

# Solving NPDES Regulatory Requirements by Leveraging the AGO Platform

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Ray de León, GISP  
JMT Technology Group

July 2014  
Esri User Conference



# AGENDA

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- **VDOT MS4 Program & Challenges**
- **ArcGIS Online**
- **Roadmap for the Field Data Collection**

# PROJECT TEAM

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EEE Consulting, Inc.

JMT Technology Group

Louis Berger Group, Inc.

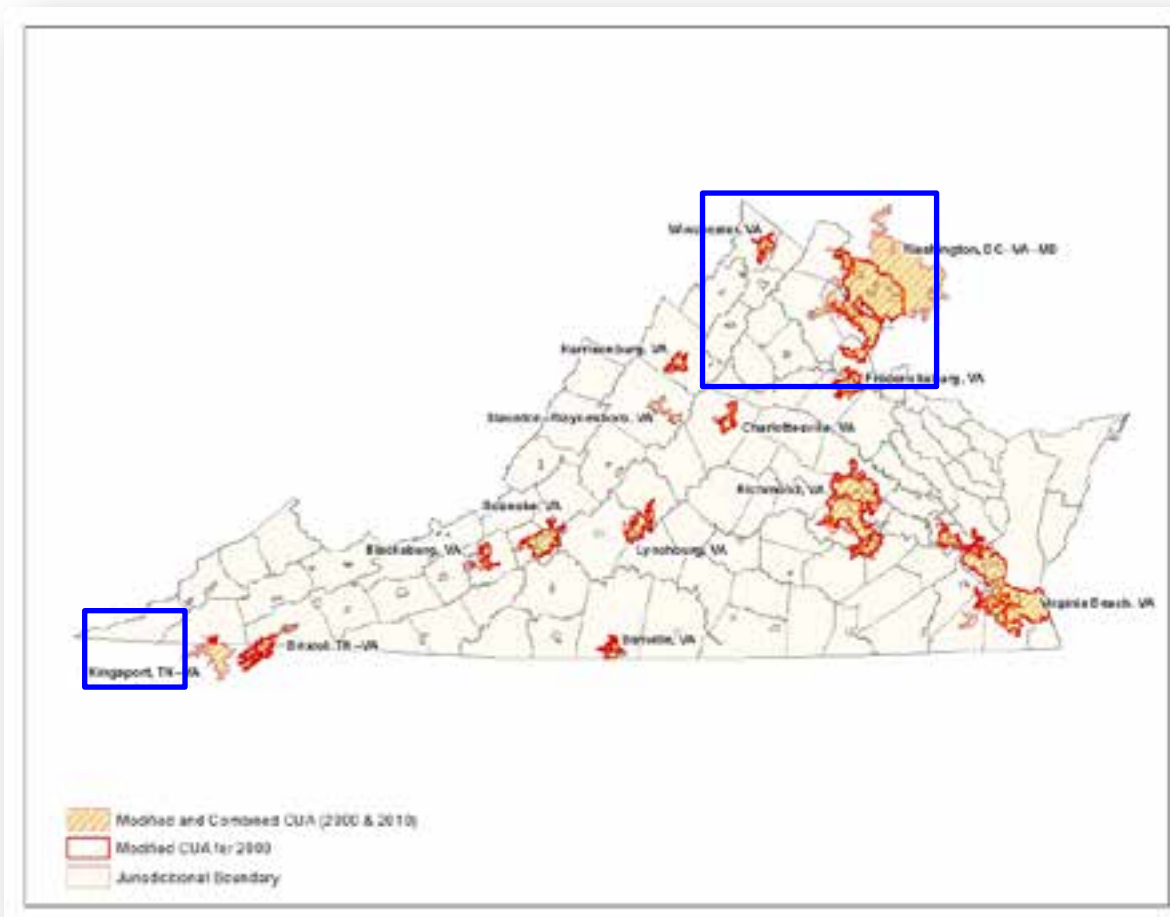


# NPDES REGULATORY REQUIREMENTS

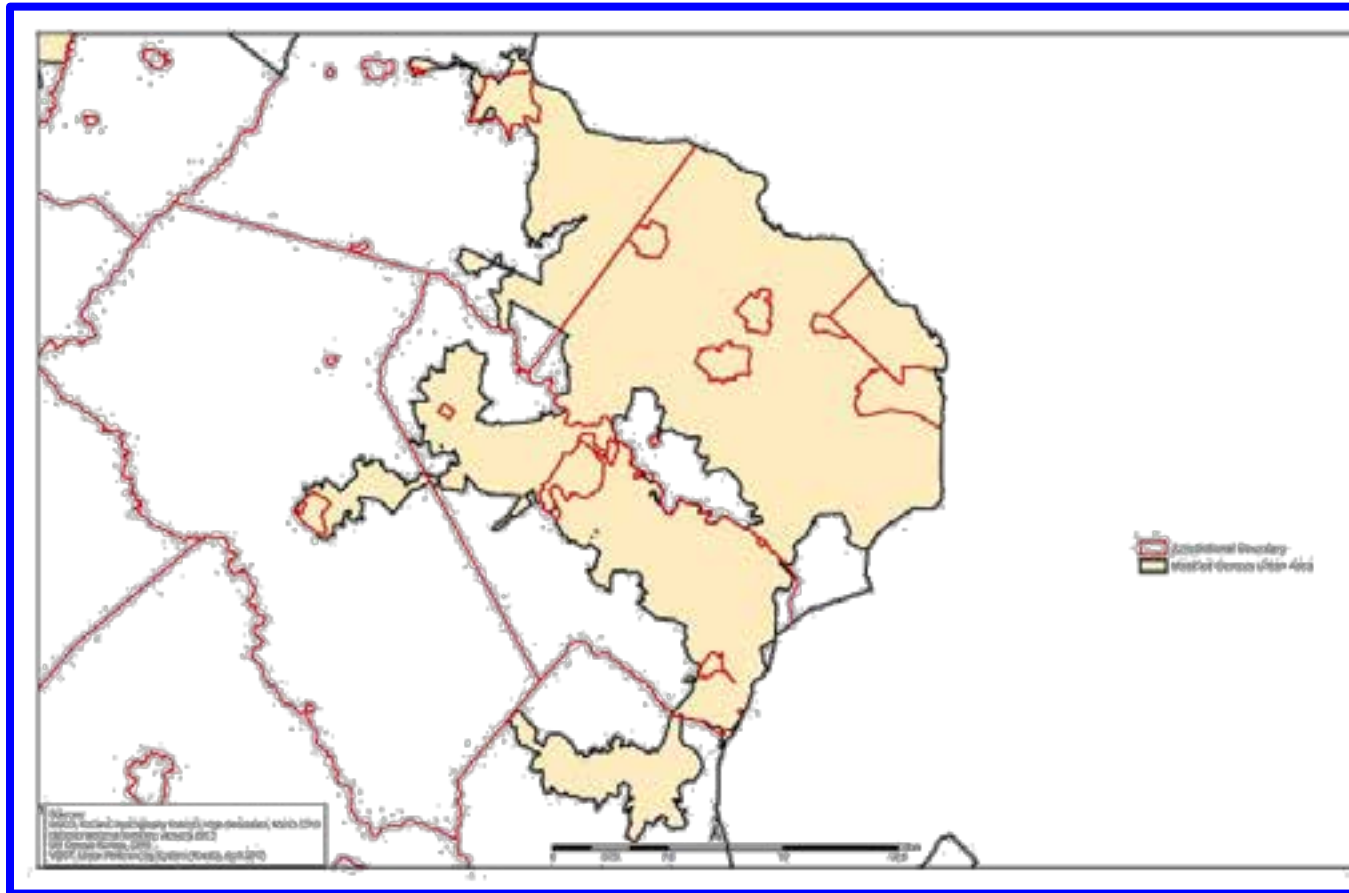
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- **General permit for MS4 Pursuant**
  - 9VAC25-890-40
- **Clean Water Act (CWA)**
  - 33 USC § 1251 et seq
- **Virginia Stormwater Management Act**
  - § 62.1-44.15:24et seq.

