

9. GENERAL INFRASTRUCTURE ELEMENT

STORMWATER MANAGEMENT SUB-ELEMENT

Plan Framework for Stormwater Management

The proposed campus master plan creates a series of plazas and open spaces through the closure of several streets and rights-of-way. The master plan does not specifically illustrate any aboveground stormwater facilities. There are 12 existing drainage basins within the campus boundaries. These drainage basins have direct outfall to Bayboro Harbor via two existing box culverts through the campus. Discharge from these drainage basins will not have adverse impacts on downstream conveyance systems.

(See Figure 9-a.)

Goal

The Stormwater Management goal for the St. Petersburg campus plan is to provide an adequate stormwater management system that accommodates future University stormwater needs while correcting any existing facility deficiencies.

Statement of Objectives and Policies

Objective 9.1. Provide a sufficient stormwater management system in a design that is consistent and enhances the overall master plan scheme.

Policy 9.1.1. Stormwater management facilities shall comply with the design criteria established in the Cost Containment Guidelines and shall be in place and operational, at established levels of service, prior to occupancy of any new University building.

Policy 9.1.2. USFSP shall coordinate through its capital improvement projects and building program to ensure that the stormwater vaults and pipes are located and constructed to avoid conflicts with future building programs.

Policy 9.1.3. USFSP shall coordinate with the city to ensure that off-campus stormwater management facilities that may be affected by the implementation of the master plan are improved as appropriate. (See Intergovernmental Coordination Element for procedures.)

Policy 9.1.4. USFSP shall annually review future construction programs and priorities for deficiency remediation as part of the capital improvements requirements and procedures of the Florida Board of Education to ensure capacity and capital improvements required to meet future University needs are provided when required, based on needs identified in other master plan elements.

Objective 9.2. Coordinate and phase the increased stormwater facility capacity to correct existing deficiencies and to meet the future needs of USFSP.

Policy 9.2.1. USFSP shall ensure that the detailed Stormwater Management Sub-Element complies with the host community's levels of service of a 10-year return frequency, 1 hour storm event. In addition, the University shall adopt a level of service standard for stormwater quality and quantity as established in the Florida Administrative Code Chapters Chapter 40D-4, 40D-40 and 40D-400, the Governing Rules of the Southwest Florida Water Management District (SWFWMD).

Policy 9.2.2. Through the implementation of the stormwater management sub-element and the capital improvements program, projects within individual drainage basins shall be constructed to accommodate the

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future needs of the University and future development within those basins and shall be phased in accordance with the capital improvements program as described in the Capital Improvements Element (Table 14-a).

Stormwater facility improvements shall be constructed as identified generally on Figure 9-a.

Policy 9.2.3. USFSP shall, as appropriate, establish a technical design standards manual for the new stormwater system to ensure the future adequate level of service and ease of maintenance.

Policy 9.2.4. USFSP shall research and develop an overall stormwater treatment credit program for the campus. Once this has been developed, future development would be incorporated into one conceptual Environmental Resource Permit (ERP) in accordance with the rules of the Southwest Florida Water Management District.

Objective 9.3. Prevent any further degradation and improve the quality of receiving waters.

Policy 9.3.1. USFSP shall identify the stormwater detention systems within the plaza or underground vault areas as "no build" zones.

Policy 9.3.2. USFSP shall implement a regular stormwater facility maintenance program to ensure adequate water quality and design capacity of the facilities.

Policy 9.3.3. USFSP shall coordinate, as appropriate, with the host community regarding the National Pollutant Discharge Elimination System (NPDES) program.

Policy 9.3.4. USFSP shall mitigate University-generated stormwater and minimize stormwater-borne pollutants through the implementation of a system of Best Management Practices (BMPs), which includes, but is not limited to:

- Incorporating stormwater management retention and detention features into the design of parks, commons, and open spaces, where such features do not detract from the recreational or aesthetic value of a site.

