropriately functional, elegant, and beautiful.
- To enhance and reinforce the overall campus urban design framework including open space, circulation and architectural character.

The architectural character of the USF Lakeland Campus should take into account the unique characteristics of the regional climate and the direct relationship to the Interstate 4 to the "High Tech Corridor". An appropriate design response will help achieve an identity and image for the campus that places it firmly in subtropical Florida.

Architectural Theming

In order to articulate the architectural nature of the buildings in relationship to each other, to the open spaces and untouched vegetative areas on site, to view corridors into and out of the site, and pedestrian corridors to the potential Town Center development to the south. The following represents an outline of architectural issues to be considered as the development of the architectural context becomes a reality.

- Architectural Vocabulary (Style)
- Pedestrian Scale
- Orientation
- Building Transparency at the Pedestrian Level
- The "Icon" Feature
- Pedestrian Movement
- Gathering Plazas with Architectural Seating
- Quads
- Universal Internet Access
- Service Zones
- Street Lighting
- Sustainability Concepts
- Climate Response
- Maintainability
- Water Features and Architectural Response with Features and Seating
- Security
- Paving Materials
- Site Furniture
- Buildings Should Engage the Adjacent Exterior Plazas and Gathering Spaces
- Campus Image

b) An assessment of the accessibility of University buildings to disabled persons.

All buildings will built in accordance with the "Accessibility Requirements Manual" by the Department of Community Affairs Florida Board of Building Codes and Standards. See 17.0 Facilities Maintenance Element for the Leadership on Energy and Environmental Design (LEED) building criteria.

16.0 LANDSCAPE DESIGN GUIDELINES

PURPOSE

The purpose of this element is to provide guidelines to assist the University in establishing and maintaining a high level of quality in the design of landscape treatments on the University campus. The considerations of this element are qualitative in nature and are in addition to the quantitative requirements of other Master Plan elements.

(1) DATA REQUIREMENTS. This element shall be based, at a minimum, on the following data:

a) An inventory of the existing character, quality and location of landscape treatments on the campus identifying the existing character and quality of landscape treatments for the following.

1. **Vehicular Circulation Routes,**
2. **Parking Facilities**
3. **Pedestrian Circulation Routes**
4. **Bicycle Facilities**
5. **Public Transportation Facilities**
6. **Emergency Access Facilities**
7. **Planted Areas**
8. **Site Furnishings**
9. **Lighting Location and Type**
10. **Trash Collection Facility**
11. **Maintenance Facility**
12. **Campus Edges**

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b) A description of the natural landscape context within which the University campus exists, including a description of important native plant species.

There is a pleasant roll in the topography of this well-drained site that ranges from elevation 170 in the southeastern corner of the site to elevation 145 near the northwestern corner of the USF Lakeland campus site. Excellent visibility to the site is present from the elevated roadway to the east, County Road 570, and from Interstate 4 west of the proposed campus site and from the elevated Interstate 4, County Road 570 interchange adjacent to the northeastern corner of the property.

The southern portion of the site has a pastoral quality with bands of mature pines and large oaks. The central portion and the northeastern corner of the site is predominated by mixed hardwoods. A linear wetland signature traverses the subject property from its northeastern corner to the central portion of the site's western perimeter.

The quality upland hardwoods and pines offer excellent view corridors into the site from County Road 570. The subject property offers excellent development potential with valuable site amenities consisting of stands of mature hardwoods and pines that when preserved will give the new campus a sense of maturity and permanence.

c) An identification and inventory of existing historic landscape features on the campus.

d) An identification and inventory of specimen or significant landscape features on the campus.

There are no known significant landscape features on Parcel 1A for the USF Lakeland Campus. There are significant stands of mature oaks and pines on the campus development site. In addition there are live oak and long leaf pine specimens that every reasonable effort should be made to preserve. Prior to initial development further evaluation of the campus is recommended to identify specimen vegetation that should be preserved.

