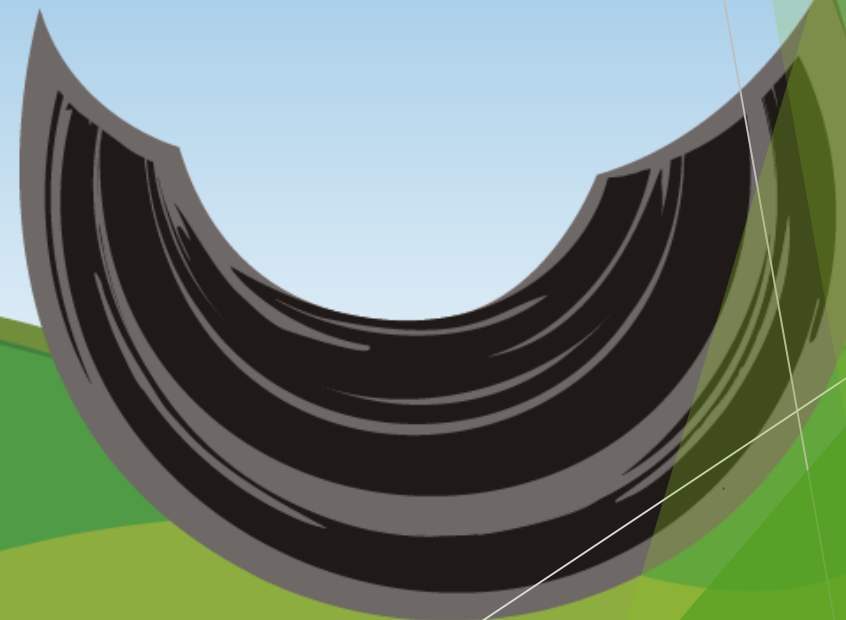


Swale Liner Discontinuation Plan

Presented by: Amy Eason, PE

Executive Project
Manager Stormwater





History

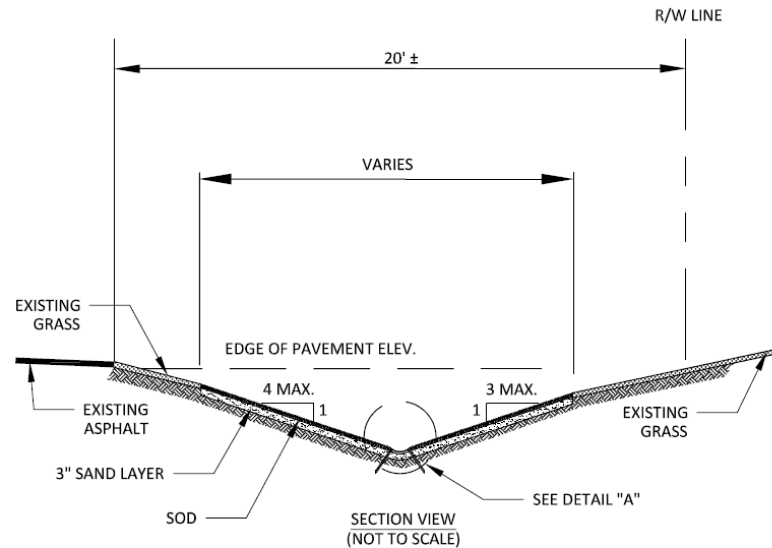
- ▶ Council requested staff to re-evaluate the use of swale liner as part of the stormwater system on February 24, 2021 and July 21, 2021
- ▶ Staff presented on November 21, 2022 the results
- ▶ Council motioned and approved the discontinuation of the swale liner program to transition into a swale re-work program



Implementation Areas

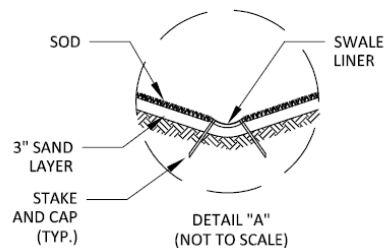
- ▶ Ordinance
- ▶ New Swale Liner Installation/Repair
- ▶ Swale Liner Maintenance

