

State of Vermont
Department of Environmental
Conservation

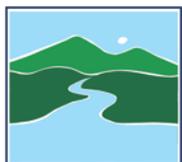
Watershed Management Division

Results Based Accountability Report

Fiscal Year 2016

Mission

To protect, maintain, enhance, and restore the quality of
Vermont's surface water resources



VERMONT DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
WATERSHED
MANAGEMENT DIVISION

 **VERMONT**
AGENCY OF NATURAL RESOURCES
Department of Environmental Conservation

Overview

In 2014, the Department of Environmental Conservation (VTDEC) launched an effort to improve how the Department tracks and measures performance using Results Based Accountability (RBA). RBA is a framework used to measure how well an agency, department, division or program is performing. RBA looks to answer three primary questions: (1) How much did we do? (2) How well did we do it? (3) Is anyone better off? RBA is required by Act 186 and is currently used by the Agency of Human Services and the Secretary of Administration's office.

Department Initiative

VTDEC and the Agency of Administration have trained over 60 Division and Program managers on the basics of RBA and how it is being used in state government. A VTDEC "Performance Management" team was developed and team members worked within their Divisions to coordinate performance measures. These measures were organized at the Department level by the categories of: water, air, land, and operations. A total of 30 performance measures were submitted to Legislature as part of our recent budget proposal. The full Department performance measure package can be found [here](#).

Watershed Management Division Measures

Included below are the performance measures specific to the Watershed Management Division (WSMD). These performance measures reflect the efforts of WSMD to implement its mission to protect, maintain, enhance, and restore Vermont's surface waters. Seven performance measures are provided at the Division level and four highlight efforts at the Program level.

Next Steps

In the coming year, we will be working to enhance our ability to track and report performance data at the Division and Program level, and will continue to develop additional Program level performance measures. We will also work to coordinate results based accountability with upcoming strategic planning so that both efforts work hand in hand.



Table of Contents

PROTECT:

- Protect Surface Water Quality Through Easements and Designations
- Protect Surface Water Quality Through Education and Training
- Program Measure: Protect Surface Water Quality Through River Corridor Bylaws

MAINTAIN:

- Maintain Surface Water Quality Through Monitoring and Assessment
- Maintain Surface Water Quality Through Permitting
- Maintain Surface Water Quality Through Technical Assistance and Review
- Program Measure: Maintain Surface Water Quality through Assessment of Statewide Stream Health
- Program Measure: Maintain Surface Water Quality Through Oversight of Wastewater Treatment Facilities

ENHANCE:

- Enhance Surface Water Quality Through Best Management Practices
- Program Measure: Enhance Surface Water Quality Through Promoting Lake-Friendly Shoreland Management

RESTORE:

- Restore Surface Water Quality Through Targeted Projects in Impaired Waters

WATER

Protect Surface Water Quality Through Easements and Designations

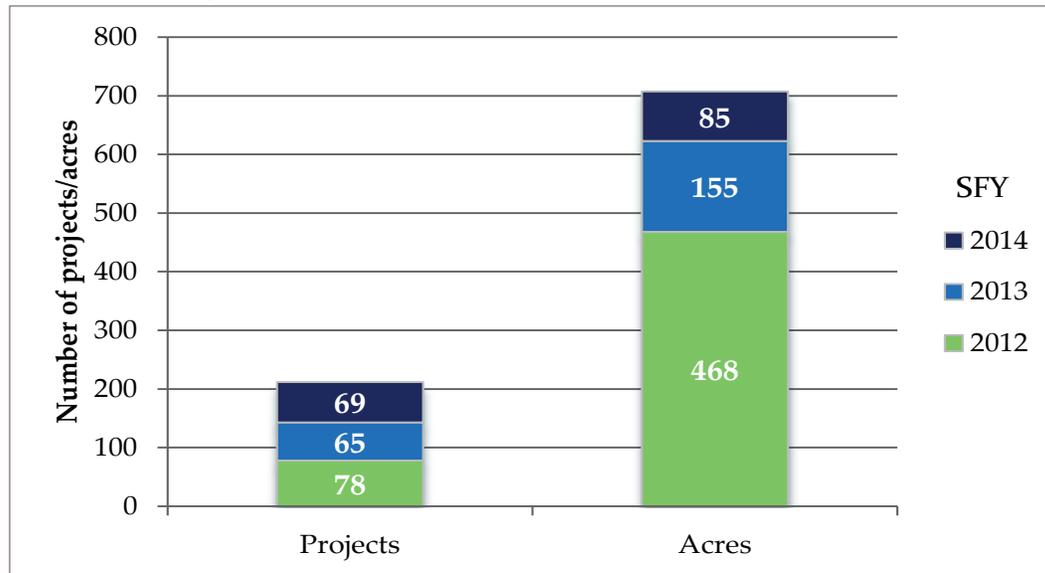
Tools for protecting water quality and increasing flood resiliency

708 acres

protected by easements and designations over the past 3 Years

PERFORMANCE TREND

Number of Projects and Acres Protected



DATA ANALYSIS

Our State’s natural ecosystems, and the functions and values they provide, are a finite resource. The Watershed Management Division (WSMD) has a primary responsibility for ensuring these water resources remain intact for future generations.

While a variety of tools exist for safeguarding natural systems from deleterious change, designations and easements are the most effective. These tools place additional restrictions on development activities and are an excellent method for reducing flood hazards, protecting water quality, and restoring wetland and riparian habitats. Such tools include:

- River corridor easements and floodplain protection measures
- Parcel buyouts
- Identification of waters for reclassification
- Outstanding Resource Water designations
- Class I wetland designations

Over the past 3 years, WSMD has used these tools to directly protect 708 acres across Vermont through 218 unique projects. In 2014 specifically, 85 acres were preserved, 66 of which were part of a wetland easement. This easement was a preservation action taken as part of a mitigation plan and will help ensure long term surface water protection and wildlife habitat connectivity.

The large number of new projects and acres protected in 2012 is a result of buyouts and municipal efforts in the aftermath of Tropical Storm Irene. These buyouts were a cost effective way to ensure the protection and stability of Vermont’s rivers.

With an influx of funding for projects associated with the Lake Champlain clean up plan, WSMD expects to report a significant increase in the number of projects undertaken and number of acres protected in the coming years.