- Use of slow release fertilizers and/or carefully managed fertilizer applications timed to ensure maximum root uptake and minimal surface water runoff or leaching to groundwater.
- Educating maintenance personnel about the need to maintain motor vehicles to prevent the accumulation of grease, oil and other fluids on impervious surfaces, where they might be conveyed to surface and ground waters by runoff, and the need to regularly collect and dispose of yard debris.
- Avoid the widespread application of broad spectrum pesticides by involving only purposeful and minimal application of pesticides, aimed at identified target species.
- Coordinating pesticide application with irrigation practices to reduce runoff and leaching into groundwater.
- Use of turf blocks and non-impervious surface treatments to minimize impervious surface area and reduce the flow of runoff pollutants.
- Incorporating features into the design of fertilizer and pesticide storage, mixing and loading areas that are designed to prevent or minimize spillage.
- Pursue licensing for grounds superintendents and staff to use restricted pesticides and to ensure that fertilizers will be selected and applied to minimize surface water runoff and leaching to ground water.

Policy 9.3.5. It shall be the policy of USFSP that no stormwater discharges may cause or contribute to a violation of water quality or quantity standards in waters of the State. Post-development rates of discharge shall not exceed pre-development rates. Additional treatment must be provided since USFSP discharges into Outstanding Florida Waters (OFW).

Policy 9.3.6. USFSP shall review all proposed construction and development on campus to ensure that any proposed increase in campus impervious surfaces shall be implemented only upon a finding that existing facility capacity is already on-line to accommodate the increased

need, or that additional capacity will be funded and on-line at the time of need.

Policy 9.3.7. USFSP shall define and implement within two years after plan adoption an engineering study to survey, document and assess the existing and future system needs, as a result of proposed land redevelopment, transportation system improvements, reconfiguration of existing drainage conveyances, and improvements within the floodplain. This study shall address the data and analysis requirements contained in Rules 6C-21.207(1) and (2), F.A.C., and shall also:

- Establish priorities for replacement, correcting stormwater management facility deficiencies, and providing for future facility needs; and
- Establish the timing and phasing requirements and identify the projected funding sources for stormwater management facility improvements to meet future USF needs.
- Establish a maintenance program in-conjunction with the City of St. Petersburg to insure that methods (structural, non-structural and operating and maintenance) are in place to protect Bayboro Harbor from pollutants.

Objective 9.4. Maintain and protect the natural drainage patterns and hydrological patterns of the St. Petersburg campus.

Policy 9.4.1. USFSP, prior to the design and construction of any stormwater management facility, shall thoroughly investigate issues including geotechnical information, regulations, and existing utilities.

POTABLE WATER SUB-ELEMENT

Plan Framework for Potable Water

The City of St. Petersburg provides potable water to the campus. This network of distribution lines within the City rights-of-way contain a 12-inch line along Sixth Avenue South and a 6-inch line in the extension of Seventh Avenue South. The rest of the site is serviced by a network of 8-inch and 6-inch distribution lines. The City has indicated through its adopted comprehensive land use plan and interview meetings that the potable water system servicing the University has the capacity to continue to serve the future needs. The master plan identifies an expansion of 485,450 square feet for the campus.

By utilizing the Potable Water Master Plan being prepared for the Tampa campus as a basis, it can be estimated that the academic expansion and student housing will require an additional 122 gallons per minute (GPM). This additional demand is based upon an average minimum of 0.25 GPM per 1,000 gross square feet of building area. The master plan effectively uses the existing potable network. In addition, the City has a reclaimed water system available to the University for irrigation. A 24-inch reclaimed water line is located at Sixth Avenue South. A 30-inch reclaimed water line extends along First Street South to the Port of St. Petersburg.

(See Figure 9-b.)

Goal

The Potable Water goal for the St. Petersburg campus plan is to provide an adequate potable water system that accommodates the future University potable water needs while correcting any existing facility deficiencies.

