Conservation Supporting Data

The purpose of the Conservation Element is to ensure the conservation, protection, and wise use of all-natural ecosystem and natural resources on the Tallahassee campus, the Panama City Campus, and campus context areas.

Tallahassee Campus

1. Inventory and Analysis of Existing Conditions

1.a. Inventory of the Existing Natural Resources on the University Campus and within the Context area adjacent to the University

The Florida State University is located within Leon County and is within the Tallahassee City limits. The Florida State University Tallahassee Campus is an urban setting approximately one mile from the Central Business District and the Capitol Complex of Tallahassee. The Tallahassee Campus is approximately four miles from the Lake Jackson State Aquatic Preserve and five miles from the Apalachicola National Forest.

Trees are the only inventoried natural resource on campus. The context area around campus contains trees of significant size and type common to campus, so that the campus expansion into neighboring areas, if sensitively done, may reach a mature look quickly if large old trees are saved.

Significant information about all properties is included in the State Lands Management Plan (SLMP) only portions of which are included in this volume. Readers are encouraged to review the SLMP to learn more information.

1.a.1. Wetlands, Including Artificial and Degraded Systems

There are no known wetlands on the FSU Main Campus.

1.a.2. Flood plains

A flood plain is adjacent to the drainage way on campus. The flood plain elevation is 64 feet above mean sea level. Refer to **Figure 13.1** for location.

1.a.3. Known Unique Geological Features (springs, sinkholes, etc.)

There are two sinkhole formations located within the Tallahassee campus. The first one formed in 1999, and it is approximately 75 feet south of the softball

practice field. Further information can be found in the 1999 report "Sinkhole Investigation: Athletic Practice Field and Parking Lot, FSU, Tallahassee, Florida" by Environmental and Geotechnical Specialists, Inc. The other sinkhole is located northwest of the FAMU/FSU College of Engineering within the stormwater pond. This sinkhole was discovered in 1999, and it is approximately 515 feet from the College. More information can be found in the 2000 report "Subsurface Investigation: Sinkhole at the FAMU/FSU College of Engineering Building Stormwater Pond, FSU, Tallahassee, Florida" by Environmental and Geotechnical Specialists, Inc.

1.a.4. Existing Mitigation Sites

None

1.a.5. Well-field Cones of Influence

The Main Campus has 48 wells on campus all used for cooling water (H.V.A.C.). Most of the wells are supply; some are injection-discharged back to the aquifer. All water drawn goes back into ground via injection wells. These wells are 300' to 400' deep. Pumping test on most recently installed well shows 2' draw down at 5000 GPM pumping rate. Wells are not used for irrigation; water comes from city water system. Refer to **Figure 13.2.**

1.a.6. Aquifers and Aquifers Recharge Areas

The aquifer under Leon County is the Floridian Aquifer. This aquifer is a porous limestone with abundant supply. Wells range from 200' to 400' deep. Recharge occurs naturally over the whole county. The FSU Main Campus has clay materials overlaying the aquifer; there are many breaches in the clay, Karst areas that allow recharge. The aquifer in southern Leon County is overlaid by sand, allowing almost unrestricted recharge.

1.a.7. Air Quality

While there are no air monitoring stations on campus and therefore no data available about air quality, FSU has committed to be a tobacco-free campus as of January 1, 2014. The university has also committed to improving air quality by converting gasoline vehicles to LPG (liquified petroleum gas), replacing gas-powered full-sized Facilities trucks with electric service vehicles, and implementing Refrigerant Management Program which aims to reduce hydrofluorocarbons. (https://sustainablecampus.fsu.edu/air-climate).

1.a.8. Surface Water Quality

There are no bodies of surface water on campus except for the storm water drainage ditches and stormwater retention ponds.

1.a.9. Known Septic Tanks and Grease Traps

There are no known septic tanks on campus. Grease traps are located adjacent to food preparation facilities and are located on **Figure 13.1.** Additionally, all food preparation facilities throughout campus have under-sink grease traps.

Table 13.1 Grease Traps in the Tallahassee Campus

Food Preparation Facility with Underground Grease Tanks
Suwanee Room
Seminole Café
The Figg at UCD
Starbucks at Strozier
Steak & Shake at Parking Garage 1
1851 at Azalea Hall
The Union – Davis Building
Honors, Scholars, and Fellows Building

Source: FSU Business Services, University Dining, March 2020.