NEXT STEPS

In 2012, rulemaking authority was transferred to DEC from the Vermont Water Resources Panel, including the authority to designate Outstanding Resource Waters and Class I wetlands. WSMD also gained the authority to administer the Vermont Water Quality Standards, which allows increased protection of Vermont waters through water reclassifications. In the coming years, WSMD plans to take greater advantage of this authority in addition to bolstering existing efforts. Strategies will include:

- Increasing the total number of projects implemented and acres protected
- Providing tools and technical assistance to municipalities and NGO’s
- Reviewing existing conservation prioritization methodologies
- Increasing the number of water reclassifications under the Vermont Water Quality Standards
- Furthering designations of Outstanding Resource Waters and Class I wetlands

In addition, WSMD will establish a data development plan that will set the stage for more robust reporting on this performance measure in the future.

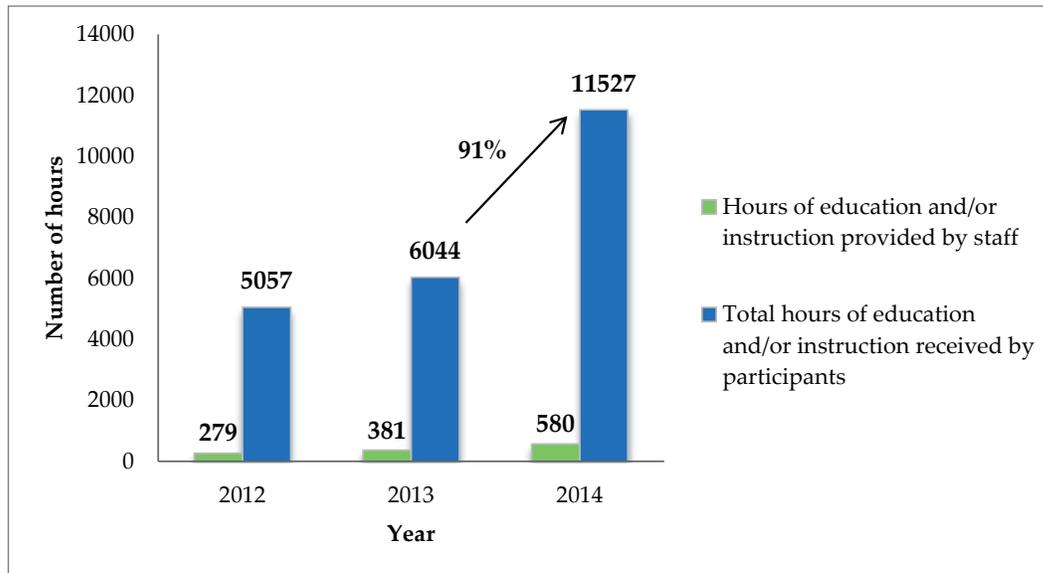

WATER

Protect Surface Water Quality Through Education and Training

Increasing environmental literacy and stewardship across Vermont

PERFORMANCE TREND

Hours of Education and Training Delivered



DATA ANALYSIS

Strategies to protect Vermont's water resources often include the procurement of easements or the designation of high quality waters. However, education, outreach, and training are also important tools to utilize in this effort. Often, only a small increase in environmental literacy is needed to change individual behavior and engender environmental stewardship. These changes include limiting the use of road and driveway salt, helping to stop the spread of aquatic nuisance species through boat washing, incorporating green stormwater infrastructure into development projects, and decreasing the use of lawn fertilizers.

In 2014, the Watershed Management Division (WSMD) provided a total of 580 hours of education and instruction to Vermonters throughout the state. These education, outreach, and training opportunities included:

- Rivers and Roads trainings on smart road development and culvert design

- Training on wetland habitats and functions
- Workshops to help prevent the spread of aquatic invasive species
- Presentations on a variety of regulations and permit requirements to municipal officials
- Webinars and trainings to inform people about stormwater management alternatives
- Lake-wise workshops to landowners and contractors on lake friendly development

When taking into consideration the number of participants at each event (average of 20), the total hours of education or instruction received by participants was about 11,500 hours, which is a dramatic jump from 2012 and 2013. This is partially due to better data collection occurring in 2014 but also increased effort by WSMD staff.

Note that the data reported above does not include technical assistance provided in terms of project review, which is reported as another measure.

91%

increase

in hours of education and/or instruction received

NEXT STEPS

WSMD believes strongly in the importance of education and instruction as a tool for environmental protection and has steadily increased the number of hours provided to Vermonters. While this is a positive trend, staff time constraints from filling both technical and education/outreach roles require us to find ways to increase our total impact through being more efficient and effective in our educational efforts. Given this, WSMD proposes to:

- Increase the average number of participants per event to have a larger impact and reach a greater audience
- Use technology to increase access to trainings by recording and uploading webinars and presentations for online viewing
- More effectively utilize partner distribution networks

Since the data currently available in relation to our education, outreach, and training efforts is fairly limited, WSMD will create a data development plan to better track progress on this performance measure.


WATER

Protect Surface Water Quality Through River Corridor Bylaws

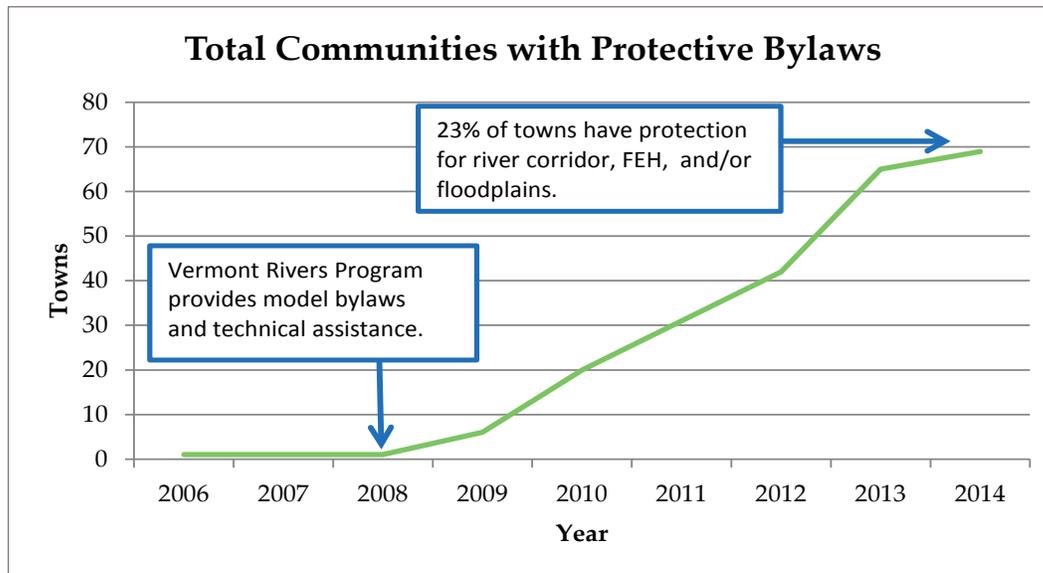
Towns adopt bylaws after receiving resources and technical assistance