A rookery associated with an existing wetland is an exemplary landscape feature that has been documented at Parcel 3. No development of this parcel of property is presently planned for campus construction.

e) An inventory of the existing types of outdoor furnishings and graphics used on campus, including identification of model numbers, materials etc. (seating, trash receptacles, paving materials, light poles and fixtures, signage, etc.)

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(2) ANALYSIS REQUIREMENTS. This element shall be based, at a minimum, on the following data:

a) An assessment of the degree to which existing landscape features (plants, materials, furnishing, graphics, etc.) are coordinated and the degree to which they contribute to or detract from the present visual and functional quality of the campus.

Through the coordination of plantings with unified styles and materials of hardscape and architectural elements, site furnishings and graphics, the campus image may be developed in a manner that promotes a holistic approach to the design of exterior spaces for the USF Lakeland Campus. The repetition of colors, materials, and design elements of site materials, furnishings and graphics all contribute to the overall visual and quality of the campus. Through the consistency of design and repetition of patterns and colors the built landscape begins to establish a visual theme in campus appearance.

Exemplary landscape features may include those remarkable landscape architectural features coordinated with building architecture and augmented with substantial plantings. Diligence should be given to ensure sufficient exterior spaces are developed for the enjoyment of students, faculty and the public. It is essential to develop more definable spaces on university campuses. These open areas need more shade, quality site furnishings and other site amenities that create desirable exterior spaces for gathering and social interaction. Emphasis should be placed on developing seating and dining areas that define open spaces on the USF Lakeland Campus.

b) An assessment of the existing design treatments for the items identified in (1) a) with regard to their impacts on campus safety.

Landscape design for the USF Lakeland Campus must be cognizant of the need for a safe and secure environment for campus users. The use of poisonous or sharp-edged plants should be discouraged. Landscape and pedestrian lighting shall be incorporated in the landscape in a manner to contribute to an overall safe campus environment.

Landscapes that are somewhat open and typically recognize the need to ensure walkways are well lit and don't provide shelter for assailants, are functional means to ensure campus safety. Design treatments for campus landscape features should not adversely impact campus safety.

Sight visibility along pedestrian and vehicular corridors must be maintained through thoughtful design and selective vegetative maintenance. Directional and regulatory signage and lighting intensity are all factors to consider when ensuring campus safety. An idea to further promote campus safety is the installation of kiosks located on campus for emergency assistance. The design and construction of walkways should comply with the latest edition of ADA (American Disabilities Act) requirements for handicap disability.

c) An assessment of the ease or difficulty of maintaining the existing landscape features.

The sheer size of the USF Lakeland Campus contributes require an extensive maintenance effort to preserve neat appearance for plantings, to assist in campus safety and security and assure the health and vitality of plant materials. To minimize the more intensive plant care of shrub and under-story plantings indigenous species should always be initially considered in a landscape design. These materials should be primarily used at campus entry zones, selected screenings and building facades, courtyards, exterior plazas along walkways and enframing outdoor spaces. Additional thought should be given to an accepted campus plant palette to ensure that sustainable species are the predominant materials selected.
Identifiable landscape goals and planting design themes must also ensure that designers

consider proper evaluation of project sites, maintenance and watering considerations of the specified materials and project cost constraints.

Consideration must be given in the selection and design of site amenities, including pavements and campus site furnishings for the USF Lakeland Campus to ensure an extended life cycle. The required level of maintenance for lighting and signage is normal for preserving satisfactory functional levels.

d) An assessment of the physical condition of the existing landscape features.

Since this USF Lakeland Campus is not yet developed, there are no designed existing landscape features. However, native plant communities exist on site that attention should be given to their preservation and incorporation in the overall campus landscape.

e) An assessment of the accessibility of the campus to disabled persons.

Compliance with ADA requirements is essential element in the design of campus facilities for the USF Lakeland Campus. Signed handicap parking spaces and ramps should be consistently located near facility accesses. Exterior stairways whenever possible should be avoided and slopes for pedestrian sidewalks should maintain manageable slopes.

17.0 FACILITIES MAINTENANCE ELEMENT

PURPOSE

The purpose of this element is to assess the existing conditions and required improvements of all existing buildings on the University campus.

