Vermont’s Story:
The Integration of the Watershed Management Division’s WQ Monitoring Programs

Tina Heath, VTANR Wetlands Program
WSMD Water Monitoring Program LEAN Event

Outcomes

March 2-3, 2016
What is LEAN?

Maximizes value for internal and external customers while removing wasteful products; and always striving for continuous improvement.

- Asks the big question: what do we need from monitoring to service our water quality programs?
- Can we coordinate better with data?
- Can we be more efficient?
- Accountability with legislature and the public
Lean Charter

► **Goals**

1. Identify WSMD monitoring priorities and anticipate future needs- Division level planning
   - What are the status and trends in water quality for Vermont’s waters?
   - Do our water’s meet the Vermont Water Quality Standards?

2. Develop strategies to make sure program priorities support division priorities.

3. Compare processes by which staff members plan each field season’s work to meet high priority monitoring needs.

4. Identify opportunities for optimization
Purpose

- Improve the efficiency of our monitoring as we address key questions:
  - What is the status in water quality of lakes, rivers, and wetlands?
  - What are the trends in water quality across our waters?
  - How well are clean water programs working? (RBA)
  - Monitoring to build program capacity, e.g., wetlands or large rivers, biological criteria for lakes.
Process

- Brought together representatives from programs across the Division:
  - Lakes & Ponds
  - Monitoring Assessment & Planning
  - Rivers
  - Wetlands

- Started by mapping respective processes
“SIPOC”

Suppliers
- Basin planners
- EPA Lakes & Ponds
- Volunteers
- Lake Associations
- Regional Partners
- WSMD Staff
- Agency Upper mates
- Academia
- Municipalities

Inputs

Process

Outputs

Customers
- EPA - ADB, 305B, 309D, NLA, NRYS/Street
- Basin plan
- Division staff
- Flow alteration staff (ERR, Molasses, Fells, Reports)
- NE regional Partners (Harvard, Ao)
- Legislature (LMR Reports, S. Maine Card, NLA Report...)
- Academia?
- OUR LAKES & PONDS! (And their aquatic life
- Shoreland Permit folks
- Water Quality Standards (Vermont...)}
What was accomplished
A new business process
Outcomes (Step 1, Initiation)

- “Veteran’s Day” pre-sessions
- Role of Basin Planner
  - Set forth annual monitoring program development process
  - Communicate to programs where gaps in data may exist
  - Make own determinations on high quality, impaired, and downward trending sites to share with programs
Outcomes (Step 2, Program-specific input)

- “Veteran’s Day” pre-sessions
- Role of Programs
  - Develop initial list of locations (sites, or subwatershed areas) to target monitoring resources.
  - Determine purpose for sampling
    - Status
    - Trend
    - Capacity
    - RBA
    - Attenuation Assets
    - Stressor ID
    - Restoration Priorities
  - Consider client for data

<table>
<thead>
<tr>
<th>Program</th>
<th>Priority Locations</th>
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<tbody>
<tr>
<td>WET</td>
<td>Status, Trend, Capacity, RBA</td>
</tr>
<tr>
<td>Lakes</td>
<td>Status, Trend, Capacity, RBA</td>
</tr>
<tr>
<td>Rivers</td>
<td>Status, Attenuation Assets, Stressor Identification, Restoration Priorities</td>
</tr>
<tr>
<td>MAPP</td>
<td>Status, Trend, Capacity, RBA, Permits</td>
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</tbody>
</table>
Outcomes (Step 3, “Monitoring Summit”)

- Programs present specific priorities to Division-wide technical group
- Explore geographic areas for integrated monitoring efforts
- Identify suitable monitoring activities for LaRosa / Lay Monitoring Partners
Outcomes (Step 4, Annual Plan)

- Integrated annual gameplan
  - Locations
  - Why
  - Clients served
  - Who does it
- Opportunity to cross-train, and leverage cross-program participation
- Annual realignment of Lakes Lay Monitoring Program locations.