23%

of Vermont towns adopted river corridor protection bylaws after receiving technical support

PERFORMANCE TREND

Vermont Towns Adopting River Corridor Protection Bylaws 2006-2014



NEXT STEPS

Continue to promote adoption of town bylaws

The following steps will be important to implement to ensure continuing success of the project.

- River Corridor Map – statewide data released 1/6/15. Using Flood Ready Atlas and Regional Commission to promote awareness of this resource.
- Support flood resilience planning by regional planning commissions and communities to integrate available data and opportunities for action .
- Update Model Bylaws in alignment with river corridor data and State Hazard Area and River Corridor Rule;
- Promote awareness of the ERAF incentive for flood resilient communities.

DATA ANALYSIS

Vermont is becoming more flood resilient through coordinated efforts to manage floodplains and river corridors. River corridors encompass the area of land surrounding a river needed to restore and maintain the naturally stable or least erosive form of a river. Over time, the protection of river corridors and floodplains minimizes damage from flood events.

In Vermont, a new State statute requires a flood resilience element in local and regional plans. Communities are also encouraged to protect river corridors and floodplains through their hazard area bylaws. The Watershed Management Division plays a key role in efforts to promote bylaw updates.

Since 2008, and in preparation for the adoption of new county-wide FEMA Digital Flood Insurance Rate Maps, the

Vermont River Program (VRP) has worked with communities to re-evaluate their flood hazard policies and bylaws.

More recently, new tools supported by VRP include the 2014 launch of Flood Ready Vermont, a resource for community leaders; promotion of the State's Emergency Relief and Assistance Fund, (ERAF), which rewards communities for flood resilience actions; and the release of the VRP-developed statewide river corridor map.

The new resources and technical assistance (in 2014, staff interacted 163 times with 108 towns) have led to nearly a quarter of Vermont communities adopting more protective bylaws: 11% directly protect river corridors or Fluvial Erosion Hazard Areas; and 22% protect mapped flood hazard areas.

DATA SOURCE: VERMONT RIVER PROGRAM

PREPARED BY: Watershed Management Division, (802) 828-1535

www.watershedmanagement.vt.gov


WATER

Maintain Surface Water Quality Through Monitoring and Assessment

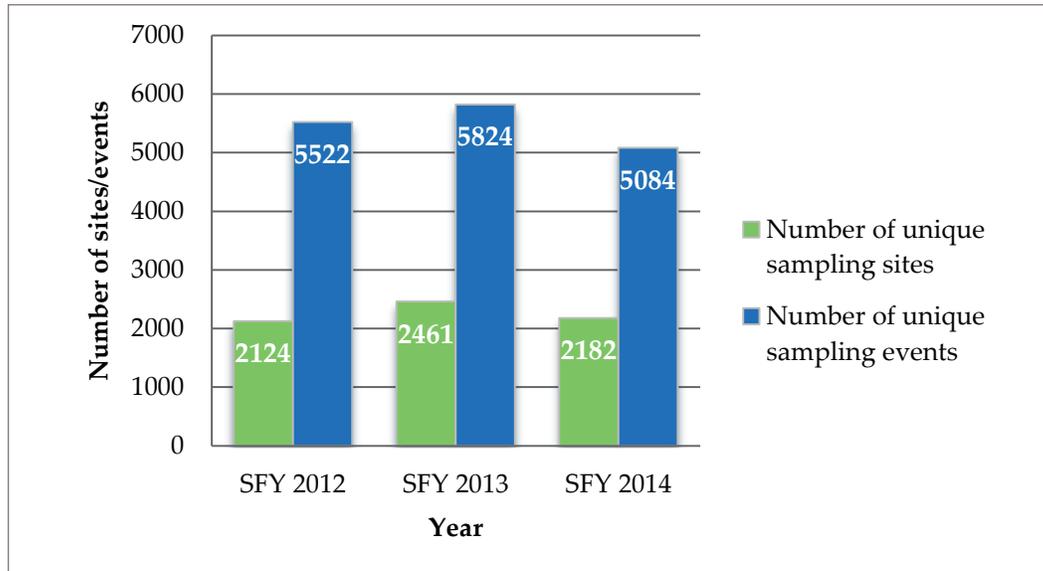
Establishing baseline conditions, tracking trends, and ensuring water quality efforts are effective

PERFORMANCE TREND

5,000+ samples

taken and analyzed in 2014

Total Number of Sampling Sites and Events



DATA ANALYSIS

The Watershed Management Division (WSMD) has been involved in monitoring and assessment efforts in earnest since 1977. Monitoring and assessment is critical to establishing baseline conditions, tracking long-term changes in water quality and designated uses, and informing management efforts. Through the work of staff scientists and citizen volunteers, it is possible to evaluate the impacts of stressors (e.g. encroachment, nutrient loading, invasive species, and erosion), prioritize mitigation and restoration efforts, and evaluate their effectiveness.

In 2014, WSMD monitored 2,182 unique sites in watersheds across the state. The Division monitors: water quality for nutrients and other pollutants, the presence of aquatic invasive species and cyanobacteria (blue-green algae), as well as wetland functions. All told, results from over 5,000 sampling events were analyzed. The slight increase in 2013 is a result of Vermont's

participation in the National Lakes Assessment, which is on a 5-year cycle and represents a greater level of monitoring and effort for that year.

