



Letter of Interest for Integrated Municipal Stormwater and Wastewater Planning Technical Assistance

Applicant: City of Burlington, Water Resources Division, 234 Penny Lane, Burlington, VT 05401/P.O. Box 878 Burlington, VT 05402

Location: City of Burlington, Chittenden County, Vermont, Lake Champlain Basin

CWA Programs:

- 3 permitted (administratively continued) WWTPs, each with separate and combined sewer, and remaining CSOs; Main Plant has a significant combined sewer drainage area which receives wet weather treatment at the plant
- Phase II MS4 with requirements to develop Flow Restoration Plans for 3 stormwater impaired watersheds
- The Lake Champlain Phosphorus TMDL is currently being revised by the EPA, and Burlington is expected to receive additional regulatory requirements related to phosphorus reductions.

Project Director: Megan Moir, Stormwater Program Manager, 802-540-1748,
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Chief Executive/Highest Ranking Official: Mayor Miro Weinberger, 802-865-7272
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Key Project Partners:

- Laurie Adams, Assistant Director of Public Works, City of Burlington
- Steve Roy, Water Resources Engineer, City of Burlington
- Staff from Vermont Department of Environmental Conservation (see attached letter of support)
- Burlington Conservation Board

Project Abstract:

The small municipality (pop. 42,000) of the City of Burlington is at the intersection of numerous water quality challenges and Clean Water Act requirements including stormwater impairments, MS4 and WWTP permit requirements, CSO abatement and upcoming additional phosphorus reduction requirements driven by the Lake Champlain TMDL. The proposed project would kick start Burlington's Integrated Municipal Stormwater and Wastewater Planning process by providing assistance with several of the key elements of the planning process as described in the 2012 EPA Integrated Planning Approach Framework memo, including: 1) evaluating financial capability, 2) convening a stakeholder group and online public input to develop the "community" criteria by which alternatives will be evaluated, 3) development of an integrated project "toolbox" which will provide examples of high ranking projects, and lastly 4) pursuit of possible alternatives to phosphorus reduction technology upgrades at Main Plant such as combined sewer stormwater reduction projects.

This effort would provide the foundational elements for the successful completion of an Integrated Plan in the next 2-3 years that can be presented to our partners at the Vermont Department of Conservation (VTDEC) as a mechanism for meeting our various human health and CWA objectives in a way which maximizes the environmental, social/community, and cost benefits (triple bottom line). Implementing this project and documenting the process in Burlington would provide an important example for similarly sized smaller communities across the nation, as well those in Vermont with similar water quality challenges.

Kick Starting Integrated Municipal Stormwater and Wastewater Planning in Burlington, Vermont

Project Need:

While it is the largest municipality in Vermont, the City of Burlington is small by national standards (pop. 42,000). As a community located on the shores of the beautiful, but phosphorus impaired Lake Champlain, this small city is at the intersection of numerous water quality challenges and Clean Water Act (CWA) requirements.

Our current Phase II MS4 permit requires the development and implementation of Flow Restoration Plans for our stormwater impaired watersheds and compliance with a Bacterial TMDL for Englesby Brook. We also own and operate 3 WWTPs. Each WWTP has a phosphorus mass loading allocation based on design flows and a 0.8 mg/l phosphorus limit for North/East plants, and 0.6 mg/l limit for Main plant. A majority of our community is served by a combined sewer system that presents potential environmental and/or human health challenges via CSO discharges and combined sewer backups into basements. There have been various successful efforts in the 1980s and more recently in 2010-2012 to fully eliminate and/or bring many of our CSOs into compliance with the State CSO Policy, but we do have remaining CSO points for which we are pursuing voluntary mitigation. Basement backups have been on the recent rise due to increasing frequency of intense storm events. While our Main Plant WWTP was redesigned in the 1980s to maximize treatment of combined sewer (primary treatment via Vortex separation or screening and disinfection) excess combined sewage reaching the plant does represent a contribution of phosphorus load to the Lake.

The revision of the Lake Champlain Phosphorus TMDL will likely issue additional phosphorus reduction requirements for the regulated and un-regulated portions of our community (those discharging directly to waterbodies) across both stormwater and wastewater sectors.

