

STORMWATER CAPITAL IMPROVEMENT PLAN

AN UPDATE TO BETHLEHEM TOWNSHIP'S STORMWATER CAPITAL IMPROVEMENT PLAN

JULY 2024

Bethlehem Township implemented a stormwater capital improvement plan (CIP) to help meet the community's stormwater program needs including mitigation of decades-old flooding and water quality permit requirements. The establishment of a stormwater utility fee in 2022 has assisted in providing a dedicated revenue stream to complete the projects and address identified needs in the CIP.

The Stormwater Authority and stormwater fee has enabled Bethlehem Township to conduct a deliberate stormwater program for addressing its stormwater needs. This includes ongoing modeling and inspection of the stormwater system to identify areas of concern. Additionally, property owners can report stormwater concerns for Township review on the Township's website.

Bethlehem Township's stormwater program needs include operation and maintenance items along with larger capital improvements. These larger-scale projects involve designing and constructing new infrastructure to reduce flooding and enhance drainage patterns, as well as pollution reduction projects required by the state. To effectively handle these significant projects, Bethlehem Township created a CIP that outlines infrastructure enhancements for the next five years.

The CIP is updated based on known priority projects in Bethlehem Township, where sufficient information exists to determine the best solution. The plan provides a path forward to proceed with engineering, design, financing, and construction of the necessary improvements to address known areas of flooding. The Township recognizes that there are some areas where further study is needed to understand the stormwater issues and better identify appropriate solutions. As further assessment occurs, priority projects are completed, and new information becomes available Bethlehem Township will continue to update its CIP.



COMPLETED IMPROVEMENTS

1. **Washington Street Basin Retrofit** (near Freemansburg Ave) ✓
2. **Washington Street Basin Retrofit** (at Oliver Court) ✓
3. **Long Court Basin Retrofit** ✓
4. **Vintage Drive Basin Retrofit** ✓
5. **Bethman and Fairway Flood Mitigation Project** ✓



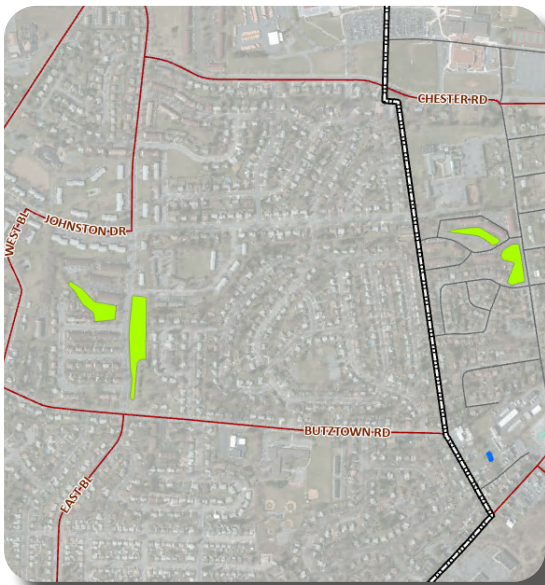
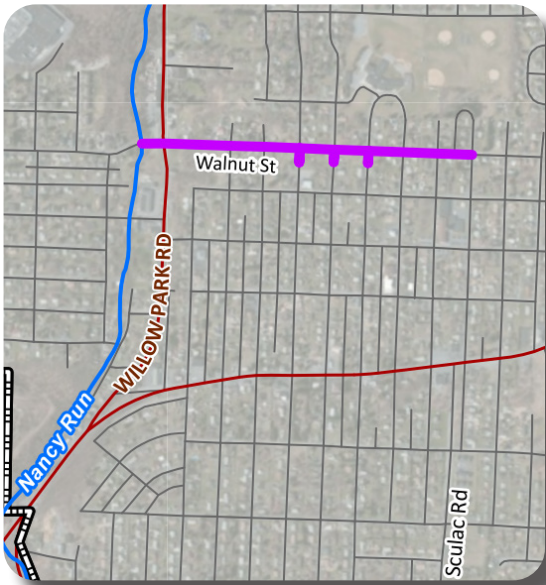
PRIORITY CAPITAL IMPROVEMENTS

Bethlehem Township's Capital Improvements Plan identifies priority projects that are crucial for managing and improving the Township's stormwater infrastructure. These projects are designed to address issues such as flooding, erosion, water quality, and stormwater runoff management. The Township is in the process of planning and constructing these projects to enhance the resilience and efficiency of its stormwater system. The graphic highlights the current status of the project.

1 WALNUT STREET DRAINAGE IMPROVEMENTS

Walnut Street Drainage Improvements will mitigate flooding in the area of Walnut Street and Willow Park Road.

Flooding has been a concern in this area for years, and drainage improvements studies date to 2003. Construction is targeted to begin in late 2024.