In regard to the Division's assessment efforts, WSMD staff participated in a variety of activities including: shoreland assessments, aquatic resource biological integrity assessments, stream geomorphic assessments, bridge and culvert assessments, permit monitoring and reporting requirements, and compliance assessments. This data enables WSMD to gauge compliance with the Vermont water quality standards and compare water quality to that of other states; where we rank very highly.

These combined efforts identify where protection, restoration, enhancement, and maintenance should be targeted to best ensure the quality of Vermont's surface waters.

NEXT STEPS

Monitoring and assessment is a critical function provided by WSMD staff. Collected data and information helps direct implementation efforts in our watersheds. Ongoing water quality data collection and assessment, combined with permit compliance monitoring, aids in maintaining waters at a high standard. Given this, WSMD hopes to steadily increase its efforts over the next few years.

WSMD also supports monitoring and assessment efforts by volunteer groups and partners. Their involvement greatly increases the number of sites monitored and thus expands the amount of available data. It also creates an important connection between the State, citizen scientist groups, and other associations. WSMD plans to bolster these local level efforts over the next few years.

Specifically, WSMD will:

- Continue high level data collection and assessment efforts
- Continue permit compliance monitoring
- Increase sampling in Lake Champlain
- Increase training opportunities for interested citizen scientists
- Increase in training and monitoring performed by volunteer groups and partners

DATA SOURCE: Watershed Management Division

PREPARED BY: Watershed Management Division (802) 828-1535

www.watershedmanagement.vt.gov

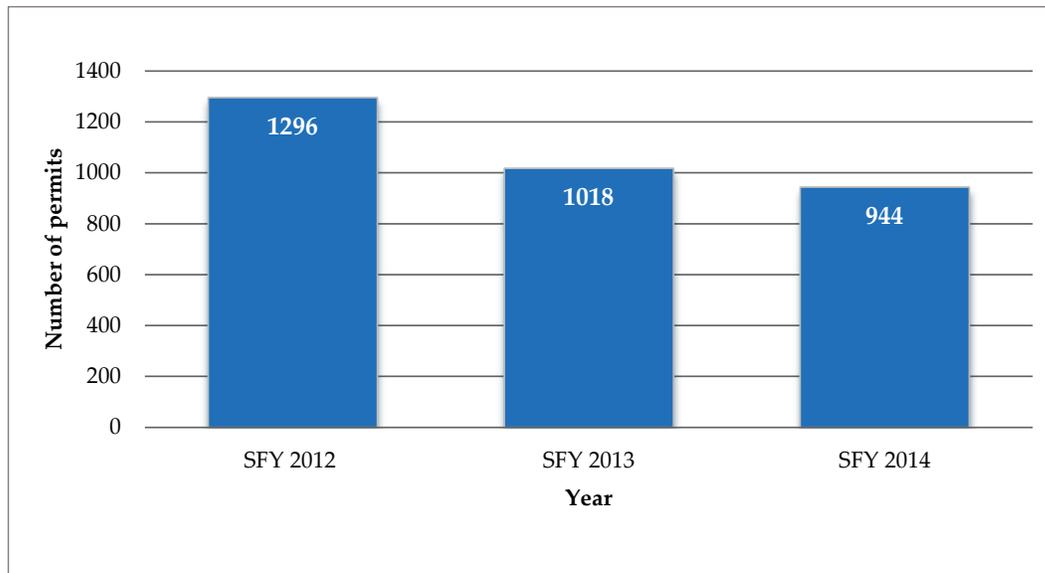

WATER

Maintain Surface Water Quality Through Permitting

Permitting as a tool for maintaining water quality

PERFORMANCE TREND

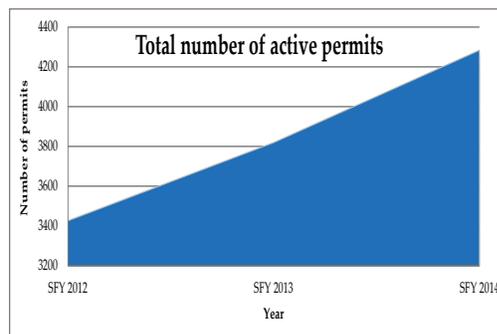
Number of Permits Issued by Year



DATA ANALYSIS

WSMD requires permit coverage for a variety of activities which have a potential to impact water resources. The permit process is meant to avoid or minimize impacts to water quality. Permit coverage is required for aquatic nuisance control, lake and shoreland encroachments, stream alterations, construction and operational stormwater management, wastewater direct discharges, residuals management, and wetland encroachments.

In 2014, WSMD issued roughly 944 new permits. This is a slight decrease from 2013 and 2012. The large number of permits issued in 2012 is a result of a renewal cycle for the Multi-Sector General Permit (stormwater) and additional authorizations provided after Tropical Storm Irene. The two year downward trend reflects a return to normal permitting levels. Related to this, the number of active permits rose to 4,284 in 2014. Active permits remain in effect beyond when the initial project



or development occurs and require ongoing evaluation and in some cases monitoring. The long-term nature of these permits and their associated monitoring and compliance requirements enable us to ensure water quality efforts are maintained.

WSMD expects to see an increase in permits, both new and active, as a result of the Lake Champlain clean up plan over the course of the next few years.

900+ permits

issued and 4,000+ active permits

NEXT STEPS

WSMD recently received new regulatory authority for shorelands, flood hazard areas, and river corridors. WSMD will likely also receive additional regulatory authority as part of the Lake Champlain clean up plan. To make sure that new regulatory processes are implemented properly, and that existing processes continue to maintain water quality at a high standard, WSMD proposes to:

- Engage a wide variety of stakeholders in the creation of new regulatory systems
- Utilize Lean business process improvement tools to improve efficiency and identify ways to improve permit processes
- Increase the number of staff dedicated to permit review and processing
- Develop an online permit application submittal system
- Review requirements associated with active permits and update as necessary
- Evaluate potential legislative changes needed to improve permit outcomes

The processing and management of permits represents a large portion of WSMD's workload. Given expected permit increases in the coming years, finding ways to make the permit process more efficient and effective will be critical to adapting to this increase in workload and ensuring the health of Vermont's surface waters.