(1) DATA REQUIREMENTS. This element shall be based upon all University-owned or managed facilities:

a) The building survey shall include the following:

1. **General**
2. **Exterior**
3. **Interior**
4. **Systems**

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(2) ANALYSIS REQUIREMENTS. This element shall be based, at a minimum, on the following:

a) A description of the current improvement needs for each facility:

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b) The projected improvement needs for each facility during the planning period:

c) The projected level and frequency of building maintenance by facility.

Master Planning for Green Building Development

During the master planning phase of the USF Lakeland campus, appropriate methods can be implemented to initiate green building development. Harvesting free energy is an important aspect in increasing building energy performance. The design of the campus can take into consideration building placement for passive solar orientation and natural ventilation to the use of existing vegetation for shade.

External methods:

Along with building orientation, an appropriate envelope design as well as building material choices should reflect the local climate. Strategic placement of windows for natural ventilation, use of appropriate insulation and window glazing and use of appropriate colors to reflect or absorb heat are all crucial elements toward the development of a green building.

Internal methods:

Once constructed, strategies such as turning off lights when daylight is available, using cool nighttime air for ventilation cooling and solar heating can be implemented to gain the highest and best use of readily available resources. Once properly oriented on the site, the size and position of doors, windows and vents can be determined based on heating, lighting, cooling and ventilating considerations. The use of plants, draperies, screens, shades and glazing can filter glare and direct sunlight and windows are located high on the walls to maximize daylight penetration. Locate storage areas, restrooms and low-occupancy areas in the building's central core. The use of air barriers including weather-stripping on windows and doors is an additional element of reducing energy costs.

Increased efficiency through the application of state-of-the-art equipment is another critical element toward optimizing building energy performance. High performance lighting continues to evolve within the construction marketplace. Optimize HVAC equipment efficiency by not oversizing plant equipment. Size duct work appropriately and install balancing dampers to reduce velocity losses. Lower air speeds in ducts reduce energy needs and noise. Specify high-performance chillers and chillers of various sizes to be step-engaged in order to efficiently meet partial load demands. Install an energy management and control system to facilitate building start-ups and shut-downs as well as optimize efficiency and occupancy comfort. Zone-level controls use occupancy sensors to light spaces only when people are present, resulting in energy savings.

Sustainability

The built environment has a profound effect on our natural environment, economy and health. The ability of the student, faculty and staff members to be productive and successful in their endeavors is intrinsically linked to those office buildings, classrooms, student housing, athletic and recreational facilities, student unions and other ancillary facilities in which they will work, live and interact. Breakthroughs in building science, technology, operations and products are now available to designers and owners who want to maximize economic performance and stay sensitive to the environment.

There is a national consensus to produce a new generation of buildings that deliver high performance both internally and externally. New trends have developed to improve industry standards, design guidelines, policies and educational tools that support the adoption of sustainable design and building practices. These national trends provide an enormous opportunity to initiate change in the way buildings are designed, built and maintained.

Green Building

The term “green building” is used to define a holistic approach for the construction of a high-performance building or “sustainable design and construction”. Environmental sustainability can range from a broad sense of incorporating all aspects of sustainability, such as meeting the current needs of a facility while accommodating future generations, or a specific focus such as energy-efficiency.

A green building strives to balance environmental responsibility, user comfort, community sensibility and resource efficiency. Green building design incorporates all aspects of construction, from planning and design, materials manufacturing, maintenance staff, waste disposal and occupants. Historically, buildings have been major consumers of electricity, potable water, and the natural environment, while contributing substantially to an increase in air pollution and waste production, creating environmental impacts. Green buildings can substantially reduce these negative impacts associates with this type of construction and operation and reverse this trend by promoting sustainable building practices. Operation costs can be reduced, as well as being resource-efficient, having less impact on local infrastructure. A more attractive living and working environment can be achieved and the marketability of the University as an economically and environmentally-friendly campus will benefit future student populations as well as being good neighbors to its surrounding host community.

