

3. WATERSHED ISSUES & BACKGROUND

As of 1986, a majority of the St. Julian Creek watershed had been developed, primarily as residential and commercial/light industry parcels. Over the past 18 years or so, the watershed has continued to fill in. While several large tracts of marketable land remain, those along the creek are not ideally suited to accommodate development pressure, particularly given the low-lying, flat topography and tidally influenced drainage outfalls.

Heavy rainfalls, tides and storm surges have always created flooding problems in this watershed. Flooding in neighborhoods has been commonplace, and the City has considered several Master Drainage Plan improvements to lower the hydraulic profiles.

A previous Master Drainage Plan study of the St. Julian Creek watershed, completed in 1986, recommended six major drainage and storm water management improvements, including a bypass for Camelot Lake, and channel and culvert crossing improvements.

To date, the only storm water BMP constructed in this watershed was the improved culvert crossing at Deep Creek Boulevard (near Gilmerton Road), which was installed when the road was realigned.

St. Julian Creek, a tributary to the Southern Branch of the Elizabeth River, has elevations as low as 2 feet (NGVD88) extending 11,500 feet west from its confluence with the Elizabeth River back to Deep Creek Boulevard—roughly two-thirds of the effective length of the watershed. This low-lying topography contributes to frequent flooding but also provides well-defined outfall discharge locations for upland drainage areas.

The drainage and storm water management improvements suggested in the 1986 Master Drainage Plan are expensive and have been carefully considered by the Department of Public Works. Several million dollars worth of recommended improvements have not yet been completed under the 1986 plan, including:

- New double 5x5 box culverts at the CSX Railroad crossing near Gust Lane,
- New double 6x5 box culverts at Deep Creek Boulevard,
- New triple 6x6 box culverts at Romaron Street,
- New bypass weir at Camelot Lake, and
- Channel improvements between the new Camelot Lake weir and Deep Creek Boulevard.

As development pressures increased and flooding continued to be a problem in the Camelot neighborhood, the City decided to revisit the Master Drainage Plan for St. Julian Creek, specifically to update the plan and reassess whether or not the improvements recommended 18 years ago are still required.

In part, the new study described in this document benefits from a considerably greater amount of watershed and drainage information —primarily in the form of aerial imagery and GIS data—and from substantial improvements in stormwater modeling and computer technology that have occurred since 1986.