



City of Ann Arbor  
Footing Drain Disconnect Program *and*  
Sanitary Sewer System Flow Monitoring and  
Wet Weather Evaluation project

## Background and Purpose

The sanitary sewer system is designed to collect and move wastewater to the Ann Arbor Wastewater Treatment Plant (WWTP). Some stormwater also enters the sanitary sewer system by various means, such as flowing into the sanitary sewer manholes at street level, and seeping through small cracks in the underground pipes themselves. In addition, household footing drains present one of the most significant contributors of stormwater entering the sanitary sewer pipes.

Footing drains are permeable pipes buried approximately at the level of a home's basement floor; set around the perimeter of a house, the drains divert storm- and groundwater away from the foundation to help keep the basement dry. Prior to the 1980s, footing drains were frequently connected directly to the sanitary sewer pipes, which are set at about the same depth. The problem with this arrangement is that during a heavy precipitation event, footing drains contribute an enormous volume of flow to the sanitary system, which can exceed the capacity of the system to move flows to the WWTP. When the sanitary sewer system is over-capacity, sewage may enter residents' homes through basement floor drains or through lower elevation plumbing fixtures, and sewage may overflow from manholes. Additionally, flow to the WWTP may exceed the plant's capacity and result in the discharge of partially-treated wastewater directly into the Huron River.

For many reasons, this situation is unacceptable. In 1999, after repeated instances of sanitary sewer basement backups occurring in homes throughout the City of Ann Arbor, a special task force – comprised of homeowners, city staff, and experts in related disciplines – was established. The "SSO Prevention Advisory Task Force" was charged with (1) defining the scope of sanitary sewer overflow (SSO) and sewage backup problems due to wet weather conditions, and (2) identifying and evaluating a range of potential solutions that would minimize future sewage backup events. Guided by an overarching principle of minimizing adverse impacts on public health, personal property, and the environment, the Task Force evaluated potential solutions – including replacing the existing sanitary sewer pipes with larger pipes, constructing local sanitary storage systems, and disconnecting household footing drains – using a variety of selection criteria including quality of life, cost, and construction impacts.

In June of 2001, the Task Force presented the results of their analysis in the "Sanitary Sewer Overflow (SSO) Prevention Study." The document recommends the initiation of a comprehensive city-wide footing drain disconnection (FDD) program as the preferred solution. Though the program was designed for implementation throughout the city, five neighborhoods – representing about 5% of the geographic area and 50% of reported basement backup problems – were selected as "priority areas" where implementation would begin.

Also because of the sanitary sewer overflows at the WWTP, the City entered into an Administrative Consent Order (ACO) with the Michigan Department of Environmental Quality. One of the items contained in the ACO was that the City must implement an Offset-Mitigation Program. The purpose of



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this program is to prevent new developments from exacerbating sewage collection system capacity issues. Before receiving a Certificate of Occupancy for a new development, a developer is required to have mitigated the increase in sanitary sewage flow from the new development by removing existing flow from the city sanitary system.

Ann Arbor City Council approved an ordinance initiating the Footing Drain Disconnection Program in October 2001, and approved a resolution establishing the Development Offset-Mitigation Program in August 2003. Since the inception of these programs, over 2,500 footing drains have been disconnected throughout the City, including nearly 98% of the homes in the Bromley and Orchard Hills priority areas, and nearly 80% in the Dartmoor priority area. Footing drains in approximately 60% of homes in the Morehead priority area, and approximately 55% of homes in the Glen Leven priority area, *have also been disconnected.*

#### Timeline

In September 2012, Ann Arbor City Council suspended the FDD program in the Glen Leven and Morehead (Lansdowne Neighborhood) areas to allow for an examination of the local stormwater system and existing surfacing flooding that residents are experiencing in that area. In addition, City Council directed City staff to conduct a review of certain aspects of the Footing Drain Disconnection Program during this suspension.

In November 2012, the City of Ann Arbor issued a Request for Proposals (RFP) to conduct a "Sanitary Sewer System Flow Monitoring and Wet Weather Evaluation." With the FDD program having been in place for over 10 years, it is appropriate to evaluate and document the effectiveness of the program on reducing the impacts of wet weather events on the City's sanitary sewer system. This review will allow the City to assess the sanitary basement backup risk that remains in the original five priority areas, and to identify other areas in the City that may require mitigation of their sanitary basement backup risk. In addition, advances in technology and wet weather control methodologies may have occurred over the past decade; therefore, the complete range of methods available for the future reduction of wet weather impacts will be reviewed and evaluated. In early February, a resolution will be sent to City Council to approve an agreement with a consultant to perform the study and the associated public engagement. The study will begin upon Council approval and last approximately 18 to 24 months.

#### For more information and/or to become involved, please contact:

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