Canal Current

A wave of information for Cape Coral's Canalwatch volunteers

Newsletter: 1st Quarter 2023

Environmental News

Save Our Swales

What are Swales

Swales are a commonly used stormwater conveyance. Essentially, they are a shallow, vegetated, open channel. The function of a swale is straightforward; collect runoff and convey it to the next stormwater infrastructure. Additionally, swales are often the first means in treating runoff to reduce pollutants.

Much like a ditch, swales collect stormwater from roadways, driveways, parking lots and other non-porous surfaces. However, there are some differences as well. Swales are shallow with gradually sloping sides and are wider than they are deep.

Why are Swales Important

Due to their design (wider than they are deep, usually a 6 : 1 ratio), stormwater is dispersed over a greater area, slowing the runoff and allowing it to temporarily pond and percolate through the soil. By reducing the runoff's speed, vegetation buffers the stormwater to remove sediments, horticultural material, pollutants such as fertilizers or pesticides, and roadway contaminants such as oil, brake dust and tire rubber particles.

Ponding of runoff in the swale provides another valuable function. Allowing the water to saturate the soil. This helps to reduce the volume of stormwater and amount of pollutants to receiving waterbodies.

The design of swales makes them easier to maintain vegetation, such as turf grass. Properly maintained vegetation lessens erosion that can cause issues with sedimentation of receiving waterbodies.

Why Manage Runoff

The urban environment is comprised with numerous examples of impervious surfaces. Roads, parking lots, driveways, and rooftops of homes, and shopping centers. Due to the pavement, stormwater can no longer reach the soil in those areas. Because it cannot percolate, rainfall becomes stormwater runoff.

As more land is converted from a natural or rural state to an urban metropolis, the volume and speed of runoff, and pollutant loading increases. To minimize flooding, protecting lives and property, and to reduce pollution of waterbodies, stormwater management practices are used to capture, slow, and buffer the runoff.

Inside This Issue:

Questions? Comments? Let us know!

(239) 574-0742
Harry: hphillips@capecoral.gov

How can you help

Maintaining your swale is the first step in making sure the swale functions properly. Keeping vegetation such as turf grass or native ground cover healthy and making sure there is no bare soil.

Keep swales debris free. Remove excess horticultural materials or grass clippings. Don't apply or limit the use of fertilizers, pesticides, and herbicides.

Make sure roof gutter down spouts are directed to landscape beds or lawn areas and not on driveways or impervious areas.

