



# Department of Public Works

## Lake Shore Drive – Swale Trees Challenge



# Current Situation Overview

- **Location:** West side swale of Lake Shore Drive Corridor
- **Design:** The swale is designed to retain water for prolonged periods, helping manage stormwater runoff.
- **Current Tree Species:** Silver Buttonwood (original design).
- **Issues:** The Silver Buttonwood requires well-drained soil, but the swale area has medium-drain soil, which retains more moisture than is suitable for this species.
- **Cost:** Replacing nine Silver Buttonwood trees costs \$1,575 (excluding labor).
- **Current Condition:** Some Silver Buttonwood trees have already died; others are in poor health and unlikely to survive in this environment.



# Silver Buttonwood – Unsuitable for Swale Environment

**Native Habitat:** Coastal environments where soil drains quickly.

**Soil Preference:** Well-drained, sandy soils.

**Moisture Tolerance:** Poor adaptation to prolonged moisture or saturated soils.

**Salt Tolerance:** High, ideal for coastal regions but not suited to swale-like, moisture-retaining environments.

**Why It's Failing in the Swale:**

**Soil Type:** Medium-drain soil retains more moisture than Silver Buttonwood can tolerate.

**Moisture Retention:** The swale's function to retain water causes prolonged exposure to moisture, leading to root rot and poor tree health.

# Palm Tree Substitution Plan



We have researched palm species that are more suitable for this specific swale environment and present the following options. These palms can better tolerate moisture, medium-drain soils, and, where necessary, salt tolerance.



# Palm Tree Options

## **Dypsis Lutescens (Areca Palm)**

Moisture Tolerance: Moderate.

Soil Texture: Prefers well-drained but adaptable to medium-drain soils.

Salt Tolerance: Low.



## **Saw Cabbage Palm (Sabal minor)**

Moisture Tolerance: High tolerance to wet soils.

Soil Texture: Adaptable to various soil types, including medium-







# Palm Tree Options

## **Carpentaria Palm (*Carpentaria acuminata*)**

Moisture Tolerance: Prefers moist conditions.

Soil Texture: Thrives in loamy, moist soils.

Salt Tolerance: Low.



## **Yellow Butterfly Palm (*Chrysalidocarpus lutescens*)**

Moisture Tolerance: Moderate to high.





# Palm Tree Options

## **Date Palm (*Phoenix dactylifera*)**

Moisture Tolerance: Low to moderate.

Soil Texture: Prefers well-drained soil.

Salt Tolerance: High.



## **Solitaire Palm (*Ptychosperma elegans*)**

Moisture Tolerance: Moderate.

Soil Texture: Adapts to loamy or medium-drain soils.





# Palm Tree Options

**Royal Palm (Roystonea regia)** Moisture Tolerance: High; can tolerate wet soils.  
Soil Texture: Thrives in moist, fertile soils.  
Salt Tolerance: Moderate.



**Cabbage Palmetto (Sabal palmetto)**  
Moisture Tolerance: High tolerance to moisture.  
Soil Texture: Grows well in moist, sandy, or loamy soils.





# Palm Tree Options

## **Key Thatch Palm (*Thrinax morrisii*)**

Moisture Tolerance: Moderate.

Soil Texture: Prefers sandy soils but tolerates various types.

Salt Tolerance: High.





# Proposed Next Steps

- Request the Commission's guidance on selecting the appropriate palm species for replanting in this swale.
- Evaluate the acquisition and implementation cost for the recommended Palm tree.