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Final Draft Preliminary Engineering Report
Stormwater Outfall Repair Project | City of Burlington
Capital Improvement Plan 2018

1. PROJECT PLANNING

a. Location

This project is located in Burlington, Vermont. The focus of work is the repair and re-stabilization of three (3) stormwater outfalls discharging to an area referred to as the "Intervale Wetlands." The overall project area is within the Winooski River Basin, more specifically referred to as 'tributaries to the Lower Winooski' (VT08-02).

The area of interest generally consists of approximately 6.2 acres of high-density residential development, commercial development, and a large wetland complex. A topographical map depicting the project area is included in *Appendix A*.

b. Environmental Resources Present

Resource inventories were conducted between September 21 and October 5, 2018. The City's consultant, VHB, Inc. completed a detailed memorandum, including descriptions of the general existing conditions, assessment methodologies, and results. The result of those inventories is being provided as a separate communication. A summary of VHB's findings is included below.

Wetlands

Wetlands were identified in the field with pink flagging and were located in the field using mobile data collection technology capable of sub-meter accuracy. To aid in the delineation and to support future planning and permitting if necessary, USACE wetland determination data was recorded for representative onsite wetlands. USACE wetland determination data was collected along the wetland and upland boundaries per the guidance in the Regional Supplement to document representative wetland and upland conditions.

VHB delineated two wetlands within the Study Area.

Wetland 2018-1 is a riverine/floodplain wetland, located in the southern portion of the Study Area, associated with the unnamed tributary of the Winooski River that runs through the Study Area. VHB Environmental Scientists delineated the wetland boundary, as depicted in the Natural Resources Map (Attachment 1). Wetland 2018-1 is characterized by overall sparse

vegetation, including jewelweed (*Impatiens capensis*), sensitive fern (*Onoclea sensibilis*) in the ground layer, and green ash (*Fraxinus pennsylvanica*) and boxelder (*Acer negundo*) in the tree and shrub layers. This is a presumed Class II wetland as it meets the following VWR 4.6 Presumption: (b) containing woody vegetation adjacent to a stream. The wetland provides the following significant functions:

- Water Storage for Flood Water and Storm Runoff (5.1),
- Surface and Ground Water Protection (5.2), and
- Erosion Control through Binding and Stabilizing the Soil (5.10).

Hydric soils were indicated by presence of a depleted matrix (USACE hydric soils indicator F3); hydrology was indicated by the presence of saturated soils in the upper 12 inches (USACE hydrology indicator A3), drift deposits (USACE hydrology indicator B3), water-stained leaves (USACE hydrology indicator B9), stunted plants (USACE hydrology indicator D1), and geomorphic position (USACE hydrology indicator D2).

Wetland 2018-2 is a floodplain wetland located along the east and west bank of the unnamed tributary of the Winooski River that runs through the Study Area. This wetland is characterized by common reed (*Phragmites australis*) and jewelweed in the herbaceous layer, and cottonwood (*Populus deltoids*), green ash, Bebb willow (*Salix bebbiana*), and common buckthorn (*Rhamnus cathartica*) in the shrub and tree layers. This is a presumed Class II wetland as it meets VWR 4.6 Presumptions: (a) threshold size greater than 0.5 acres, and (b, c) containing dense, persistent non-woody and woody vegetation adjacent to a stream, and provides the following significant functions:

- Water Storage for Flood Water and Storm Runoff (5.1),
- Surface and Ground Water Protection (5.2), and
- Erosion Control through Binding and Stabilizing the Soil (5.10).

Hydric soils were indicated by the presence of a depleted matrix. Hydrology was indicated by the presence of surface water in a portion of the wetland (USACE hydrology indicator A1), a high water table (USACE hydrology indicator A2), saturated soils in the upper 12 inches, as well as stunted plants and geomorphic position.

Rare, Threatened, and Endangered Species

To identify the potential occurrences of rare or sensitive species, particularly those that are federally, or Vermont listed threatened or endangered, and to quantify available onsite habitat condition relative to each, VHB researched the NHI database for the presence of known EO's of rare, threatened, endangered ("RTE") species within a 0.25-mile radius of the Project area. There are no state-mapped occurrences within or adjacent to the Study Area. The search yielded three mapped plant species within a quarter- mile vicinity of the Study Area.

Two of the three species are state-protected, and all three species have potential habitat within the Study Area. To ensure no adverse impact to this species, or any RTE species that have the potential to occur onsite, a floristic survey was conducted to document the identifiable plants within the Study Area during the 2018 fieldwork. Based on this survey, no RTE plant species were observed within the Study Area.

