Framework for Managing Stormwater Infrastructure

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01 Program Overview

02 GIS Database Creation

03 Initial Inspections

04 Repairs and Retrofits

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01

SAC CBP3 Overview

The Stormwater Authority of Chester

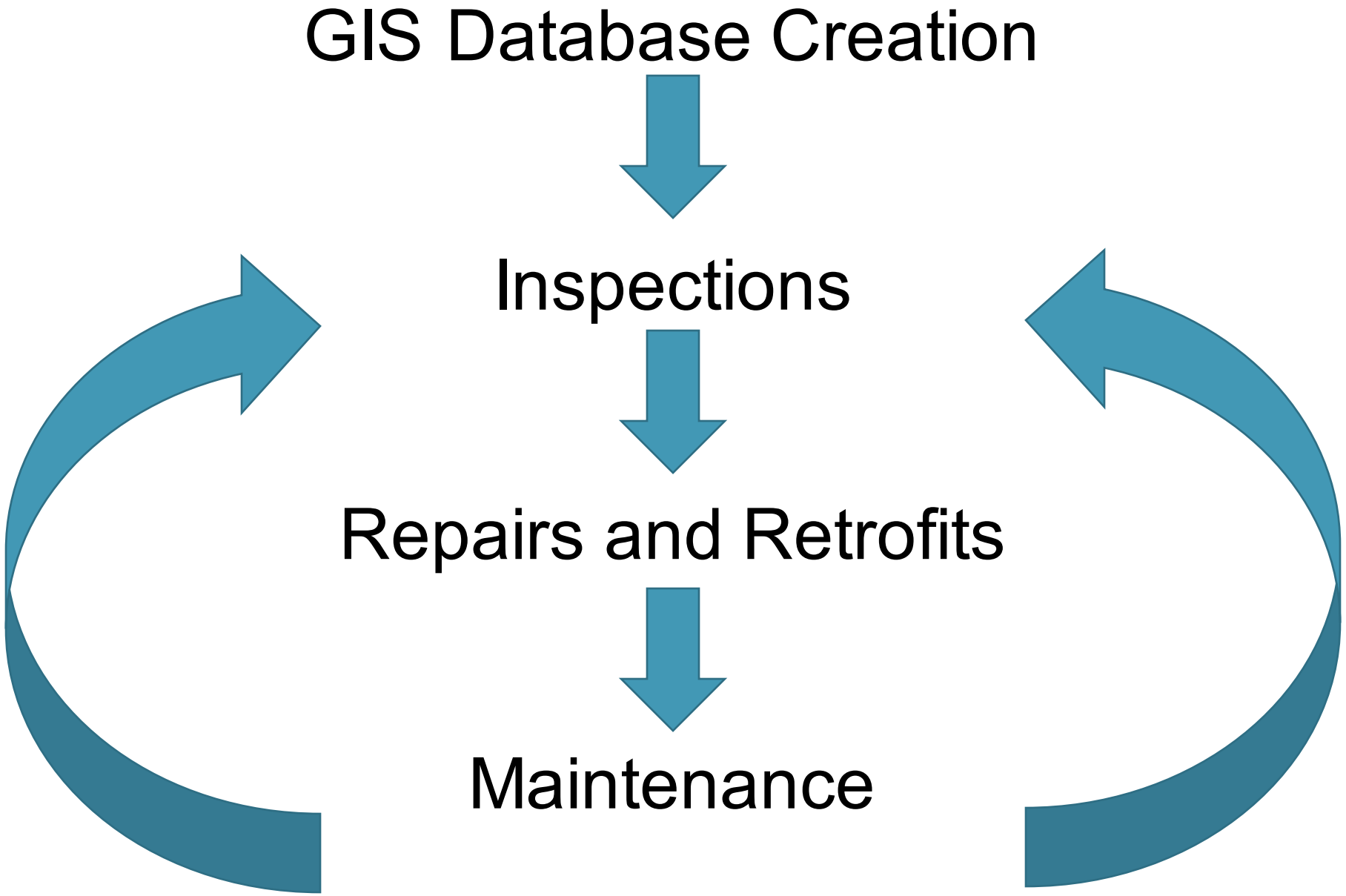
- A 30-year partnership between the Stormwater Authority of Chester (SAC) and Corvias to identify, design, build, operate and maintain stormwater assets.