Given the breadth of CWA and human health requirements, our Wastewater and Stormwater programs are facing a landscape of financial burdens and potentially conflicting priorities. As such, “selling” the implementation of these various requirements to the community is going to be very difficult and has an unfortunate increased likelihood of both funding and legal challenges. Thus far, we have been successful in the creation of a stormwater utility that provides a sustainable funding source for stormwater management. However, the rate increases that will be necessary to meet regulatory obligations for both the anticipated Lake Champlain TMDL compliant stormwater and wastewater programs are going to be substantial and can no longer be considered separately without creating an undue financial burden on our community. In order to achieve financially sustainable yet significant gains in water quality and human health protection, *integrated* water resource (not stormwater vs. wastewater) priorities must be established to ensure cost effective implementation sequencing.

The State of Vermont Department of Environmental Conservation (VTDEC) has indicated a strong willingness to work with the City of Burlington in the incorporation of an integrated municipal stormwater and wastewater plan in any future permits, including the possibility of implementation through a combined stormwater-wastewater NPDES permit.

The proposed project would kick start Burlington’s Integrated Municipal Stormwater and Wastewater Planning¹ process by providing assistance with several of the key elements of the planning process, including: evaluating financial capability, convening a stakeholder group and online public input also to develop the “community” criteria by which alternatives will be evaluated, development of a integrated project “toolbox” which will provide examples of high ranking projects, and lastly, pursuit of possible alternatives to phosphorus reduction technology upgrades at Main Plant such as combined sewer stormwater reduction projects.

Project Approach:

The project will involve the completion of the foundational elements described in the *2012 Memo on Integrated Municipal Stormwater and Wastewater Planning Approach Framework*. Specifically, through this technical assistance program we hope to complete Elements 1-3 and portions of Element 4 of an Integrated Stormwater Wastewater Management Plan for the City of Burlington. It is our hope that we can complete the full Integrated Planning process within the next 2-3 years and work with the State to implement our Integrated Plan through our various (or a joint) NPDES permit for our WWTPs and MS4. The City will complete the following as part of the project:

- Develop a description of water quality, human health and regulatory issues to be addressed in the plan (Element 1)
- Develop a description of existing wastewater and stormwater systems under considerations and summary information describing the systems current performance (Element 2)
- Convene a stakeholder group; provide public outreach for input (Element 3)
- Completion of H/H model for Main WWTP (*in process*) to be used for alternatives Case Study (Element 4/Task 4)
- Coding for on-line tool for public input (Element 3/Task 2)

We request assistance from the EPA Contractor for any/all of the following:

- Task 1: Analysis of our Community’s **financial capabilities** in funding an integrated SW/WW improvement program, with specific attention to community socio-economic factors, City financial challenges and other needed SW and WW expenditures (Element 4).
 - Examine possibility of an income sensitive rate structure to minimize impact to low income community members
 - Level of Effort:
 - ✓ 80 hours , Month 1 - Month 3
 - ✓ 1 kick-off meeting (#1)², 2-3 web meetings
 - ✓ Deliverables: Calculation of financial capability; documentation of methods; recommendations re: long term financial strategy
- Task 2: Assisting a stakeholder group (convened by the City) in the identification and **development of “community” criteria** that will be used in the ranking and comparison of different alternatives to maximize the triple bottom line/sustainability approach of the integrated plan (Element 3 and 4).

¹ Efforts related to integrated planning thus far have involved attending various workshops and webinars related to integrated planning and discussions with the VTDEC. However, we have several efforts underway and/or starting this year which will support the integrated planning process and alternatives identification as we move forward, including: update of our Main Plant Collection system H/H model, Flow Restoration Plan for Centennial and Englesby, and Application for Clean Water SRF assistance for 1) an outfall assessment and rehabilitation 2) stormwater pipe assessment and rehabilitation and 3) CSO reduction project planning and design for a remaining CSO point