Summary of Objectives and Policies

Objective 9.5. Provide at a minimum an average level of service of 0.25 GPM per 1,000 gross square feet of building area.

Policy 9.5.1. The University shall establish and adopt the following level of service standards for potable water and fire flow:

- A minimum a level of service of 0.25 GPM per 1,000 gross square feet of building area;
- Provide adequate fire protection with a goal of 3,000 GPM for four hours; and

- Maintain an operating pressure range of a minimum of 40 psi throughout the system.
- The existing system appears to be adequate to handle the future needs with service individual lines.

Policy 9.5.2. Maintain an acceptable operating pressure range throughout the system.

Policy 9.5.3. Correct any existing potable water facility deficiencies.

Objective 9.6. Provide adequate fire protection with a goal of 3,000 GPM for four hours.

Policy 9.6.1. USFSP shall provide sufficient fire protection and fire hydrants with the construction of new facilities and installation of distribution lines.

Policy 9.6.2. USFSP, in order to provide sufficient fire protection, shall install fire hydrants only on 6-inch or larger water lines.

Policy 9.6.3. USFSP shall conduct on-site fire flow tests at least annually to verify adequacy of fire protection or identify deficiencies. The tests shall be conducted in accordance with the methodology described in the American Water Works Association Manual Number 31, entitled "Distribution System Requirements for Fire Protection" and NFPA 25. The results of such tests shall be provided to the City of St. Petersburg Fire Department.

Objective 9.7. Cooperate with the City of St. Petersburg Water Department and all appropriate State and Federal agencies to ensure safe and sufficient water supply at a cost effective rate.

Policy 9.7.1. Improve, expand, and upgrade the potable water system as identified on Figure 9-b. The timing and phasing requirements and priorities for these improvements are identified in the Capital Improvements Element.

Policy 9.7.2. USFSP shall coordinate the provision of on and off-campus potable water facilities required to meet future USFSP needs with the host community or appropriate service provider as described in Intergovernmental Coordination Element. USFSP shall establish a procedure and assign responsibility for regularly scheduled

coordination meetings with appropriate City of St. Petersburg officials relative to USFSP potable water needs. USFSP shall pursue any interlocal agreements or memoranda of understanding necessary to ensure that potable water will be supplied to the campus to meet the future needs of the University.

Policy 9.7.3. USFSP shall, through its capital improvements program, ensure that the potable water system will be appropriately upgraded and replaced, as necessary to meet the future University needs as described in Capital Improvements Plan Element (Table 14-a).

Policy 9.7.4. Annually review future construction programs and priorities for deficiency remediation as part of the capital improvements requirements and procedures of the Florida Board of Education to ensure that potable water facility improvements required to meet future USFSP needs are in place and operational, at the adopted levels of service, prior to occupancy of any new USFSP building.

Policy 9.7.5. Proposed increases in consumptive uses, whether residential or non-residential, shall be approved only upon a finding that existing potable water treatment and distribution facility capacity is already online to accommodate the increased need, or that additional capacity will be funded and on-line when needed.

Objective 9.8. Develop and promote a water conservation program.

Policy 9.8.1. USFSP shall, through its capital improvements program, ensure that when a project requires relocation of utilities, that those utilities be appropriately upgraded and replaced as necessary in accordance with the capital improvements program as described in Capital Improvements Element (Table 14-a).

Policy 9.8.2. USFSP shall prepare, as appropriate, a technical design standards manual to ensure the compatibility of future lines for ease of on-going maintenance.

Policy 9.8.3. USFSP shall continue a water conservation program as follows:

- Require the use of xeric landscaping techniques, including the maintenance or installation of selected vegetative species, low irrigation and compact hydraxone concepts, shall be required for all new building and ancillary facility construction.

