



Calvin, Giordano & Associates, Inc.

A SAFEbuilt COMPANY

Technical Memorandum

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Lake 11 Project – Proposed Improvements

Date: 8/12/2026

To: Flow Way Community Development District – Board of Supervisors

From: Calvin, Giordano & Associates, Inc.

Subject: Lake 11 Improvements – (Technical Memorandum)

Project: CGA Project No. 21-4271

CC: File

Based on the Board's direction to enhance the landscape and littoral areas surrounding Lake 11, District staff has developed a phased plan designed to improve both the aesthetics and long-term health of the lake. The proposed improvements were developed using conceptual plans, preliminary schematics, and contractor cost proposals to establish a reasonable order-of-magnitude budget.

The Lake 11 improvements are proposed to be completed as two coordinated projects during that will take place in Fiscal Year 2026 and 2027. Construction will be scheduled to account for seasonal conditions, anticipated lake water levels, material availability, and contractor coordination. The project budget is summarized in the updated cost table included in this memorandum.

Time Frame

It is imperative that the trees and landscape shrubs be installed as early as possible during the summer rainy season to maximize establishment and long-term success. Taking advantage of the consistent rainfall and favorable growing conditions will significantly reduce plant stress, encourage root development, and improve overall survival rates while minimizing the need for supplemental irrigation.

To achieve these benefits, installation should occur during Fiscal Year 2026, with a target completion in early to mid-September. Completing the work during this timeframe will allow the trees, shrubs, and native plant material to capitalize on the remainder of the rainy season and growing season, providing several months of establishment before entering the drier winter months. Early installation is expected to accelerate plant maturity, improve overall landscape performance, and maximize the visual impact of the improvements in the shortest possible timeframe.



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The CDD Staff has reviewed the proposed improvements and outlined the costs in the following table:

Table 1: Rough Order of Magnitude Summary of Construction Costs

Improvement/Phase	Proposed Improvements	COSTS*
1 (FY26)	Irrigation System	\$27,000
2 (FY26)	Lake Bank Landscaping	\$65,000
3 (FY26/27)	Soil Rehab	\$22,000
4 (FY26/27)	Littoral Plantings	\$23,000
5 (Optional – FY28)	Fountain w/ electric service	\$44,000
	Contingency & CEI (10% & 7.5%)	
TOTAL		\$160,290

**Improvement 5 (Decorative Fountain) is an optional item that could be installed in Fiscal Year 2028. Its cost is not included in the TOTAL above.*

Improvement 1 – Irrigation System

The irrigation system is the foundation of the entire beautification project. The new irrigation will tie into the existing irrigation main located on the residential side of the lake and extend around the littoral shelf. Large rotary irrigation heads will provide coverage approximately 25 to 30 feet into the littoral shelf on both sides, allowing both the shoreline landscaping and future littoral plantings to receive supplemental irrigation during dry periods.

This irrigation system is critical to establishing healthy vegetation and significantly improving the long-term survivability of both the lake bank landscaping and littoral plants, particularly during seasonal drought conditions.

Improvement 2 – Lake Bank Landscaping

The second improvement consists of installing enhanced lake bank landscaping along the top shelf surrounding Lake 11. The purpose of these plantings is to soften and partially screen the visual appearance of the littoral shelf from adjacent sidewalks and roadways.

A combination of shrubs, ornamental grasses, and accent plantings will create a more attractive lakeside appearance while directing attention toward the landscaped shoreline instead of the exposed littoral shelf.



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Proposed Lake Bank Plant Material:

- Red cooperleaf
- Silver buttonwood
- Muhly grass
- Panama rosw
- Weeping bottlebrush
- Green buttonwood
- Sea grape

Improvement 3 – Soil Rehabilitation

If site conditions warrant, the District will perform soil rehabilitation prior to or during the planting phase. This work will improve soil quality by incorporating additional nutrients, reducing excessive organic material, and creating improved growing conditions for both shoreline and littoral vegetation. As part of this process, all rocks and other unwanted material will be removed from the treatment areas.

Improving the soil profile will help establish stronger root systems and increase long-term plant health and performance.

