Sewer Capacity Assurance and Rehabilitation Program (SCARP)

LCA BOARD UPDATE BRIEFING

August 14, 2017
SCARP Briefing Objectives

1. Share LCA & WLSP progress to date
2. Review June 14 EPA/PADEP meeting
3. Explain status of negotiations with Partners re: *How to Pay for the LCA/WLSP SCARP Work*
4. Explain status of negotiations with City and with other Signatories re: *How to Pay for the City’s AO Work*
5. Explain sequence of activities from now to the End-of-Year regulatory submission deadline and into 2018
6. Review Board opportunities for opinions and authorizations
THE BACK STORY

The Players

City

LCA and WLSP

Other City Signatories
Progress to Date
WLSP Progress Summary – since 2011

- 144 Basement disconnections
- 355 manhole inflow dishes installed
- 258 manhole frame/covers reset
- 82 cleanouts caps repaired
- 1 Roof drain disconnected

Majority of Private Side Work is Complete
WLSP Source Reduction Programs
Halfway through the Source Reduction Program already
Rehab Effectiveness Monitoring is currently being conducted

### WLSP Progress Summary

<table>
<thead>
<tr>
<th></th>
<th>Mainline Rehab</th>
<th>Manhole Rehab</th>
<th>Lateral Rehab</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>To date</td>
<td>To do</td>
<td>Total</td>
</tr>
<tr>
<td><strong>Macungie</strong></td>
<td>21,724</td>
<td>7,500</td>
<td>29,224</td>
</tr>
<tr>
<td><strong>Alburtis</strong></td>
<td>14,172</td>
<td>14,172</td>
<td>277</td>
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<tr>
<td><strong>LCA</strong></td>
<td>72,494</td>
<td>82,800</td>
<td>155,294</td>
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<tr>
<td><strong>UMT</strong></td>
<td>63,720</td>
<td>-</td>
<td>63,720</td>
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<tr>
<td><strong>LMT</strong></td>
<td>26,000</td>
<td>21,000</td>
<td>47,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>198,110</td>
<td>111,300</td>
<td>309,410</td>
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</table>
Ongoing LCA Work

- Park Pump Station Rehabilitation
- Spring Creek Pump Station Screen and Valve Refurbishment
- Trunk Line Rehabilitation
LCA Future Projects

Source Reduction Projects
- Reduce amount of interceptors that need to be upsized ($72M savings)

Interceptor Projects
- Reduce overflows from WLI

Pump Station Projects
- Remove flow from City interceptors

<table>
<thead>
<tr>
<th>Project</th>
<th>Spend Year</th>
<th>Spend Year Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLI Trunkline Rehab</td>
<td>2016</td>
<td>$812,000</td>
</tr>
<tr>
<td>Park Pump Station Refurbishment</td>
<td>2017</td>
<td>$2,719,794</td>
</tr>
<tr>
<td>WLI Main Rehab 2</td>
<td>2018</td>
<td>$3,346,171</td>
</tr>
<tr>
<td>Park Force Main Refurbishment</td>
<td>2018</td>
<td>$3,032,467</td>
</tr>
<tr>
<td>Park Force Main Extension</td>
<td>2020</td>
<td>$2,429,534</td>
</tr>
<tr>
<td>Trexlertown Interceptor</td>
<td>2021</td>
<td>$14,622,411</td>
</tr>
<tr>
<td>Little Sister Force Main</td>
<td>2028</td>
<td>$21,253,937</td>
</tr>
<tr>
<td>Little Sister Pump Station</td>
<td>2029</td>
<td>$16,813,466</td>
</tr>
<tr>
<td>Kecks Bridge Park Interceptor</td>
<td>2030</td>
<td>$6,137,575</td>
</tr>
<tr>
<td>Upper Milford Relief Trunk Line</td>
<td>2032</td>
<td>-</td>
</tr>
<tr>
<td>AMTL Relief Trunk Line</td>
<td>2034</td>
<td>$17,745,063</td>
</tr>
<tr>
<td>Ancient Oaks Interceptor Phase 2</td>
<td>2036</td>
<td>$12,509,104</td>
</tr>
</tbody>
</table>
Upcoming LCA Work (2017-2018)