The Leadership on Energy and Environmental Design (LEED) Green Building Rating System was created to establish parameters for rating what is considered a “green building”. Since the knowledge regarding green buildings continues to expand, LEED continues as a dynamic and ever-changing system. The rating system is organized into environmental categories: Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources, Indoor Environmental Quality and Innovation and Design Process. The following is an encapsulation of those categories.

Sustainable Sites:

1. Erosion and Sedimentation Control
   - Prevent loss of soil during construction by stormwater runoff and/or wind erosion, including protecting topsoil by stockpiling for reuse.
   - Prevent sedimentation of storm sewer or receiving streams.
   - Prevent polluting the air with dust and particulate matter.

2. Site Selection
   Do not develop buildings, roads or parking areas on portions of the site for the following;
   - Prime farmland.
   - Land whose elevation is lower than 5 feet above the 100-year flood elevation.
   - Land identified as habitat for any Federal or State threatened or listed species.
   - Within 100 feet of water, wetlands, isolated wetlands or areas of special concern.
   - Land which prior to acquisition was parkland.

3. Development Density
   - Increase density to conform with existing of desired density goals by utilizing sites that are located with an existing minimum development density of 60,000 SF per acre.

4. Brownfield Development
   - Develop on a site documented as contaminated or brownfield site.

5. Alternative Transportation (Public and Alternative Fuel Vehicles)
   - Locate the project within ½ mile of a commuter rail, light rail, or subway station or ¼ mile of two of more public or campus bus lines usable by building occupants.
   - Provide alternative fuel vehicles and parking for 3% of building occupants.

6. Reduces Site Disturbance
   - Limit earthwork and clearing of vegetation.
   - Protect and restore open space.
   - Reduce the development footprint to exceed open space requirements.

7. Stormwater Management
   - Implement a stormwater management plan.
   - Construct site stormwater treatment systems.

8. Heat Island Effect
   - Provide shade and/or use light-colored materials and/or an open grid pattern pavement or place 50% of parking in underground or structured parking.
   - Use highly reflective and high emissivity roofing for a minimum of 75% of the roof surface or install a vegetated roof for at least 50% of the roof area.

9. Light Pollution Reduction
   - Provide uniform light at lower levels. Use the minimum amount of lighting equipment.
   - Design shielded exterior lighting. Eliminate light trespassing. Minimize glare.

Water Efficiency:

1. Water Efficient Landscaping
   - Use high-efficiency irrigation technology or use captured rainwater or recycled water.
   - Eliminate all potable water for irrigation or do not install permanent irrigation systems.
   - Use native plantings for landscaping.

2. Innovative Wastewater Technologies
   - Maximize water efficiency within buildings to reduce the burned on municipal water supply and wastewater systems.
   - Reduce the use of potable water for building sewage conveyance or treat wastewater on site.
3. Water Use Reduction
   - Use less water with low flow fixtures, installing sensors and flow restrictors.

Energy and Atmosphere:

1. Fundamental Building Systems Commissioning
   - Engage an independent commission to ensure fundamental building elements and systems are designed, installed and calibrated to operate as intended.
   - Develop a training program of the building staff to properly operate and maintain the building to achieve the long-term sustainability goals.
2. Minimum Energy Performance
   - Design the building to comply with the ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers) energy code.
   - Minimize the consumption of non-renewable energy resources.
   - Reducing total energy consumption as well as “time of day” or “time of season” demands.
3. CFC-Reduction in HVAC and Refrigeration Equipment
   - Zero use of CFC-based refrigerants in new HVAC systems to reduce environmental and health problems.
4. Optimize Energy Performance.
   - Reduce design energy cost for regulated energy systems including HVAC, hot water and interior lighting.
   - Harnessing free energy by using daylight, ventilation cooling and solar heating.