DATA SOURCE: Watershed Management Division

PREPARED BY: Watershed Management Division (802) 828-1535

www.watershedmanagement.vt.gov

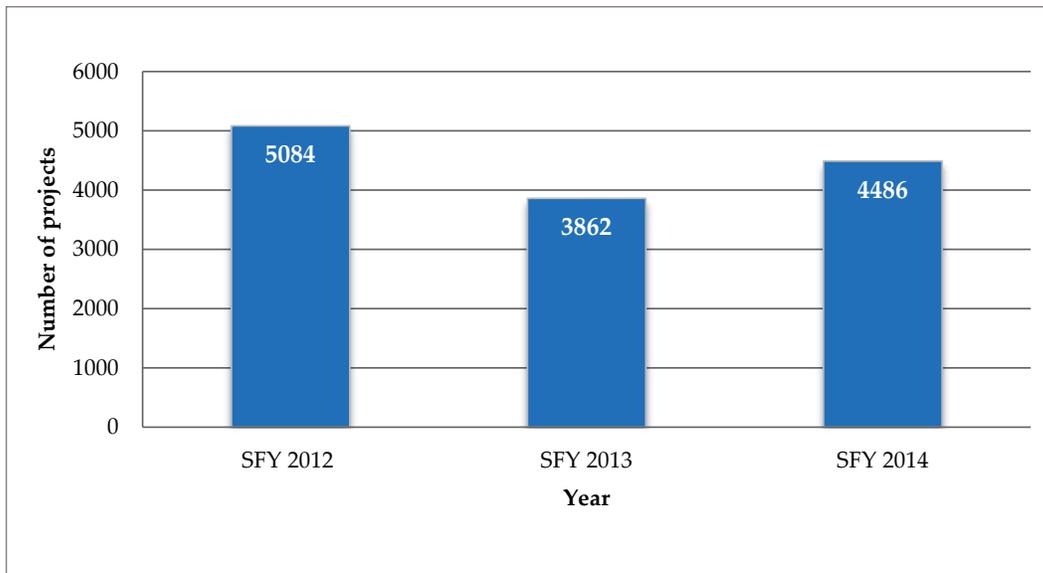

WATER

Maintain Surface Water Quality Through Technical Assistance and Review

Mitigating impacts to surface waters through sound advice and scientific knowledge

PERFORMANCE TREND

Number of Projects Reviewed by Year



DATA ANALYSIS

The Watershed Management Division (WSMD) regularly provides technical assistance to municipalities, landowners, developers, and NGO's (lake and watershed associations) to ensure that water quality standards are met and ecological functions and values are maintained. This type of assistance can take many forms. In many cases, it is regulatory in nature, as the majority of projects coming in to WSMD do so through a defined permit process. In other cases, it is purely advisory or collaborative. For example, many WSMD staff support local NGO's in the design and implementation of watershed restoration projects. All the technical assistance provided serves a critical function in maintaining watershed health.

In 2014, WSMD staff provided technical assistance on over 4,000 unique projects, as shown in the graph above. This total includes, jurisdictional determinations, review of permit applications and renewals, municipal and NGO support, bylaw reviews, illicit discharge detection and

elimination efforts, and grant application review and management.

In 2012, the data shows a large number of projects reviewed in comparison to subsequent years. Much of this is attributed to the additional technical assistance provided in the aftermath of Tropical Storm Irene. This is particularly true of the Rivers Program which played a critical role in the state's recovery efforts.

The slight jump from 2013 to 2014 is generally a result of better tracking in 2014. We expect this number to increase again in 2015 and likely 2016 as we refine our data management methods and take on additional responsibilities associated with the Lake Champlain clean up plan.

The numbers provided in this report are an underestimation of the projects actually reviewed by WSMD staff.

4,000+ projects

reviewed to ensure
Vermont's water quality

NEXT STEPS

Technical review by experts in the environmental field is key to limiting stressors to Vermont surface waters (as described in Vermont's Surface Water Management Strategy). As stewards of Vermont's surface waters, WSMD strives to have a strong, active and meaningful presence across the Vermont landscape. As such, WSMD plans to increase the number of projects reviewed by staff over the next few years.

Specifically, WSMD will:

- Continue high level involvement in project reviews
- Utilize Lean business process improvement tools to improve efficiency and identify ways to better use limited technical resources
- Increase the number of staff dedicated to project review and technical assistance
- Find new ways to support municipalities and NGO's in project identification, development, and implementation

As noted in the data analysis, the data we have currently available on technical assistance and review is fairly limited. Given this, WSMD will also craft a data development plan that will set the stage for more robust reporting on this performance measure in the future.

WATER

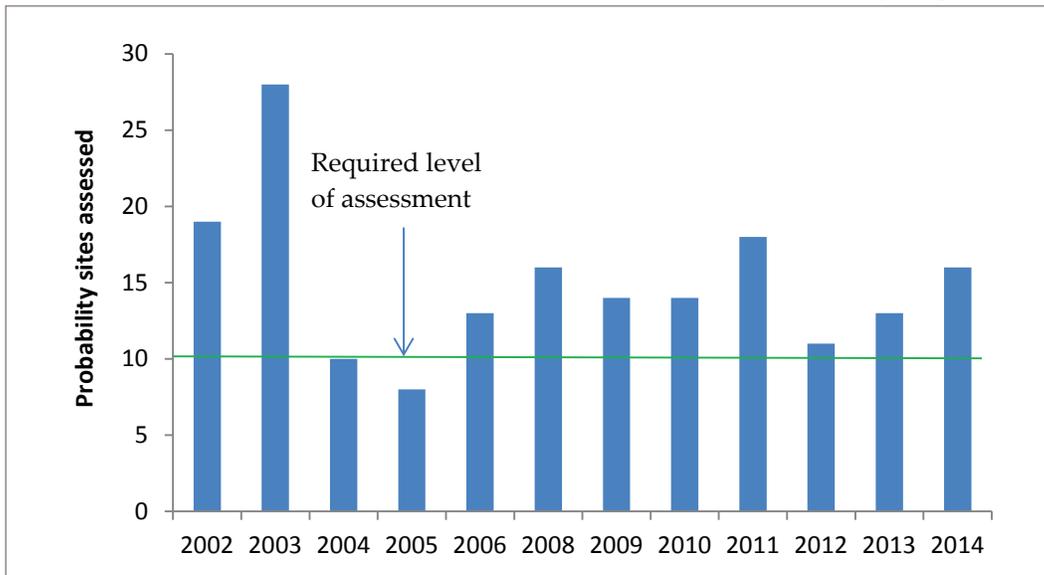
**Maintain Surface Water Quality
Through Assessment of Statewide Stream Health**

Ensuring capacity to survey the biological condition of streams across Vermont

100%
of the required number
of stream sites were
assessed each year

PERFORMANCE TREND

Number of Streams Assessed Per Year for Statewide Probability Report



NEXT STEPS

Supporting existing capacity
The goals of the MAPP program are to continue to meet or surpass the present target, add additional communities, and environmental measures and continue to train staff.