Improvement 4 – Littoral Plantings

This improvement includes the installation of approximately 22,000 new littoral plants designed to transform the existing sandy littoral shelf into a vibrant, natural shoreline habitat.

Proposed flowering species include:

- Pickerelweed
- Golden Canna
- Duck Potato
- Blue Flag Iris
- Swamp Lily

Final plant selections may be adjusted based on water depth, soil conditions, and environmental suitability.

The primary objective is to create a dense, colorful planting area throughout the littoral shelf, replacing the existing exposed sand with healthy vegetation. During the rainy season, natural lake levels will provide adequate moisture. During extended dry periods, the new irrigation system will provide supplemental watering to improve plant survival and maintain an attractive appearance year-round.

Improvement 5 – Decorative Fountain

This Improvement is an optional item that would include the installation of a decorative floating fountain with electrical service. If approved, and positioned within the open-water portion of Lake 11, the fountain would serve as the visual centerpiece of the lake while drawing attention away from the littoral shelf.

If approved, the fountain would provide daytime visual interest while incorporating nighttime illumination to further enhance the lake's appearance. In addition to its aesthetic value, the fountain would create movement and improve the overall presentation of the community entrance. This is an optional improvement and is not included in the project's total cost; if the Board elects to move forward with it, the fountain could be installed in Fiscal Year 2028.



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Long-Term Maintenance

Once the project is complete, routine maintenance will be necessary to preserve the appearance and health of the new landscape improvements. Ongoing maintenance activities will include mowing turf areas, trimming trees and shrubs, weed control within planting beds, periodic mulch replacement, irrigation system inspections and repairs, and routine maintenance of the littoral plantings.

The proposed shrubs and accent plantings will be maintained at an approximate height of 4 to 5 feet. Maintaining this height will provide a clean, uniform landscape while partially screening the littoral shelf from public view without completely obstructing views of the lake. This maintenance program will help ensure the landscape remains attractive, functional, and sustainable for many years.

The proposed landscape improvements will include the installation of approximately Eighteen (18) 45-gallon trees strategically spaced around the Lake 11 shoreline. Tree spacing will vary between approximately 8 and 12 feet, depending on the selected species and site conditions. Because of their larger size at installation, these trees will provide an immediate visual impact while establishing long-term canopy and screening along the lake bank.

The remaining landscape material will consist primarily of 1-gallon and 7-gallon plantings. The 1-gallon material will include native grasses and other shoreline vegetation intended to provide rapid establishment, erosion control, and habitat enhancement. The 7-gallon material, including species such as Red Copperleaf and other ornamental shrubs, will be installed at an average height of approximately 4 feet. Under normal growing conditions, these shrubs are expected to reach approximately 6 feet in height within one year, creating a mature appearance and providing effective screening and visual enhancement of the shoreline.

Staff Recommendation

District staff recommends proceeding with the project in two phases to maximize installation success while allowing flexibility based on seasonal conditions.

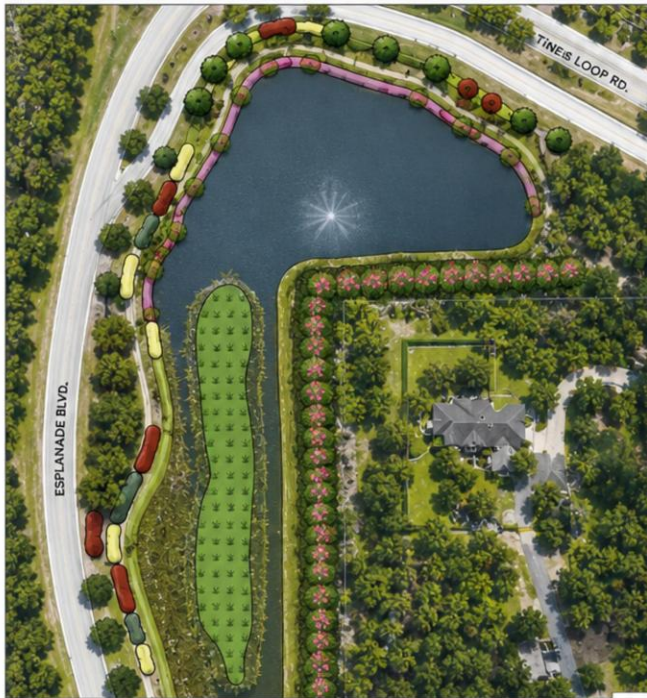
Staff recommends beginning with the installation of the irrigation system, as it is essential to support both the shoreline landscaping and future littoral plantings. Once irrigation is operational, staff recommends proceeding with the lake bank landscaping as part of phase one (FY26).

