

FINAL PROJECT REPORT

Thatcher Brook Restoration Project, Phase I – #2017RT11



Grantee: City of Biddeford

Contact: Tom Milligan, City Engineer

Project Manager: Jennifer Harris, York County Soil & Water Conservation District

Project Start Date: February 27, 2017

Date FPR Submitted: February 6, 2020



Funding for this project, in part, was provided by the U.S. Environmental Protection Agency under Section 319 of the Clean Water Act. The funding is administered by the Maine Department of Environmental Protection in partnership with EPA. EPA does not endorse any commercial products or services mentioned.

I. Project Overview

Project Background & Purpose

Thatcher Brook is a Class B stream located in the City of Biddeford and Town of Arundel that flows into the Saco River. Thatcher Brook is 7.7 miles long and has a total watershed area of 7.1 square miles (4,525 acres). Thatcher Brook's watershed contains a significant amount of impervious cover (IC). A large portion of the watershed is a designated growth area. There is also a considerable amount of pasture, forest and wetlands within the watershed.

From 2017-2019 the City of Biddeford was awarded a 319 watershed grant for the implementation of the Thatcher Brook Watershed Restoration Plan. The Thatcher Brook Watershed Restoration Project, Phase 1 (2017RT11) focused on commercial property technical assistance with stormwater operation and maintenance plans, NPS abatement projects, pollutant load reductions, outreach and education and ordinance development.

Thatcher Brook is on Maine's 303(d) list for benthic macroinvertebrates and bacteria nonattainment. Maine Department of Environmental Protection (MDEP) macroinvertebrate samples collected during 2004, 2012, and 2013 in Upper and Lower Thatcher Brook indicated that the brook did not meet Class B standards for aquatic life use criteria. MDEP collected additional grab and storm samples in 2014. Those assessments, along with stream habitat and geomorphic assessments, resulted in the identification of several stressors to Thatcher Brook's water quality. These stressors included stream channel alterations, elevated phosphorus, decreased dissolved oxygen, and elevated chloride, a secondary stressor within the watershed. Thatcher Brook is included in the statewide IC Total Maximum Daily Load (TMDL) and the statewide bacteria TMDL. Thatcher Brook was recently listed as an Urban Impaired Stream in MDEP's Chapter 502.

In 2012, the City of Biddeford received a 604(b) grant (#2012RT20) from the United States Environmental Protection Agency (EPA) and MDEP to develop the Thatcher Brook Watershed Management Plan (WBMP). The WBMP was accepted by the MDEP in January 2015. The Thatcher Brook Technical Advisory Committee (TAC) was formed during development of the WBMP and determined that retrofits should be targeted to areas with expected long-term larger contributions of polluted runoff. Nine priority stormwater retrofit projects were identified, as well as large commercial properties and state-maintained roads. Numerous smaller residential and commercial areas adjacent to the stream were also identified for future work. It was determined that shoreland zoning and stormwater requirements should be enhanced in both Arundel and Biddeford. Several buffer restoration sites, in-stream restoration and culvert replacement sites were also identified to address stream habitat degradation. Salt management was identified as a key action to proactively prevent chloride from further stressing the watershed.

The primary purpose of this project was to improve the quality of Thatcher Brook and return it to its Class B status by reducing the impact of the stressors on the watershed identified in the WBMP. It was expected that future water quality impacts to Thatcher Brook and downstream waters would be reduced and community awareness and support would grow as a result of this project. Dissolved oxygen levels in the stream and polluted runoff entering the stream would be reduced as a result of this project. Both high and medium priority stormwater retrofits and instream habitat restoration projects were the focus of this project as well. These tasks would work to stabilize stream hydrology, reduce impervious cover, and improve stream habitat.

Project Highlights

Successes:

All proposed Stormwater Retrofits (SWR) and instream habitat projects were completed within the course of this grant, except for the match project SWR 8 proposed by the MDOT. The City of Biddeford also performed a stream restoration project by removing a road and a culvert that were pinching the brook at Medical Center Drive. The Biddeford Conservation Commission also developed an excellent educational program with high school students where they taught them sampling protocols within the brook. They also worked with University of New England students to build knowledge and information about the watershed within the community.

