

OUR WATERWAYS

South Florida's stormwater management system originated early in the 20th century when Governor Napoleon Broward introduced the first network of waterways by lobbying to drain the Everglades. After overcoming some resistance, Broward achieved enough support to construct a primary drainage system which was intended to promote farming and provide a means of transportation. A secondary surface water system was then constructed primarily by developers throughout the mid-1900's to drain large tracts of land for advancing development. This secondary waterway system has become Tamarac's current means of transporting stormwater to the primary drainage systems. Tamarac's waterways (secondary drainage system) has a network of canals and lakes that cover an area of 523 acres. Approximately 60% of the City's stormwater, west of NW 64th Avenue, drains into the C-14 canal (located along Tamarac's northern city limits) that connects the Everglades to the Atlantic Ocean. The City has three stormwater pump stations along the C-14 canal that control its waterway levels during major storm events. Areas east of NW 64th Avenue drain by gravity flow into the C-13 canal that also connects the Everglades to the Atlantic Ocean. The City constantly monitors surface water levels to ensure proper maintenance levels are always met and the potential risk of flooding is avoided.

STORMWATER MANAGEMENT



In South Florida, we face extreme weather cycles. We spend part of the year hoping for rain to come and the other part wishing it would go away. We can't control the rain, so we have to manage our water resources. Surface water relies on gravity flow for conveyance, therefore, swales, canals, lakes and wetlands play a significant role in managing our rainfall while adding natural beauty to our neighborhoods. South Florida is comprised of flat low-lying areas that become quickly saturated by rainfall. As a result, standing water in streets and yards is a common part of life. Within a few days of a heavy rain, the water will recede as it moves through these retention areas by soaking into the ground or evaporation. By catching, storing and moving rainfall runoff, the water management system helps prevent flooding, recharges our drinking water supplies, and ensures the water in the system is good quality.

WATER QUALITY AND WATER POLLUTION MITIGATION



Excess rain or stormwater runoff that flows over unpaved areas, construction sites, streets, parking lots and golf courses can cause stormwater pollution by washing nutrients, debris, sediment, grease, and oil, into our waterways. This pollution can be damaging to our environment, ecology, surface water and sometimes the groundwater aquifers (our drinking water supply). The Environmental Protection Agency (EPA) has mandated that municipalities obtain a National Pollutant Discharge Elimination System (NPDES) permit that requires a series of programs to control the flow of stormwater pollutants into our waterways. With Broward County as the lead agency, the City of Tamarac actively participates in stormwater management programs to ensure compliance and the protection of our most precious resource...water.

The City of Tamarac has implemented several effective pollution prevention measures:

- Regular cleaning of the storm drainage system to reduce the amount of debris and contaminants that can flow into our waterways.
- Regular street sweeping reduces the amount of pollutants reaching our waterways.
- Enforcing strict engineering requirements for all development to ensure that stormwater systems are constructed in accordance with best management practices (BMP's) outlined in federal, state, and local regulations.