Ordinance



NOTES

1. SWALE LINER: 1/4 SECTION OF 12" ID SMOOTH INNER WALL PERFORATED BLACK POLYETHYLENE PIPE.
2. STAKE AND CAP: 1/2" DIAMETER X 12" LONG PVC WITH CAP THRU LINER AT CORRUGATION AT 2' INTERVALS.
3. PROVIDE A 1-1/2" GAP BETWEEN LINER SECTIONS FOR EXPANSION.
4. SWALE LINER, STAKES, AND CAPS PROVIDED BY THE PUBLIC WORKS DEPARTMENT.

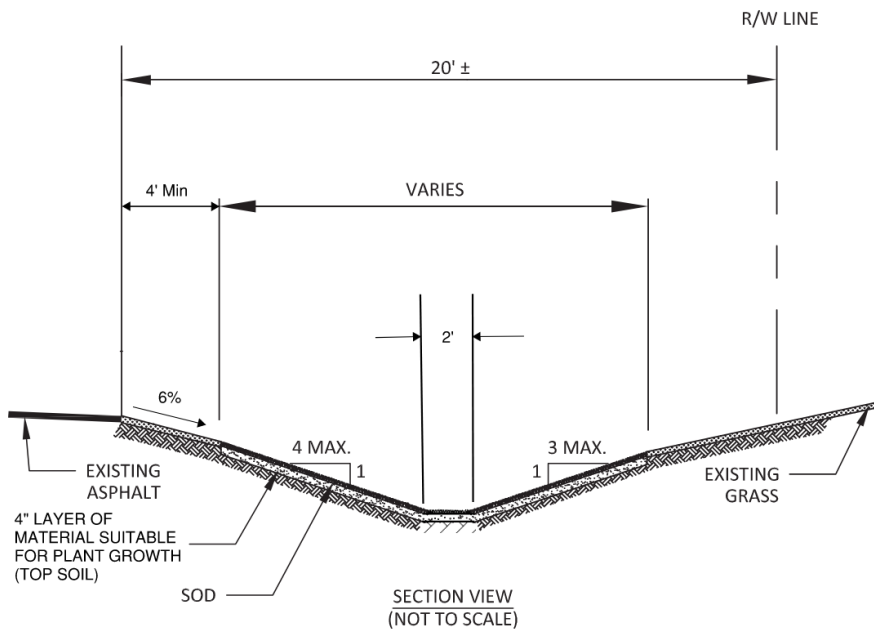


- ▶ Second Reading for the deletion of the requirement of swale liner for new construction or reinstallation in the permits and as specified in the Engineering Standards for Land Development - Section 56.22(g)
- ▶ Section 32.38(a)(19) - lists the liner as part of the stormwater system that Public Works manages. (Change later)
- ▶ Section 41.08 (g) - requires it to be maintained by the owners of improved property (Change later)
- ▶ Various references in the Engineering Standards for Land Development (Change this year)



New Swale Liner Installation/Repair

- ▶ No more new swale liner to be installed
- ▶ Notice will be provided to pipe vendor cancelling future purchase of liner
- ▶ Residential Review and Permitting Guidelines will be modified (aka Permitting Forms)
- ▶ Instead of repairing swale liner, City will remove the swale liner and apply new swale section





Swale Liner Maintenance

OPTION 1

- ▶ Cancel maintenance contracts in the next 60 days
- ▶ Landowner's responsible for the cleaning.
- ▶ Leave swale liner in until re-work program occurs

OPTION 2 (STAFF RECOMMENDATION)

- ▶ Continue maintenance for this Fiscal Year (2022-2023)
- ▶ Reduce the amount in next Fiscal Years
 - ▶ 3 cleanings in FY 2023-2024
 - ▶ 1 cleaning in FY 2024-2025
 - ▶ 0 cleaning beyond