Problems:

Completion of all proposed work within the time period of the grant was difficult. An extension was granted to the City to complete the work. However, this still was not enough time to complete all proposed projects and establish a relationship with all property owners of no-mow zone buffer restrictions. The City of Biddeford became short-staffed during the grant, leaving less time to devote to grant implementation. Also, the District had two cases of turnover in the Project Manager position. It took time to bring the new project managers up to speed. It also took more time than expected for ordinance development and planning board review.

Key personnel:

Project Key Personnel consisted of YCSWCD staff Theresa Galvin (former Project Manager, 2016-2017), Whitney Baker (former Project Manager, 2018-2019) and Jennifer Harris (current Project Manager 2019-Present). Staff from MDEP who were integral to this project were Wendy Garland, John Maclaine and Amanda Pratt. Key project partners from the City of Biddeford included Tom Milligan, John Malloy, Ray Parent and Jeff Demers. Ken Buechs with the Biddeford Conservation Commission, Kelsey Johnson with Biddeford High School and Christine Feurt with the University of New England were also an important part of this project and heavily involved in outreach and education tasks.

Changes in scope of the project:

A habitat improvement project was added on Medical Center Drive, consisting of the removal of a road and associated culvert and the addition of several plantings. Site SWR 8 was not performed by MDOT due to infeasibility. The original work plan called for 10 commercial property technical assistance visits; seven were completed. Buffer restoration work at four sites had not been completed by the end of the grant period.

II. Task Summary

Task 1 – Project Management

The City of Biddeford and ME DEP signed a grant agreement in February 2017, with the project officially encumbered February 7, 2017. The City of Biddeford Signed a contract Memorandum of Understanding (MOU) with YCSWCD for their services effective at the start of 2017. The YCSWCD Project Manager tracked project expenses, match, completed the NPS Site tracker, carried out invoicing, and completed four (4) semi-annual progress reports and one (1) final project report.

The City of Biddeford submitted a one-year extension request to the MDEP in September 2018 and it was approved by the MDEP in 2018.

Task 2 – Thatcher Brook Watershed Workgroup

The Thatcher Brook Restoration Committee met five (5) times over the course of the project. Meetings were held at City Hall. The Thatcher Brook Restoration Committee members included:

- Theresa Galvin, YCSWCD, former
- Whitney Baker, YCSWCD, former
- Jennifer Harris, YCSWCD, current
- Wendy Garland, MEDEP
- John MacLaine, MDEP, former
- Amanda Pratt, MEDEP, current
- Tom Milligan, P.E., City of Biddeford
- Greg Tansley, City of Biddeford
- Christine Ohman, City of Biddeford
- Jeff Demers, City of Biddeford
- Chris Baldwin, CPESC
- Peter Newkirk, ME DOT (former)
- Christine Feurt, UNE and Wells Reserve and Saco Watershed Collaborative
- Emily Greene, UNE and Wells Reserve and Saco Watershed Collaborative
- John Field
- Matthew Eddy, City of Biddeford
- Tad Redway, Town of Arundel
- Ken Beuchs, Biddeford Conservation Commission
- Michelle Furbeck
- John Malloy, City of Biddeford (former)
- Tom Craven
- Kelsey Johnson, Biddeford High School
- Danica Lamontagne, City of Biddeford

Task 3 – Commercial Property Technical Assistance

Commercial property technical assists were completed on seven properties within the Biddeford Industrial Park. The YCSWCD Project Manager led this effort, assisted by City of Biddeford employees Hillary Owens and Tom Milligan and Cumberland County Soil and Water Conservation District (CCSWCD) Engineer Chris Baldwin. Below is a summary of the suggestions taken from each SOMP that was delivered to each property as well as delivered to the DEP. Each deliverable submitted to the DEP included a site map.

1. Barrette (8 Morin Street):

Recommended Solutions:

The District encouraged Barrette to continue sweeping pavement and cleaning catch basins every spring on a yearly schedule. The overall cleanliness of the catch basins was good, as well as the pavement. To prevent ice damage to the tracks, the District recommended an approximate 60-foot long French drain adjacent to the area of erosion as well as native plantings. The District encouraged Barrette to work with an engineer to have an evaluation performed of the current state of the detention pond.