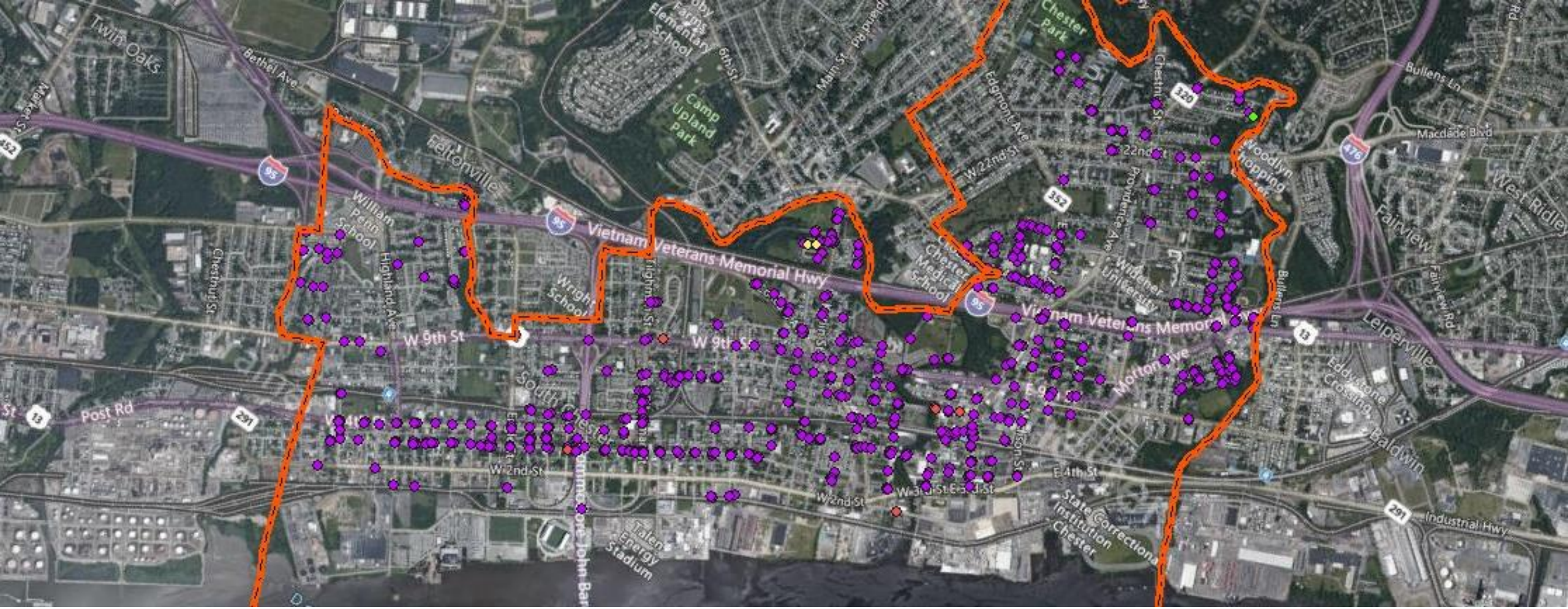
SAC + Corvias® =

- Based on the Community-Based Public-Private Partnership (CBP3) model developed by the US EPA Region III
- Intentionally developed to provide multiple, overlaying benefits (socioeconomic, environmental, implementation efficiency, local uplift) that contribute to the revitalization of the City of Chester, Pennsylvania.

Integrated Delivery Partner

HDR is responsible for the management of design and construction toward the completion of projects with a view towards green and grey infrastructure improvements in support of the City's MS4 Permit.