Materials and Resources:

1. Storage and Collection of Recyclables
   - Provide an area that serves the building and is dedicated to separation, collection and storage of materials to be recycled.
2. Building Reuse
   - Extend life cycle of existing building stock, conserve resources, retain cultural resources, reduce waste and environmental impacts of new buildings as they relate to materials manufacturing and transport.
3. Construction Waste Management
   - Recycle and/or salvage of construction, demolition and land clearing waste.
   - Minimize over-packaging, improper storage, ordering errors, poor planning, breakage, mishandling and contamination of construction materials.
4. Resource Reuse
   - Use salvaged, refurbished or reused materials, products and furnishings for building materials.
5. Recycled Content
   - Use materials with recycled content.
6. Regional Materials
   - Use building materials and products that are manufactured regionally within a radius of 500 miles of the project site.
7. Certified Wood
   - Use wood-based materials and products certified in accordance with the Forest Stewardship Council’s Principles and Criteria.

Indoor Environmental Quality (IAQ):

1. Minimum IAQ Performance
   - Using high-quality outdoor air and providing adequate ventilation rates.
   - Avoiding the introduction of contaminants with properly located air intakes.
2. Environmental Tobacco Smoke Control
   - Prohibit smoking in the building and locating exterior designated smoking areas away from entries and operable windows.
3. Carbon Dioxide Monitoring
   - Install a permanent carbon dioxide monitoring system that provides feedback on space ventilation performance.
4. Ventilation Effectiveness
   - Provide for the effective delivery and mixing of fresh air to support the safety, comfort and well-being of building occupants.
1. Construction IAQ Management Plan
   - Prevent indoor air quality problems resulting from the construction/renovation process in order to help sustain the comfort and well-being of construction workers and building occupants.
   - Protect stored on-site or installed absorptive materials from moisture damage.
   - Replace all filtration media immediately prior to occupancy.
6. Low-Emitting Materials
   - Reduce the amount of indoor air contaminants that are odorous (adhesives, sealants, paints, coatings, carpets and composite wood) potentially irritating and/or harmful to the comfort and well-being of installers and occupants.
7. Indoor Chemical and Pollutant Source Control
   - Avoid exposure of building occupants to potentially hazardous chemicals.
   - Employ entryway systems to capture dirt, etc. from entering the building.
   - Provide drains for appropriate disposal of liquid waste.
8. Controllability of Systems
   - Provide a high level of thermal, ventilation and lighting system by individual occupants or multi-occupant spaces (i.e. classrooms or conference areas).
9. Daylight and Views
   - Provide a connection between indoor spaces and the outdoors through the introduction of daylight and views into regularly occupied areas of the building.
   - Orient the building on the site to maximize daylighting options.
   - Use courtyards, atriums, clerestory windows, skylights, louvers and adjustable blinds to achieve deep daylight penetration

Innovation and Design Process

Provide design teams and projects the opportunity to be awarded points for exceptional performance above the requirements set by the LEED Green Building Rating System and /or innovative performance in Green Building categories.

Good stewardship toward the environment and the surrounding host community will give USF Lakeland the unique opportunity to utilize breakthroughs in building science, technology, products and productivity. This will enable the University to develop a campus which supports industry standards for sustainability, initiate change in the way buildings are designed, built and maintained and represent a movement to incorporate environmental considerations for a better working, living and learning experience.

18.0 COASTAL MANAGEMENT ELEMENT

PURPOSE

The purpose of this element is to provide for the protection of residents and property in those campuses or portions of campuses within the coastal area of the host community, and to limit expenditures, and where appropriate, restrict development, in those areas subject to destruction by natural disaster within the coastal high hazard area.

(1) DATA REQUIREMENTS. This element shall be based on the following data:

a) Inventory all land uses and facilities on the University property within coastal area, including buildings, structures and infrastructure facilities such as roadways, bridges, sanitary sewer, potable water and stormwater management facilities, and any shoreline or coastal protection structures. Any conflicts among existing shoreline uses, and methods to minimize such conflicts, shall be identified.

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

b) Inventory natural features on the University property within the coastal area, including wetlands, vegetative cover, areas subject to coastal flooding, and any wildlife habitats.

See 13.0 Conservation Element for a detailed narrative for this requirement.

c) As applicable, an inventory of on-campus estuarine conditions, including known point and non-point sources of pollution, an identification of local, state and federal regulations and programs governing estuarine environmental quality.

