University System of Maryland
MS4 Permit Workshop

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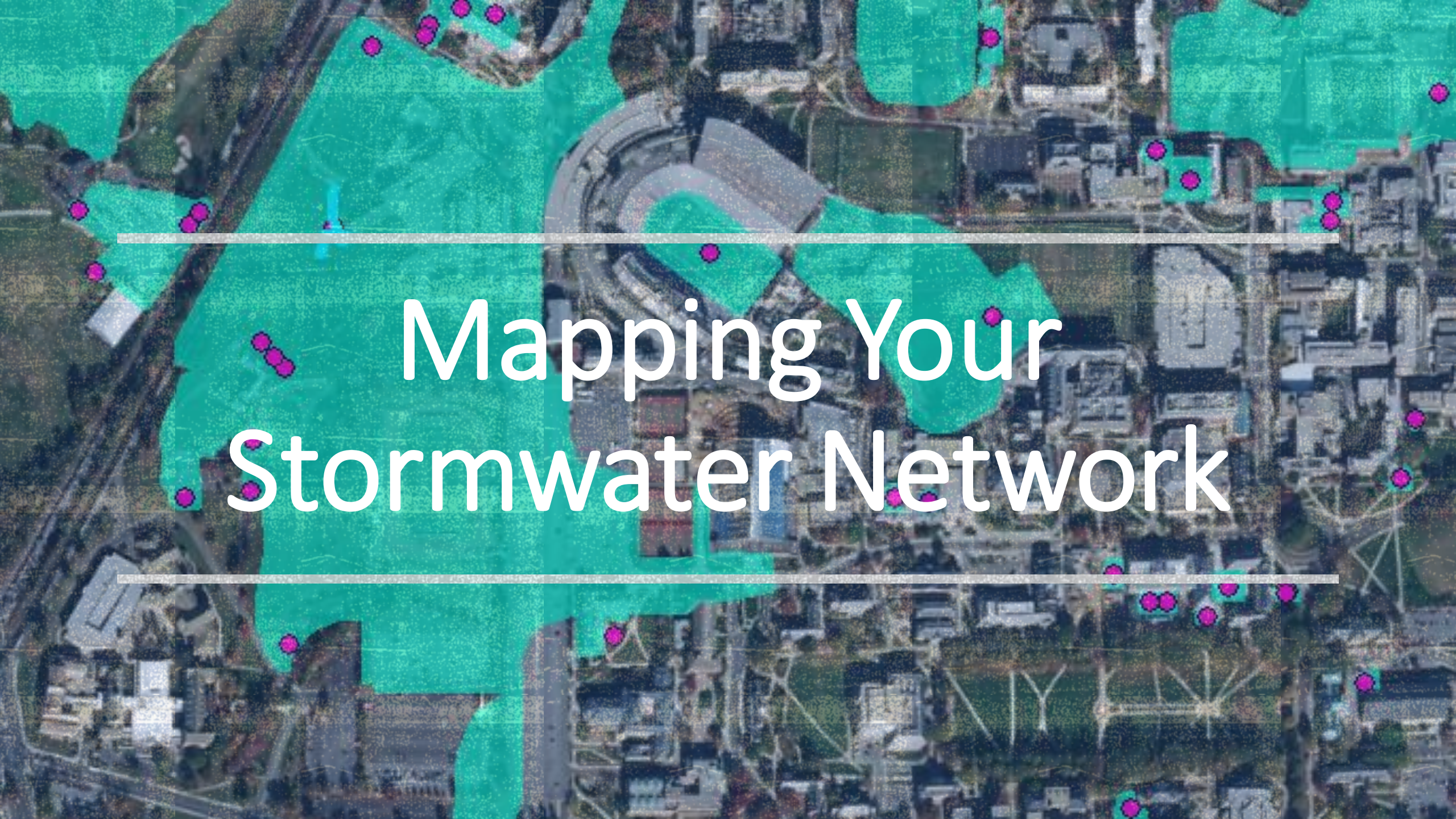
University System of Maryland

MARYLAND ENVIRONMENTAL SERVICE

Minimum Control Measures

1. Personnel or Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Control
5. Post Construction Stormwater Management
6. Pollution Prevention and Good Housekeeping