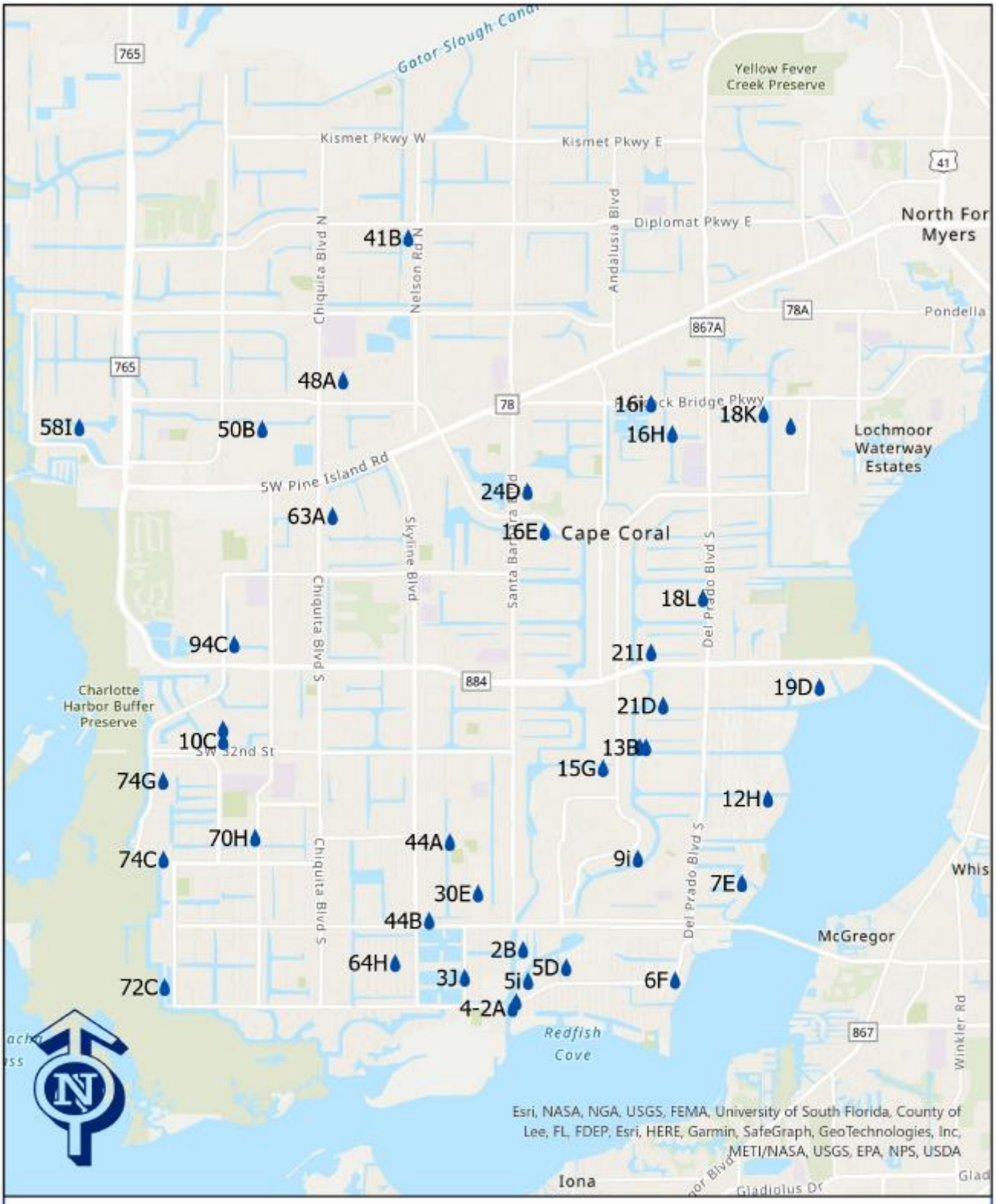
Do not park vehicles in the swale as this can compact the soil reducing the amount of runoff that can soak in.

Remember; Runoff should temporarily pond in the swale for 24 to 72 hours depending on the rain event.

For swale drainage issues or regrading, please contact the City of Cape Coral 311 Call Center. Just dial 311 or email at 311@capecoral.gov

Above: Residential swale during a rainfall.

Left: Catch basin covered with horticultural debris and grass clippings. Remember to keep catch basins and under driveway culvert pipes free of debris to prevent flooding and pollution.



City of Cape Coral Canalwatch Stations

Coordinated by Harry Phillips
Environmental Resources Division, City of Cape Coral