1.a.10. Known Storage Sites of Hazardous, Toxic, or Medical Waste

Biomedical waste is collected and stored at a 90-day storage facility adjacent to the College of Medicine's King Building. Chemical and hazardous waste is collected and stored at a 90-day storage facility adjacent to the Maintenance Complex and at a 180-day storage facility in Tampa. Source: FSU Environmental Health and Safety, March 2020.

Refer to Figure 13.1 for known storage sites for hazardous, toxic, or medical waste.

1.a.11. Chemical and Hazardous Waste Disposal Systems

Biomedical waste is collected for disposal by Stericycle. Hazardous and chemical waste is collected for disposal by U.S. Ecology. Both companies are licensed private contractors. Source: FSU Environmental Health and Safety, March 2020.

1.a.12. Surface and Groundwater Hydrology
Not applicable.

2. Future Needs / Requirements

2.a. Existing Commercial, Recreational, and Conservation Uses for the Following:

Wetlands, including artificial and degraded systems
None

Floodplains
Presently the floodplain areas on campus are used for recreation and open space. The drainage way on campus is presently used solely for storm drainage.

Known unique geological features (springs, sinkholes, etc.)
None

Existing Mitigation Sites
None

Well-field cones of influence
Florida State University uses water wells on the Main Campus for Cooling.

Aquifers and aquifer recharge areas
The City of Tallahassee now has 27 supply wells pumping from the Floridan aquifer. A combination of chlorine and fluoride are added to aquifer water, and at certain well locations where there are traces of chemical compounds the City has decided to use granulated carbon and green sand filtration. Current capacity of the wells is 63.2 MGD.

Grease Traps
Grease traps are located at food preparation facilities.

2.b. Opportunities and Methods for Protection or Restoration of the Following:

- **Wetlands, including artificial and degraded systems**
  None

- **Floodplains**
  None

- **Known unique geological features** (springs, sinkholes, etc.)
  None

- **Existing mitigation sites**
  None

- **Well-field cones of influence**
  Well water for cooling water is injected back into the ground after use.

- **Aquifers and aquifer recharge areas**
  The city is currently recycling water (treated sewage effluent) and using for commercial spray irrigation.

- **Grease Traps**
  Part of the preventative maintenance program inspection checks.

2.c. Known Sources and Rates of Discharge or Generation of Pollution of the Following:

- **Wetlands, Including artificial and degraded systems**
  None

- **Floodplains**
  Information not available.

- **Known unique geological features** (springs, sinkholes, etc.)
  None

- **Existing mitigation sites**

None

- **Well-field cones of influence**
  Information not available.

- **Aquifers and aquifer recharge area**
  Information not available.

- **Grease Traps**
  Information not available.

2.d. Opportunities for the Following:

- **Wetlands, including artificial and degraded systems**
  None

- **Floodplains**
  On campus floodplains could continue to be utilized for recreation and open space facilities. The drainage ways on campus could be utilized as an aesthetic resource through proper management.

- **Known unique geological features** (springs, sinkholes, etc.)
  None

- **Existing mitigation sites**
  None

- **Well-field cones of influence**
  Information not available.

- **Aquifers and aquifer recharge areas**
  Information not available.

- **Grease Traps**
  None

2.e. Current and Projected Water Needs and Sources
Refer to discussion **Potable Water Sub-Element** in **Element 10 Utilities.**

2.f. Opportunities to Reduce University Energy Consumption
In addition to ongoing adherence to University standard practices and design guidelines which require energy conservation procedures, the University may increase its conservation effectiveness by operational improvements such as the examples listed below:

- Upgrading major ~~central~~ plant equipment to more efficient models.
- Replace plumbing fixtures with low-volume models.
- Replace light fixtures with more efficient types of ballasts and lamps where appropriate.
- Investigate alternative fueled vehicles.
- Encourage walking and bicycle use.
- Encourage transit ridership.
- Research lab building recommissioning.
- Research lab air change improvements.
- Green Labs energy conservation program.
- Cooperation with Cenergistic, a third-party energy management company.

Discussion of Panama City Campus Conservation

The Panama City Campus is located in Bay County within the city limits of Panama City. It is adjacent to a residential neighborhood on the east, Gulf Coast Community College on the south, Gray Park to the west, and faces on North Bay along its northern edge.