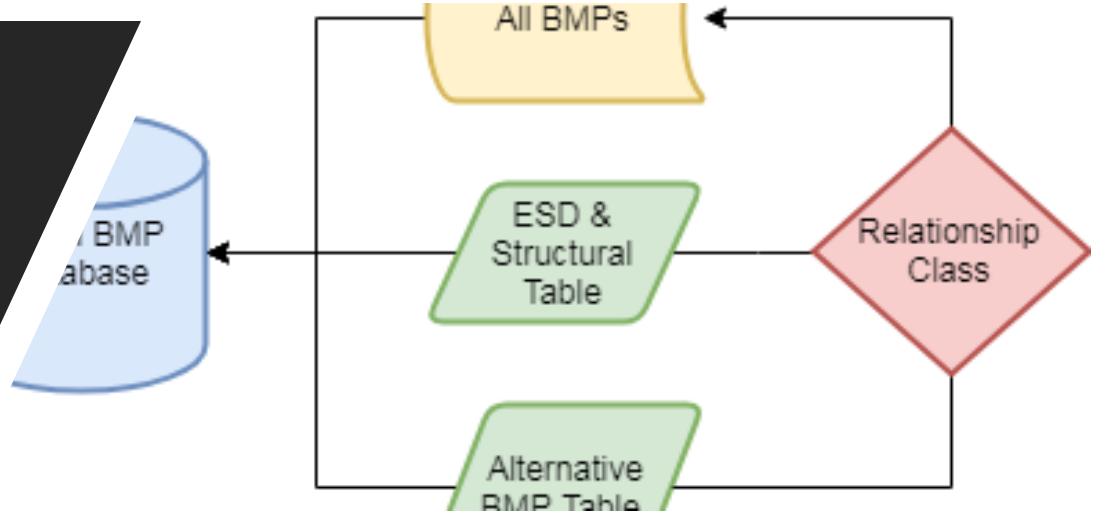

Mapping Your
Stormwater Network

Review of Existing Data

- Reviewing existing data and organizing to assist with a smooth and painless migration to database format
- Data that will get you started includes and not limited to:
  - CAD datasets,
  - Engineering Plans
  - Existing GIS data
  - Tabular data
  - Permits
  - Other Approved Records of Information (i.e studies or paper forms).

Development of Stormwater Network and Urban BMP Database

- Developing the schema or framework for Stormwater Network
- Populating data into the Urban BMP Database (Excel sheet and or GIS)
  - Phase II MS4 Excel BMP Template (May 2018) (Link)
  - Phase II MS4 Database Guidance (May 2018) (Link)



