Background & Timeline

- **2009** AO issued to City, City Signatories, LCA and LCA Signatories, DEP CAP for LCA
- **2009** System wide flow metering completed in Western Lehigh Interceptor (WLI) and LCA Signatory systems
- **2009** Western Lehigh Sewerage Partnership (WLSP) was formed by agreement
- **2010** WLSP Hydraulic model developed
- **2010** LCA Flow Equalization Basin (FEB) constructed to manage wet weather flows
<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>Original EPA deadline for eliminating SSOs extended with plan required by 12/31/2017</td>
</tr>
<tr>
<td>2015</td>
<td>Began regional discussions on cost sharing</td>
</tr>
<tr>
<td>2017</td>
<td>Nov. 2: EPA suggests different approach</td>
</tr>
<tr>
<td>2018</td>
<td>Meeting 3/23/18 with EPA and DEP suggesting AO can be terminated if Regional Flow Management Strategy is developed – with 8/1/18 submission deadline</td>
</tr>
</tbody>
</table>
Regional Flow Management Strategy

Critical Elements Requested by EPA:

1. Collection system operation & maintenance (O&M)
2. System characterization
3. Inflow and infiltration removal (Source Removal Plan = SRP)
4. Flow monitoring
City & City Signatory Collaboration Process

2015 – 2017

- Worked on a Memo of Cooperation (not successful)
- City wet weather project cost sharing based on peak flows (not successful)
- Improving reliability and accuracy of sewage billing meters (SBM) by developing a set of common standards (not successful)
City & Signatory Collaboration Process

2018 (April through June)

- Regional Flow Management Strategy (RFMS) ✓
- Flow monitoring details – when and where ✓
- Evaluation and approval process for SBMs to utilize for flow monitoring program ✓
- Peak flow reporting plant flows > 60 mgd ✓
- Agreement on joint submission, format & retained municipal programs ✓
City & Signatory Collaboration Process

Developing the RFMS:

- City, LCA and Signatories / WLSP all participated
- Represents broad levels of commitment to cooperation and ongoing improvements
- Includes commitment to cooperative efforts to improving SBMs (LCA drives this effort)
- Includes commitment to ongoing wet-weather flow monitoring, regional flow monitoring & modeling, and future capital improvements planning
- Each Signatory generates its own SRP and O&M plan
City & Signatory Collaboration Process

Flow monitoring as part of the RFMS:

- Includes 2 flow monitoring projects to capture dry- and wet-weather flows at jurisdictional level (from each Signatory) – 2019 and later
- Includes hydraulic modeling of regional conveyance system to support capital improvements planning
- Models projected future development flows and commits to future Act 537 planning when needed
- LCA / WLSP will do more detailed flow monitoring of its large service area – City/Signatories can too!
Regional Flow Management Strategy

Structure of the RFMS:

- Joint cover letter by LCA & City – indicating collaboration between owner and operator of Kline’s Island Wastewater Plant
- Cover letter from each Signatory indicating support for RFMS and associated collaboration required
- RFMS document capturing primary areas of committed cooperation & collaboration
- Individual Operation and Maintenance Plan for each Signatory
- Individual I&I Source Removal Plan (SRP) for each Signatory
- Progress to be reported to DEP annually via Chapter 94 Report (LCA compiles, reviews and submits as a single report)
Lehigh County Authority’s Role?

As operator of City system, LCA will manage:

- Implementation of City’s SRP – to be determined / paid by City
- Implementation of City’s O&M plan – LCA’s responsibility
- Implementation of signatory SBM evaluations for accuracy & future electronic data capture
- Develop ongoing flow-monitoring process with signatories for wet-weather events >60 mgd at Kline’s Island
- Implementation / participation in regional flow monitoring and modeling efforts (cost shared by all signatories)
- Compile, review and submit annual progress reports to DEP
- Careful review of sewage planning modules in City service area
Lehigh County Authority’s Role?

As owner of WLI facilities, LCA will manage:

- Ongoing collaboration with WLSP partner municipalities as they complete their O&M and SRP work
- Implementation of O&M and SRP work for WLI facilities, Upper Milford, Weisenberg & Lowhill townships
- Develop extended flow monitoring / modeling data for WLSP communities, in parallel with broader regional program
- Capital improvements to address conveyance capacity restrictions for current / future flows in WLI system
- Annual DEP reporting & connection management plan administration – includes careful review of sewage planning modules in WLI service area
WLSP I&I Source Removal Plan (SRP) (SCARP Implementation Outline)

- Includes plans for all Partners, including LCA’s WLI system and municipal systems
- Flow characterization anticipated in 2019 and 2026 (we would like it to be concurrent with flow monitoring included in RFMS!)
- Flow projections of anticipated growth to be included in characterization
- Ongoing rehabilitation effectiveness monitoring to administer Connection Management Plan
WLSP I&I Source Removal Plan (SRP)
(SCARP Implementation Outline)