- Rehab Effectiveness Monitoring (metering April – October 2017)
- Park Force Main Inspection (2017 dates TBD)
- Trexlertown Interceptor Alignment Evaluation (Fall 2017)
- Iron Run Pump Station Flow Impact Evaluation (*December 2017*)
- Pretreatment Plant Domestic-Industrial Flow Segregation Evaluation (*Spring 2018*)
- Western Lehigh Interceptor Pipe and Manhole Rehabilitation (2018)
- Little Sister Pump Station Alignment Evaluation (2018)
EPA and PADEP meeting: June 14, 2017
EPA / PADEP Meeting Objectives

Review progress to date (info from slides above)

Review plans for future projects, phased approach

Review overflow history at Kline’s Island Wastewater Treatment Plant (KIWWTP), Outfall 003

Asked for feedback to help us prepare an acceptable submission to EPA / PADEP by the 12/31/2017 deadline
Future Projects / Phased Approach for WLSP and City

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<th>Project Description</th>
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<td>$ 3,032,467</td>
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<td>Park Force Main Extension</td>
<td>2020</td>
<td>$ 2,429,534</td>
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<tr>
<td>Phase 1 COA Blending</td>
<td>2020</td>
<td>$ 5,386,420</td>
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<tr>
<td>Trexlertown Interceptor</td>
<td>2021</td>
<td>$ 14,622,411</td>
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<tr>
<td>End of Phase 1 Performance Evaluation</td>
<td>2026</td>
<td>$ 1,177,949</td>
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<tr>
<td>Little Sister Force Main</td>
<td>2028</td>
<td>$ 21,253,937</td>
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<td>Little Sister Pump Station</td>
<td>2029</td>
<td>$ 16,813,466</td>
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<tr>
<td>Phase 2 COA Blending</td>
<td>2029</td>
<td>$ 12,317,557</td>
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<tr>
<td>Kecks Bridge Park Interceptor</td>
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<td>$ 6,137,575</td>
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<td>Ancient Oaks Interceptor Phase 2</td>
<td>2036</td>
<td>$ 12,509,104</td>
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<tr>
<td>End of Phase 2 Performance Evaluation</td>
<td>2037</td>
<td>$ 1,387,564</td>
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<tr>
<td>Phase 3 COA Blending</td>
<td>2041</td>
<td>$ 10,308,967</td>
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</table>

Phased to pace the 4 MGD of new connections expected between now and 2040.
Overflow History at KIWWTP

• Our performance is much better than it was 10 years ago
  • Due to dry weather and LCA FEB
  • Unknown impact of I&I efforts

### Wet Weather Activation of Outfall 003

<table>
<thead>
<tr>
<th>DATE</th>
<th>CAUSE</th>
<th>DURATION (hrs)</th>
<th>VOLUME (mgd)</th>
<th>RAINFALL (in)</th>
<th>INTERVAL (yrs)</th>
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<tbody>
<tr>
<td>2/24/2016</td>
<td>Mechanical Problem - Pumps &amp; Hydraulic Capacity Exceeded</td>
<td>7.75</td>
<td>1.18</td>
<td>3.01</td>
<td>&gt;1</td>
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<td>4/30/2014</td>
<td>Mechanical Problem - Bar Screens &amp; Hydraulic Capacity Exceeded</td>
<td>11.33</td>
<td>1.17</td>
<td>3.88</td>
<td>&gt;2</td>
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<td>9/30/2010</td>
<td>Mechanical Problem - Bar Screens &amp; Hydraulic Capacity Exceeded</td>
<td>13.17</td>
<td>5.32</td>
<td>8.01</td>
<td>&gt;100</td>
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<td>9/30/2010</td>
<td>Hydraulic Capacity Exceeded - Lee</td>
<td>23.50</td>
<td>2.09</td>
<td>2.71</td>
<td>&gt;1</td>
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</tbody>
</table>

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Feedback Requested from EPA / PADEP

