Utilizing LID within the County Right of Way to Satisfy MS4 Requirements

October 20, 2016

McCORMICK TAYLOR
Regulatory Requirements

- Federal Clean Water Act permit program
- **MS4 = Municipal Separate Storm Sewer System**
  - Provide SWM for 20% of Impervious Surfaces (approximately 5.9 square miles)
ESD & LID Projects

- Forest Estates – 33 acres
- Franklin Knolls (4 Phases) – 147 acres
- Wheaton Woods – 270 acres
Neighborhood Demographics

- Neighborhoods built in the late 1950’s & early 1960’s
- Single family detached residential housing
- Curb & gutter with sidewalks
- Mature trees
- Utilities
- No existing SWM facilities
# Preliminary Watershed Assessment

- GIS Desktop Analysis
- Field Walk
- Summary Tables and Mapping
- Assessment of Opportunities
  - Feasibility
  - Aesthetics
  - Constructability
  - Maintenance

## Roadway LID Field Data Sheet

- **Data Collector:** [Name]
- **Opportunity ID:** [ID]
- **Proposed Site Location (Address or SSD):** 13200 [Address]
- **Notes:** [Additional notes]

## Verify Map Data is Accurate (if not, note any inconsistencies on map):
- Storm Drain System
- [Select other if necessary]

## SWM Practices Proposed:
- [Select practices]
  - Bioretention/Rain Garden
  - Bio-swale
  - Tree Box Filter
  - Other:

## Feasible Conflicts:
- [Select conflicts]
  - Utility (list type): water
  - Vegetation/Tree removal
  - Other:

## Notes:
- [Additional notes or considerations]
Over 600 sites initially identified as part of the Preliminary Assessments
Supporting Information

- Topographic Survey
- Utility Designation and SUE
- Geotechnical Analysis - Soil Borings and Infiltration Tests
- Environmental Features
Roadway Design Constraints

- Width of County ROW (curb to sidewalk)
- DOT setbacks/clear space requirements
- Driveway/Leadwalk Locations
- On-street parking
- Slope of roadway
Additional Design Constraints

- Existing Trees/Roadside Tree Permit
- Underground and Overhead Utilities
- Existing Soils/Infiltration Rates
- Property Owner Complaints and Preferences
Final Designs

• Forest Estates - 24 facilities constructed
• Franklin Knolls (4 Phases) – 119 facilities constructed
• Wheaton Woods – 200+ facilities under design
Types of ESD/LID Facilities
Rain Garden
Bioretention
Curb Extension
Bioswales
Tree Box Filter

Filterra®
Permeable Sidewalk
Project Specific Design Modifications

- Modified Inlets
- Scarify existing subsoil & till in mulch
- Widened filter media & stone
Project Specific Design Modifications

• Reverse underdrains
Project Specific Design Modifications

- Bridge over existing utility house connections
- Concrete edging along front side of facility
Project Specific Design Modifications

- Filtterra draining into stone reservoir
Community Outreach

- Public Meetings
- Community Walks
- One-on-one meetings with property owners
- Educational Opportunities
Construction

- MCDOT Coordination
- Utility Improvement Coordination
- Community Involvement
- Design/Field Modifications
Contact Info

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