The campus contains numerous mature trees, many draped with Spanish moss. Along the water's edge is a thin strip of natural vegetation. At the northeastern end of the site is a small tidal pool. Currently surrounded with dense vegetation, this pool is an excellent resource for biological research. With modest care, access to the pool by boardwalk could enable visitors to enjoy the site without disturbing its natural functions. Around the building sites, well-kept lawns and modest landscaping present a manicured image to students and visitors. The open or undeveloped areas in the western part of the site have less dense ground cover of grasses natural to sandy coastal sites.

The small pond at the south center of the pond is apparently not an engineered detention pond, although it is often referred to that way. Inflow and outflow appear to be sheet flow only. A berm on the north edge was formed from the dirt removed to dig the pond. Adjacent to the pond and along the entry drive to the main building entry is a copse of pine trees.

The University has updated its State Lands Management Plan in 2010.

There are no wetlands or Floodplains on the campus. The 100-year floodplain lies along a thin strip of the North Bay. There are no known springs or sinkholes.

The air conditioning system utilizes well water for condenser water for the chillers and injects the used, warmer water back into the ground.

Chemical and hazardous wastes are not generated by academic programs and only maintenance-related solvents might be considered. The University has routine procedures for properly handling and disposing of any such materials.

Possible energy consumption reduction practices as described in other sections may apply equally well to the Panama City Campus and to the Southwest Campus.

Discussion of Southwest Campus Conservation

Many of the same approaches and emerging technologies that are either presently in use or being considered for application at the Main and Panama City Campuses are also available for consideration at the Southwest Campus. These include many of the items listed above, such as the use of cogenerated electricity, steam and chilled water utilities, the upgrading of major pieces of utility equipment, and the replacement of light fixtures with efficient types of ballasts and lamps. The University is moving forward to install a chilled water loop, using well water for cooling, at the Tallahassee campus southwest. This will significantly reduce water consumption.

The Southwest Campus, however, offers some unique considerations that are either in the discussion stage, moving forward towards implementation, or presently in use. For instance, the City of Tallahassee has approached Florida State with the idea of using treated wastewater for irrigation purposes at the Seminole Golf Course. If feasible and implemented, such a system would not only allow the City a more effective means of treating wastewater generated at its

treatment plants, but also provide the University with a means of irrigation that does not depend upon well water. Discussions with the City on the use of such a system are still in their infancy, but the University remains optimistic that such a system is possible, both from a technology and financial point of view. The Campus Master Plan for the Southwest Campus will be amended, where necessary, in future years if such a system is incorporated.

One practical conservation measure that is currently being installed involves the heating source for the Marine Science Research and Training Center that is nearing completion on the Southwest Campus. Essentially an outdoor pool complex, the design of the facility utilizes groundwater as a means of regulating the temperature of the swimming pools and diving tank. The use of such a system avoids the need for an expensive, energy consuming heating and cooling system.

There are other opportunities that are possible for implementation at the Southwest Campus. The Materials Research Building, when completed was one of the first LEED certified building at Florida State. There have been discussions of using passive and active solar systems to generate either electricity or heat water. The new Intramural Sports Complex is using a groundwater irrigation system as a means of reducing the demand on potable water systems and, in a sense, returning the water to the source through natural percolation. The design of this facility also includes a preserve for gopher tortoises, a threatened native species.

This is an abbreviated discussion of conservation measures currently being used, considered or envisioned for use on the Southwest Campus. Many of these same measures are also being considered for implementation on the Main Campus, the Panama City Campus, and all other properties and facilities assigned to Florida State University.

- Upgrading major central plant equipment to more efficient models.
- Replace plumbing fixtures with low-volume models.
- Replace light fixtures with more efficient types of ballasts and lamps where appropriate.
- Investigate alternative fueled vehicles.
- Encourage walking and bicycle use.
- Encourage transit ridership.