- City will develop a submission to EPA based on blending option
  - Lowest cost option w/ appropriate environmental & operational benefits
  - Need regulatory direction / decision to move forward
- Acceptable level of protection?
  - 10-year design basis
  - 5-year compliance basis
- Future regulatory format?
  - PADEP / Act 537 process
  - EPA order (what kind?)
What EPA and PADEP told us

- Progress to date is encouraging
- Comprehensive planning approach is appreciated
- We’ll get back to you on the rest

We appreciate the information, but we won’t render an opinion today
Getting from Today to New Year’s Eve
Critical Elements

• LCA Memorandum of Cooperation w/ WLSP *(How to Pay for the LCA/WLSP SCARP Work)*

• City Memorandum of Understanding w/ Signatories *(How to Pay for the City’s AO Work)*

• WLSP partners’ Capacity Management, Operations & Maintenance (CMOM) plans

• Document details of 25-year work plan for LCA / WLSP SCARP efforts *(SCARP Guidance Manual)*

• Develop SCARP summary for submission to EPA / PADEP *(SCARP Implementation Plan)*

• City / City Signatories will develop their own submissions to EPA
WLSP Memorandum of Cooperation (MOC)

**Partners Agree**
- Commitment to completing Source Reduction Programs
- Phase 1 SCARP conveyance costs distributed on allocation method
- Phase 2 SCARP conveyance costs distributed on peak flow need
- Want City to base Phase 2 City AO projects on peak flow as well – could save WLSP $13M if source removal work is successful

**Partners Uncertain**
- How much Source Reduction Program is optimal
  - Need flow metering and modeling data
- When the MOC should terminate, based on regulatory oversight changing and/or yet undefined projects being completed / paid for
- How to get an MOC passed w/ these unknowns

MOC – Close to closure with Partners
WLSP Memorandum of Cooperation (MOC)

We’re working on it!

- Municipal managers & solicitors working together on these uncertainties
- Expect to adopt municipal ordinance and LCA resolution to agree on MOC and SCARP planning documents
City Memorandum of Understanding (MOU)

Signatories Agree

• Cost of Phase 1 City AO projects distributed based on existing agreements (treatment capacity allocation)

Signatories Uncertain

• How much each system leaks, and what needs to be done about it
• What a peak-flow basis for distributing cost of Phase 2 City AO projects means
• How to interpret peak flow rights included in old agreements
• Requirements for standardization / maintenance of sewer billing meters
• Who should share in costs of relief facilities (e.g. Sister Pump Station)

MOU negotiations will not move forward
City-Signatory Interactions

- Phase 1 projects will kick off without MOU in place
- Must continue to work together on the outstanding issues
  - Metering & modeling
  - Sewer billing meters
  - Negotiating future agreements
CMOM Plan Development

- Objective: Establish long term operating practices
- Significance: May change O&M practices/tools; lower costs
- Issues: Organizational resistance
- Development by: LCA-Arcadis
- Status: Not started
- Anticipated Cost: $20K
SCARP Implementation Guidance Manual

- Objective: Guide for next generation for 25 year plan
- Significance: Document important findings, assumptions, issues
- Issues: None
- Development by: Arcadis
- Status: Not started
- Anticipated Cost: $60K
SCARP Implementation Outline

- Objective: Regulatory submission
- Significance: Will be reference by EPA and DEP for next two decades
- Issues: Balancing detail with flexibility
- Development by: Arcadis
- Status: Not started
- Due: Halloween to WLSP, NYE to regulators
- Anticipated Cost: $15K
City & City Signatories

Regulatory Submission by 12/31/2017 Deadline

City will lead efforts for City submission

Signatories will handle their own submissions
**LCA Board Input & Actions**

**LCA / WLSP Related Work:**
- SCARP Guidance Manual & Implementation Plan Development (8/14/2017)
- MOC review & input (*October 2017*)
- SCARP Guidance Manual & Implementation Plan review & input (*November 2017*)
- LCA Resolution authorizing inter-municipal agreement (MOC) (*November 2017*)
- Design & Construction project authorizations (ongoing as scope of projects are defined)

**City AO Work:**
LCA participating under City direction as Operator
- Engineering contract approval for Phase 1 AO improvements (8/14/2017)
- Design & Construction project authorizations (ongoing as scope of projects are defined)