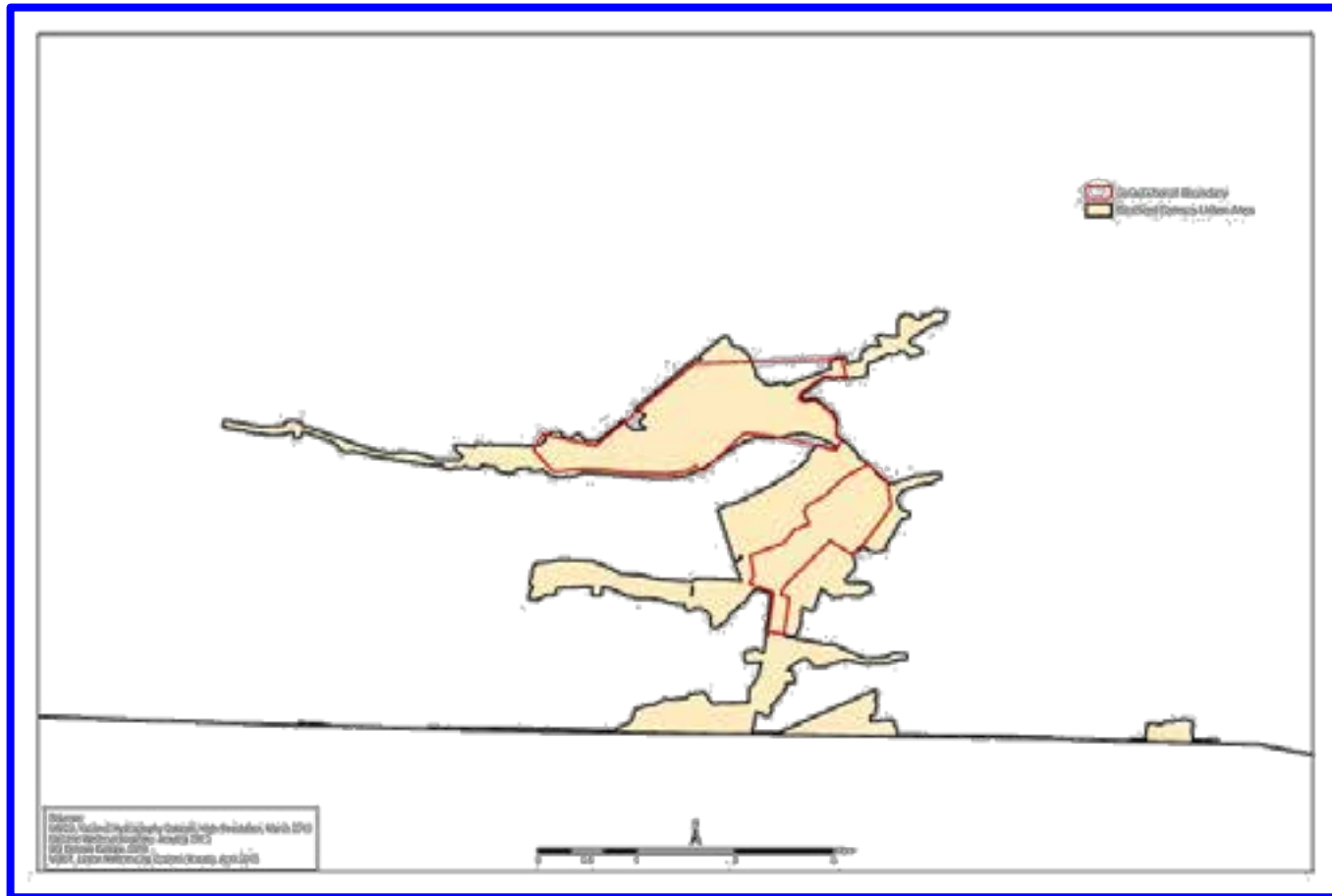
# CHALLENGES - STATE WIDE | 15 CUA



# CUA – WASHINGTON, DC-VA-MD



# CUA – KINGSPORT, TN-VA



# CHALLENGES - FIELD INSPECTION



Table 1: Field Inspection