2. Fiber Materials Inc. (5 Morin Street): Site Layout

Solutions and Recommendations (See Site Layout for Reference):

The District recommended using a combination of geo-grids and gravel, or grass, to stabilize the bare soil areas near Catch Basin 1. Grass was not recommended however if vehicles were still accessing this area. Also, if time and finances allowed, the District recommended the area should be regraded and CB1 should be cleaned. The District recommended that CB 2 be cleaned and that a stabilized area around the catch basin be established. The District also recommended that a native vegetated buffer be re-established around this basin and several check dams be installed above the catch basin as well, comprised of angular stone. The District recommended that the plunge pool adjacent to the southern exit of the property be enlarged as well as cleaned. No stormwater appeared to be reaching Catch Basin 3. The District recommended that a swale be installed to direct water to this basin. The District also recommended that an absorbent pad and an absorbent boom be installed around the edge of Catch Basin 4. Trucks park on top of this catch basin and oil can get into the snout on the end of the pipe leaving the catch basin. The District recommended that Catch Basin 5 become a double grate, versus the single grate it is right now. Catch basin 6 appeared clean and functioning. Grated Trench Drain (Box Grates) on site were clean and appeared in working order. The District did not search for the outlet from these box drains and did not inspect where they tied into the stormwater system. An armored drainage channel existed above Catch Basin 2. It was created by FMI to direct water into Catch Basin 2. It appeared functioning on site, however the material it was made from did not appear angular. If more material continues to move down slope, the District suggested that the drainage channel be regraded and re-lined with new geotextile fabric and armored angular riprap of an appropriate size.

3. Growers Express, LLC (20 Morin Street):

Recommended Solutions:

The District recommended that both catch basin 1 and 2 be cleaned at the same time and as frequently as possible because they may be draining either directly into the stormwater connection outlet, or into the detention basin which then drains into the stormwater connection outlet. The District also recommended that the detention basin shoulders, especially nearest the outlet-controlled structure, should be better stabilized with riprap. A better buffer should be established near the detention basin nearest the pavement and dumpsters. The best buffer would be a combination of hardy, native low bush vegetation. On site, it also appeared that the spillway overflow had not been kept in-tact. The District recommended that this should be cleared of dead trees and vegetation and should be functional. The District also recommended that the area lacking a buffer to the south of the building should be better vegetated. The District recommended this area should also be monitored for potential vehicle oil leakage. There did not appear to be any absorbent boom measures in place that could contain potential vehicular spills. A readily assessable spill kit should also be provided. At the District site walk, it appeared that soils were hydric and a freshwater wetland existed in the narrow vegetated strip between Growers Express, LLC and the facility to the north of the building. Infiltration drains existing along this side of the building did not appear functioning, especially at the north-east corner of the building. The District recommended a better infiltration trench or French drain on this side of the building. The stormwater outlet owned by the City of Biddeford appeared operational, but also dated and old. The District recommended determining what water was tying into this structure so that presence of pollutants, if any, could be evaluated to determine if they were getting into the watershed.

4, 5 and 6: High Tech Extracts (5 Drapeau St.) and adjacent lots A and B:

Recommended Solutions of Each Property:

(5 Drapeau Street):

Catch basins 1 and 2 appeared to be clean. However, sediment tracking near catch basin 2, indicated that stormwater runoff was carrying sediment towards Lot B and towards the turnout area on Lots A and B. If the turnout was not used for vehicular traffic, then the District recommended that the property owner encourage that traffic stop traveling over this area and stabilize it with vegetation. Catch basin 5 was within the loading dock. The District recommended it be cleaned and the concrete around it resurfaced.

(Lot A-15 Morin Street):

The cover of a manhole out front of the commercial building had been cleared and maintained. It was not clear if the structure itself had been cleaned regularly, but the District assumed it had been maintained based on its exterior state. Catch Basin 3 was clogged The District recommended that it should be cleaned. Catch Basin 4 was clean, however it was failing and the District recommended that it be replaced. Catch basin 6 was clean and in good condition.

(Lot B):

A drain manhole existed on this lot but the District had a difficulty locating it. It was completely covered with sand and sediment, due to erosion in the area and the unstable vehicle turnout that connected 5 Drapeau Street to Lots A and B. It was presumed to not be functioning, thus causing drainage issues. The District recommended that the manhole should be cleaned and the area around it should be stabilized. It appeared that lawn clippings were also being dumped there. The District recommended they be disposed of properly at the public work facilities. The District recommended that a subsurface stormwater detention area be located on a portion of Lots A and B next to Morin Street, where stormwater was already traveling.