Phase two (FY27) will be completing the soil rehabilitation and littoral plantings. The decorative fountain is an optional improvement and, if approved by the Board, could be added in Fiscal Year 2028.

This phased approach provides the District with the greatest opportunity for successful plant establishment while creating a significantly improved and sustainable lakeside landscape for residents to enjoy.

LAKE 11 BUFFER

- Conceptual Landscape Plan



LEGEND

- 'Red' Copperleaf
- 'Java White' Copperleaf
- Silver Buttonwood
- Muhly Grass
- Cord Grass
- Aquatic Plants (Littoral Shelf)
- Trees
- Panama Rose (Shrub)

PROJECT OVERVIEW

The Lake 11 Buffer improvements will enhance the aesthetics, provide year-round interest, improve water quality, and create a lush naturalized shoreline.

KEY BENEFITS

- Screens littoral shelf from roadway and path
- Improves water quality and lake health
- Provides erosion control and bank stability
- Enhances habitat for pollinators and wildlife
- Creates seasonal color and visual interest

PANAMA ROSE (SHRUB)



Evergreen shrub with vibrant pink blooms nearly year-round. Excellent for mass plantings, screening, and adding color to the landscape.

PROPOSED PLANT MATERIAL

LAKE BANK PLANTS (UPLAND BUFFER)

'Red' Copperleaf  Bold, tropical foliage provides rich color and contrast throughout the year.	'Java White' Copperleaf  Variegated foliage adds brightness and contrast in the landscape.	Silver Buttonwood  Native, salt-tolerant shrub with silvery foliage. Excellent screening and structure.	Muhly Grass  Ornamental grass with beautiful pink blooms in fall. Adds softness and movement.	Cord Grass  Native shoreline grass that stabilizes banks and provides texture and height.	Panama Rose  Evergreen shrub with vibrant pink blooms nearly year-round. Excellent for mass plantings and screening.
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LITTORAL (AQUATIC) PLANTS

Pickeralweed  Purple flower spikes bloom spring through fall. Attracts butterflies and pollinators.	Golden Canna  Bright yellow tropical blooms add vibrant color and height in shallow water.	Duck Potato (Arrowhead)  White blooms and broad arrow-shaped leaves. Great for shoreline coverage.	Blue Flag Iris  Striking blue-purple blooms in spring. Hardy and effective in wet conditions.	Swamp Lily  Large white, fragrant flowers. Adds elegance and thrives in shallow water.
Spikerush  Forms dense clumps that provide texture and habitat for wildlife.	Bulrush  Tall vertical form provides screening, habitat and shoreline stabilization.	ABOUT THE LITTORAL PLANTINGS Approximately 22,000 littoral plants will be installed on the littoral shelf with a mix of flowering and non-flowering species. These plants help improve water quality by absorbing nutrients, provide habitat for fish and wildlife, stabilize shorelines, and create a vibrant natural appearance. The irrigation system (Phase 1) will provide supplemental watering during dry periods to help ensure plant establishment and long-term success.		



A thoughtfully designed landscape that enhances beauty, improves lake health, and brings lasting value to the community.

Sheet 2 — Irrigation Zone Plan

Retention area irrigation zone map.



Zones: Main Line 2", Zone 1 Rotors, Zone 2 Rotors, Zone 3 Rotors, Zone 4 Rotors, Zone 5 Rotors.

Buffer Planting Quantities

Plant quantities called out from the Flow Way CDD Lake #11 Buffer landscape design plan (Quantities).

Species	Container Size	Quantity
Red Copperleaf	7 gal	17
Silver Buttonwood	7 gal	24
Muhly Grass	1 gal	700
Panama Rose	3 gal	30
Native Aquatic Plants	—	22,000
Weeping Bottlebrush	45 gal	4
Green Buttonwood	45 gal	4
Sea Grape	45 gal	4