

# ASWM State Wetland Program

## Integration Case Study: Vermont

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### **Integration of the Vermont Watershed Management Division's Water Quality Monitoring Programs: Combining Wetland, Lake and River Program Monitoring**



#### **State Wetland Program Information**

This case study<sup>1</sup> explores the integration efforts undertaken by the Vermont Wetlands Program in partnership with an array of state agency partners, as well as other “satellite programs”. Vermont’s Wetlands Program is run by one manager, six regulatory staff and 1.25 FTE monitoring staff.

#### **Type of Integration Effort**

This project brings together wetland management, water quality monitoring and watershed planning by integrating all freshwater resource monitoring programs in Vermont.

#### **Scale of Integration Effort**

Monitoring programs are integrated through collaboration at the statewide level.

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<sup>1</sup> Project Case Study Criteria: The Association of State Wetland Managers (ASWM) conducted interviews with representatives from state wetland programs actively integrating with one or more additional resource management programs operating within their state. Criteria for case study inclusion required eligible programs to demonstrate direct or indirect impacts of integration on watershed-level planning, implementation and/or outcomes documented using formal or informal performance measures. Further consideration was given to integrated programs with the ability to provide cost-benefit insights.

## Integration Goals

The Vermont Wetland Program and its partners are working collaboratively to achieve the following integration goals:

1. Create a watershed-approach to monitoring
2. Identify Division monitoring priorities and anticipate future needs
3. Develop strategies to make sure program priorities support division priorities
4. Integrate staff monitoring efforts for efficiency
5. Specific to the Wetlands Program, the project also worked to increase biocriteria development collaboration; VRAM usage by other Programs; and use of processes that allow for identification of targeted sites for condition assessment (using Basin Plans, where other programs have existing data, etc.).

## Integration Process Timeline

- 2016-2017      Tested “new business process” that was created after a three-day LEAN event in which monitoring programs within the Division met and worked out a plan together. Held a “pilot” meeting for 2016 field season and went through the whole process for planning the 2017 field season.
- 2018 -Future    This process (see below) will occur each year in a multiple-step Implementation Plan to determine site selection for each upcoming field season

<b>Annually, the partners conduct the following process:</b>	
1.	Basin Planners review Implementation Table to highlight areas that need to be addressed and share this information with programs prior to Initiation Meeting (October)
2.	“Initiation” Joint Meeting: November-December for wetland, lakes and stream monitoring, assessment and planning staff
3.	Basin Planners present Implementation Tables with monitoring priorities
4.	Monitoring programs share their monitoring priorities
5.	Outside Programs share any potential monitoring priorities
6.	Individual programs create priority site list based upon feedback from Basin Planners, outside programs, and own program priorities
7.	Gather program priorities for upcoming Basin(s)
8.	Hold Summit Meeting Programs present specific priorities to Division-wide technical group Explore geographic areas in Basin(s) for integrated monitoring efforts <ol style="list-style-type: none"> <li>a. Watershed approach to sampling</li> <li>b. “cross-pollination” opportunities</li> <li>c. Identify suitable monitoring activities for volunteer monitoring programs/affiliates</li> </ol>
9.	Develop draft monitoring plan
10.	Develop revised plan with Division Director
11.	Conduct plan updates at program level
12.	Update Water Quality Monitoring Strategy
13.	Deploy into field season with monitoring plan
14.	Meet to review planning process for next field season

## Project Leadership

Vermont’s monitoring integration project involves an array of state agency partners, including leadership by the Watershed Management Division Director and partners from the Wetlands Program, Lakes and Ponds Program, Rivers Program, and Monitoring, Assessment & Planning Program. Additionally, the Monitoring, Assessment & Planning Program coordinates the annual Monitoring Summit. Other “satellite” programs involved in the project include the state’s Stormwater Program; Forest, Parks & Rec, Waste Management Division, Wastewater Program; and Clean Water Initiative Program, as well as a few others in peripheral ways.