2023

	bd = below detection				benchmark numbers: Marked data are in the highest 20% of values found by Hand et. al, 1988.														
	January 2023						February 2023						March 2023						
	NO2	NO3	NH3	TKN	T-N	T-PO4	NO2	NO3	NH3	TKN	T-N	T-PO4	NO2	NO3	NH3	TKN	T-N	T-PO4	Avg
	<1.0	<1.0	none set		<2.0	<0.46	<1.0	<1.0	none set		<2.0	<0.46	<1.0	<1.0	none set		<2.0	<0.46	TSI
4-2A							0.1	0.22	0.1	0.3	0.52	0.08							32.35
5D							0.1	0.14	0.1	0.2	0.34	0.08							34.64
7E	0.1	0.23	0.2	1.1	1.33	0.1	0.1	0.27	0.1	0.5	0.77	0.11							54.44
9H	0.1	0.15	0.2	1.3	1.45	0.1	0.1	0.23	0.1	0.6	0.83	0.09	0.1	0.01	0.1	0.90	1.01	0.17	58.81
12H	0.1	0.21	0.1	1.3	1.51	0.1	0.1	0.25	0.1	0.7	0.95	0.12	0.1	0.01	0.1	0.90	1.01	0.16	52.68
13B	0.1	0.05	0.1	1.0	1.05	0.1							0.1	0.01	0.1	0.70	0.81	0.18	59.89
15G	0.1	0.11	0.2	0.8	0.91	0.1	0.1	1.94	0.1	0.4	2.34	0.06	0.1	0.03	0.1	0.70	0.83	0.15	53.22
16E	0.1	0.04	0.1	1.0	1.04	0.1	0.1	0.02	0.1	0.6	0.62	0.03	0.1	0.03	0.1	0.90	1.03	0.17	54.77
16I	0.1	0.04	0.1	0.9	0.94	0.1	0.1	0.02	0.1	0.6	0.62	0.05	0.1	0.01	0.1	0.60	0.71	0.16	51.43
18K	0.1	0.04	0.1	1.0	1.04	0.1	0.1	0.02	0.1	0.8	0.82	0.04	0.1	0.01	0.1	0.70	0.81	0.16	58.30
18L	0.1	0.04	0.1	1.6	1.64	0.2	0.1	0.22	0.1	0.9	1.12	0.12	0.1	0.01	0.1	1.00	1.11	0.2	61.21
18M							0.1	0.02	0.1	0.5	0.52	0.05	0.1	0.01	0.1	0.80	0.91	0.18	53.75
19D	0.1	0.19	0.1	1.8	1.99	0.1	0.1	0.34	0.1	1.0	1.34	0.10	0.1	0.03	0.1	0.80	0.93	0.17	62.62
21D	0.1	0.11	0.1	1.1	1.21	0.1	0.1	0.14	0.1	0.8	0.94	0.07	0.1	0.03	0.1	0.80	0.93	0.18	58.59
21I	0.1	0.04	0.1	1.4	1.44	0.1							0.1	0.01	0.1	1.60	1.71	0.19	64.15
24D	0.1	0.04	0.2	0.9	0.94	0.1							0.1	0.01	0.1	0.60	0.71	0.16	51.99
30E	0.1	0.05	0.1	0.6	0.65	0.1	0.1	0.04	0.1	0.3	0.34	0.04	0.1	0.02	0.1	0.60	0.72	0.16	43.87
41B							0.1	0.02	0.1	0.6	0.62	0.03							45.70
44A	0.1	0.04	0.1	0.8	0.84	0.1							0.1	0.03	0.1	0.60	0.73	0.16	51.38
44B	0.1	0.04	0.1	0.8	0.84	0.1													52.55
48A	0.1	0.05	0.1	1.2	1.25	0.1	0.1	0.02	0.1	0.4	0.42	0.03							55.81

50B	0.1	0.10	0.1	0.9	1.00	0.1	0.1	0.04	0.1	0.6	0.64	0.03							52.24
58I							0.1	0.03	0.1	0.1	0.13	0.08	0.1	0.01	0.4	0.60	0.71	0.16	40.73
64H	0.1	0.11	0.1	0.1	0.21	0.1	0.1	0.13	0.1	0.1	0.23	0.07	0.1	0.05	0.1	0.40	0.55	0.17	32.05
70H	0.1	0.04	0.2	0.8	0.84	0.1	0.1	0.02	0.1	0.3	0.32	0.07	0.1	0.02	0.1	0.60	0.72	0.17	44.30
72C	0.1	0.14	0.1	0.1	0.24	0.1	0.1	0.08	0.1	0.3	0.38	0.08	0.1	0.01	0.1	3.80	3.91	0.18	46.29
74C	0.1	0.04	0.2	0.9	0.94	0.1							0.1	0.01	0.1	0.60	0.71	0.18	49.09
74G							0.1	0.02	0.1	0.5	0.52	0.08	0.1	0.01	0.2	0.70	0.81	0.18	38.96
82A	0.1	0.04	0.1	0.1	0.14	0.1	0.1	0.02	0.1	0.1	0.12	0.04	0.1	0.01	0.1	0.40	0.51	0.18	41.96
94C	0.1	0.06	0.1	0.9	0.96	0.1	0.1	0.03	0.1	0.6	0.63	0.08							51.02
Median		**0.05**	**0.10**	**0.90**	**0.98**	**0.10**		**0.04**	**0.10**	**0.50**	**0.62**	**0.07**		**0.01**	**0.10**	**0.70**	**0.81**	**0.17**	**52.12**
Max		**0.23**	**0.20**	**1.80**	**1.99**	**0.20**		**1.94**	**0.10**	**1.00**	**2.34**	**0.12**		**0.05**	**0.40**	**3.80**	**3.91**	**0.20**	**64.15**

NO2 = Nitrite (inorganic)	TKN = Total Kjeldahl Nitrogen (organic + NH4)
NO3 = Nitrate (inorganic)	TN = Total Nitrogen (inorganic + organic)
NH3 = Ammonia (inorganic)	TPO4 = Total Phosphate

High levels of nutrients in our canals can indicate the presence of fertilizer runoff or effluent from wastewater or septic systems. Excessive nutrients can lead to nuisance plant growth and algal blooms.