7. Sterling Rope (26 Morin Street):

Recommended Solutions:

The District recommended that Sterling Rope keep an eye on all five catch basins on the property and have them inspected annually for potential cleaning and maintenance. If the storm drains with outfalls in Richardson Brook were not in use, the District recommended they be removed and the area stabilized with native vegetation. If it was not possible to remove them, the District recommended they be filled and capped. Native vegetation was also recommended at the outlet of each pipe to stabilize the area. The detention pond needed to be re-delineated and assessed by an engineer to determine if it was functioning as a detention pond. Several areas of the parking lot behind the building, adjacent to the brook, the District recommended to either be repaved or removed. If pavement was removed, the bare area could be reseeded with a conservation seed mix. The District recommended that stormwater runoff structures, such as level lip spreaders, may also be installed at several locations along the pavement where gullies and rills had begun to form. In addition, native low bush vegetation could be planted in several locations adjacent to the parking area where the buffer was heavy in canopy, but sparse in low bush vegetation. This would enhance the low bush buffer.

Task 4 – Education & Outreach

Four press releases were created by the Biddeford Conservation Commission (BCC) publicizing outreach and education on behalf of the BCC, the University of New England (UNE), the City of Biddeford and the YCSWCD. Two of the four press releases were published in The Courier and the Journal Tribune. BCC was the primary driver in all outreach and education tasks, partnering primarily with UNE. BCC continued to promote their Yardsmart program in an Earth Day segment preview on Biddeford Cable Access. BCC went into Biddeford high school, St James 7/8 grade and the Biddeford middle school classrooms at least four times, performing in-class tutorials. A total of 18 students were reached at the Middle School, 8 students participated at St. James school and 14 students participated at the high school. BCC also took high school students on field trips to Thatcher Brook, educating them on water quality and testing. An Art/essay contest was not performed as had been originally proposed in the Phase 1 Work Plan. The City of Biddeford also kept current grant project information up to date on their website for the public to access.

Approximately 12 UNE students participated in the Phase 1 project by assisting the BCC with creating an outreach presentation about the Thatcher Brook Watershed. The BCC used the material from the presentation as part of a tri-fold color brochure which was direct mailed to 1500 residents within the Watershed. Dr. Christine Feurt's student, Faith Paglierani, also created a story map detailing each chop and drop location within projects A3 and B2. Information regarding the

culvert removal project at Medical Center Drive was presented by the YCSWCD at the Maine Stormwater Conference in Portland on December 2nd, 2019 with approximately 45 people in attendance for the session. Information about all work within the Phase 1 project was also presented by the YCSWCD at a Saco Watershed Collaborative meeting in Biddeford on December 6, 2019 with approximately 34 people in attendance. Approximately 11 watershed boundary signs were placed throughout the watershed and two of these signs were placed on the Eastern Trail.

Task 5 – Stormwater Retrofit and Restoration Projects

Buffer Restoration Sites:

Four buffer locations were chosen to establish mowing restrictions as well as potentially live stake these areas and solicit plantings from local businesses. No grant money was placed towards these projects, however these projects were supposed to contribute match for Phase 1. Please see Appendix A for reference locations of these properties. District staff had intended to visit each property, with assistance from the City of Biddeford and the Biddeford Conservation Commission. Unfortunately, no site visits were made, however a letter describing the grant and the benefit of mowing restrictions was sent to each landowner in 2019. If these landowners respond to the letters once Phase 1 has expired, the District will still reach out to work with these landowners to educate them of the importance of mowing restrictions and assist them in re-vegetating their buffers adjacent to Thatcher Brook.

Stormwater Retrofits:

SWR 6 Site:

This site was located on the shoulder of the road near the entrance to the Maine Turnpike in Biddeford. It was listed as a high priority site in the WBMP for the watershed. The existing grading and soil/vegetated lip at the edge of the pavement promoted gutter flow and directed polluted runoff into Thatcher Brook. It did not allow runoff to flow into the adjacent vegetated areas. The MDOT graded approximately 150 linear feet of road shoulder to encourage runoff sheet flow into the adjacent buffer. They also stabilized the shoulder area once it was regraded.