GIS Database Creation
Inspections
Repairs and Retrofits
Maintenance

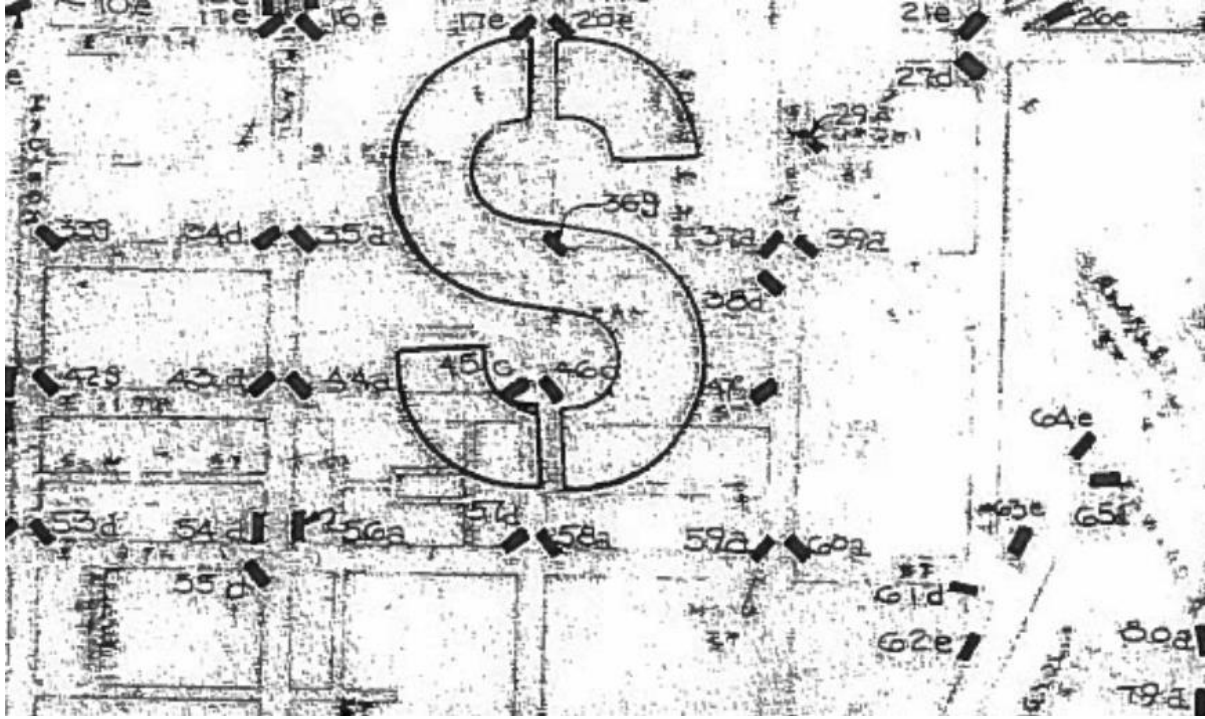


02

GIS Database Creation

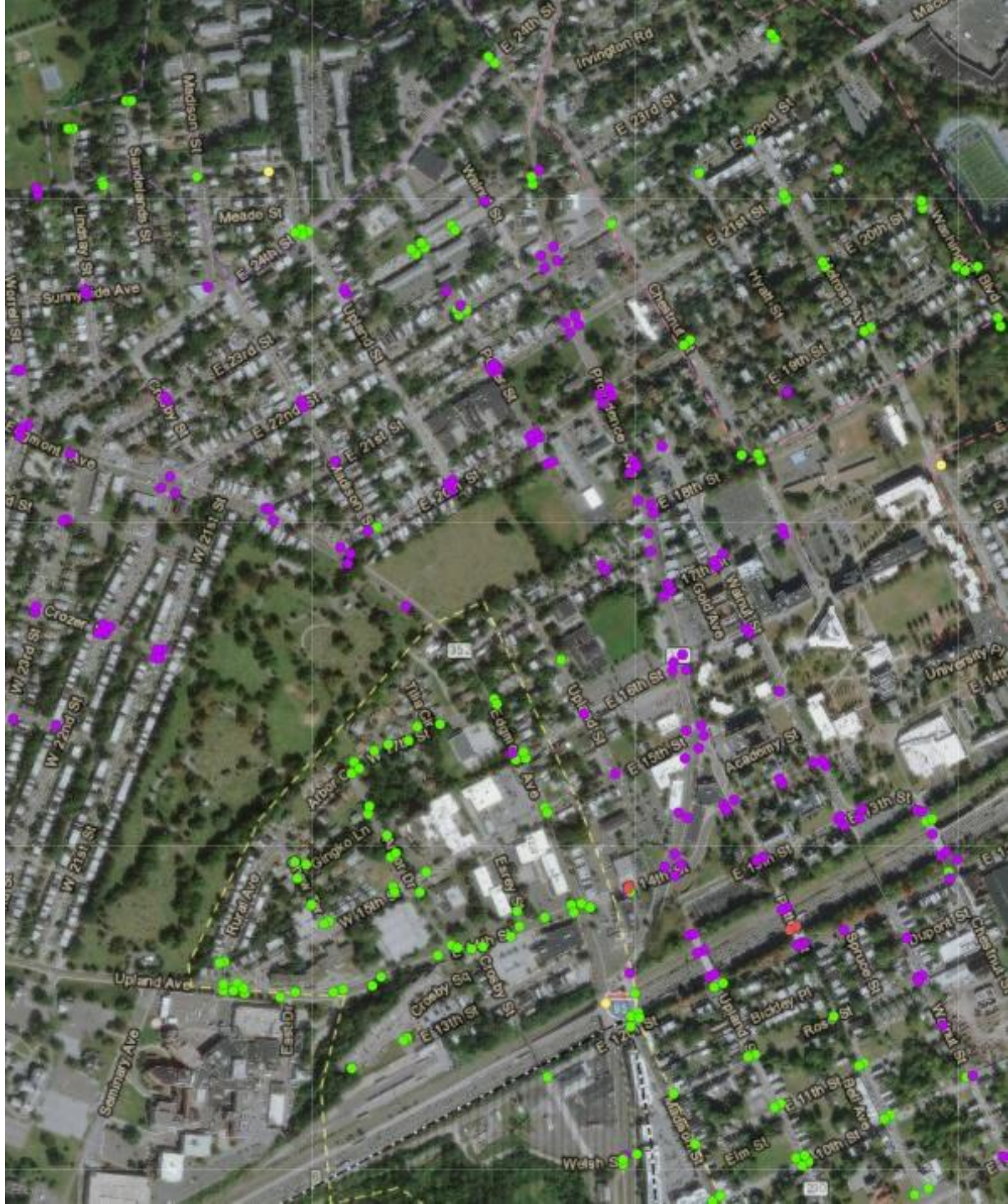
Understand Existing Data

- Historical Records
- Desktop Investigations
- Site Visits



GIS Database Creation

- Platform
- Asset Identification
- Additional Reference Data



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Initial Inspections

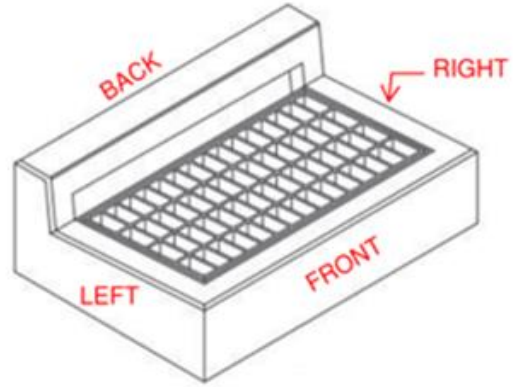
Inspection/GIS Integration

- Determine Data Needs
- Inspection Fields
- Field Card

Curb Slab and Grate Example

Metal Curb Plate and Grate Example

Hood Example



CB Wall Definitions for Laterals

CB FUNCTIONALITY

Choose the appropriate **FUNCTIONAL STATUS** for the catch basin:

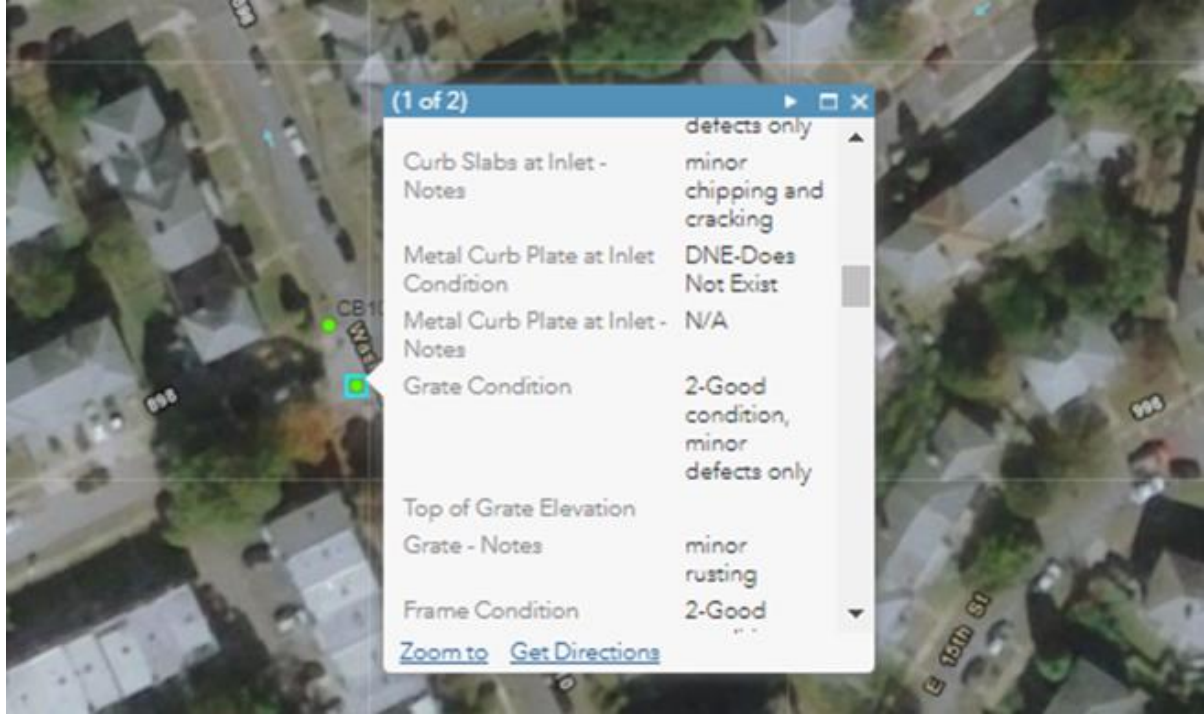
- Functional - Flow is conveyed as designed, no defects restricting flow
- Non-Functional – Flow is not conveyed as design. There is a structural issue or packed lateral impeding flow.
- Unknown – Due to conditions on-site, it is not possible to determine the functional status

List any **FUNCTIONAL DEFECTS/DEVIATIONS/ISSUES** that exist such as: missing CB components, standing water, pipe collapse, extensive damage, cracks, clogged/blocked laterals, dry weather flow, hazardous waste, grease/oil dumping.

RIGHT-OF-WAY CHARACTERISTICS

Cleaning/Inspection

- Training
- Photos
- Collection of Data Via Mobile App
- Data Received and QC'd Through Collector Application



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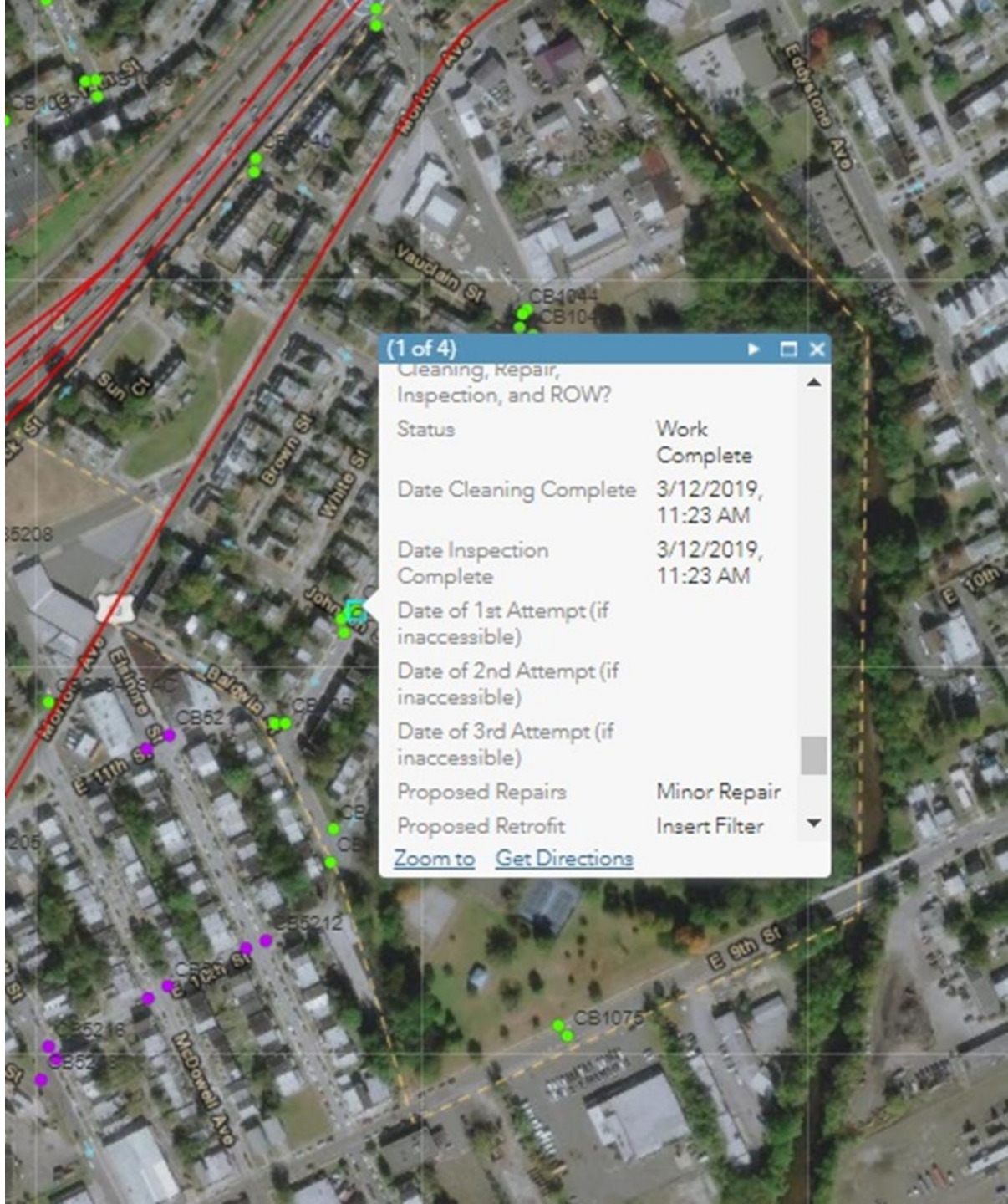
Repairs and Retrofits

