3. WATERSHED ISSUES & BACKGROUND

Over the past 18 years or so, Milldam Creek has been among the City's most actively developed watersheds. Its large tracts of marketable land located near the center of the City have made it attractive to developers. Unfortunately, the land is not ideally suited to accommodate development pressure, particularly given its 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 Milldam Creek watershed, completed in 1986, recommended five major drainage and storm water management improvements, including a new bridge at Campostella Road, new upstream storage basins, and channel and culvert crossing improvements.

To date, there have been relatively few storm water detention BMPs constructed in this watershed. However, as the remaining developable parcels are built out in accordance with prevailing state and local storm water management regulations, significantly more impoundments are expected.

Milldam Creek, a tributary to the Southern Branch of the Elizabeth River, has elevations as low as 2 feet (NAVD88) extending 12,000 feet east from its confluence with the Elizabeth River back to Military Highway—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. Private sector development has produced significant upstream storage facilities (near the I-64 interchange at Military Highway), fulfilling one of the key recommendations of the prior plan. Nevertheless, several million dollars worth of recommended improvements remained to be done under the 1986 plan, including:

- New quadruple 72-inch culverts at the Norfolk Southern Railraod crossing,
- A new 32-foot bridge at Campostella Road,
- Channel improvements between Campostella Road and Military Highway, and
- A new 6x6 box culvert crossing at Military Highway.

As development pressures increased, the City decided to revisit the Master Drainage Plan for Milldam 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 considerably greater watershed and drainage information—primarily in the form of aerial imagery and GIS data—and from substantial improvements in storm water modeling and computer technology that have occurred since 1986.

The City had several alternative improvement concepts in mind, including the consideration of additional flood storage between Military Highway and Battlefield Boulevard, and avoiding the proposed bridge at Campostella through the use of multiple, less expensive culverts. These and many other alternative scenarios were considered in the course of this study.