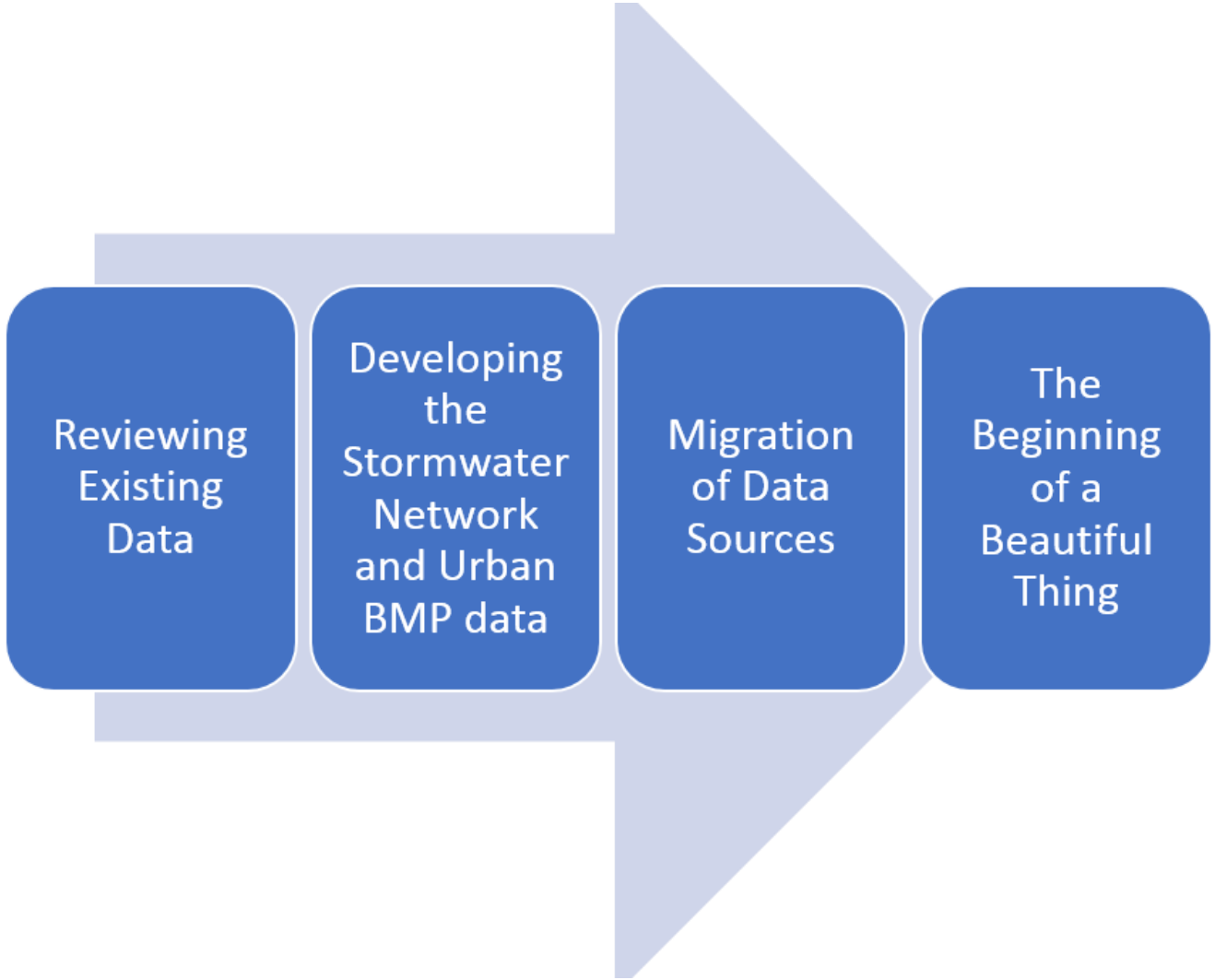
ments (Sample Input Table)