Repair/Retrofit Decisions

- Photos and Condition Ratings Reviewed
- Rough Drainage Areas Determined
- Guidance Document for Consistent Decisions
- Categories of Actions



No Repair

Minor Repair

Major Repair

Replacement

Hood

Insert Filter

Porous Panels

Tree Box

Insert Filter Pilot Study

- Multiple Manufacturers
- Performance Compared After Two Months
- Opportunity for Customization

FLOGARD® CATCH BASIN INSERT FILTER

Removes Pollutants from Runoff Prior to Entering Waterways

Efficient System
Catches pollutants where they are easiest to catch, at the inlet.

Variable Design
Able to be retrofitted or used in new projects.

Treatment Train
Can be incorporated as part of a "Treatment Train".

No Standing Water
Helps to minimize bacteria and odor problems.

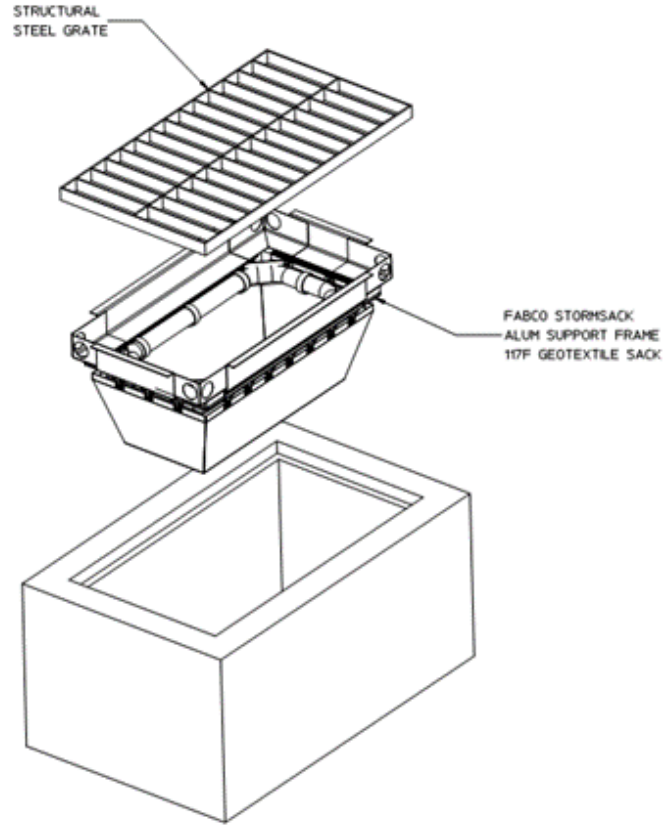
Focused Treatment
Removes petroleum hydro-carbons, trash and Total Suspended Solids (TSS).