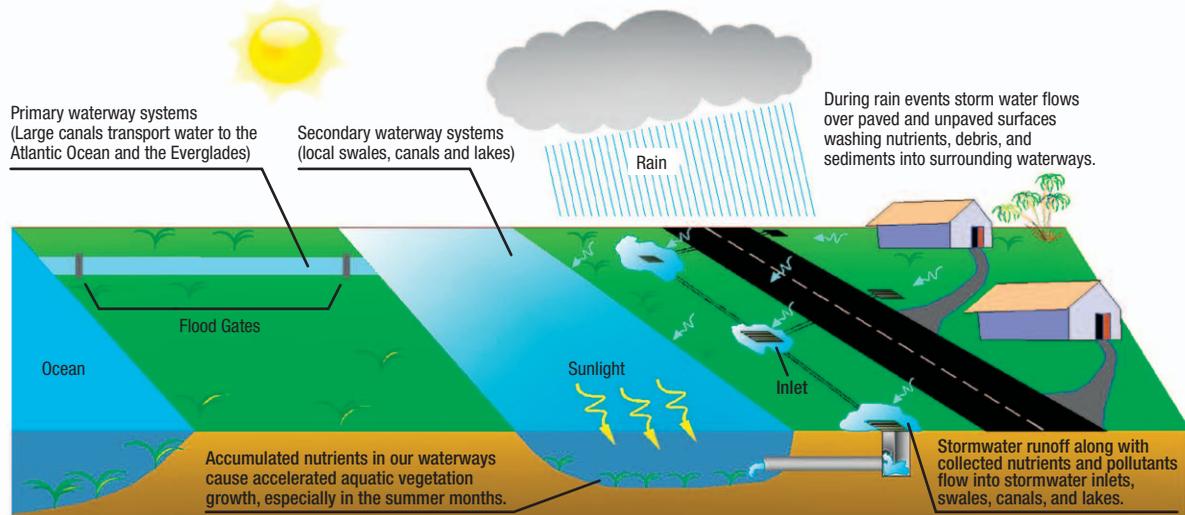
AQUATIC VEGETATION

One detrimental effect of stormwater runoff is that as the water flows, it continually picks up contaminants. A major contaminant is lawn and garden fertilizer within our residential communities. The stormwater becomes rich in nutrients as the nitrogen and phosphorous dissolve and move down stream. This supercharged water can accelerate the growth of aquatic plants and algae in water bodies, especially when it is shallow. The four most common aquatic plants found in our waterways are hydrilla, hygrophila, vallisineria and spadderdock. These plants proliferate more during the summer months when the City must keep the canal levels low and provide maximum storage to minimize flooding. To clean the canals, the City applies herbicides approved by the Department of Environmental Protection (DEP) in a controlled manner, along with the mechanical removal of underwater plants. Plant-eating fish called grass carp have been introduced in many canals to feed on certain aquatic plants. Unfortunately, the grass carp offer only limited usefulness because they do not feed on every type of aquatic plant. Although it may seem desirable to keep the waterways clear at all times, the sub-tropical climate of South Florida makes this impossible. In addition, some vegetation must be retained in our waterways to support aquatic life.



**KEEP OUR CITY CLEAN
DON'T POLLUTE**

TYPICAL SOUTH FLORIDA DRAINAGE SYSTEM DIAGRAM



FREQUENTLY ASKED QUESTIONS

Q Why aren't aquatic plants completely removed?

A Regulatory agencies require that some vegetation remain to help maintain good water quality and provide a habitat for many types of fish and other forms of aquatic life.

Q What is the ugly looking scum that floats in my waterway?

A The floating substance is aquatic plant material that has been recently sprayed with herbicides. The herbicides kill off the targeted overgrowth underwater, however, due to the decomposition of the plant material, it eventually breaks off from the bottom of the waterway, floats to the surface, and presents itself as a scum looking material.

Q Why does the canal or waterway behind my home look worse after I have seen maintenance crews spraying?

A After the first spraying it can take between three to six weeks before floating scum breaks up and disappears. Note: Variables that affect reaction time are the depth of waterways and current weather conditions.

Q Why is my swale and driveway full of water?

A The engineering of surface water conveyance has many components such as drains, pipe networks, and channels. However, some of the most important elements to a drainage system are swales and areas to allow sheet flow over unpaved surfaces. Regulatory agencies require drainage components to allow water to collect, percolate, and filter through the soil and into our groundwater system. Please note that if your driveway has a low spot, water will collect both from rain and irrigation.



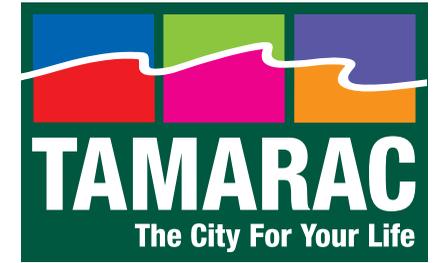
WHAT CAN YOU DO TO HELP?

- Keep storm drainage inlets free of trash, debris or other obstructions.
- Never discard paint, oil or other hazardous waste into the storm drains.
- Report illegal dumping of hazardous waste in any location.
- All painting supplies (brushes, roller, etc.) must be cleaned in a sink or area that is connected to a sanitary sewer. Never clean painting supplies over grass areas and especially not near a storm drain.
- Wash your vehicles over grass areas and use environmentally friendly cleaning supplies.
- Pick up after your animals. Fecal coliform is present in animal fecal matter which can contribute to surface and ground water contamination and nutrient loading.
- Maintain swale areas in good condition. Do not change the shape of swales or obstruct the path of stormwater flow.
- Do not be alarmed if swales are soggy and water remains up to 72 hours. Mosquitos do not breed until water ponds for at least 72 hours or more. Furthermore, most species of mosquitos require standing water for a minimum of 10 to 14 days to complete their development.
- Schedule your irrigation system timer to prevent constant accumulation of water in your swale and the waste of precious groundwater.
- Do not deposit yard waste, grass clippings or debris in waterways, storm drains, and remove all sediment and clippings from roadways and sidewalks when you complete your maintenance.
- Prune tree branches and shrubs hanging over waterways.
- Avoid fertilizing your lawn just before a rain event.

For questions or additional information,
please call the
Public Services Department at
(954) 597-3700
or visit our website at www.tamarac.org



The City of Tamarac
Public Services Department
6011 Nob Hill Road
Tamarac, FL 33321



STORMWATER & WATERWAYS



*A Guide to
Understanding the Issues*