<table>
<thead>
<tr>
<th>Annual Monitoring Program Gameplan</th>
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<tbody>
<tr>
<td><strong>Which program monitors</strong></td>
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<td></td>
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<tr>
<td><strong>Lakes</strong></td>
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<td>B1</td>
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<td>B2</td>
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<tr>
<td>B3</td>
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<tr>
<td>Other</td>
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<td><strong>Rivers</strong></td>
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<td>Other</td>
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<td><strong>MAPP</strong></td>
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<td>B3</td>
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<tr>
<td>Other</td>
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<tr>
<td><strong>Wetlands</strong></td>
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<tr>
<td>B1</td>
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<td>B2</td>
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<tr>
<td>B3</td>
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<tr>
<td>Other</td>
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<tr>
<td><strong>LMP and LaRosa</strong></td>
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<td>B1</td>
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<td>B2</td>
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<td>B3</td>
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<td>Other</td>
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Outcomes (Step 5, Management Briefing)

- Are any key priorities missing
- Resource issues
  - Resource needs
  - Lab budgeting
  - Capacity limitations
- RFP issued for LaRosa Partnership Monitoring to meet specific needs.
- Annual report-out to VT Water Monitoring Council and WUV.
Field staff deploy and program moves forward into new year.
Implementation Plan

- 14-point implementation plan
- Update Vermont Water Quality Monitoring Program Strategy
- Full go-live for 2017 season across all basins.

<table>
<thead>
<tr>
<th>Task #</th>
<th>Task Description</th>
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<tbody>
<tr>
<td>Total Project Progress</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Outline new process</td>
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<tr>
<td>2</td>
<td>Organize details of summit</td>
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<tr>
<td>3</td>
<td>Post event documentation on SharePoint</td>
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<td>4</td>
<td>Develop presentation on event outcomes</td>
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<td>5</td>
<td>Develop draft decision making rubric</td>
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<td>6</td>
<td>Gather program priorities for Otter Creek</td>
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<td>7</td>
<td>Consider database architecture</td>
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<td>8</td>
<td>Hold the summit</td>
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<td>9</td>
<td>Develop draft monitoring plan using database architecture</td>
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<td>10</td>
<td>Develop revised monitoring plan for management</td>
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<td>11</td>
<td>Review revised plan with Pete and Mary</td>
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<td>12</td>
<td>Conduct plan updates at program level</td>
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<td>13</td>
<td>Update WQMS</td>
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<tr>
<td>14</td>
<td>Meet to review planning process for 2017</td>
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Meshing of WsMD Groundhog Day monitoring summit with the five-year tactical basin planning process

Groundhog Day: Monitoring summit consists of three two-hour sessions focused on color coded maps

Post-Veterans Day: Three short summit preparation sessions (one per basin on deck) to review data

Monitoring (Year 1)

Assessment by programs supports new TBP (Year 2)

Implementation Continued (Year 5)

Planning (Year 3)

Implementation (Year 4)

RBA ADB 303 & 305
This is good news for Wetland Bioassessment & Monitoring

- **Priorities:**
  - Building program capacity
    - Biocriteria development and creating a condition gradient for different wetland types
    - Targeted and probabilistic site selection
  - Condition- reference and impaired sites (targeted)
  - Status- how does site compare to other wetlands in VT, and US? (NWCA)
  - Trends- what does the data show over time?

- **How LEAN process can help:**
  - Identify targeted sites for condition assessment
  - Biocriteria development collaboration
  - LTM strategies
  - More bodies to help sample & implement VRAM
Where we’re at right now:

- Summit Meeting Pilot Run- June 2016- Otter Creek Basin
- Basin Planners share their implementation tables and highlight what areas need to be addressed
- Programs review these tables and determine priorities based on need for protection, missing data, etc.
- 2016 “Veteran’s Day” meeting:
  - 2 hour session for each basin- planner and programs discuss where concerns/priorities overlap
- November- February:
  - Each program develops a list of prioritized sites and why, and by who