STORMWATER MANAGEMENT AND DRAINAGE
ASSETS MAINTENANCE PROGRAM

Maryland State Highway Administration
Cornelius Barmer, PE - Program Manager
Programmatic Approach to Asset Management Program

- Managing for Results
- Systematic Approach to Assessment & Tracking
- Reporting
- Communication Plan
- Updating Technology
- Assessing the Inspection (QA)
- Funding
Objective: 5.3 Environmental Compliance and Stewardship in SHA Highways and Facilities

Integrate sustainable strategies to maintain SHA highways, buildings and maintenance facilities in an environmentally sensitive manner and ensure 100% compliance with applicable environmental regulations and standards.

How well is the activities accomplishing the goals?
Design
- Work Order Generation
- Remedial Plans
- SWM Retrofit
- Enhancement Projects
- Drainage Improvement Projects

Planning
- Inspections
- Condition Rating
- Asset Location (inlet, pipes & SWM)

Stormwater Management and Drainage Assets Life Cycle

Operations
- Routine Maintenance
- Minor Maintenance

Construction
- Area Wide Contracts
- Bid Build
- Design- Build
Planning

Inspections (INLETS, PIPES, SWM)
Inventory (location of asset)
Condition Ratings – KNOWN CONCERNS

Four Phases
- Existing Data updates
- Sampling (IDDE)
- Quality Updates
- Update with new data

Cost for full Inventory update & Inspection = avg. $400K per County

3-year Cycle
Design

We can provide:

- Work Order Generation
- Remedial Plans *(Area Wide Contract)*
- Retrofit / Enhancement Plans *(Bid-Build)*
- Drainage Improvement Projects

Inspections/ Assessments/ Rating Design
Permitting Assistance
Technical Review
Phase 5 Services
Construction Methods

Area Wide Contracts

Bid-Build

Design-Build

Memorandum of Understanding
Number of SWM Facilities

<table>
<thead>
<tr>
<th>SWM Condition</th>
<th>Totals</th>
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<tbody>
<tr>
<td>Routine Maintenance</td>
<td>1570</td>
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<tr>
<td>Minor Maintenance</td>
<td>1102</td>
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<tr>
<td>Major Remedial</td>
<td>303</td>
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<tr>
<td>Retrofit Required</td>
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SWM Asset Condition Per District

Districts

- District 1: 104 + 66 = 170
- District 2: 86 + 55 = 141
- District 3: 185 + 159 = 344
- District 4: 117 + 20 = 137
- District 5: 279 + 56 = 335
- District 6: 222 + 12 = 234
- District 7: 608 + 35 = 643

District 7 has the highest number of SWM facilities with 643 facilities.
Communication with Districts

Business Plan Goals
SWM asset Operational Manual (Spring 2014)
Delivery and Format of Information
Funding
Providing our internal road crews with support

Supported by Electronic Information (Goal is real-time)
Updates are essential to success
Location Info – incorporate IPAD
Operational needs based on asset type
Suggested Seasonal Activities
Electronic Data

**ArcGIS**
- Very flexible
- Oracle basis
- Transformational

**Google Earth®**
- KMLs have been distributed to RMEs and District Operation Engineers – **IPAD compatible**
- Google Earth provide an alternative to eGIS for spatial information

**eGIS**
- eGIS has location information for hydraulics structures and SWM facilities
- Planned enhancements include inspection data and structure images
- Strategic Planning Effort is Ongoing (January 2015)
  - Custom Software vs. Off the Shelf
  - Growing Inventory
  - Growing needs
Identify a potential concern

Identify, Locate, Communicate, Execute
Funding

Eligibility
Who does Preliminary Engineering?
State vs. Federal funded
Who is the drainage contact?
What is leading the effort?
What are the needs?
Fund 74 – Planned and Budget

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<th>Year</th>
<th>Spent/ Planned</th>
<th>Budgeted</th>
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Future Asset Needs
Thank you