All nutrient concentrations shown in mg/L

TSI = Trophic State Index, a quick indicator of canal health. 30 sites this quarter scored as GOOD (<60). Zero site scored FAIR (60-70), and zero scored POOR (>70).

First quarter 2023 water quality continued to improve with the lack of stormwater influence and further recovery from Hurricane Ian rainfall runoff. However many canals became drastically low in the freshwater basin areas resulting in some emergency measures to pump water from a reserve reservoir in Charlotte County. Rains began in late May associated with the onset of the rainy season and June continued to be a wetter month. Fortunately, this also began the fertilizer black out period.

For up-to-date City of Cape Environmental Resources Division water quality date visit
https://www.capecoral.net/department/public_works/quarterly_water_quality_reports.php

Florida-Friendly Landscaping™ PROGRAM

Join us for a free class to learn the 9 principles that guide Florida Friendly Landscaping (FFL) in Lee County. Each principle is covered so you can apply what you learn to your own garden.

Among the topics of discussion:

- **Plant selection and placement**
- **Efficient irrigation**
- **Mulching and fertilization**
- **Attracting wildlife**
- **Pest management**
- **Yard waste & recycling**
- **Protecting the water supply & waterfront**

Register for Upcoming Summer/Fall 2023 Free Classes

DAY	DATE	TIME & LOCATION
Saturday	6/24/23	10am-Noon @ Estero Rec. Ctr., 9200 Corkscrew Palms Blvd. Estero
Friday	7/21/23	6-8pm @ Rotary Park, 5505 Rose Garden Rd. Cape Coral
Saturday	9/23/23	10am-Noon Online via Zoom
Thursday	10/26/23	1-3pm Online via Zoom
Friday	11/3/23	1-3pm @ Rotary Park, 5505 Rose Garden Rd. Cape Coral
Saturday	11/18/23	10am-Noon @Rotary Park, 5505 Rose Garden Rd. Cape Coral

In-person Class Registration:
https://fflwsp23.eventbrite.com/

Online Zoom Class Registration:
https://FFLwspZM23.eventbrite.com

RAIN BARREL WORKSHOPS: Make and take home a Rain Barrel and learn why it's a great ideal
Call Rotary Park (239) 549-4606 to register and pre-pay. Charge $50.

Saturday	7/22/23	10-11am @ Rotary Park, 5505 Rose Garden Rd. Cape Coral

Native Plant Sale

Saturday	7/22/23	9am-1pm @ Rotary Park, 5505 Rose Garden Rd. Cape Coral

UF IFAS Extension UNIVERSITY of FLORIDA

FLORIDA MASTER GARDENER VOLUNTEER

The Lee County Extension Office is a division of the University of Florida,Institute of Food and Agricultural Sciences. Our mission is to respond to Lee County issues and needs through customized education and training in agriculture/natural resources, horticulture 4-H/youth development, marine education, Florida yards and neighborhoods, and family and consumer science.

Lee County Parks & Recreation

City of Cape Coral
Environmental Resources
815 Nicholas PKWY
Cape Coral, FL 33990

Cape Coral
FLORIDA

FERTILIZER RESTRICTIONS
JUNE 1 - SEPTEMBER 30

1 CHOOSE CAREFULLY

Fertilizers containing nitrogen or phosphorus are not permitted between June 1 and September 30.

2 FERTILIZER-FREE ZONE

Fertilizer cannot be used within 15 feet of any body of water.

3 INCOMING STORMS

No fertilizer is allowed if a flood, tropical storm, or hurricane watch or warning is in effect.

4 WATCH FOR DEBRIS

No grass clippings or debris may be swept or blown into storm drains, streets, or waterways.

5 NO PHOSPHORUS

Phosphorus fertilizer is not permitted unless a soil test performed in the past two years identifies a deficiency.