Location	Inspector	Date	Time	Weather	Notes

Table 2: Field Inspection

Location	Inspector	Date	Time	Weather	Notes

Table 3: Field Inspection

Location	Inspector	Date	Time	Weather	Notes

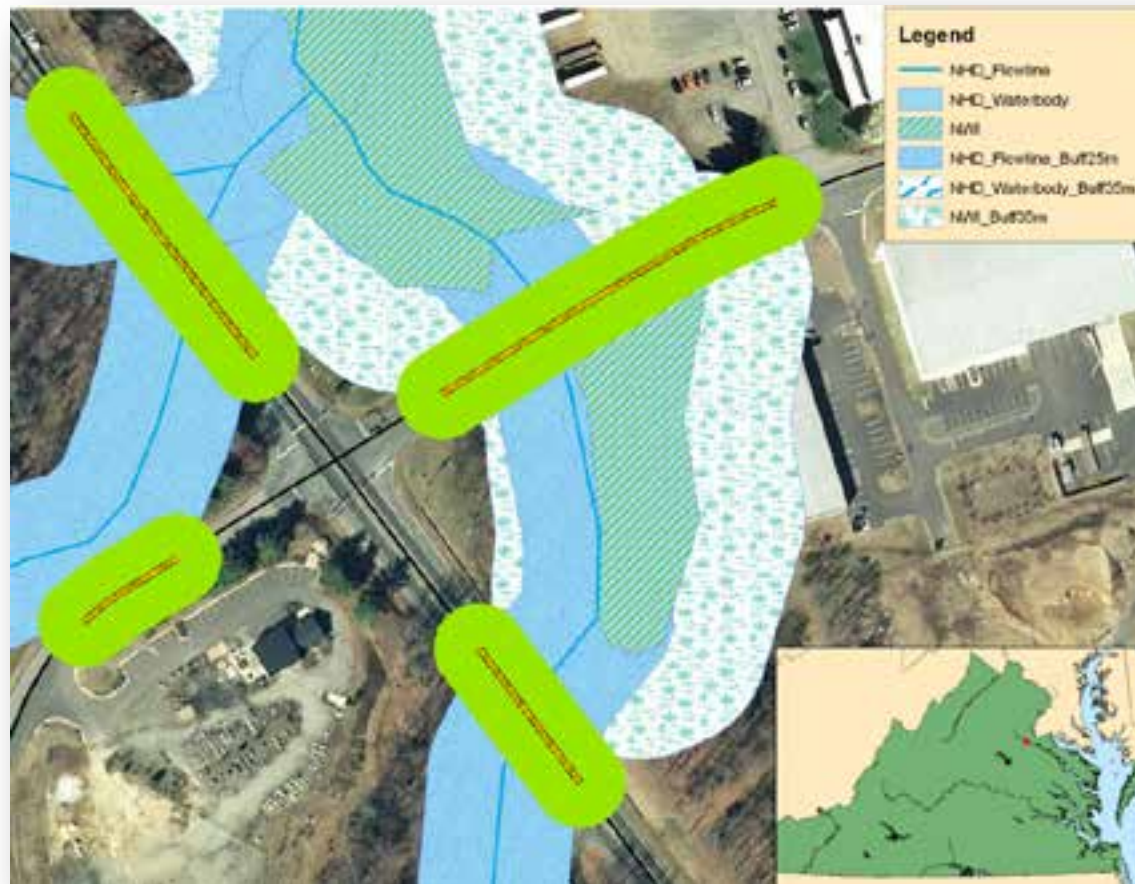


# VDOT MS4 – GIS SOLUTION

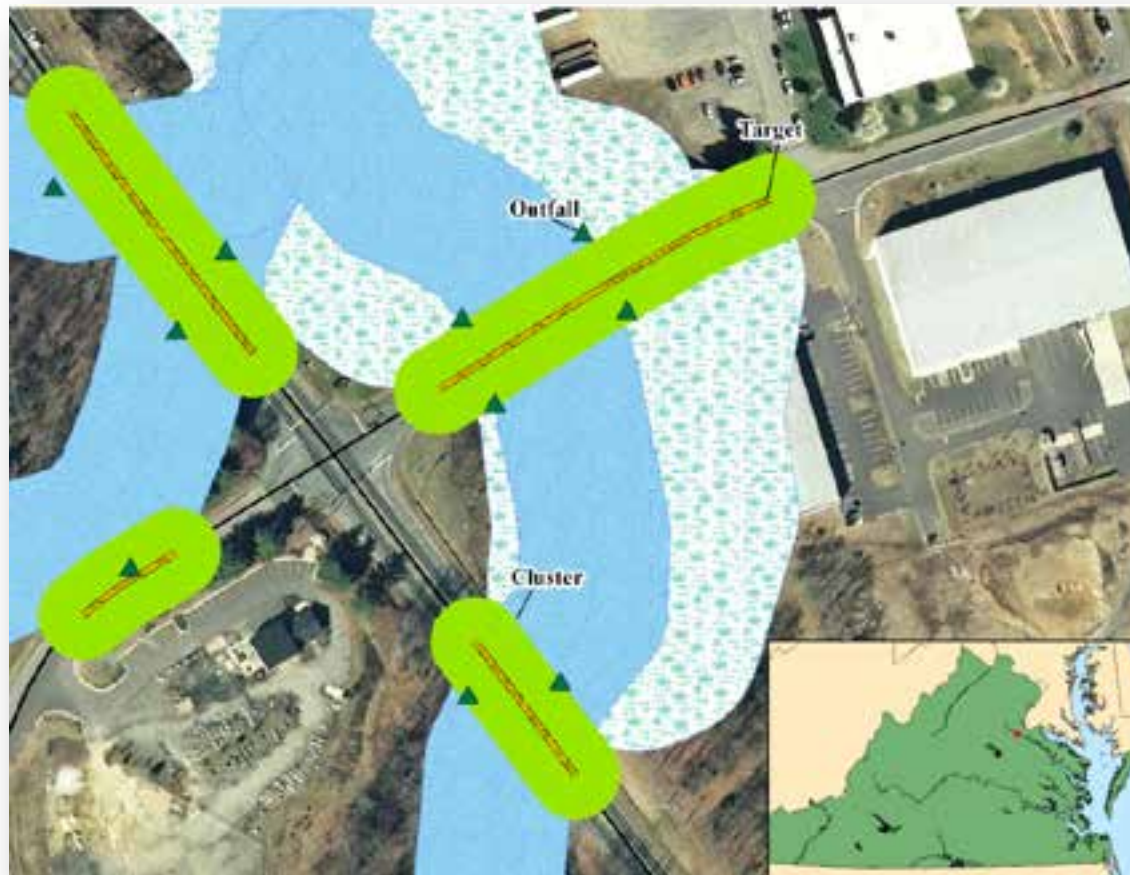
- ArcGIS to **model and predict** MS4 outfalls
- VDOT's ArcGIS Online
- Collector App