## Resource Investment

Coordination for this integration effort has been supported by long term funding of the Federal EPA Performance Partnership Grant (PPG). Section 106 of the Clean Water Act requires states to develop a monitoring Program strategy. The two objectives of the Vermont Water Quality Monitoring Strategy are directly applicable to this work: 1) Communicate, collaborate and coordinate on a regular basis with organizations, agencies, municipalities, and the general public to assure complementary monitoring programs and 2) Integrate monitoring and assessment with management actions.



## How Success Has Been Measured

This project has a number of measurable outcomes to track progress in achieving its integration goals. Currently, the project measures and tracks the following:

1. Creation of monitoring site plan for each field season
2. Number of sites visited to meet implementation goals
3. Number of potential restoration sites identified through integrated monitoring results
4. Number of sites where protections are “achieved” based on integrated monitoring results [Examples: Class I wetland designation, reclassification of surface waters, designating watersheds/ surface waters as Outstanding Resource Water (ORW)]
5. Number of sites sampled for multiple programs that lead into a greater understanding, protection or remediation about a particular watershed.

## Impact on Watershed-level Planning, Implementation or Outcomes

This project has been designed to result in the following watershed-focused improvements: 1) improved tactics for watershed-level planning, 2) improved implementation of monitoring efforts to meet Division priorities, and 3) improved efforts in protecting, maintaining, enhancing, and restoring the quality of Vermont’s surface water resources.

## Cost Benefit Insights

At this stage in Vermont's integration effort, it is not known what the cost-benefit ratio will be for implementing these integration efforts.

### Benefits

It is expected that through these efforts, Vermont will accrue the following benefits, which will be documented:

- Integrated monitoring efforts to achieve Division-level goals of protecting, maintaining, enhancing, and restoring the quality of Vermont's surface water resources by identifying watershed level restoration potential, high quality protection areas, and identifying permitting successes or issues. Identify specific areas on the landscape which are in need of protection or restoration action. Better understanding of the quality of water as it travels downgradient.
- Career development opportunity for field monitoring staff
- Optimized field staff time by cross-training among different monitoring programs to collect data. This will hopefully allow for the collection of more data across different media.
- Greater resource sharing coordination.
- Increased peer group for small Wetland Bioassessment program, allowing for greater vetting of ideas and suggestions for monitoring approach.

### Costs

These benefits will be made possible through expenditures to cover the following costs:

- Time involved planning integrated monitoring efforts for each field season
- Staff time to review Basin Plan Implementation Tables and other program priorities
- Staff time to develop site selection priorities for each program that encompass Division priorities
- Staff time for meeting preparation and coordination

### Other Impacts



In addition to the above-stated benefits, there have been positive environmental, efficiency, economic and regulatory effectiveness impacts. In terms of the environment, the integration project has increased protections of high-quality sites and restoration of impaired surface waters. Cross-program coordination provides greater information on more waterbodies. This in turn can lead to more sites being proposed for classification and protection, increasing overall effectiveness. Economically, becoming more efficient with monitoring operations keeps expenses low. Finally,

coordination results in increases in regulatory effectiveness by collecting and providing the correct information when needed for wastewater treatment plant permit reasonable potential determinations, waste management permits near impaired sites and TMDL identification and stressor identification.

## Information about Policy-related Issues

Integration is encouraged in the Vermont Agency of Resources, and specifically within the Watershed Management Division. The Division's Monitoring Programs went through a three-day LEAN event to encourage integration of monitoring efforts. Additionally, in Vermont, the Clean Water Act requires the use of the Tactical Basin Plans and Implementation Tables to identify the highest priority actions that will receive state funding in order to restore or provide higher protections to surface waters. Monitoring and assessment work identifies and informs the Tactical Basin Plan of priority protection and remediation sites, specific media, multiple media, and whole watersheds. Monitoring is key to determine whether restoration and protection projects and permits are working effectively.

