



City of Doral

Stormwater Master Plan

Frequently Asked Questions (FAQs)



City of Doral Stormwater Master Plan Frequently Asked Questions (FAQs):

1. What is the purpose of the Stormwater Master Plan (SWMP) and how is it developed?
 - a. A SWMP is a planning-level engineering document that serves to analyze the current condition of the City's existing stormwater management (drainage) systems. This analysis serves to identify and prioritize areas where drainage systems are deficient and to what extent. After these problem areas are identified, preliminary drainage projects are developed and prioritized to help alleviate flooding in these areas. The SWMP also compares the cost of these projects to the City's budget and defines the implementation schedule for the defined projects.
 - b. For the analysis, the City is broken up into sub-basin which are basically areas which drain to a common low point, similar to a series of differently sized bowls. Each bowl has its own area and internal drainage systems. For the purposes of a SWMP, what moves stormwater inside each bowl is not the main concern but rather how the stormwater is conveyed from one bowl to another, ultimately going to a nearby canal, the groundwater table, or other body of water.
 - c. The analysis is performed using the existing drainage information from the City, County, and State and takes into account the major portions of the systems such as major drainage pipes connecting sub-basins, canals, and lakes. These drainage systems and the areas that drain to these systems are fed into a sophisticated stormwater modeling application which routes stormwater throughout the systems.
2. What are the limitations of the SWMP?
 - a. The SWMP is a planning tool. Therefore, it only takes into account the major portions of the drainage systems that exist, and it does not take into account the individual inlets and smaller systems that do not contribute to drainage from one sub-basin to another. This type of analysis is typically performed during the detailed design level studies and designs which usually take into account much smaller areas such as intersections, sections of roadways, and even small neighborhoods.
3. Why are SWMP updated about every 5-years?
 - a. SWMPs are typically updated every 5-years in order to assess the current condition of the City's drainage systems and is a requirement of the Federal Emergency Management Agency (FEMA) – this can ultimately affect flood insurance rates. Updates take into account projects that have been constructed since the last SWMP, newly developed areas, changes in local conditions such as adjustments in maintained canal stages, sea level rise (which affect all major canals and rivers for everyone), and land use changes.
4. How is the Stormwater Master Plan used by the City?
 - a. The SWMP document serves to support the City in making educated and scientifically substantiated decisions for the management of the City's drainage systems. It serves to provide a greater understanding of the City's existing drainage systems, identify areas of concern, and provide a recommendation for implementing future flood control projects on priority basis in order to provide the greatest benefit in the most cost-effective fashion.
5. What is flood protection level of service?
 - a. The level of service is defined as the level of flood protection a drainage system provides against a predefined rainfall event. For example, drainage systems must provide flood protection for buildings finished floor elevations up to a 100-year rainfall event, assuming the building was built in accordance with City of Doral regulations and building codes.
6. What is considered flooding?
 - a. Flooding is a relative term that is one of the most incorrectly used words when describing water that is sitting on the surface of an area. In most cases, flooding is defined as when a drainage system does not meet the intended flood protection level of service or exceeds the designed capacity of a drainage system.
7. Who is responsible for deciding which projects are constructed first?
 - a. The SWMP will provide a listing of potential future projects prioritized using a system of assessing the greatest benefit and taking into account construction costs. This approach is based on getting the City the "biggest bang for its buck" for every project constructed.
8. Why is the stormwater not draining?
 - a. There are three primary reasons for flooding in developed areas.
 - i. Problem #1 – Maintenance issues – An inlet or pipe is obstructed by debris.
 - ii. Problem #2 – The system does not have the adequate capacity for the appropriate design event. This is mostly due to overdevelopment.
 - iii. Problem #3 – The rainfall event exceeds the design capacity of the drainage system.
 - b. When it rains, stormwater runoff needs to go somewhere. If we don't give it somewhere to go, that stormwater will just sit on the surface and evaporate and infiltrate slowly over time. Fortunately, Mother Nature has a system for handling stormwater runoff by allowing stormwater to percolate into the ground. This water penetrates the surface and recharges the groundwater table which is where County residents get their drinking water.