# GIS Analysis - MS4 TARGET MODEL



# OUTFALL IDENTIFICATION



# ARCGIS ONLINE



# FIELD INSPECTION - COLLECTOR APP



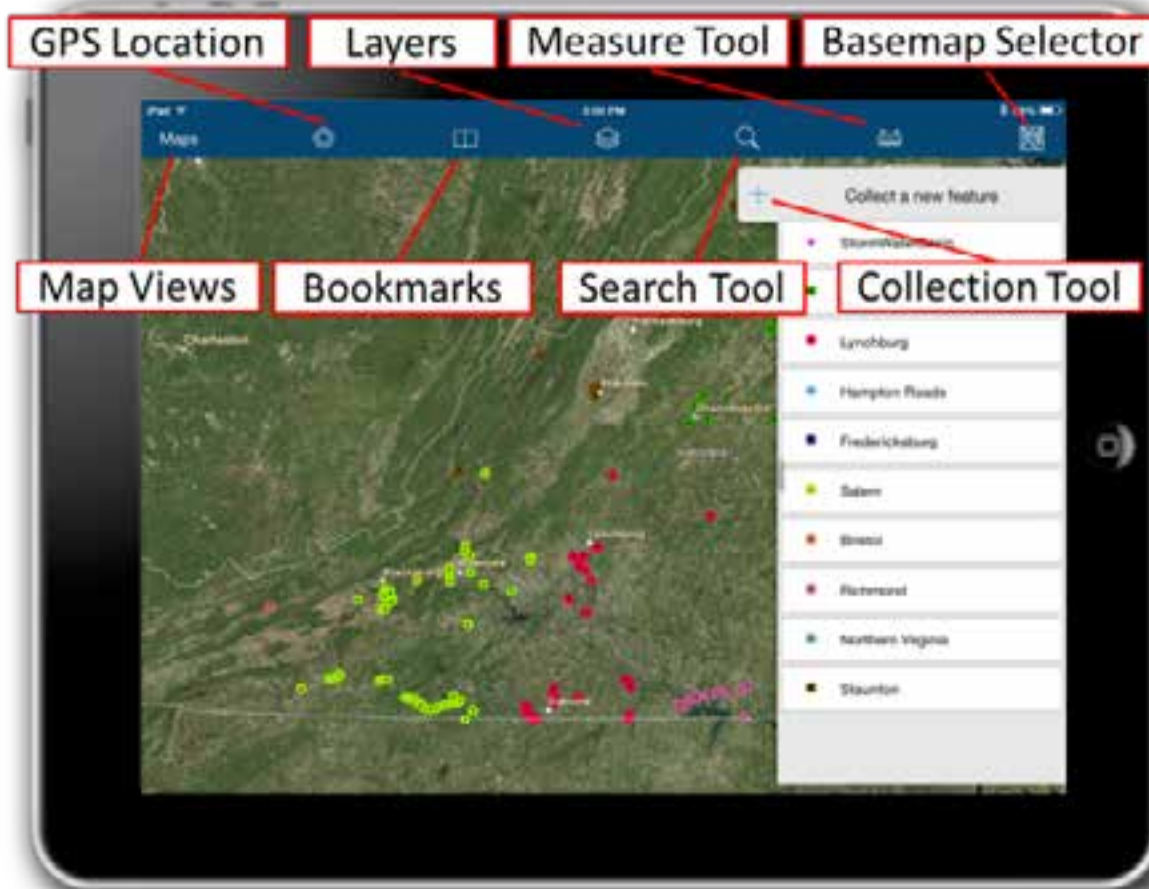
Collector