Maximum Flexibility
Available in a variety of standard sizes to fit round and square inlets.

Economical
Earn a higher return on system investment.

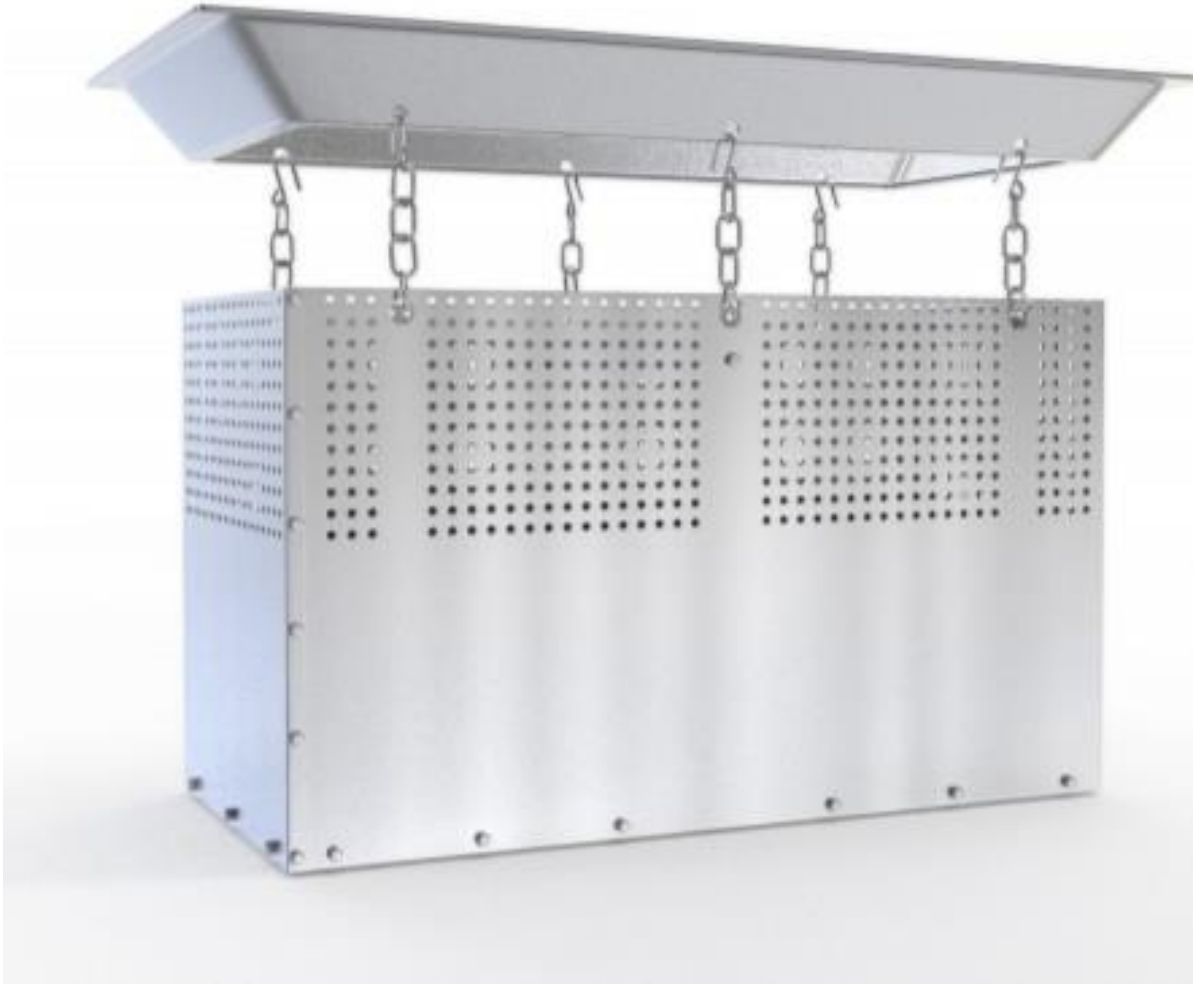
Two-part stainless-steel insert to filter solids and oils/grease