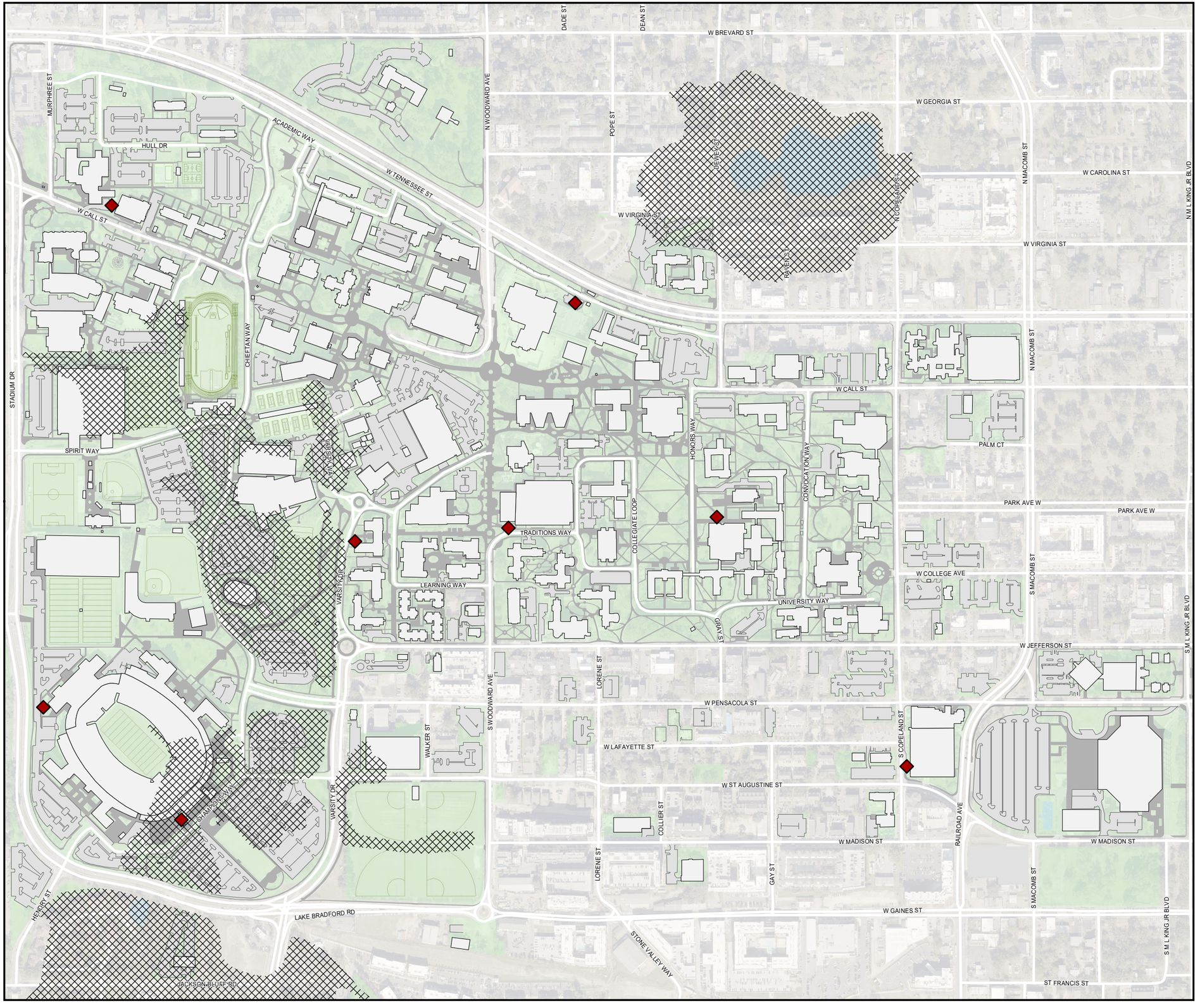

FIGURE 13.1

CAMPUS ENVIRONMENTAL AREAS

LEGEND:

- GREASE TRAP LOCATIONS
- 100 YEAR FLOOD PLAIN

SOURCE:
FSU FACILITIES PLANNING
TLCGIS
FEMA

FLORIDA STATE UNIVERSITY
TALLAHASSEE CAMPUS

SUPPORTING DATA
24 SEPTEMBER 2021

N

0 300 600 900 Feet

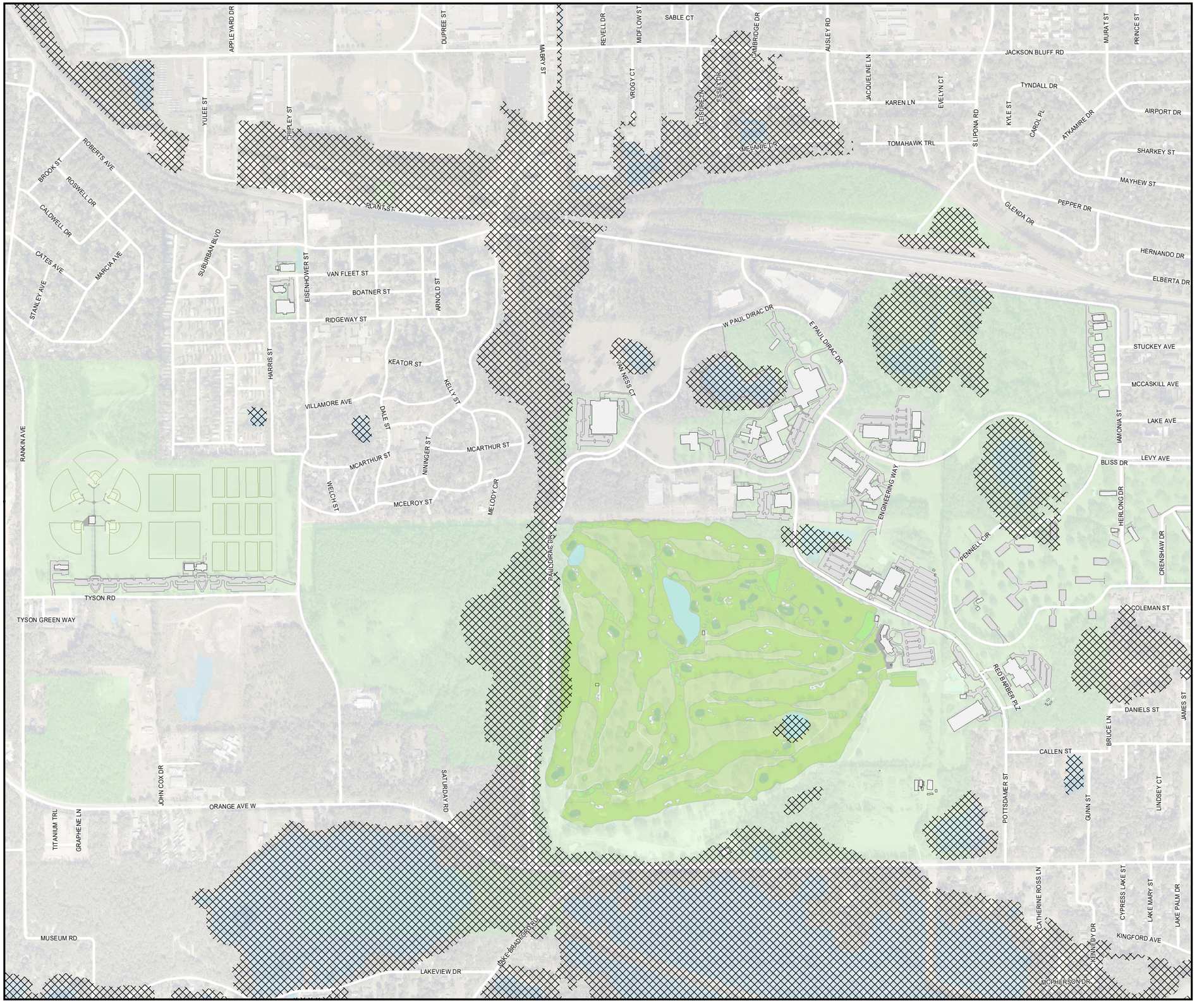

FIGURE 13.2

100-YEAR FLOOD PLAIN

LEGEND:

FLOOD PLAIN

SOURCE:
FSU FACILITIES PLANNING
TLCGIS
FEMA

FLORIDA STATE UNIVERSITY
TALLAHASSEE CAMPUS
SOUTHWEST

SUPPORTING DATA
24 SEPTEMBER 2021

N

0 500 1,000 1,500 Feet

FIGURE 13.3

WETLANDS AND KARSTS

SOURCE:
FSU FACILITIES PLANNING
PERKINS & WILL 2020 STUDY

FLORIDA STATE UNIVERSITY
TALLAHASSEE CAMPUS
SOUTHWEST

SUPPORTING DATA
24 SEPTEMBER 2021

FIGURE 13.4

EXISTING
HYDROLOGY

BASED ON UNITED STATES DEPT OF THE INTERIOR GEOLOGICAL SURVEY, 1940

SWAMP LAKE STREAM

SOURCE:
FSU FACILITIES PLANNING
PERKINS & WILL 2020 STUDY

FLORIDA STATE UNIVERSITY
TALLAHASSEE CAMPUS
SOUTHWEST

SUPPORTING DATA
24 SEPTEMBER 2021