# COLLECTOR - OFFLINE COLLECTION



# COLLECTOR – SIMPLE MENU

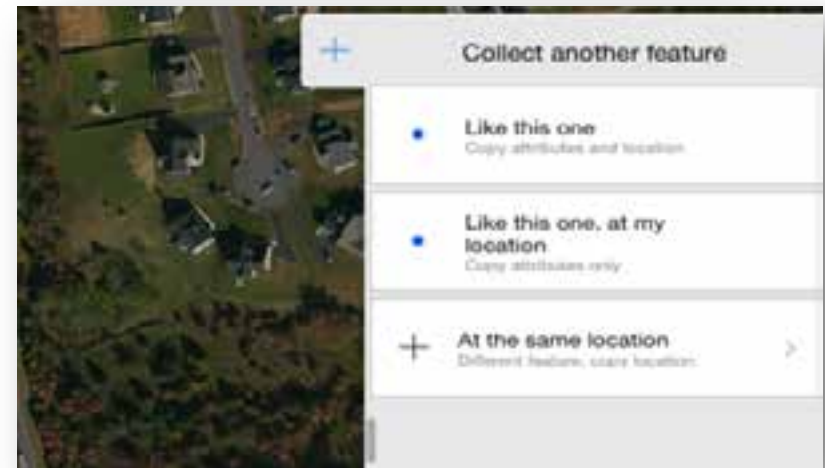
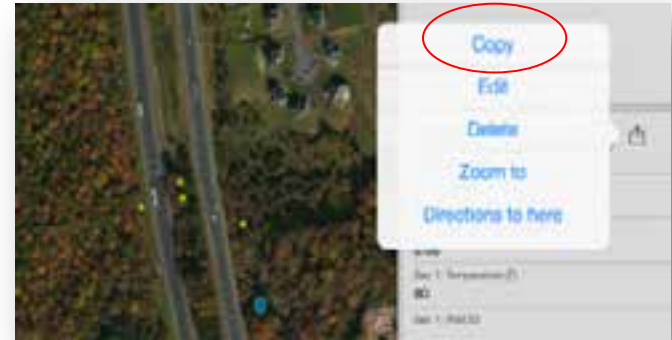
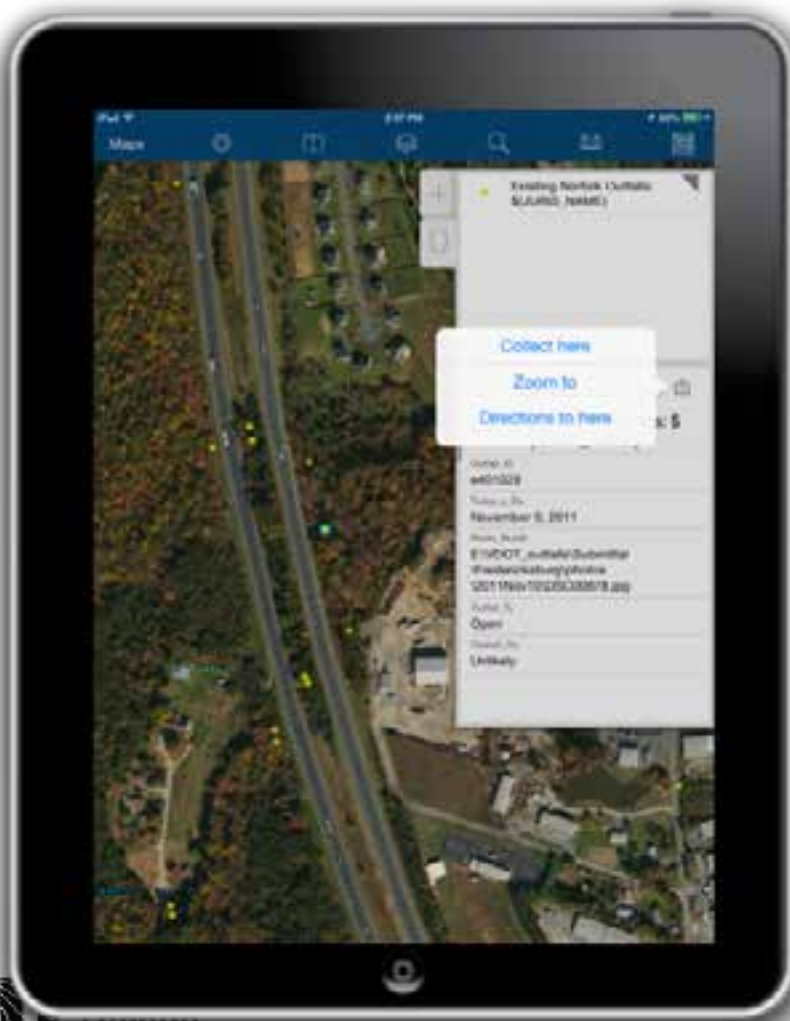