Not applicable (not a coastal zone).

d) Campus facilities designated as public hurricane shelters shall be identified and inventoried, including number of shelter spaces, responsible agencies, population to be served and the nature of facilities provided. Where no such facilities exist on campus, the number of University-resident students, faculty and staff requiring evacuation from surge-prone coastal high hazard areas, the number of University resident students, faculty and staff requiring public hurricane shelter, the number of hurricane shelter spaces available (including any designated reserve for resident students), evacuation routes, transportation and hazard constraints on the evacuation routes and evacuation times shall be inventoried.

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for the Inventory section of this document.

e) An inventory of existing beach and dune systems on the University property, including erosion and accretion trends, and an identification of existing University programs to protect or restore beaches or dunes.

Not applicable (not a coastal zone).

f) An inventory of public access facilities, including access points to beaches or the shoreline, ramps, docks or other public use facilities on the University property.

Not applicable (not a coastal zone).

g) The coastal high hazard area shall be identified and the improvements and infrastructure within the coastal high hazard area shall be inventoried.

Not applicable (not a coastal zone).

(2) ANALYSIS REQUIREMENTS. This element shall provide, at a minimum, the following analyses:

(a) For those buildings, structures and infrastructure facilities identified, measures that would reduce exposure to hazards shall be analyzed, including relocation, structural modification of "flood-proofing". This analysis shall include consideration of the expected life of the facilities, and an analysis of the future demand for those facilities based upon population and needs projections.

This Master Plan is for the development of a new campus for USF Lakeland, thus no existing campus is considered for this requirement.

(b) An analysis of the impacts of any proposed development on identified natural resources, identifying strategies for avoidance and/or mitigation of impacts to any identified resources.

(c) An analysis of the impacts of any proposed development on estuarine environmental quality; including strategies to minimize impacts of development and a feasibility analysis of mitigating impacts of identified pollution sources.

See 13.0 Conservation Element for a detailed narrative for this requirement.

(d) An analysis of the host community's plans and procedures for hurricane evacuation and sheltering, including the requirements for the use of University facilities as public shelters.

Polk County Florida Emergency Management has established guidelines for hurricane preparedness at www.polk-county.net. USF Lakeland has developed a webpage at www.lklnd.usf.edu/docs/safety for information on hurricane preparedness procedures as well. In the event that a hurricane of other severe weather is expected to impact the USF Lakeland Campus, the Campus currently follows the emergency closing plan set forth by the USF System..

A detailed list of items has been provided if the county is under a hurricane threat, watch or warning. The list was developed as a checklist to prepare for a potential hurricane including the preparation of a disaster supplies kit, keeping your home in good repair, tacking down loose roofing and siding, trimming dead broken limbs from trees, making minor improvements, such as bracing the gable ends of roofs, needed to make your home safer, making plans to buy materials to protect your home before a storm threatens, purchasing a battery powered weather alert radio, taking an inventory your property and storing insurance papers and other important papers in a safe place or send a copy to a relative out of the area.

(e) An analysis of the availability of large tracts of open space that might be suitable for use in staging emergency resources (i.e., helicopters, supplies, personnel etc.) until their deployment into the disaster area.

In the vicinity of the USF Lakeland Campus site, there is an abundant amount of open space that is suitable for emergency staging in the event of a disaster.

(f) Based upon future enrollment and facility needs, project the future hurricane shelter needs, an analysis of the ability of the University to meet those needs, and an analysis of evacuation clearance times for this future enrollment.

USF Lakeland will need to establish a hurricane evacuation policy to provide all future enrollment projections with shelters. In 2004, four major hurricanes threatened the state of Florida and many universities were presented with difficult decisions regarding the safety of its students, faculty and staff. In light of these unprecedented events, USF Lakeland has determined that current policies will continue to be evaluated to provide the University with the best and safest scenario for hurricane evacuation procedures. Ongoing coordination is necessary with the host communities regarding evacuation procedures.

(g) An assessment of the adequacy of existing beach and dune protection and enhancement measures as appropriate.

Not applicable (not a coastal zone).

(h) An analysis of the capacity of and need for public access facilities to the beach or shoreline.

Not applicable (not a coastal zone).