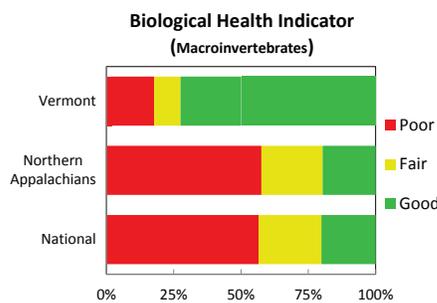
The Biomonitoring and Aquatic Studies Section Lab is facing a number of retirements in the next several year and is focusing to ensure the continuation of these efforts. The program will work to meet the following goals:

- Maintain and increase staff
- Enhance staff expertise in taxonomy, and modeling of data
- Develop bioassessment expertise for additional communities, e.g., periphyton
- Integrate additional water quality and physical habitat stressors into survey

DATA ANALYSIS

The Monitoring, Assessment and Planning Program’s (MAPP) probability report presents the biological condition of Vermont’s wadeable streams based on the results of a statewide probability-based survey. This is the second such survey that has been performed by the program. The continuation of these surveys, on a five-year cycle, allows MAPP to examine trends in the condition of Vermont’s streams and understand how physical and chemical stressors are affecting biological health over time. These statewide surveys also coincide with US EPA’s National Rivers and Streams Assessment (NRSA), which allows the comparison of Vermont’s streams to regional and national conditions.

The above figure plots the number of probability sites that MAPP has assessed each year. The first survey covered 2002 to 2006 and the second covered 2008 to 2012.



The program must assess at least 10 sites a year, but shoots to meet a higher confidence standard for more accurate assessment of biological conditions across Vermont.

Survey results (see Biological Health Indicator figure above) indicate that 70% of Vermont streams are in good biological health; however, additional results show a decline in health between the two surveys.

DATA SOURCE: Biomonitoring and Aquatic Studies Section

PREPARED BY: Watershed Management Division, (802) 828-1535

www.watershedmanagement.vt.gov

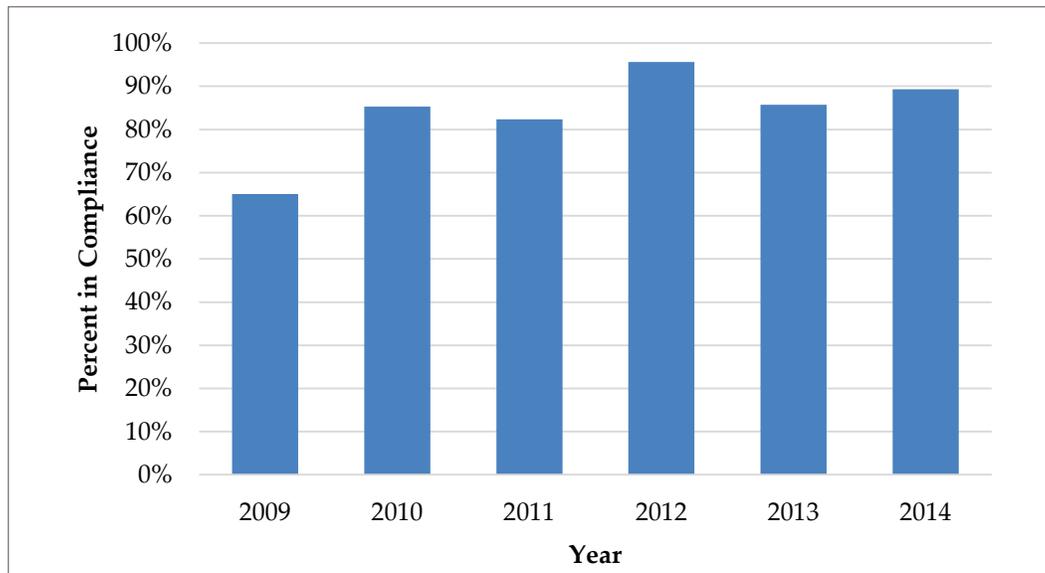

WATER

Maintain Surface Water Quality Through Oversight of Wastewater Treatment Facilities

Inspections and technical assistance support facilities' ability to meet permitted effluent limits

PERFORMANCE TREND

Percent Compliance for Wastewater Treatment Facilities



DATA ANALYSIS

The Wastewater Program (WW) issues permits to facilities discharging wastewater into surface waters under Vermont's Water Pollution Control Act and the federal Clean Water Act. The complexity of operating and maintaining these municipal, private and industrial wastewater treatment facilities (WWTF) requires technical capability and adequate maintenance plans. The program's operation and management section conducts inspections as well as provides technical assistance to ensure facilities have the capability to comply with their permit requirements.

Wastewater Program staff inspect all municipal facilities a minimum of once every three years and all major municipal and industrial facilities once every one to two years. Violations may result in a

response ranging from a phone call or letter to a Notice of Alleged Violation.

Data trends for performance (see figure) indicate that after 2009, 85 to 95% of the facilities continue to operate at an acceptable level or higher. The only exception was 2011, where levels fell to 82% when extreme flooding after Hurricane Irene challenged facilities' operation and maintenance capabilities. The increase in number of facilities meeting performance levels after 2009 is due to additional focus by Wastewater Program staff on providing direct technical assistance to wastewater treatment facility operators.

90%

of inspected direct discharge facilities met compliance requirements on initial inspection in 2014

NEXT STEPS

Ongoing trainings and technical assistance

Trainings, in addition to inspections, to improve and maintain a high level of operation and maintenance performance at the facilities.