# COLLECTOR - DIRECTIONS

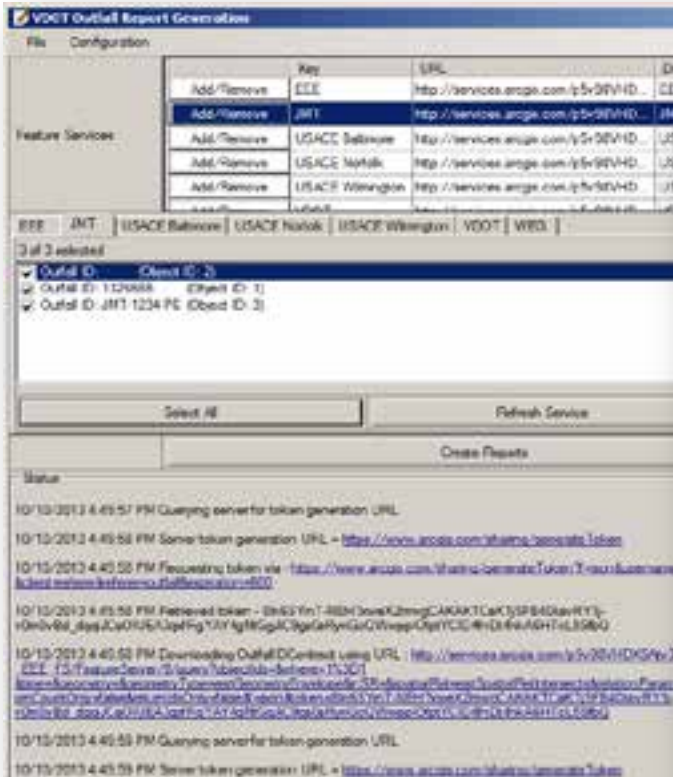




# COLLECTOR – SIMPLE COLLECTION



# STANDARDIZED REPORTS



### Outfall Reconnaissance Inventory Field Sheet

**Section 1: Team Data**

Investigator: Tim Abdala	Team ID: [ ]
Tester's date: 10/10/2013	Rainfall (in): Last 24 hours: 0 Last 48 hours: 0
Temperature (F): 0	GPS Unit: [ ] GPS SV or ID: [ ]
Camera: [ ]	Camera SV or ID: [ ]

**Section 2: Background Data**

Subwatershed: Middleburg Creek	Outfall ID: JMT-1234-PE
Photo #:	Time: 1:49 PM
	Latitude: 38.8120 Longitude: -77.0621
MSA Outfall (Yes/No) No Or POD (Yes/No)* No ID of County Structure: [ ] Is POD a MSA Street connection (Yes/No)* No County Outfall: [ ]	Notes (e.g., origin of outfall, closures such as SWM Basin): [ ]
Land Use in Drainage Area (Check all that apply): <input checked="" type="checkbox"/> VDOT <input type="checkbox"/> Industrial <input type="checkbox"/> Urban-Cities/Residential <input type="checkbox"/> Suburban/Residential <input type="checkbox"/> Commercial	
Inventory Review: Review (Outfall Survey, QA/QC, EDCR, DDCI)	

**MSA Outfall Note:**

1. Because of EDCR act in and reflects all of outfall to determine will be in MSA area. VDOT approved to assist in the EDCR determination but will be assumed for VDOT has a drainage system MSA outfall and a POD.
2. If VDOT discharge structure inside of a targeted area of MSA street gates and the discharge POD and the inventory and assessment completed.
3. If the POD is into a ditch, paved ditch or pipe then the POD is also a MSA Interconnection (MCI).

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# LESSONS LEARNED

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- **Clearly define the DB schema**
- **Use Tiling Package**
- **Plan your Web map service**
- **Set your permission**
- **Pre-plan Offline collection**



# ROADMAP

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- **Complete IDDE Inspections**
- **2<sup>nd</sup> Validation Inspections**
- **Stormwater BMP Inspections**
- **Robust form**
- **Integrate with Operations**



# THANK YOU

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Q & A

# CONNECT WITH US...

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