SWR 8 Site:

MDOT began planning for this project, located near the Irving in Biddeford, but determined that pitch and elevations would not work for this project in this location. They determined they would not be able to construct this stormwater retrofit.

Underdrained Grassed Soil Filter on Morin Street:

Morin Street discharged untreated runoff via CB's directly into Thatcher Brook above the monitoring site TH3, which had documented issues with elevated phosphorus, low dissolved oxygen, and habitat issues. The underdrained grassed soil filter was designed to capture and treat runoff before it entered Thatcher Brook in this area. The treatment system within the City ROW was approximately 5 feet wide by 380 feet long, treating approximately 25,600 square feet of impervious area.

Instream Habitat Restoration

Sites A3 and B2:

Pool diversity was lacking in the segment of brook between I-95 and the NE of Gateway Plaza (Site A3) as well as a segment of brook behind the Southern Maine Health Center, near Medical Center Drive (B2). Therefore, two chop and drop habitat restoration projects were proposed that would create pool diversity and enhance microhabitat diversity. The addition of rock substrate would also be considered in order to improve channel habitat conditions. The City of Biddeford and the District worked with a fluvial geomorphologist on the project, John Fields, as well as a forester experienced in chop and drop projects, Jay Milot (Caribou Springs, LLC). Habitat enhancement of Thatcher Brook using the "chop and drop" technique is used to directionally fell trees on the floodplain into the channel in order to create log steps, pools, and complexity in the channel to trap sediment, narrow the channel, and increase flow depths

and velocities during the low flow summertime period. All was done by hand without the need for excavators or other machinery.

Culvert Removal at Medical Center Drive:

This project was added to the work plan after additional funds remained from the completed instream habitat restoration projects. Medical Center Drive crossed Thatcher Brook near the hospital and the City had an agreement with the hospital to remove this road and remove the culvert crossing and pavement of the majority of Medical Center Drive. The City had used the turn-around at the end of Medical Center Drive in the past for their plow vehicles. Pavement was removed, the culvert was removed and a new turn-around for plow trucks was created for the City on the hospital's property, closer to the hospital entrance and far from the culvert removal site. This culvert and impervious area removal project were considered habitat restoration because the 6-7 foot wide culvert was perched and the road was no longer highly trafficked. The area that was restored was stabilized with riprap at the toe of the slope lined with non-woven geotextile, and the banks were stabilized with jute matting, requiring native plantings to be driven through the matting. The banks were stabilized with 100 live stakes of Red Osier Dogwood. The area on each side of Thatcher Brook was planted with a combination of 20 Black Chokecherry shrubs, 20 Shadblow Serviceberry shrubs, 10 Red Maple trees and 10 Eastern White Pines. The area where pavement was removed was mulched and seeded with a logging road seed mix, containing native grass seed meant for disturbed road-beds.

Task 6 – Ordinance Development

The City of Biddeford changed their ordinances to require three practices as Standard Operating Procedure regarding approved projects in the Thatcher Brook Watershed (1. Annual Stormwater Maintenance Logs for Planning Board approved projects, 2. Requirements that Best Management Practices (BMP's) be adhered to throughout all stages of construction regrading Planning Board approved projects, 3. Requires the submittal of salt management plans for Planning Board Approved projects). The City of Biddeford also has a 100-foot shoreland zoning restriction around Thatcher Brook and Richardson Brook, that was established prior to the Phase 1 grant. Currently, the City of Biddeford is undergoing the development of a new Comprehensive Plan. The Plan is expected to be finished in mid-2020, with implementation to occur following plan adoption. Discussion on Water and Natural Resources with the Comprehensive Plan Committee is anticipated to occur Winter/Spring of 2020. Discussion points in the Comprehensive Plan will include several items, not limited to, A. Zoning Ordinance amendments, which are a high priority for the City and will become an early implementation priority once the Plan is completed and adopted by City Council; B. Exploring maximum parking standards and requirements that parking above and beyond the maximum required per-use be constructed with pervious pavement; C. Exploring landscape standards that minimize the need for the application of chemical herbicides, pesticides, and fertilizers.