- Install a sub-metering system on existing and new facilities to be able to monitor accurately the amount of water being utilized in the various facilities.
- The University shall create an awareness program of water usage utilizing the information above.
- The irrigation system shall be upgraded to be controlled by a computerized, rain-sensitive system.
- Opportunities to coordinate with the host communities in providing a reclaimed water irrigation system should be explored, if ever extended to the University.
- Use of collected stormwater or building "gray" water for landscape irrigation purposes shall be explored.
- Use of efficient low water volume plumbing fixtures in new and renovated University buildings.

Objective 9.9. USFSP shall periodically complete a potable water study, which identifies potable water management facility improvements necessary to accommodate projected potable water needs.

Policy 9.9.1. USFSP shall prior to the construction of campus housing complete an engineering study to survey, document and assess the existing and future potable water system needs. This study shall address the data and analysis requirements contained in Rules 6C-21.207(4) and (5), F.A.C., and shall also:

- Establish priorities for replacement, correcting potable water facility deficiencies, and providing for future facility needs; and
- Establish the timing and phasing requirements and identify the projected funding sources for potable water facility improvements to meet future USFSP needs.

Objective 9.10. Protect and conserve potable water sources.

Policy 9.10.1. USFSP shall identify the potable utility corridors as "no build" zones.

Policy 9.10.2. USFSP shall investigate if any existing lines (installed prior to 1980) that are to be relocated, replaced or removed have the potential to contain asbestos or are also known as "transite."

SANITARY SEWER SUB-ELEMENT

Plan Framework for Sanitary Sewer

Bisecting the campus in an alley between Sixth and Seventh Avenues South is a 48-inch sanitary sewer force main running in an east-west direction. Two 48-inch force mains expand to 60 inches as they run to the east and terminate at the City of St. Petersburg's Wastewater Treatment/Reclaimed Water Facility located east of the Coast Guard Station. A "T" connection from the 48-inch main extends in a southerly direction mid-block between Fourth and Third Streets South. This system is maintained and operated by the City of St. Petersburg.

Utilizing the draft sanitary sewer study for the Tampa campus as a basis, an average daily flow factor of 0.25 gallons per minute (GPM) per 1,000 gross square feet of building area can be anticipated for non-residential uses. Using this factor for future sanitary sewer demand (including 243,750 sf of student housing), this would generate an additional 122 GPM based on planned expansion. There are a number of minor utility conflicts identified in the master plan. They include the proposed expansion of the Campus Activity Center and the proposed parking garage located at the southwest corner of First Street South and Fifth Avenue South.

(See Figure 9-c.)

Goal

The Sanitary Sewer goal for the St. Petersburg campus plan is to provide an adequate sanitary sewer system that accommodates the future University sanitary sewer needs while correcting any existing facility deficiencies.

Summary of Objectives and Policies

Objective 9.11. Provide for reliable and efficient collection and transmission of all wastewater generated by USFSP in an environmentally safe manner.

Policy 9.11.1. Maintain at a minimum the present wastewater collection at its present level of service with the implementation of the Master Plan.

Policy 9.11.2. USFSP shall coordinate with the City of St. Petersburg and all applicable agencies to ensure capacity is available at the time of University development in accordance with procedures and timing, outlined in the Intergovernment Coordination Element.