Easy to install, inspect and maintain, even on small and confined sites



Insert Filter Pilot Study

- Abtech Ultra Urban Filter was chosen based on the Study
- Worked directly with Abtech after selection
- Custom Design for the Chester Program



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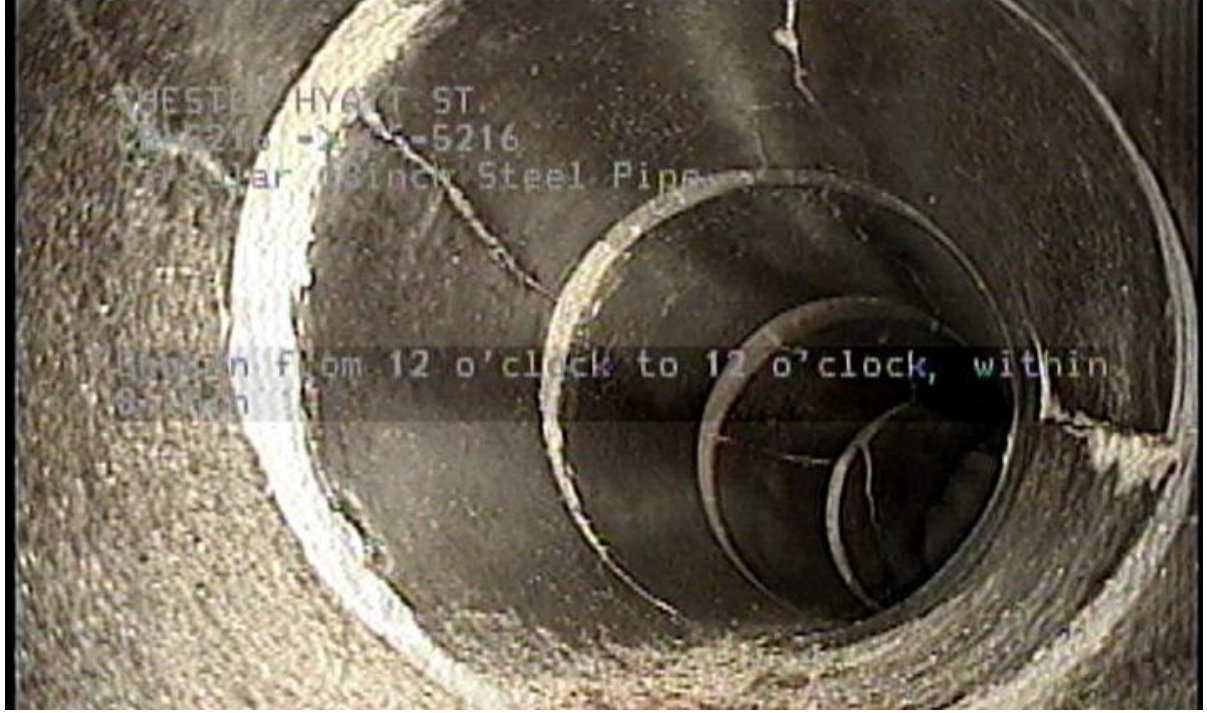
Maintenance

Maintenance Structure

- Create Maintenance Checklist for Each Asset Type
- Schedule Regular Maintenance Inspections
- Identify Problem Locations
- Use Data to Schedule Future Work

Pipe Rehabilitation/Replacements

- CCTV Inspection Data
- Decision Logic
- Risk Matrix
- Schedule Pipe Rehab/Replacements



Tracking Key Metrics

- **3** biotretention and 2 curb bump-outs installed to date.
- **7,006** SF of porous panels planned/installed
- **15** Tree box planned/installed
- **1,360** Catch basins cleaned, inspected, surveyed and inventoried
- **245** insert filters and **200** hoods installed
- **83,000** gallons of debris removed to date

Tracking Key Metrics

…continued

- **One** street sweeper and vacuum truck procured
- **1,200** LF of storm sewer replaced to date
- **140** Catch basins replaced/added
- Local residents/union employees performed **8,900** man-hours (29%) of the total work performed by contractor

“The time to repair the roof is when the sun is shining.” – John F Kennedy

Questions?

THANK YOU

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