Outline

- RIDOT Consent Decree background
- Tracking of Consent Decree compliance
- Drainage infrastructure data management
- Stormwater Control Plan (SCP) data management
- Overall data integration
RIDOT’s RIPDES Audit Consent Decree

2011 Audit

2014
May 2014—DOJ notifies RIDOT of intent to bring federal court action for RIPDES violations
- Control of pollutants discharged to impaired waters
- Illicit discharge program development/screening
- Good housekeeping measures

September 2014
Draft Consent Decree

Many, many meetings

October 20, 2015
Proposed Consent Decree issued

November 19, 2015
Public comment period closes

December 7, 2015
Consent Decree Finalized
Consent Decree Requirements

- Drainage system inventory and inspection
- Catch basin and manhole cleaning
- Street sweeping
- Illicit discharge detection elimination inspections
- Stormwater Control Plan (SCP) development
- Stormwater Treatment Unit (STU) design and construction
- Internal trainings
- Annual compliance reports

- Ongoing data updates to RIDEM and EPA
- Coordination among multiple divisions and consultants
Other Departments

Operation and Maintenance
- Catch basin and manhole cleaning
- Street sweeping
- Drainage infrastructure repairs
- STU maintenance

Project Management
- Project scoping
- STU design

Environmental
- Project permitting
Asset Management

- Drainage infrastructure inventory
- Condition inspections
- IDDE screening and sampling
- Work orders for inspection and maintenance follow-up
- Tracking of work complete
- Mobile field data collection
RIDOT’s Stormwater Data Management

Data Layers
- Outfalls
- Structures
  - Manholes
  - Catch basins
- Existing STUs
- Pipes
- Conveyances

Related Tables
- IDDE Sampling Entry
- Condition
- Work Order
## Dry Weather Sampling

### Electronic Data Collection

<table>
<thead>
<tr>
<th>MobileVUE</th>
<th>Home</th>
<th>Settings</th>
<th>Logout</th>
<th>About</th>
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<table>
<thead>
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<th><strong>Weather Conditions</strong></th>
<th>Dry</th>
<th>Wet</th>
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<tbody>
<tr>
<td><strong>Last Rain Event</strong></td>
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<tr>
<td><strong>Rain Event Duration</strong></td>
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<tr>
<td><strong>Rain Event Amount</strong></td>
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### FIELD SAMPLING of FLOW

<table>
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<tr>
<th><strong>Temperature</strong></th>
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<tr>
<td><strong>Temp abnormal</strong></td>
<td>Yes</td>
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<tr>
<td><strong>Conductivity (uS/cm)</strong></td>
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</tr>
<tr>
<td><strong>Conductivity &gt; 1000 uS/cm</strong></td>
<td>Yes</td>
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<tr>
<td><strong>pH</strong></td>
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<tr>
<td><strong>6 &lt; pH &gt; 8</strong></td>
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<tr>
<td><strong>Salinity (ppt)</strong></td>
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<td><strong>Salinity &gt; 10 ppt</strong></td>
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### Ammonia (mg/L)

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### Chlorine (mg/L)

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### Chlorine > 0.02 mg/L

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### Surfactants (mg/L)

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### Surfactants >= 0.25 mg/L

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### Field Sampling NOTES

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### QA/QC Dup Field Sample

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</tr>
<tr>
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<td>Yes</td>
</tr>
</tbody>
</table>
Hello Bastoni, Annie.

Need Help?

Dashboard

Collect

Query

Failing: Requires Immediate Action
Fair: Inspect Within 1 Year
Good: Inspect Within 2 Years
Poor: Requires Maintenance

Pet Waste Signs, Install Year

Choose a Map Theme

© Vannesse Haagen Brustein, Inc.
Stormwater Control Plans

**Goal:** Develop Stormwater Control Plans for all impaired watersheds over 10 years

- Setting treatment targets
- Identify potential structural and non-structural BMPs to meet target
- Accelerated construction schedule
- Developed tracking database
SCP Data Management

Challenges
- Over 230 watersheds
- Multiple consultants completing work
- Different consultants each year
- Unique tracking needs for each watersheds
- Submission to RIDOT, RIDEM, and EPA

Solutions
- Centralized cloud-based database to track information
- Enterprise database allowing for versioning
- Customizable but comprehensive database
- ArcGIS Online maps for agency review
RIDOT SCP Data Management

Data Layers

- SCP Watersheds
  - Program tracking/planning
  - Summations for reporting

- Potential STUs

- Existing STUs

- RIDOT Catchments
  - Treatment status
  - Discharge point

- Outfalls

Related Tables

- STU Water Quality
- Catchment Constraints
ArcGIS SCP Figure 4

Legend
Non-RIDOT Catchment Treatment Status
- Potential STU Treatment
- Limited ROW STU Treatment
- Existing STU Treatment

RIDOT Catchment Treatment Status
- Potential STU Treatment
- Limited ROW STU Treatment
- Existing STU Treatment
- Retrofit STU Not Feasible
- TIP Project
- Non-Discharge
- Discharge to CSO

Existing STUs

Lakes with TMDL Determination: Roosevelt Lake

- NAME: Roosevelt Lake
- WBID: RI0006017L-05
- WBDesc: Roger Williams Park Ponds, Providence
- Impairment: Dissolved Oxygen, Total Phosphorus, Excess Algal Growth, Non-Native Aquatic Plants, Fecal Coliform
- TMDLs For: Excess Algal Growth, Fecal Coliform, Dissolved Oxygen, Total Phosphorus
- WQS: B
- CAT: 4A

Zoom to
Data Sources

- Delineate RIDOT catchments
- Use drainage inventory data from VueWorks
  - Catch basins
  - Outfalls
  - Map interconnections
- Complete IDDE screening and sampling
Data Integration with RIDOT Programs

- Prioritizing future work from SCP outcomes
- Coordination with transportation projects
- Coordination with municipal partners
- Stormwater program budget and schedule planning
- Sharing drainage infrastructure information with project designers
- Pulling project updates back into drainage infrastructure database
- Taking credit from all stormwater improvements statewide
- Keeping reduction targets up to date
Pre-Scoping
Project Intake Tool
Project Limits Defined
Review SCP Data to:
- Identify watersheds
- Identify TMDLs
- Identify impaired receiving waters
- **Determine if STUs will be required**

Scoping Phase
Project Scope and Cost Defined
Provide Design Consultants with:
- Anticipated STU needs
- Existing SCP data and potential STU data
- Drainage system data

Interim Design Phase
STU Feasibility Defined
Update SCP Results
- Confirm Project Area receiving waterbody
- Update catchment delineation
- Update existing STU and potential STU data

Final Design
Final STU Design
Update Drainage Infrastructure
- Final STU Data
- STU WQ Calculations
- Updates to drainage infrastructure data

Catchment Delineations
Watershed data
Potential STU data
Existing STU data
RIDOT Drainage Infrastructure
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