

Beaver Creek Drainage Basin

Third Corrective Action Plan

May 2025

Introduction

On June 13, 2002, Lower Paxton Township Authority (LPTA) and Lower Paxton Township (LPT) entered into the Second Consent Decree with the Department of Environmental Protection (the Department), under which, a connection restriction was imposed on the Beaver Creek Drainage basin. In September 2011 the second Beaver Creek Corrective Action Plan (CAP) was drafted and approved to eliminate wet weather overflows and reduce hydraulic overload in the Beaver Creek Drainage Basin. The second Beaver Creek CAP was incorporated into the Second Amendment to the Second Consent Decree dated August 21, 2013. In May 2021, LPTA/LPT petitioned the Department to amend the second CAP schedule, proposing changes to project prioritization and scope. This petition was approved by the Department in June 2021. For reference, copies of the second CAP, the Authority's amendment letter, and the Department's approval letter are attached.

To date improvements have been made in nineteen (19) mini-basins, by implementing the "total sewer replacement program" approach as outlined in the second CAP, which called for the rehabilitation of mainlines, laterals, and building sewers along with key interceptor replacement projects. Using this approach, the program has successfully improved approximately 30.3 miles of pipelines and LPTA has spent approximately \$65 million in capital funds on improvement projects within the Beaver Creek conveyance system.

The strategies outlined in the second CAP have effectively eliminated overflows and significantly reduced peak wet-weather flows throughout the Beaver Creek Basin. The LPTA/LPT total replacement strategy for I/I removal has resulted in a 47% reduction in peak hourly flows going to Swatara Township's WWTP associated with wet weather events. This reduction changed the measured peak hourly flows from 19.75 mgd to 10.50 mgd, removing approximately 9.75 mgd of peak flows within the Beaver Creek basin conveyance system. Analysis has also indicated that the LPTA's rehabilitation efforts achieved a 99% removal rate of excess I/I within rehabilitated basins. Consequently, this reduced the overflow locations within the basin from nineteen (19) to two (2) sites currently. The remaining sites only experience overflows during flood-level wet weather events. To put the success in perspective, it is estimated that more than 130 wet weather events were successfully conveyed in the last 10-years that would have previously experienced overflows prior to the program's inception. No overflows have been reported during the 2024-2025 reporting period.

The completion of the current second CAP mini-basins and program evaluation has necessitated the need for a new third CAP. After reassessing the Beaver Creek sewer system (following completion of the BC-7 mini-basin), it was determined that LPTA/LPT is able to develop a strategy that involves a more focused approach to remove the remaining excess wet weather flows and eliminate the remaining overflows within the conveyance system. Several high priority areas in the Beaver Creek basin have been identified as key to eliminating the overflows and reducing the hydraulic overload. The success of the total sewer replacement program, continued flow metering throughout the Beaver Creek basin, updating the existing Beaver Creek hydraulic model, and continually field confirming overflow events has significantly improved LPT/LPTA's ability to identify and target the next high priority areas in the Beaver Creek basin.

Description of Plan Elements

Based on the current evaluation, it is recommended that LPTA/LPT implement the following program and schedule to eliminate overflows by 2028 and reduce the hydraulic overload by 2033. The recommended implementation schedule shall address the following elements:

- Trunk H Rehabilitation
- Nyes Road Overflow Box Reconfiguration and Capacity Evaluation at the Beaver Creek Meter Chamber
- Miscellaneous Maintenance Repairs
- Priority Mini-basin Rehabilitation (as needed)

Implementing appropriate strategies within these project areas are projected to eliminate the need for a storage facility within the Beaver Creek basin.

Trunk H Rehabilitation

Flow metering along Trunk H, located in the Beaver Creek basin, has identified a significant contribution of excess flow during wet weather events. Due to the system configuration, it is challenging to directly measure if the excess flow is occurring in the interceptor or from the contributing mini-basin, BC-8F. Field investigations suggest that the flow is directly contributed by the interceptor. To mitigate these excessive wet weather flows within the basin, it is recommended that Trunk H be replaced or rehabilitated prior to any planned rehab of BC-8F. Following the Trunk H project, and the program elements listed above, LPTA/LPT shall meter the overall removal and determine if additional efforts in the mini-basin are required in the future. Currently, the estimated completion date for the Trunk H rehabilitation and other program elements is 2027.