2 EASTON AVENUE AND SANTEE ROAD FLOOD MITIGATION PROJECT – PHASE 1

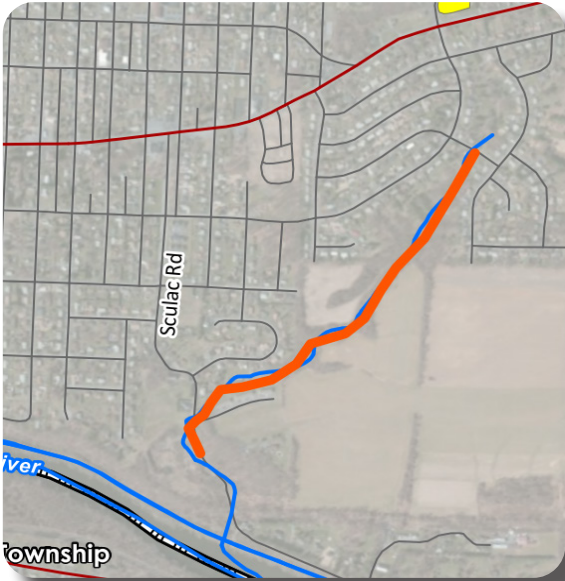
Phase 1 of the Easton/Santee Flood Mitigation Project involves improvements to four detention basins to reduce flooding during smaller storms. In addition to mitigation of flooding, the improvements will meet some of the water quality improvements required by the state. Substantial flooding has occurred in this area for decades.

The Township/Authority was awarded \$4 million in grant funding to offset project costs. The balance of costs are anticipated to be funded through a low interest loan. The project is being completed through cooperation with the City of Bethlehem.



3 SCULAC STREAM RESTORATION

A stormwater channel upstream of Sculac Road has experienced severe erosion impacting adjacent sanitary sewer infrastructure and residential yards and structures. A study was initiated to make improvements which will also provide PRP credits. Design has begun for the project.



4 EASTON/SANTEE FLOOD MITIGATION PROJECT – PHASE 2

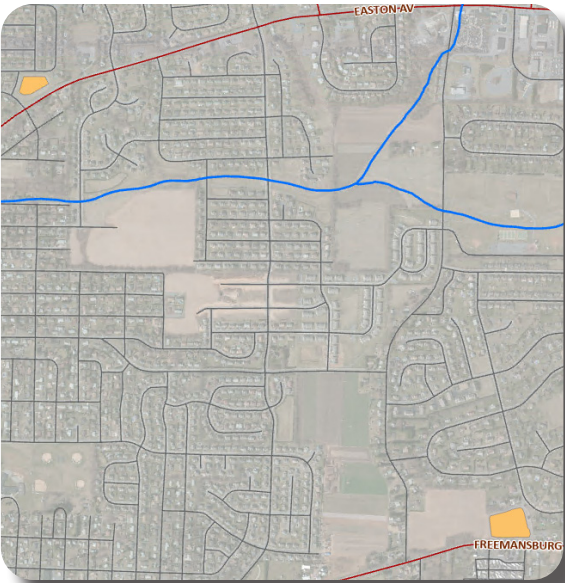
Phase 2 of the Easton/Santee Flood Mitigation Project, resulting from a FEMA Flood Study of the Nancy Run watershed, will enhance Phase 1 improvements by upgrading the conveyance systems and installing large stormwater infrastructure. These enhancements, combined with Phase 1 basin improvements, will provide substantial flood reduction benefits.



5 POLLUTION REDUCTION BASIN RETROFITS- PHASE 2

Bethlehem Township's MS4 permit requires the Township to meet certain pollution reduction requirements. These retrofits will clean stormwater runoff to standards imposed on the Township via state and federal mandates.

Basin retrofits at two existing basins throughout the Township will improve local water quality and meet a portion of the Township's Pollution Reduction Plan (PRP) requirements from PADEP. Retrofitting the basins will allow for greater stormwater retention and for pollutants to be reduced through the infiltration process. The remaining two are being planned to meet future MS4 requirements.



STORMWATER MANAGEMENT HAS MULTIPLE BENEFITS

Stormwater, as depicted in the images below, goes beyond flooding in the Township; it leads to persistent erosion issues. Erosion poses multifaceted challenges, including the contamination of streams and rivers with pollutants, disruption of habitats for wildlife, structural damage to infrastructure, and heightened flood risks. These impacts underscore the critical need for effective stormwater management strategies. Notably, the Township has taken proactive steps by including projects in their capital improvement plan that not only address flooding but also tackle adverse effects of stormwater.



Erosion adjacent to residential property near Sculac Stream



ONGOING PRIORITIES ASSESSMENT & FUTURE FLOOD MITIGATION PROJECTS

Future flood mitigation projects will be needed throughout the Township that are not highlighted in this plan. The stormwater program will also conduct a broad cleaning and televising program in 2024 which will further identify needs and guide updates to this plan. Initial review of flooding in the Sheridan Drive/Chetwin Terrace area is ongoing. A potential Nancy Run Floodplain Restoration project is being investigated following the 2024 Flood Study findings. Additionally, the Township created an online forum for property owners to upload stormwater concerns throughout the Township. By working with property owners and assessing the Township's stormwater system, the Township will be better prepared to mitigate flooding concerns and meet MS4 permit requirements that require additional water quality improvements. Future updates to this plan will serve to prioritize the flood mitigation and water quality projects. **Stormwater concerns can be submitted on the Township's website.**