In June 2017, at an Annual Town Meeting, the Town of Arundel passed "*Amendments to the Town of Arundel Land Use Ordinance, Chapter 8-Shoreland Zoning Incorporating Upper Thatcher Brook and Richardson Brook into a special Shoreland Overlay Protective Zone*". The Ordinance established a 100' Shoreland Zone from the normal high-water line of these brooks for additional land use development protection as per the Thatcher Brook Watershed Management Plan implementation recommendations. The Upper Thatcher Brook in this context refers to those portions of Thatcher Brook contained within the Town of Arundel.

Task 7 – Pollutant Reductions

The YCSWCD Project manager estimated the NPS pollutant load reductions for the SWR 6 created in 2017. The reductions were calculated, with assistance from the DEP, for the culvert removal at Medical Center Drive and the Morin street grassed underdrained soil filter in 2019.

Pollutant reductions were not calculated for the Chop and Drop projects performed in 2018. A total of 0.54 tons/year of sediment, 2.09 pounds/year of phosphorus, and 10.85 pounds/year of nitrogen were reduced as a result of projects conducted in Phase 1. A total of approximately 100 linear feet of stream bank or shoreline was protected as a result of projects conducted in Phase 1.

Pollutant reductions by site are as follows:

| Site | Sediment (tons/yr.) | Phosphorus (lbs./yr.) | Nitrogen (lbs./yr.) | Stream Bank or Shoreline Protected |
|----------------------------|------------------------|--------------------------|------------------------|---|
| SWR 6 | 0.3 | 1.1 | 6.7 | 0 |
| Morin Street Filter | 0.24 | 0.99 | 4.15 | 0 |
| Culvert Removal Project | 0 | 0 | 0 | 100 feet |
| TOTAL | 0.54 | 2.09 | 10.85 | 100 feet |

III. Deliverables Summary

1. A. City 319 Contract – 2/27/2017
 - B. Subcontract with YCSWCD – 12/27/2019
 - C. Semi-annual progress reports
 - o 1 – 11/15/2017
 - o 2 – 5/15/2018
 - o 3 – 11/15/2018
 - o 4 – 5/15/2019
 - D. NPS Site Tracker-12/29/19
 - E. Final Project Report- January 14, 2019
2. Seven (7)- technical assistance recommendations and implementation actions- 12/27/2019
3. A. News Article 1- 9/1/17
 - B. News Article 2- 5/15/2018
 - C. Press Release 3-12/22/2019
 - D. Press Release 4-12/28/2019
 - E. Watershed Sign template and locations – 12/21/2019
 - F. Saco Watershed Collaborative Presentation- 12/8/2019
 - G. BCC and UNE Brochure – 12/31/2019
4. A. NPS Site Report SWR 6 – 12/21/2019
 - B. NPS Site Report Chop and Drop (A2 and B3)- 12/21/2019
 - C. NPS Site Report Culvert Removal Medical Center Drive- 12/21/2019
 - D. NPS Site Report, Morin Street Soil Filter-12/31/2019
5. Summary of Ordinance Development-12/26/2019

- 6. A. 2017 PCR-1/15/2018
- B. 2019 PCR-12/22/2019

IV. Project Outcomes

Major Outcomes

1. BCC performed no less than four in-class tutorials with Biddeford Middle and High School students and visited the Saint James School as well. They also conducted several field trips, teaching them the techniques for water quality sampling and educating them of the importance of restoration of the Thatcher Brook Watershed. BCC also created four press releases documenting this effort.
2. A total of 11 watershed signs were placed throughout Biddeford making the public aware of Thatcher Brook and the waters that drain to it. Two of these signs were located on the Eastern Trail.
3. The City of Biddeford, the YCSWCD with assistance from CCSWCD, performed seven technical assistance site visits within the Biddeford Industrial Park, resulting in seven Stormwater Operation and Maintenance Plans.
4. A total of three instream habitat restoration projects and two stormwater retrofit projects were conducted as a result of this project, ultimately removing a total of 0.54 tons/year of sediment, 2.09 pounds/year of phosphorus, and 10.85 pounds/year of nitrogen from the watershed and stabilizing approximately 100 linear feet of stream bank.
5. The Town of Arundel now has a 100-foot shoreland zoning restriction around Thatcher Brook. The City of Biddeford has changed their ordinances to require the following three practices as Standard Operating Procedure regarding approved projects in the Thatcher Brook Watershed: 1. Annual Stormwater Maintenance Logs for Planning Board approved projects, 2. Requirements that Best Management Practices (BMP's) be adhered to throughout all stages of construction regrading Planning Board approved projects, 3. Requires the submittal of salt management plans for Planning Board Approved projects.