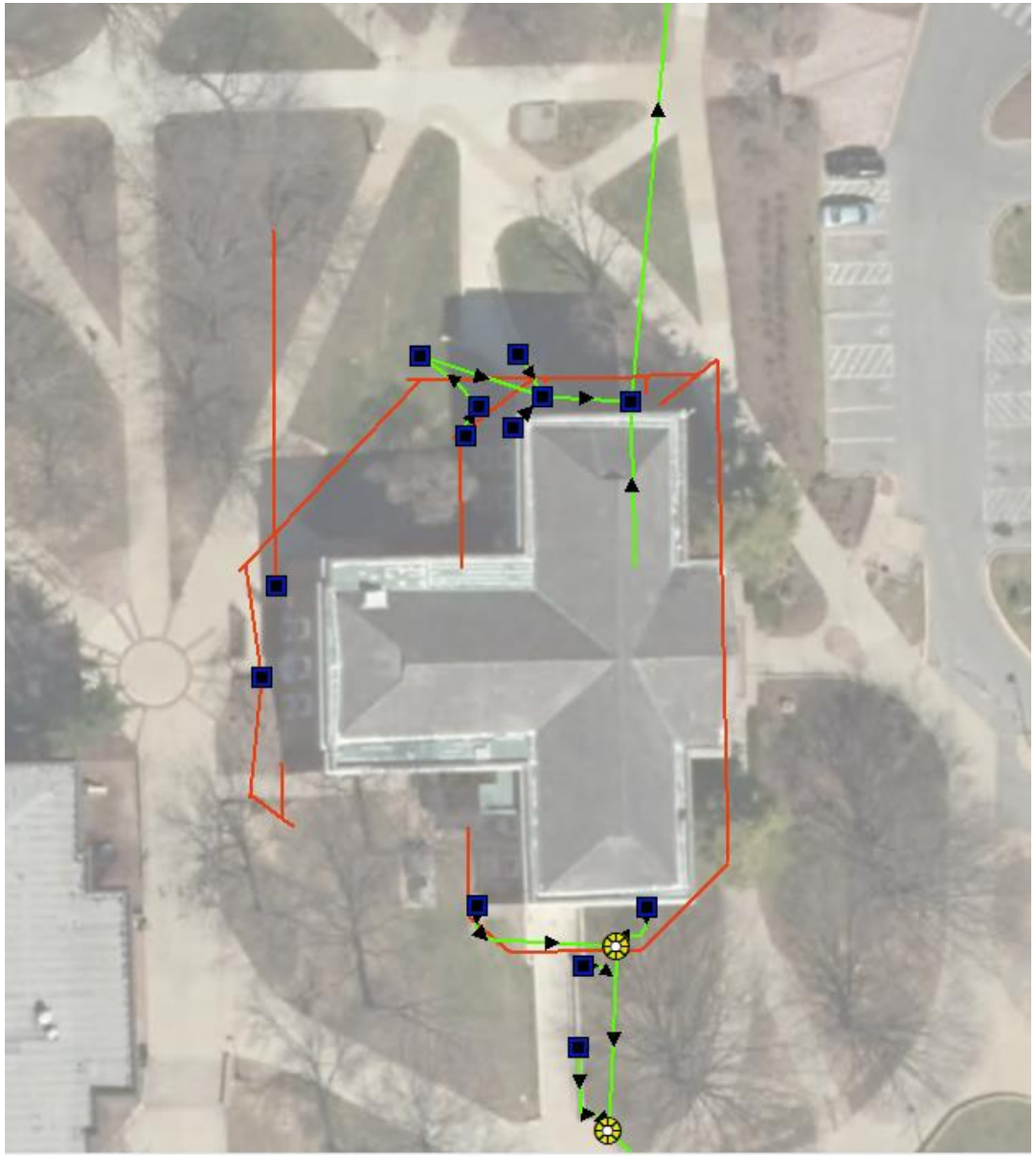
red of all structural, ESD and alternative Best Management Practices (BMPs)

EAST	PERMIT_NUM	LOCAL_BMP_ID	BMP_NAME	BMP_CLASS	BI
0333.6501	13-SF_5501	SWM001	Building A - Bioretention	E	M
11315.6953	13-SF_5501	SWM002	Stormpond #1	S	PV
402498.1268	13-SF_5501	SWM003	Sand Filter #3	S	FN
402566.4318	13-SF_5501	SWM004	Stone Building Parking lot rem	A	IN
402557.0082	13-SF_5501	SWM005	Bay Park Living Shoreline	A	SH
402549.7904	13-SF_5501	SWM006	Wet Pond - Everton Hall	S	W
402566.4318	13-SF_5501	SWM007	Annual Sweeping Program	A	VS
402557.0082	13-SF_5501	SWM008	Earth Day Planting	A	FF

Migration of Data Sources

- Transfer of existing data into the database
  - Can be in the form of digitization, data entry, or data migration from CAD to GIS
- Noting which BMPs have associated plans, computations, results, signatures is helpful for the baseline analysis.





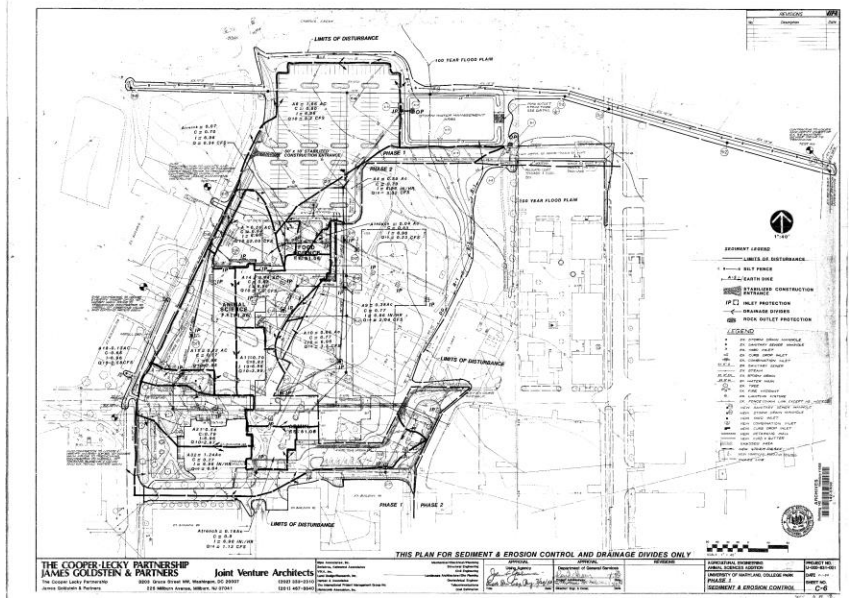
Verifying and Assessing the Stormwater network