- Policy 9.11.3. USFSP shall coordinate with the City of St. Petersburg and applicable agencies to establish as an appropriate Level of Service 0.25 gallons per minute (gpm) per 1000 square feet of building area on an average daily basis. The level of service number should be reviewed prior to the construction of campus housing to insure that both residential and non-residential uses have been considered.
- Policy 9.11.4. Annually review future construction programs and priorities for deficiency remediation as part of the capital improvements requirements and procedures of the Florida Board of Education to ensure that sanitary sewer facility improvements required to meet future USFSP needs are in place and operational, at the adopted levels of service, prior to occupancy of any new USFSP building.
- Objective 9.12. Coordinate the sanitary sewer relocation and improvement program with the implementation of the capital improvement program and Master Plan.
- Policy 9.12.1. USFSP shall coordinate with the host community to ensure that off-campus sanitary sewer facilities that may be affected by the implementation of the master plan are improved as appropriate. (See Intergovernmental Coordination – Plan Element 12 for description of coordination procedures). USFSP shall establish a procedure and assign responsibility for regularly scheduled coordination meetings with appropriate City officials relative to USFSP sewage requirements. USFSP shall pursue any interlocal agreements or memoranda of understanding necessary to ensure that sanitary sewer will be supplied to the campus to meet the future needs of USFSP.
- Policy 9.12.2. USFSP shall identify the main utility trunk lines as "no build" zones.
- Policy 9.12.3. USFSP shall through its capital improvements program, ensure that the sanitary sewer system will be appropriately upgraded and replaced on-campus, as necessary to meet the future University needs as described in the Capital Improvements Element (Table 14-a).
- Policy 9.12.4. USFSP shall investigate if any of the existing lines (installed prior to 1980) that are to be upgraded, removed or relocated have the potential to contain asbestos or are also known as "transite." Appropriate action will be taken by the University to have these

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lines removed, remediated, or replaced by a certified contractor or be allowed to remain.

Policy 9.12.5. Improve, expand, and upgrade the sanitary sewer system as identified on Figure 9-c. The timing and phasing requirements and priorities for these improvements are identified in the Capital Improvements Element.

Policy 9.12.6. USFSP shall continue with preventative maintenance program for existing lines. The Facilities Maintenance Element of the adopted master plan shall be amended as needed to incorporate the provisions of this maintenance program.

Objective 9.13. Resolve minor utility conflicts through coordinated detailed utility study and building design.

Policy 9.13.1. Proposed increases in consumptive uses, whether residential or non-residential, shall be approved only upon a finding that existing sanitary sewer treatment and distribution facility capacity is already online to accommodate the increased need, or that additional capacity will be funded and online when needed.

Objective 9.14. Correct any existing sanitary sewer deficiencies.

Policy 9.14.1. USFSP shall continue to utilize a preventative maintenance program for existing lines. The Facilities Maintenance Element of the adopted master plan shall be amended as needed to incorporate the provisions of this maintenance program.

Policy 9.14.2. USFSP shall establish an emergency and routine repair and replacement program of existing sanitary sewer system lines.

Policy 9.14.3. USFSP shall annually review future construction programs and priorities for deficiency remediation as part of the capital improvements requirements and procedures of the Florida Board of Education to ensure capacity and capital improvements required to meet future campus needs are provided when required, based on needs identified in other master plan elements.

Objective 9.15. To reduce the impacts of sewage generation.

Policy 9.15.1. USFSP shall continue to utilize and expand its use of reclaimed water for its on-campus irrigation.

Policy 9.15.2. USFSP shall implement, where practical, the following techniques for reducing the impacts of sewage generated on the campus:

- Eliminating flush valves from all building plumbing.
- Utilizing low volume plumbing fixtures.
- Implementing a leak detection and repair program.
- Eliminating stormwater, swimming pool and other illegal connections.
- Using holding tanks to reduce peak flows.
- Using pump stations and force mains to by-pass bottlenecked gravity mains.
- Establish a schedule for the elimination of septic tanks and timely hookup to sanitary sewer.
- Establish a schedule for the inspection of existing grease traps and clean, repair or replace as necessary. Where a grease trap has not been provided for a food preparation facility, it shall be reviewed and updated as required.

SOLID WASTE SUB-ELEMENT

Plan Framework for Solid Waste

The City of St. Petersburg is responsible for the collection of solid waste on the St. Petersburg campus. The burnable waste is transported to the Pinellas County Refuse to Energy Incinerator located in Pinellas Park. The non-burnable, non-recyclable, solid waste is transported to the Pinellas County landfill. The City of St. Petersburg currently has a mandated ten percent recycling program of all solid wastes. The St. Petersburg campus generates approximately 5,650 cubic yards of solid waste annually or 0.0146 cubic yards per square foot. By using this factor, it can be estimated that an additional 7,088 cubic yards of solid waste will be generated annually by the master plan.