² Kick off meetings for different tasks can be combined for travel cost savings

- Develop **communication strategy** to ensure the consideration and maximum **incorporation of green infrastructure practices** and other innovative solutions where they provide more sustainable solutions;
- Assist in the development of **on-line tool** to educate community regarding the integrated planning process and to crowd source input from a larger audience³
 - Tool would provide opportunity for long term engagement of community during the development and comparison of alternatives and implementation of the plan
- As an exercise in using the criteria, rank projects currently planned/proposed (such as those proposed in the Flow Restoration Plans for Stormwater Impaired Waters)
- Level of Effort:
 - ✓ 150 hours, Month 3 - Month 7
 - ✓ 1 kick-off meeting(#2); 3-4 community meetings; 1-2 web meetings
 - ✓ Deliverables: Public presentations (along with City staff); facilitation of public meetings; documentation of public process; documentation of criteria selection and how they will be used in the long term implementation process; ranking of currently proposed projects
- Task 3: Develop **project “templates” for an integrated planning implementation toolbox** (i.e. conceptual examples of projects that have characteristics that would rank highly based on the community criteria) that will help target projects during the city wide alternatives identification process (Element 4)
 - For example, a green street in the combined sewer system that also is in a neighborhood challenged by basement sewer backups
- Level of Effort:
 - ✓ 120 hours, Month 6 - Month 9
 - ✓ 4 web meetings
 - ✓ Deliverables: Integrated Planning “Toolbox” that lists conceptual projects which would have the highest possible rankings
- Task 4: **Main WWTP Phosphorus Reduction Alternatives Case Study** (Element 4): Focusing on Main Plant WWTP consider phosphorus reduction opportunities other than treatment plant technology upgrade that could meet possible restricted phosphorus effluent permit limits for Main WWTP such as:
 - Reducing/mitigating/removing stormwater flow to the combined sewer system
 - Use existing tools or develop new tools to evaluate the feasibility and cost of providing necessary stormwater reductions through green infrastructure practices vs. conventional storage
 - i.e. how many acres would need to be “greened” to significantly reduce the frequency of wet weather events at the WWTP
 - Develop conceptual retrofit plans for the Main WWTP sewershed
 - Evaluate cost and benefits of this approach vs. technological upgrade
 - Other opportunities such as optimizing the WWTP internal processes, potentially reducing the use of phosphorus in commercial/industrial/municipal applications, water quality trading with Agricultural sector
 - Using the “community criteria”, evaluate these opportunities in comparison to technological plant upgrades
- Level of Effort:
 - ✓ 300 hours, Months 3 - Month 9

³ City staff have developed similar crowd-sourcing applications for other planning projects. See <http://www.burlingtonvt.gov/public/map.php>

- ✓ 1 kick-off meeting (#1); retrofit planning field work (3-4 days); 2-3 web meetings
- ✓ Deliverables: Technical memo re: conceptual stormwater retrofit feasibility planning for Main Plant Sewershed, including projected costs and break down of green/gray infrastructure; Ranking of the proposed projects using community criteria; Technical Memo evaluating other opportunities outside of specific stormwater reductions.

Anticipated Results:

In the short term, this project will provide the foundational elements for the completion of an Integrated Municipal Stormwater and Wastewater Plan in the next 2-3 years that can be presented to our partners at the Vermont Department of Conservation (VTDEC) as a mechanism for meeting our various human health and CWA objectives in a way which maximizes the environmental, social/community, and cost benefits (triple bottom line). Using the momentum of the proposed project, we will proceed with completing the remaining steps of Element 4 (alternatives identification, evaluation, selection and implementation schedules), Element 5 (measuring success) and Element 6 (improvements to the Plan).

Having such a plan, which is backed by a financial strategy, will ensure the long-term success of our implementation efforts to restore our receiving waters and protect human health in the shortest time frame possible without causing undue financial pressure upon our small community. This approach is supported by our local administration, particularly given its focus on maximizing cost benefit to the community while protecting one of our largest tourism assets, the Lake, which is also the source of our drinking water. It is additionally supported locally by our Conservation Board and at the State level by the Vermont Department of Conservation and our Governor Peter Shumlin⁴.

Though it appears that most of the communities pursuing integrated planning are larger municipalities, this effort would demonstrate the applicability of the integrated planning approach for smaller communities like Burlington. It would also serve as an example of the Integrated Planning approach (and documentation of the necessary early steps) for some of the other communities in the Lake Champlain Basin who have a similar intersection of CWA obligations (Phosphorus TMDL, Combined Sewer System and CSOs, MS4 with Stormwater Impaired Watersheds) such as St. Albans and Rutland. In particular, we think it is a good opportunity to develop additional, more specific methods for calculating financial capability, use on-line public input tools for the development of community project ranking criteria and for examining the ways in which reductions of stormwater could have nutrient reduction benefits at WWTPs with combined sewer inflows.

⁴ Page 5, May 29, 2014 letter from Gov. Shumlin to EPA <http://bit.ly/1pv3RjQ>

Commissioner's Office

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June 20, 2014

U.S. Environmental Protection Agency
Office of Wastewater Management
Washington, D.C. 20460

Re: Burlington, Vermont – Letter of Interest for Integrated Planning Technical Assistance Grant

To whomever it may concern:

I am writing to express Vermont's support for Burlington, Vermont's Letter of Interest to EPA for a technical assistance grant for Integrated Planning (IP). Burlington is a small city faced with enormous financial pressures due to existing and imminent obligations under the federal Clean Water Act (CWA) for wastewater treatment, combined sewer overflows, stormwater management, and implementation of TMDLs, including the soon-to-be-released Lake Champlain TMDL. Vermont's small population and revenue base makes protecting surface waters particularly challenging when compared to other areas such as southern New England and the Chesapeake states. Industry is limited and businesses are small, thereby leaving the cost of paying for clean water on individual taxpayers and small businesses. An IP approach would allow the City to meet its CWA obligations through a prioritization of investments and a sustainable funding stream.