- c. The problems begin when we develop areas and cover up these naturally “pervious” areas with man-made “impervious” structures such as roadways, sidewalks, and buildings. This means that the remaining pervious areas now have to percolate additional stormwater into the groundwater table. If the capacity of the natural ground is exceeded, and the drainage systems are deficient in their design, flooding can occur.
9. What is a 5-year, 10-year, and 100-year design storm event, and how does that translate to rainfall amount?
 - a. Engineers and scientists use the 5-year, 10-year, and 100-year terms to identify the intensity and probability of a rainfall event occurring. These terms are called recurrence intervals and translate into a percent chance of a rainfall event occurring in any given year. For example, a 100-Year event does not only mean that the storm is one which will happen only once in a 100 year period, but it also has a 1% chance of occurring in any given year – this probability is easy to calculate and is just the number 1 divided by the recurrence interval . In all cases, a rainfall amount is associated with these recurrence intervals and these amounts are based on statistical analyses which take into account many years of rainfall data for a region. These rainfall depths are site specific and vary throughout the State and the world.
10. How does the City use the 5-year, 10-year, and 100-year design storm events for the design of drainage systems?
 - a. In most cases, the 5- and 10-year design storm events are used to size drainage systems to provide flood protection for collector and arterial roads.
 - b. The 100-years design storm event is used to establish the minimum finished floor elevations.
11. What is a Finished Floor Elevation?
 - a. The Finished Floor Elevation, or FFE, is the lowest habitable elevation of the structure in question.
12. Why can't you raise the road?
 - a. It may seem logical that the easiest and most viable solution for alleviating flooding is to raise the elevation of the road or property that is being affected by flooding. The reality is that this is not as simple as it sounds. If a government entity, private business, or homeowner raises their roads or property to avoid flooding, the area that they just filled is now not available for storing stormwater runoff. This water has to go somewhere, and in most cases results in an adjacent property getting that additional runoff and potentially causing flooding in an area that may not have otherwise flooded. This can propagate problems throughout the City.
13. When it comes to drainage, what is the City's responsibility?
 - a. The City is responsible for all City owned roads and roads which the City has an agreement with the County or State to maintain. Other areas exist within the City which are maintained, and are the sole responsibility of the County and the State (Florida Department of Transportation and South Florida Water Management District). These areas mostly include major roadways, highways, and some canals within the City.
 - b. The City is not responsible for the maintenance of private properties which include residential, commercial, and industrial lots, private parking lots, private roads, and common areas within private communities. If the property is owned by a private citizen or entity, the City does not have jurisdiction in order to address flooding in these areas.
14. I live on a private road. What can the City do for me if there is flooding on my privately owned road?
 - a. The City will work with a private owner/management company/Homeowners Association (HOA) and may provide guidance regarding the causes of flooding and how to best alleviate flooding.
15. Who should I contact if I have a problem concerning flooding in my area?
 - a. If you have a concern about flooding or a drainage system, you should call the City's Public Works Department. The City will help in either addressing your concern or use the information provided by the resident/business owner to contact the responsible entity, if the entity is a public entity. In the event that the area of concern is located in a private community or is a privately owned roadway, it will be necessary to contact the responsible property owner or Homeowners Association.
 - b. If there is a drainage problem in your area, you can contact the City of Doral at 305-593-6740 or email publicworks@cityofdoral.com with your concerns.