Types of surface water protection in Vermont:

- Class I designation: highest level of protection under the Vermont Wetland Rules for wetlands that are considered exceptional and/or irreplaceable to Vermont's natural heritage. Only allows permitted impact if there is a compelling need for public health or safety and increases the regulated buffer width. This designation process often takes a lot of time due to the designation requiring a rule change, which is ultimately decided by the state's legislature.
- Reclassification of other surface waters as part of the Tactical Basin Planning process.
- Outstanding Resource Waters

Identification of sites through monitoring and assessment that are impaired, disturbed, or downward trending that need restoration to meet TMDLs and VT Water Quality Standards. For Ecosystem Restoration Grant funding, a water quality improvement project must be identified in a tactical basin plan, which heightens the need for integrated monitoring information



## Challenges & Lessons Learned

Vermont documents several lessons learned from their integration efforts that may serve as useful guidance to others seeking to undertake similar efforts.

The Vermont project needed to invest in neutral facilitation during multi-program meetings in order to stay on task, which was a challenge without this meeting support. They have also found the delegation of duties to be tricky in the integrated planning environment. They share that it takes additional time and effort to plan for meetings and site selection in the integrated setting as decisions must take into consideration and balance different division's priorities. They have found that it can be difficult to coordinate multiple programs for meetings. To make this coordination happen effectively, buy-in to the integration work and meetings is necessary from both agency leadership and staff.

On a more practical level, they also share some program-related lessons learned. To allow enough time to get everything completed, staff members have found that they need to begin planning for next sampling year soon after the end of the present year. They have also identified the need to create database architecture in ways that hold and store site locations based on the results of the integrated decision-making rubric.

## **Next Steps**

Vermont plans to continue to develop and enhance their integration efforts. To this end, they are slated to 1) continue using the “new business process” to determine site selection for next year’s field season and 2) annually review each previous year’s “business process,” looking at what worked, what didn’t and how to improve.

## **Transferability**

While this initiative is transferable to other states, some elements of the context within which this effort has been developed are unique to the State of Vermont. Integration in this manner may be a “smoother” process to assimilate in Vermont because the primary monitoring programs are all housed under the same Division (Watershed Management). Also, monitoring has been the foundation for the creation of Tactical Basin Plans which are updated every 5 years. Other states that have similar processes with rotational basin schedules and basin/ watershed plans may be able to proactively align individual program goals to meet bigger picture goals. If states do not have a similar watershed planning process and funding, monitoring efforts are contracted out, or do not exist at all, it may be a more difficult conception to bring such collaborative efforts to reality.

A primary driver behind greater collaborative monitoring efforts was through the passing of the Clean Water Act in 2015, which strengthens multiple water quality statutes in the state and also requires that all water quality improvement actions undertaken by the State be integrated by means of the Tactical Basin Plans. A program housed within the Watershed Management Division, known as the Clean Water Initiative Program (CWIP), directs state funding toward implementation of priority projects identified in the TBP’s. These plans are developed based on the monitoring efforts of individual programs that assess water quality in various media throughout a basin that help to identify and prioritize actions to improve and protect water quality.

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### **Additional Resources**

- <http://dec.vermont.gov/watershed/map/basin-planning> - Tactical Basin Plans
- <http://dec.vermont.gov/watershed/cwi/cwf> - Clean Water Fund
- <http://dec.vermont.gov/watershed/cwi> - Clean Water Initiative Program
- <http://dec.vermont.gov/watershed/map/strategy> - Vermont Surface Water Management Strategy
- [https://anrweb.vt.gov/PubDocs/DEC/WSMD/mapp/docs/mp\\_MonitoringStrategy2015.pdf](https://anrweb.vt.gov/PubDocs/DEC/WSMD/mapp/docs/mp_MonitoringStrategy2015.pdf) - VT DEC Water Quality Monitoring Program Strategy
- [http://dec.vermont.gov/sites/dec/files/wsm/boss/docs/WSMD-Strategic-Plan\\_2016-2018.pdf](http://dec.vermont.gov/sites/dec/files/wsm/boss/docs/WSMD-Strategic-Plan_2016-2018.pdf) - WSMD Strategic Plan 2016-2018