



CHAPTER 9: STORM WATER MANAGEMENT

STORM WATER MANAGEMENT GOALS

The primary goals for managing storm water for the City of Charles Town are:

- *Provide water quantity and water quality management.*
- *Eliminate localized flooding from short intense storms as well as major catastrophic storm events.*
- *Encourage the use of new technologies and methods for managing storm water that assist in re-charging the underground aquifer*
- *Establish a comprehensive approach for managing storm water within the Urban Growth Boundary.*

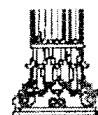
The City has a storm water management system that has grown inconsistently over the years. Some areas, mainly the Downtown area, have underground conduits to take the storm water and eventually discharge it to Evitts Run or some other natural drainage channel. The remainder of the city handles storm water by channeling along city streets in ditches and through private property. There are no current maps of the storm water system nor an overall storm water management plan.

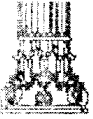
Some areas where storm water problems are known to exist include but are not limited to the following:

- Samuel Street and Liberty Street intersection
- Samuel Street between Liberty and North Street
- North Street between Samuel and Mildred Streets
- Charles Street and Liberty Street intersection and immediate area
- Sutter property
- Evitts Run floodway
- Greenfield Subdivision

Because the underlying geology is karst limestone, there are many sinkholes in the City. These sinkholes act as infiltration devices. The storm water gathers in these sinkholes and drains into the water table. This acts as a form of flood control but assists in polluting the water table. Although flooding is reduced, it is a temporary solution. The sinkholes will get larger as the limestone dissolves from the surface water. This can cause problems for nearby structures. The remedy has been generally to fill in the sinkhole with rock, debris, concrete, or even trash. However, the filling in of the sinkhole for any reason eliminates the ad hoc storm water pond/infiltration trench and the potential for flooding is increased.

As development occurs the amount of impervious surface (parking lots, roofs, etc.) increases, sinkholes, and other crevices are filled in, drainage swales rerouted and nature's way of handling storm water no longer works as it once did. The longtime residents notice that storms seem more severe and water runoff is no longer as predictable as before.





The Environmental Protection Agency (EPA) is mandating cleaning up water pollution in the nation's waterways. One emphasis of the EPA program is the cleaning of storm water. The rules do not apply as yet to cities the size of Charles Town, but they will during the next 5 – 10 years depending on population growth.

The City requires new developments to prepare storm water management plans as part of their overall infrastructure improvements for the development. However, there is no overall infrastructure plan for handling water quantity or surface water quality for the future.

RECOMMENDATIONS FOR STORM WATER MANAGEMENT

1. Prepare community-wide watershed management plan for storm water.
2. Map the existing storm water management infrastructure and drainage courses. Place the data into the City's GIS system.
3. Establish an annual preventive maintenance inspection program for the existing storm water infrastructure.
4. Review the storm water management facilities that the City has approved even though private parties such as Home Owner Associations are maintaining them. Evaluate the facilities to determine that they are meeting the City's standards as outlined in the city code.
5. Require developers of new projects to provide electronic mapping data of all utilities including storm water management infrastructure for use by the City in updating their database.
6. Establish water quality criteria and standards to be met by new developments in the design of storm water management infrastructure.
7. Tie the preservation of the natural features in the landscape to the storm water management program, using stream or drainage ways buffers for "first flush" (the first ½-inch of rainwater) treatment of storm water.