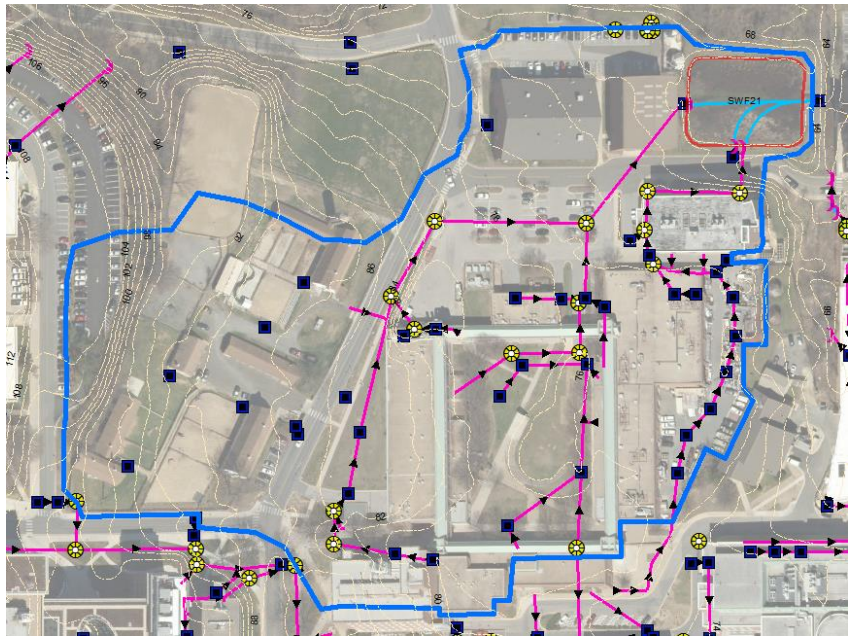
Field verifying existence of stormwater point features.

Assessing conditions of stormwater point features (Manholes, Outfalls, Inlets, etc.)

Verifying flow of stormwater network

Confirmed data available for developing drainage areas, IDDE, BMP inspections, design & construction, or emergency repairs