For further information contact:

City of Doral
305-593-6740
publicworks@cityofdoral.com

or

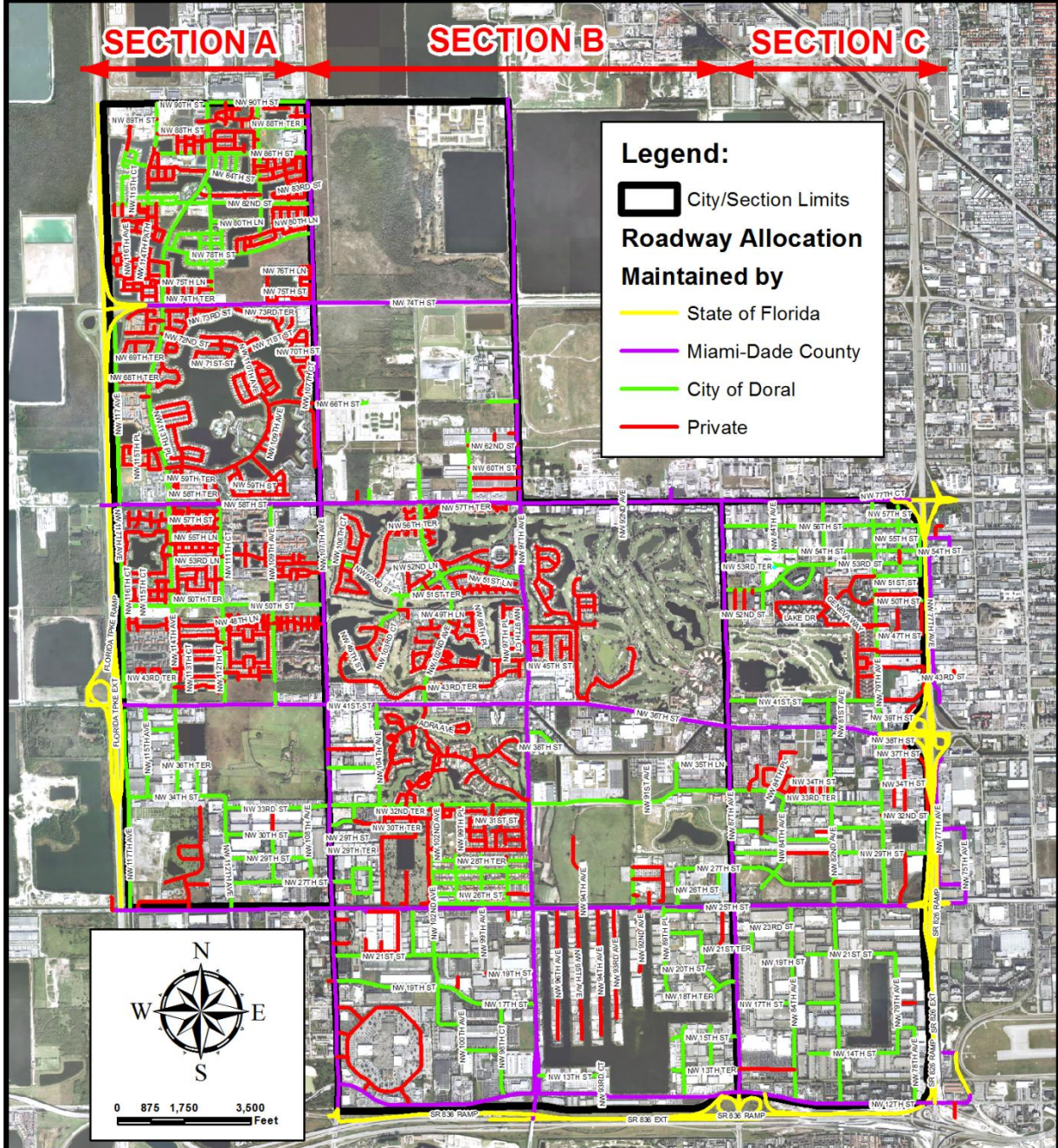
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City of Doral

Stormwater Master Plan

Public Outreach Open-House



Roadway Allocation Map

Prepared by A.D.A. Engineering, Inc.
for the City of Doral