The following steps will support and improve current compliance rate.

- Hire additional technical staff
- Continue trainings in facility and laboratory analytical operations.
- Increase the number of inspections performed

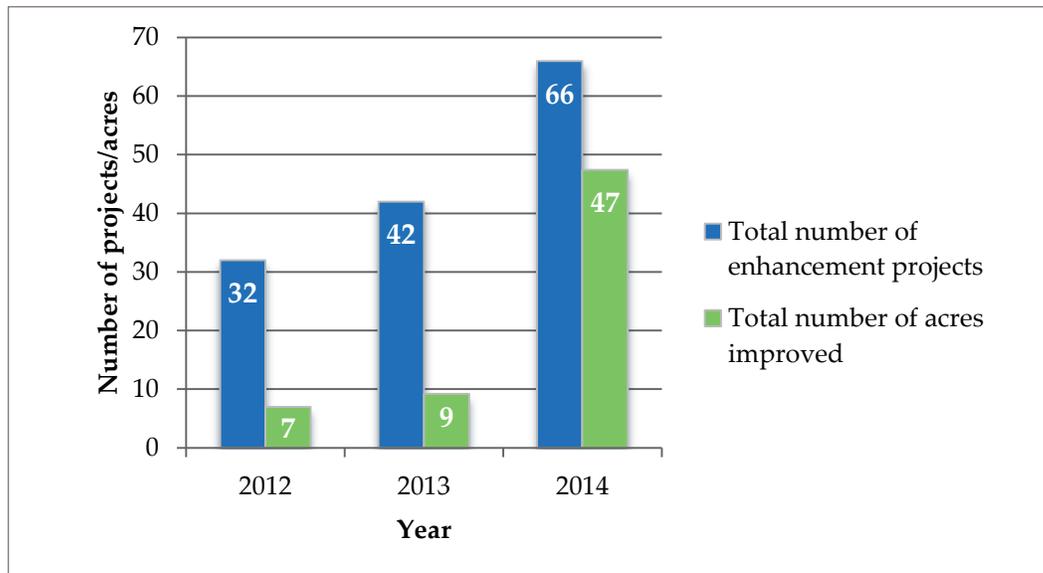

WATER

Enhance Surface Water Quality Through Best Management Practices

Improving ecological and hydrologic function throughout Vermont

PERFORMANCE TREND

Number of Enhancement Projects Undertaken and Resulting Acres Improved



DATA ANALYSIS

In efforts to enhance water quality, the Watershed Management Division (WSMD) uses a multi-pronged and comprehensive approach. This approach includes strategies to avoid, minimize, and manage impacts to Vermont's surface waters. Managing impacts is particularly important considering that watersheds, currently meeting Vermont's water quality standards, may be trending downward and could easily become stressed or impaired as a result of cumulative and legacy impacts. In these watersheds, it is important to use best management practices and other means to enhance, or improve upon ecological and hydrologic functions, in an effort to move the water quality trend in a positive direction.

In 2014, WSMD facilitated or helped to fund 66 unique enhancement projects, collectively resulting in improvements to roughly 47 acres.

Enhancement projects include:

- Implementation of best management practices on 20 lakeshore properties
- Riparian buffer plantings and in-stream improvements
- Removal of invasive species from eight different wetland complexes
- Installation of green stormwater infrastructure practices such as rain gardens and bioretention

2014 represents a significant jump from previous years. This is primarily due to a lack of reportable data for the previous years; the data for 2012 and 2013 is likely underrepresented.

It should also be noted that a few programs do not report data in units of acres; these programs will report separately at the program level in the future.

66 projects

enhanced the function of 47 acres in 2014

NEXT STEPS

Enhancement projects are an important tool in WSMD's efforts to improve water quality throughout Vermont. When implemented and sited properly, they can have noteworthy results. To date, WSMD has relied heavily on its Tactical Basin Planning process and partner organizations to identify, develop, and implement projects. In the future, WSMD will continue along this track but also plans to increase its efforts by:

- Further engaging municipalities and NGO's in this work
- Increasing the amount of funding available for project scoping and implementation
- Increasing the amount of technical assistance provided by WSMD staff
- Using Lean business process improvement tools to evaluate and advance project prioritization methodologies

Since the data currently available in relation to our enhancement projects is fairly limited, WSMD will create a data development plan to better track progress on this performance measure.

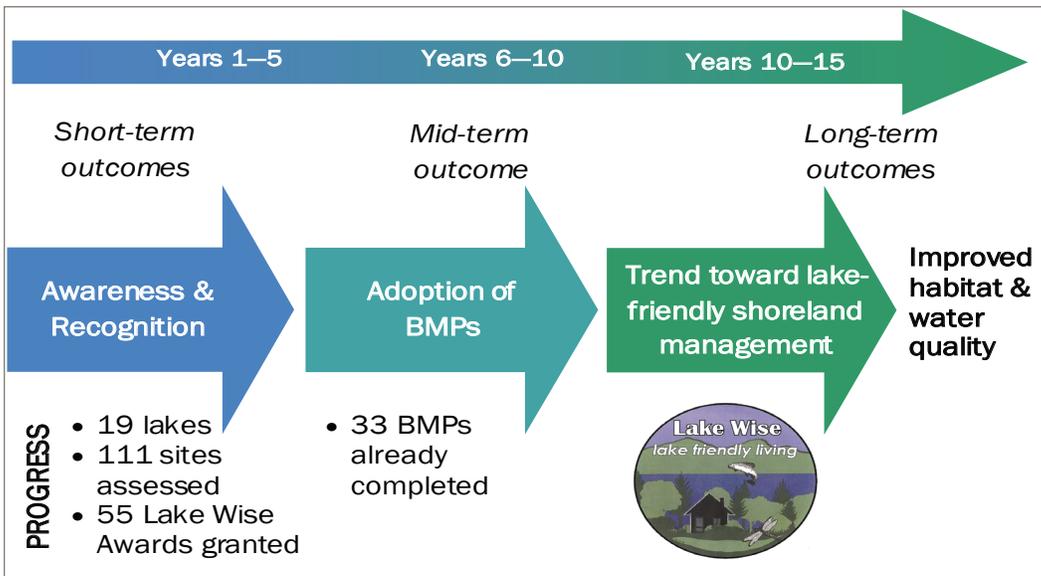
WATER

Enhance Surface Water Quality Through Promoting Lake-Friendly Shoreland Management