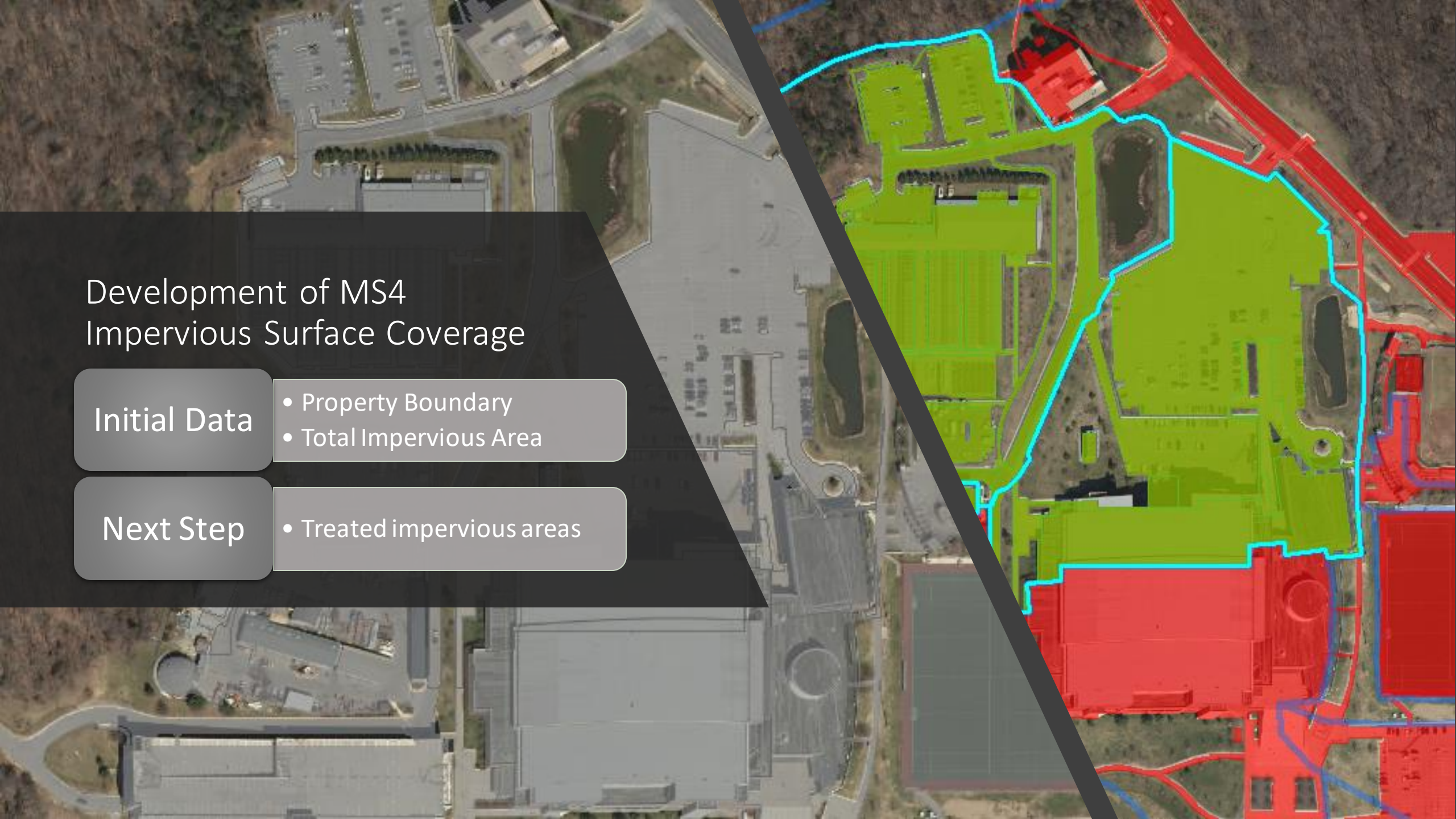
Development of Drainage Areas

Developing the drainage area is essential to determining the drainage to your outfalls, stormwater facilities, inspections, baseline, and overall stormwater plan.

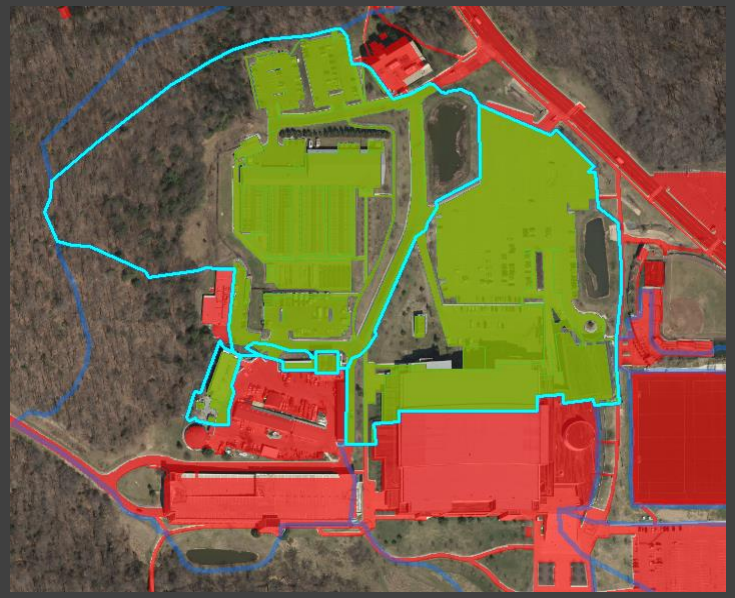
Using previous documentation and existing data will assist in this process

Development of MS4 Impervious Surface Coverage

Initial Data	• Property Boundary • Total Impervious Area
Next Step	• Treated impervious areas



Determining the Baseline



- The Baseline Impervious Area Assessment will determine the total impervious surface area required for restoration within each campus property.
- Assessment is made on a chosen baseline year.
- Identify restoration projects already completed since 2006, and consider those in the analysis.