Utilization of the urban geometric grid pattern for the master plan establishes convenient service corridors to the buildings. By using existing alleys as service corridors along with the pedestrian plazas during off-peak hours, solid waste collection appears to be sufficient. Although specific solid waste collection locations have not been identified, the master plan does establish that service areas will be separated from major pedestrian and front door access points.

(See Figure 11-c in the Transportation Element)

Goal

The Solid Waste goal for the St. Petersburg campus plan is to provide for future University solid waste collection and disposal requirements in a safe, cost effective, environmentally sound, and an aesthetically satisfactory manner.

Summary of Objectives and Policies

Objective 9.16. Coordinate with the City of St. Petersburg in establishing an appropriate level of service for solid waste collection.

Policy 9.16.1. USFSP shall establish a level of service of 0.015 cubic yards per square foot annually for solid waste collection.

Policy 9.16.2. USFSP shall coordinate the provision of on and off-campus solid waste collection and disposal facilities required to meet future USFSP needs with the City of St. Petersburg or appropriate service provider as outlined in the Intergovernmental Coordination Element. USFSP shall pursue any interlocal agreements or memoranda of understanding necessary to ensure that solid waste

collection and disposal services will be supplied to the campus to meet the future needs of the University.

Objective 9.17. Procedures to reduce USFSP-generated solid waste and increasing recycling and reuse programs shall be defined.

Policy 9.17.1. USFSP shall continue to take steps to reduce the quantity of solid waste generated by expanding its recycling program to include additional drop-off locations. These drop-off facilities shall be installed in the individual buildings, residential areas, or with convenient drive-through locations. Awareness programs directed toward students, faculty and staff shall also be included in this recycling program.

Objective 9.18. Establish or modify the existing solid waste collection locations for easier service and to avoid potential pedestrian conflicts.

Policy 9.18.1. USFSP shall continue to assist in providing solid waste collection services for the academic and marine sciences uses on campus.

Policy 9.18.2. USFSP shall establish a unified screening program for solid waste collection locations. Included will be the implementation of aesthetic coordination as well as standardized solid waste containers.

Policy 9.18.3. USFSP shall, during the design of specific building programs, evaluate the relationship of the proposed buildings with the existing buildings, and to identify opportunities to reconfigure, enhance or screen solid waste collection facilities from pedestrian corridors.

Objective 9.19. Encourage and support proper management in the disposal of hazardous and other special wastes.

Policy 9.19.1. USFSP shall meet all State and Federal regulations in the collection and transportation of its hazardous wastes and materials.

Policy 9.19.2. USFSP shall monitor the volume and type of hazardous waste collection and temporary storage on site to determine feasibility of constructing and operating the next higher level of storage facility on campus. If such a determination is made to proceed, USFSP shall amend the adopted campus master plan to reflect the timing, location, and scope of such a facility.

Policy 9.19.3. Specific training shall be developed and administered to all employees who handle solid waste.

Objective 9.20. Procedures to correct any existing solid waste facility deficiencies shall be established.

Policy 9.20.1. USFSP shall ensure that solid waste collection and disposal facilities are appropriately provided for and phased accordingly to meet the future USFSP needs while correcting any disposal facility deficiencies. USFSP does not anticipate the need for any solid waste facility improvements at this time. If this condition changes, USFSP shall amend the adopted campus master plan to identify said improvements, and to establish the timing and phasing requirements and priorities for the improvements.

Policy 9.20.2. USFSP shall establish that the timing and phasing of disposal facility improvements shall be coordinated with the Capital Improvements Element.

Policy 9.20.3. USFSP shall annually review future construction programs and priorities for deficiency remediation as part of the capital improvements requirements and procedures of the Florida Board of Education to ensure capacity and capital improvements required to meet future USFSP needs are provided when required, based on needs identified in other master plan elements.