The 2-year old Lake Wise Program Has Led to Measurable Shoreland Benefits

PERFORMANCE TREND

Lake Wise Program: Awareness and Recognition Leads to BMP Implementation



30%

of the participants in Lake Wise volunteered to improve their shoreland management practices

NEXT STEPS

Continue to see lakeshore BMPs implemented

- Continue to assess lakeshores and improve management with site specific shoreland BMPs
- Train local landscapers in shoreland BMPs
- Partner with a summer youth camp, including completing BMP work for Lake Wise eligibility

DATA ANALYSIS

Lake Wise, initiated 2013, awards lake-friendly shoreland property—including that of state parks, town beaches, private homes and businesses—and provides technical assistance to those who want to learn how to manage their property in a lake-friendly way.

Lake Wise complements the new Shoreland Permit Program by focusing on improving the management of existing development on the 45% of Vermont shorelands that mostly do not fall under the jurisdiction of the Shoreland Act. Both Lake Wise and the Shoreland Permit Program were established to change the dominant landscaping practices on Vermont lakeshores that have been

proven to degrade shallow water habitat and threaten water quality.

In 2014, the second year of Lake Wise, shoreland owners from 19 lakes, including state parks, town and community beaches, and private homeowners have voluntarily participated. To date, 33 shoreland Best Management Practices (BMPs) have been completed and 55 lakeshore sites awarded Lake Wise signs, which provide public recognition for good lake stewardship. All awarded properties serve as demonstration sites to teach others good shoreland management, encouraging a new social trend in lake-friendly shoreland practices.



DATA SOURCE: Lakes and Ponds Program

PREPARED BY: Watershed Management Division (802) 828-1535

www.watershedmanagement.vt.gov

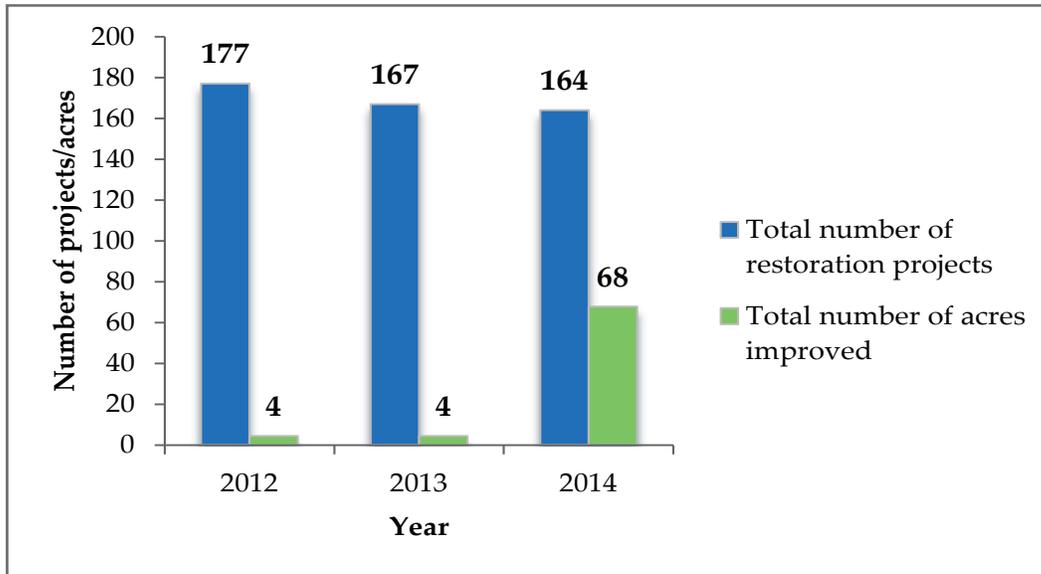

WATER

Restore Surface Water Quality Through Targeted Projects in Impaired Waters

Returning ecological and hydrologic function to impaired waters

PERFORMANCE TREND

Number of Restoration Projects Undertaken and Resulting Acres Improved



DATA ANALYSIS

Due to cumulative and legacy impacts of development and land use change, a number of Vermont's surface waters do not currently meet water quality standards. Restoring ecologic and hydrologic function to these impaired waters is critical to resilient and self-sustaining natural systems and essential to achieving the water quality goals and objectives as articulated in the Surface Water Management Strategy. Project implementation is a primary tool in which WSMD facilitates improvements in impaired waters. This work includes: sediment and phosphorus treatments, water quality remediation projects, river and floodplain restoration projects, wetlands restoration work, increased permit requirements for impaired waters, and the development and implementation of restoration plans.

In 2014, WSMD facilitated 164 restoration projects in impaired waters. This is consistent with the number of projects completed in 2012 and 2013. The major difference is the number of acres improved. In 2014, 68 acres were improved versus 4 acres in previous years. This is due to the completion of a sediment phosphorus inactivation treatment in Ticklenaked Pond. This was the final step for restoring water quality and setting the stage for removal from the impaired waters list. Furthermore, there were three wetland restoration projects, restoring over 13 acres of wetlands. It should also be noted that the data available for 2012 and 2013 is incomplete. Given this, the data presented is an underestimate of the actual acres restored. Additionally, a few programs within the Division do not report data in units of acres; these programs will report separately at the program level in the future.

68

acres

improved in 2014

NEXT STEPS

Restoration projects are an important tool in WSMD's efforts to improve water quality throughout Vermont. Traditionally, WSMD has relied heavily on Tactical Basin Plans, development and implementation of restoration plans, and increased permitting requirements for restoring water quality where it has been degraded. While this approach will continue into the future, WSMD plans to expand upon these efforts by:

- Increasing the amount of funding available for restoration project scoping and implementation
- Increasing the amount of technical assistance provided by WSMD staff to partners
- Reviewing project prioritization methodology and funding mechanisms
- Utilize Lean business process improvement tools to improve efficiency and evaluate and advance project prioritization methodologies

Additionally, since the data currently available in relation to our restoration projects is fairly limited, WSMD will create a data development plan to better track progress on this performance measure.