1. Determine the total impervious area within campus property.
2. Determine how much of that impervious area is treated by existing BMP's, and the level treatment provided by Era.
3. Subtract the equivalent treated acres from the total impervious area.
4. Subtract areas regulated by an industrial permit or owned by others.
5. Multiply by 20% to arrive at Restoration Goal.

Water Quality for Existing BMP Credit

Era Definitions

Based on permitted date, not built date!

- Prior to 1985 – no WQ
- 1985-2002 – ½" WQ
- 2002-2010 – 1" WQ **
- Post 2010 – ESD implemented**

** WQ is considered fully treated

Restoration Project Planning

- Perform a watershed assessment to identify existing problems, and potential restoration opportunities
    - Identify potential sources of pollutants
    - Field recon to identify erosion issues
    - Known flooding issues/other
    - Potential educational opportunities
- Conduct a feasibility study of projects. Prepare initial costs estimates, and rank and prioritize restoration projects based on a cost per equivalent impervious acres of restoration.
- Budget improvements.

Photo credit: https://www.anacostiatrust.org/#intro

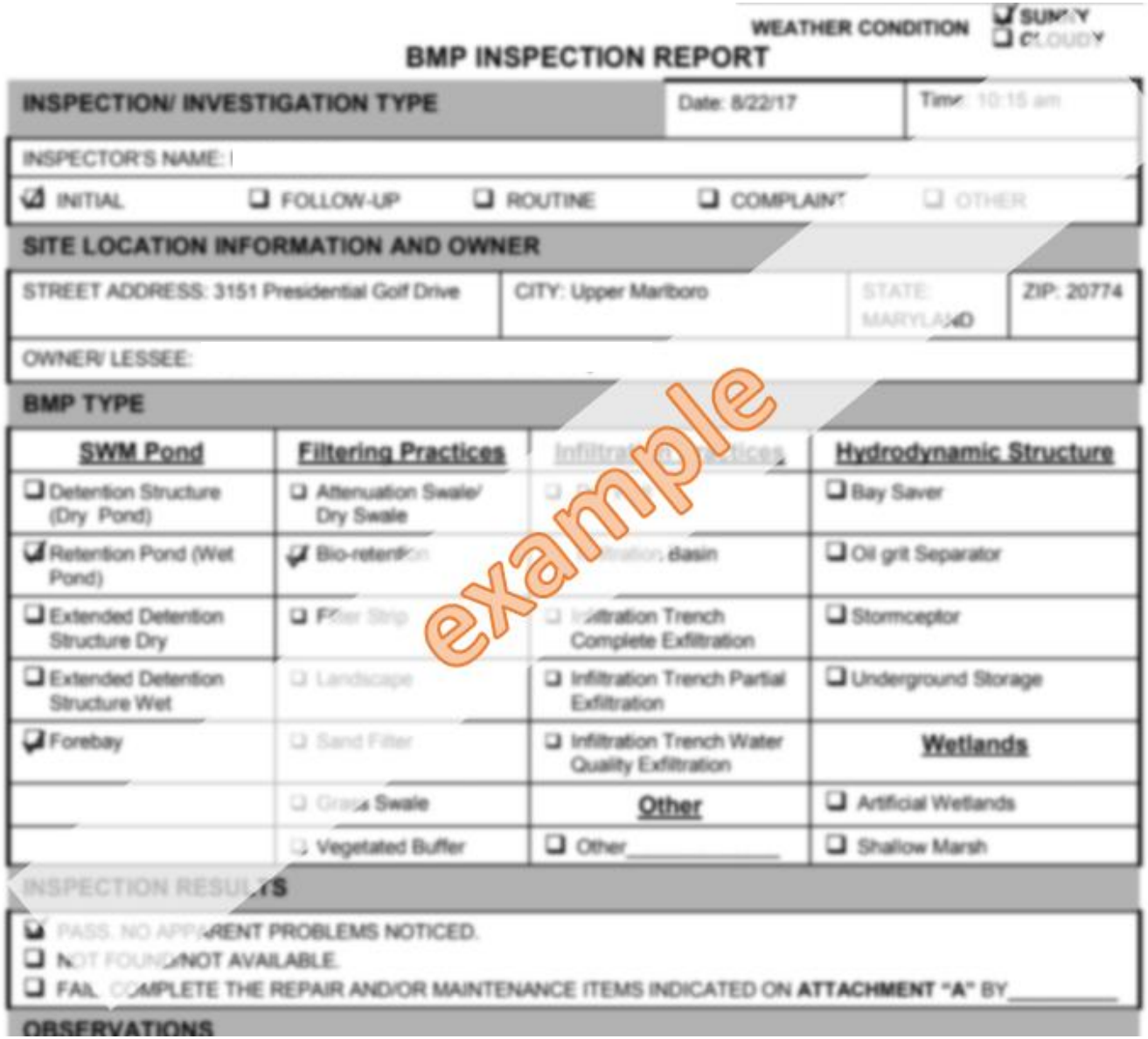
What's needed for crediting existing BMPs?