LCA’s Rehabilitation Projects for WLI System:

- Rehabilitation (test and seal) of Alburtis-Macungie Trunk line (completed 2016)
- Rehabilitation of WLI if necessary – test and seal (2018-2019)
- Manhole rehabilitation WLI (2018-2019)
WLSP I&I Source Removal Plan (SRP)
(SCARP Implementation Outline)

LCA’s WLI System - Capacity Improvements:

- Park Pump Station Refurbishment to restore to design capacity (ongoing – to be completed in 2019)
- Park Force Main and Air Release Valve Rehabilitation (ARV) (2019-2021)
- Spring Creek Pump Station Force Main and ARV Rehabilitation (2020)
- Trexlertown Interceptor Paralleling (2022-2023)
- Regional Park Pump Station (2028)
## WLSP I&I Source Removal Plan (SRP)
### (SCARP Implementation Outline)

**Rehab & Capital Improvement Costs:**

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>WHO PAYS?</th>
<th>Spend Year</th>
<th>Spend Year Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLI Trunkline Rehab</td>
<td>WLSP</td>
<td>2016</td>
<td>$ 1,225,613</td>
</tr>
<tr>
<td>Park Pump Station Refurbishment</td>
<td>WLSP</td>
<td>2018</td>
<td>$ 4,287,281</td>
</tr>
<tr>
<td>WLI Main Rehab 2</td>
<td>WLSP</td>
<td>2019</td>
<td>$ 4,004,989</td>
</tr>
<tr>
<td>Park Force Main Refurbishment</td>
<td>WLSP</td>
<td>2018</td>
<td>$ 1,756,741</td>
</tr>
<tr>
<td>Flow Characterization Update</td>
<td>WLSP/SIGNATORIES</td>
<td>2019</td>
<td>$ 1,000,000</td>
</tr>
<tr>
<td>Trexlertown Interceptor</td>
<td>WLSP</td>
<td>2021</td>
<td>$ 14,504,440</td>
</tr>
<tr>
<td>Flow Characterization Update</td>
<td>WLSP/SIGNATORIES</td>
<td>2026</td>
<td>$ 1,000,000</td>
</tr>
<tr>
<td>Regional Force Main</td>
<td>SIGNATORIES</td>
<td>2028</td>
<td>$ 21,253,937</td>
</tr>
<tr>
<td>Regional Pump Station</td>
<td>SIGNATORIES</td>
<td>2029</td>
<td>$ 16,813,466</td>
</tr>
<tr>
<td>Kline’s Island WWTP Wet Weather</td>
<td>SIGNATORIES</td>
<td>2029</td>
<td>$  unidentified</td>
</tr>
<tr>
<td>Kecks Bridge Park Interceptor</td>
<td>WLSP</td>
<td>2030</td>
<td>$ 24,127,349</td>
</tr>
<tr>
<td>Upper Milford Relief Trunk Line</td>
<td>WLSP</td>
<td>2032</td>
<td>$ 6,323,084</td>
</tr>
<tr>
<td>AMTL Relief Trunk Line</td>
<td>WLSP</td>
<td>2034</td>
<td>$ 7,415,419</td>
</tr>
<tr>
<td>Ancient Oaks Interceptor Phase 2</td>
<td>WLSP</td>
<td>2036</td>
<td>$ 12,285,034</td>
</tr>
</tbody>
</table>
LCA Operation and Maintenance Plan

- Developed by the LCA Operations group for the WLI system, Upper Milford, Weisenberg and Lowhill systems

- Only covers LCA-owned/operated systems – other WLSP partners have their own O&M plans!

- Sections include pump stations, force mains, gravity sewers, laterals, low pressure sewers and more

- Each section covers purpose, overview, goals and performance measures, preventative maintenance, reactive maintenance, SOPs, equipment and spare parts, staffing, and information management
What’s Next? Path to EPA Submission

- Municipal and LCA review of RFMS
- Execution of individual municipal cover letters committing to working together collaboratively
- Signatories complete and submit their SRPs and O&M plans to LCA / City
- Submission of RFMS including all Signatory SRPs & O&Ms to EPA by 8/1/18
What’s Next? LCA’s 2018 Action Plan
(in addition to our O&M work and capital projects!)

- Signatory SBM evaluation and approvals
- Investigate technology / costs for electronic data submission for all SBMs
- Develop process for Signatory wet-weather flow reporting (flow events >60 mgd at Kline’s Island)
- Initiate DEP discussion about future Connection Management Plan for Kline’s Island service area
- Careful review of all sewage planning modules