Nyes Road Overflow Box Reconfiguration and Capacity Evaluation at the Beaver Creek Meter Chamber

The remaining overflows in Beaver Creek are experienced in the vicinity of overflow boxes at MH 30 and MH 162. With the substantial I/I reduction in the Beaver Creek basin, the program implementation schedule provides for completing minor structural changes and repairs to eliminate the one overflow box and redirect any excess flow to a single location at MH 162.

Preliminary model results also indicate a reduction in capacity near the Beaver Creek Meter Pit from what is expected. Additional field reconnaissance will be completed to determine if there is debris in the pipes in that area and complete a survey to ensure that the recorded pipe slopes are correct. This initial effort is planned for 2026 so that additional maintenance efforts could be identified as needed.

Key Maintenance Repairs

Township Staff routinely respond to issues or complaints that arise within the collection system and track any necessary repairs. In addition to the normal maintenance, there was also additional investigations in the priority basins (BC-8F and BC-10D) associated with the basin prioritization efforts. As a result, Staff compiled a list of four critical repairs in the Beaver Creek drainage basin that may have a direct impact on excess flows. A contractor was awarded the miscellaneous repairs project in late 2024 and started the repairs in spring 2025. All repairs are expected to be completed by Fall 2025.

Priority Mini-Basin Rehabilitation

The total replacement approach has resulted in unprecedented success in the Beaver Creek Drainage basin. With this substantial success at removing excess I/I from the conveyance system it is envisioned that additional projects will not be needed to eliminate existing overflows during non-flood events. However, as future growth within the basin is experienced additional projects may become necessary to maintain the available capacity. By continuing to utilize flow metering at strategic locations within the basin, the LPTA/LPT will be able to regularly assess flows within the system and projected growth as detailed in their annual Ch94 reporting. This will facilitate pinpointing maintenance needs and identify high priority rehabilitation areas as needed to maintain the safe carrying capacity of the Beaver Creek Basin sewer system.

Currently BC-8F and BC-10D are the next priority basins; however, these areas may experience a reduction in flow due to the Trunk H project and the Miscellaneous Maintenance repairs identified above. If future growth projects exceeding the projected safe carrying capacity of the Beaver Creek sewer system area, a mini-basin rehabilitation project will be enacted.

Program Schedule

The following timeline is proposed for meeting the Second Amendment to the Second Consent Decree and the Settlement Agreement

Table 1 – Proposed Schedule for BC Basin

Tentative Priority For 2025 – 2028: Eliminate Overflows	
Key Maintenance Repairs	2025
Nyes Road Overflow Box Reconfiguration and Capacity Evaluation at the Beaver Creek Meter Chamber	2026
Trunk H Rehabilitation	2027
Tentative Priority For 2028 – 2033: Reduce the Hydraulic Overload	
Priority Mini-Basin Rehabilitation (as needed)	2033

Permits and Connections

In accordance with the Second Amendment to the Second Consent Decree and the Settlement Agreement 1.4 (d) On or before March 15, 2013, and each March 15 thereafter that the agreement is in effect, Lower Paxton and STA will renegotiate the limitations on connections in good faith, based upon Lower Paxton's compliance with subparagraph, 1.4 (b) and this 3rd Beaver Creek Basin CAP. If no agreement is reached after good faith negotiation, DEP will decide, in its sole discretion, the number of connections to be allowed for the following 12 months (from April 1 through March 31), with the limitation that DEP may not allow more than 75% of the number of connections allowed to LPTA's Beaver Creek collection system in the immediately preceding 12 months. In the absence of an agreement by Lower Paxton and STA, DEP will make its determination on the number of connections on or before March 31, 2013, and each March 31 thereafter.