As-Builts

- A record of what was built.
- Confirm actual WQ treatment amount.
- What if as-builts cannot be found?

Existing BMPs - Inspection

- Inflow
- Ponding
- Invasives
- Structural



WEATHER CONDITION ☑ SUNNY ☐ CLOUDY

BMP INSPECTION REPORT

INSPECTION/ INVESTIGATION TYPE	Date: 8/22/17	Time: 10:15 am
INSPECTOR'S NAME:		
☑ INITIAL ☐ FOLLOW-UP ☐ ROUTINE ☐ COMPLAINT ☐ OTHER		

SITE LOCATION INFORMATION AND OWNER

STREET ADDRESS: 3151 Presidential Golf Drive	CITY: Upper Marlboro	STATE: MARYLAND	ZIP: 20774
OWNER/ LESSEE:			

BMP TYPE

SWM Pond	Filtering Practices	Infiltration Practices	Hydrodynamic Structure
☐ Detention Structure (Dry Pond)	☐ Attenuation Swale/ Dry Swale	☐	☐ Bay Saver
☑ Retention Pond (Wet Pond)	☑ Bio-retention	☐ Infiltration Basin	☐ Oil grit Separator
☐ Extended Detention Structure Dry	☐ Filter Strip	☐ Infiltration Trench Complete Exfiltration	☐ Stormceptor
☐ Extended Detention Structure Wet	☐ Landscape	☐ Infiltration Trench Partial Exfiltration	☐ Underground Storage
☑ Forebay	☐ Sand Filter	☐ Infiltration Trench Water Quality Exfiltration	**Wetlands**
	☐ Grass Swale	**Other**	☐ Artificial Wetlands
	☐ Vegetated Buffer	☐ Other_____	☐ Shallow Marsh

example

INSPECTION RESULTS

☑ PASS. NO APPARENT PROBLEMS NOTICED.
☐ NOT FOUND/NOT AVAILABLE.
☐ FAIL. COMPLETE THE REPAIR AND/OR MAINTENANCE ITEMS INDICATED ON **ATTACHMENT "A"** BY_____

OBSERVATIONS

Existing BMPs

Example Inspection

Existing BMPs

Maintenance

Pond Retrofit

Impervious Surface Removal

Retrofit Opportunities

Favorite BMP

- Submerged Gravel Wetland
- High groundwater
- Large drainage area

Souces of Funding

- Capital Funding
- Pooled Resources - Partnerships
- Grant Opportunities

Grants!

- **Design & Implementation funding available**
- NFWF
  - Up to $1M
- Chesapeake Bay Trust
  - Up to $100,000
- DNR Trust Fund
  - Up to $1M

Questions?
Reach out!
410-729-8200

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