Despite Vermont's small size, it continuously promotes proactive environmental stewardship and investment. Most recently, on May 29th, the Department issued the Lake Champlain Phosphorus TMDL Phase 1 Implementation Plan, which will require significant phosphorus reductions across numerous sectors, including agriculture, developed lands, including existing developments, roadways and MS4 communities, and forestry. This implementation effort will impose significant additional clean water requirements on Burlington, and makes the use of IP both timely and essential. The Phase 1 Plan specifically mentions IP as desired method for use by communities to ensure prioritized implementation and sustainable funding. The Plan also recognizes that NPDES permits should incorporate long-term compliance schedules with prioritized implementation – a logical outgrowth of an IP effort. A copy of the Plan is available at <http://www.watershedmanagement.vt.gov/erp/champlain>.

In sum, Burlington's small population and limited tax base faces these current and imminent CWA obligations:

- Burlington has three administratively continued NPDES permits for treatment plants that discharge to Lake Champlain. These permits will need to be reissued to include requirements to meet any allocations provided in the Lake TMDL.
- Burlington is an MS4 community and will face requirements to impose more stringent controls on new and existing development and roadways in order to meet the TMDL allocations. It is expected that retrofit requirements will be embedded in a combination of MS4 permits, residual designation authority (RDA) permits, NPDES construction permits, and state stormwater operational permits. IP would assist in this permit issuance effort by informing the sequencing and timing of implementation efforts and planning for sustainable funding streams.

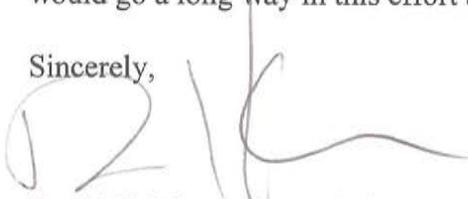
- In addition to the Lake TMDL, Burlington is already required in its MS4 permit to retrofit existing development to meet flow reduction requirements in EPA-approved stormwater “flow” TMDLs for three stormwater-impaired streams in Burlington. These implementation efforts are already underway.
- EPA is currently evaluating Burlington’s CSOs in light of the upcoming Lake TMDL. DEC is actively updating its CSO policy to consider the integration of green infrastructure practices by municipalities in CSO control efforts. The Department has a full-time Green Infrastructure Coordinator who is assisting in this effort.

Given the confluence of these CWA requirements and the upcoming need to reissue and develop new permits to implement the Lake TMDL, the Department is uniquely positioned to consider new approaches to permitting, including “bundling” requirements into combined NPDES permits, incorporating long-term compliance schedules to foster cost-effective implementation sequencing, and water quality trading. The Department is open to these creative efforts and has a demonstrated track record of using NPDES permits effectively to promote implementation efforts, both in the issuance of an MS4 general permit with stringent stormwater TMDL implementation requirements and an RDA general permit for stormwater retrofits to approximately seventy five entities in five communities with stormwater-impaired waters, including Burlington.

If Burlington receives EPA’s technical assistance grant, the benefits to other even smaller and more financially strapped communities up and down the Lake Champlain watershed would be significant. Multiple communities within the Lake Champlain basin, including Montpelier, Rutland, Shelburne, South Burlington, and St. Albans are faced with similar administratively continued wastewater treatment facility permits, MS4 permits, CSOs and increased stormwater control obligations on existing development and roadways as a result of the new Lake TMDL. Any IP model or template developed by Burlington could also be utilized by small Vermont communities along the Connecticut River that are faced with Long Island Sound Nitrogen TMDL implementation requirements.

The Department is committed to working with Burlington and other communities to pursue the use of IP to protect the health of Vermont’s citizens and meet the requirements of the Clean Water Act through prioritized implementation actions and sustainable financial planning. An EPA technical assistance grant for Burlington would go a long way in this effort and serve as the model for Vermont’s small communities state-wide.

Sincerely,



David K. Mears, Commissioner

Cc: Miro Weinberger, Mayor, Burlington
Megan Moir, Burlington DPW