Environmental Outcomes

A total of 0.54 tons/year of sediment, 2.09 pounds/year of phosphorus, and 10.85 pounds/year of nitrogen will now be kept out of the stream and approximately 100 linear feet of stream bank has been stabilized. Instream habitat improvements will benefit the brook hydrologically and support aquatic organisms.

Lessons Learned

The four proposed buffer no-mow zone restrictions, a task that should have taken the least amount of time, was not completed in a timely manner and ultimately become more time consuming than expected. It was a project that was not placed as a high priority by the District and by the City, because it did not require grant funds and contributed a small amount of match. However, these no-mow zones areas are just as critical to the brook as other proposed projects. In the future, the District and the City have learned to initiate these tasks earlier and begin no-mow restriction

discussions earlier on. It can take time to educate landowners of the importance of no-mow zones, and the District will continue work beyond this Phase 1 project to educate landowners of the importance of now-mow zones, should the homeowners reach out after Phase 1 is completed. Two years is also a very short time to accomplish significant ordinance changes through a planning board. However, the Phase 1 project has launched the start of a good campaign to develop a new Comprehensive Plan for the City of Biddeford in 2020.

V. Summary of Total Expenditures

| | <u>NPS Grant</u> | <u>Non-Federal Match</u> |
|------------------------|---------------------|--------------------------|
| Grant Agreement Amount | <u>\$139,790.00</u> | <u>\$99,521.00</u> |
| Funds Expensed | <u>\$131,240.00</u> | <u>\$87,553.97</u> |
| Funds Balance | <u>\$8,550.00</u> | <u>\$11,967.03</u> |

VI. Non-federal Match Documentation / Certification

Non-Federal Match Documentation / Certification
NPS Grants Program, Maine Department of Environmental Protection,

Grantees need to document matching funds or services contributed to the project. The amount of match required is listed under 'Budget Information' in the project work plan. Grantees must submit this form as part of the Final Project Report to certify that match has been properly documented before closeout of the Grant Agreement.

To efficiently meet documentation requirements, Grantees should accumulate match information as the project proceeds and record information in a table. See *Nonpoint Source Grant Administrative Guidelines (2016) Appendix A* for an example. The following information is needed to adequately document match.

- 1. Source. Identify the source of the funds or services;
- 2. Activity. Describe the activity and the amount of activity; and
- 3. Valuation. Describe the basis for assigning the amount of dollar value to the activity.

Important: This signed certification form must be accompanied by supporting information that documents (source, activity and valuation) the matching funds or services claimed by the Grantee. The Certification Statement alone is not sufficient to document the non-federal match.

GRANTEE INFORMATION:

Grantee Name: City of Biddeford
 Address: City Hall, 205 Main Street
 Biddeford, ME 04005
 Telephone: (207) 571-0700
 Contact Person: Tom Milligan – City Engineer

PROJECT INFORMATION:

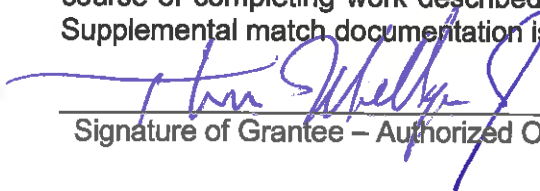
Project #: #2017RT11
 Project Title: Thatcher Brook Watershed Restoration Project, Phase 1

Match Amount Planned Under the Grant Agreement: \$ 99,521.00

Match Amount Claimed: \$ 87,553.97

CERTIFICATION STATEMENT:

I certify that the non-federal match summarized in the attached information was expended in the course of completing work described in the Grant Agreement for the Project referenced above. Supplemental match documentation is available for review in Grantee files.


 Signature of Grantee – Authorized Official

2/10/2020
 Date

Appendix A: Buffer Site Locations where letters were sent



Buffer 1



Buffer 2



Buffer 3



Buffer 4