OPTION 3

- ▶ Remove all swale liner with current maintenance contractor
- ▶ Either add sod or leave until re-work program occurs

Communications Plan

Internal Communication (Week of Feb 13, 2023)

Citizen Summit (February 18, 2023)

Social Media Campaign (week of February 27, 2023)

Press Release (March 3, 2023)

Letters with Brochure for 1 PSL requests (after Summit)

Utility Bill Insert (early March)

Email Blast (Late February/Early March)

Videos

BROCHURE FRONT

FAQ FREQUENTLY ASKED QUESTIONS

WHAT IS A SWALE LINER?

A plastic swale liner is placed at the bottom of the swale to move stormwater through the system.

WHY DID THE CITY INITIALLY INSTALL SWALE LINERS?

Historically, Port St. Lucie wasn't properly designed, and a plastic swale liner was a solution in 1980s to prevent flooding in residential areas. It was believed that the liner would move water and help maintain a consistent grade. Over the decades, research showed that it actually decreases the flow capacity compared to a typical swale with a flat bottom.

WHAT IS A SWALE?

The swales are designed to collect storm water and deliver the runoff to canals and waterways prior to discharging to the river.

WILL THE CITY STILL INSTALL SWALES?

Yes, the City will continue to install and repair residential swales throughout the City, but going forward they will not include the plastic liners.

WHOSE RESPONSIBILITY IS IT TO MAINTAIN SWALES?

It is responsibility of property owners to maintain that portion of the street/road right-of-way from the edge of the pavement to the owner's property line. Learn more at Maintenance of Right-of-Way Code Ordinance Sec. 41.08.

STORMWATER OVERVIEW

The City's stormwater program is comprised of:

917
miles of roadway

1,200
miles of swales

200
miles of canals

6,000+
culverts

1,460+
acres of lakes and ponds

180+
control structures

3
pump stations

294
miles of curbing

CONTACT INFORMATION

For more information on your swale visit:

www.CityofPSL.com/swale

or call 1PSL at

772-871-1775



PORT ST. LUCIE IS DISCONTINUING THE SWALE LINER PROGRAM

City of Port St. Lucie's
Public Works Department



BROCHURE BACK

THE CITY OF PORT ST. LUCIE WILL NO LONGER USE SWALE LINERS.

HERE'S WHY:

REDUCE FLOOD PROTECTION

Swale liners reduce the amount of water collected within the swale and actually decrease the flow capacity compared to a typical swale with a flat bottom.

DECREASED WATER QUALITY

Swale liners contribute to worsening water quality. The plastic liner prevents runoff from infiltrating into the ground for valuable treatment. About half an inch of rainfall is not being treated.

Swale liners also transport more pollutants and sediment into the primary and secondary stormwater systems, which all discharge into the St. Lucie River and Estuary.

HIGH COST

Yearly installation and maintenance costs are approximately \$3.5 million, which is 10% of the City's stormwater budget. This is taking crucial funds away from critical capital projects and the replacement of aging infrastructure.

MAINTENANCE

The City expends \$2.4 million to clean swale liner six times a year. However, without the liners, swale maintenance can be reduced to once every 5 to 10 years, dependent on soil conditions.

EROSION

The lining of swales is only needed in high-velocity situations to prevent erosion. According to the Department of Transportation, sod is suitable for swales. PSL's swale slopes are shallow, flat and the water does not reach high-velocities.

CITY COMPARISON

Port St. Lucie is the only municipality in Florida to use swale liners. The City of Sebastian dropped its swale liner program in 2016 because of the high cost.

MOVING FORWARD PORT ST. LUCIE IS:

- Discontinuing the swale liner program.
- Removing existing swale liners as the City maintains and regrades residents' swales.
- Establishing a program to re-configure residential swales, including removing the sediment buildup on the slopes and re-establish swale grades for positive drainage.

Comments or Questions

Council Support on...

- ▶ Swale Liner Maintenance
- ▶ Communication Plan