Based upon desktop and field review, there are no known plants or animals within the Study Area. Additionally, VHB reviewed the USFWS Federally Listed Endangered and Threatened Species in Vermont with known ranges in the City of Burlington. From the review, the Project site is within the known summer range of a bat species. Although there are no known occurrences or areas of designated critical habitat within the Project Study Area, the City would need to coordinate with FWS for cutting of trees, equal to or greater than, three inches diameter at breast height ("DBH") or restrict cutting to occur between October 31st and April 15th when all non-migratory bats would be overwintering in hibernacula.

Archaeological Resources

A site inspection was conducted on December 14, 2018 with Scott Dillon, Survey Archaeologist for the Vermont Division of Historic Preservation. Scott did not express any concerns during the site inspection, indicating that the majority of the area was likely artificial fill and therefore unlikely to contain any significant archaeological resources.

Following a desktop review of available mapping resources, Mr. Dillon confirmed via email on 12/19/18 that there are no archaeological concerns within this area and will provide a final comment letter once the design is final and either Army Corps or CWSRF review has been initiated.

c. Other Infrastructure Present

The project area further encompasses other City and private infrastructure. A natural gas transmission line is located directly north of the City's outfall pipe 'IV8.0' and is owned and operated by Vermont Gas Systems, Inc. Two other outfall pipes which are owned and operated by the City of Burlington are within the project area, referred to as 'IV9.0' and 'IV10.0' respectively. Further discussion of the City's outfall infrastructure is included later in this report under Section 2: Existing Facilities.

Vermont Gas Systems, Inc. is aware of the project, and has agreed to execute an easement with the City to allow completion of the necessary work. This agreement is under development at the time of this report.

The project is also adjacent to an existing rail bridge, owned and operated by New England Central Railroad. The proposed area of work will not be within the railroad right-of-way, and

therefore will not require any additional measures be taken during construction. However, a Right-of Entry Agreement was executed with NECRR on May 29, 2019 to allow the City access onto the railroad parcel for construction and ongoing maintenance. A copy of this agreement is included with this report.

Adjacent to the project site near the top of the slope, there are private properties with houses. These properties are depicted in the project design plans with addresses on Convent Square and Washington Street.

Adjacent to the project site near the top of the slope, there is infrastructure present on Manhattan Drive. The infrastructure includes but is not limited to: fence, curb, paved road, electrical lines, gas lines, sewer lines, stormwater lines and water lines.

d. Population Trends

Burlington has the following population trend information based on available US Census data:

Year	U.S. Census Population
2000	38,884
2010	42,417
2016	42,500

e. Community Engagement

Burlington has had several public meetings on their greater capital improvements project and integrated planning project, which are the genesis of this project. One such meeting was the bond informational meeting on September 27, 2018. The $30M capital improvement project bond, which includes this project, passed at a 92% approval rate.

Because the project is located below a residential area, community engagement associated with this specific project has been minimal to date. Neighbors have been provided with contact information for program staff, and some have reached out with general questions about work completed thus far. A letter was provided to residents on April 25, 2019, in advance of the Wetlands Permit submittal, a copy of which can be found in *Appendix C.*

Following the final identification of project boundaries, three property owners have been engaged to request easement agreements. These easement agreements are actively in progress, and will be provided upon final execution.

Upon completion of the final design, the project team will conduct outreach to neighbors on the project. Doorhangers will be distributed to all neighbors in the vicinity of the project to ensure they are aware of the work prior to construction beginning. City staff will also utilize Front Porch Forum, Facebook, and Twitter to communicate about this project.

2. EXISTING FACILITIES

a. Location Map

A map of the existing outfall facilities is included in *Appendix D*.

b. History

The project area is part of a larger wetland complex that has been fragmented over time through the development of Route 127 and other surrounding neighborhoods.

There are eight stormwater outfalls located along the existing channel below Manhattan Drive and Convent Square. Those outfalls are identified as follows:

IV24.0	CSO 002
IV8.0	IV12.0
IV9.0	IV51.0
IV10.0	
IV11.0	

The stormwater outfalls in this area were installed in the mid-1900's. Over time, as the neighborhoods draining to these outfalls were built out, the additional impervious surfaces discharging to these locations have resulted in substantial erosion at the toe of the slope. The erosion has caused extensive deposition of sediment to the existing wetlands, damaging large portions of the buffer and wetland itself.

c. Condition of Existing Facilities

Streams

Stream delineations were completed during the inventory process. Stream centers and stream tops of bank or slope are identified in the field with blue survey flagging. Staff mapped one unnamed tributary of the Winooski River, which is depicted as 2018-SC-1/2018-TOB-1/2018-TOS-1 on the Natural Resources Map, also provided with *Appendix B*.

The channel has been affected by the ongoing erosion in the overall area as well as the "flashy" nature of the stormwater discharge that provides a large portion of its flow, resulting in headcuts, ongoing incision, eroded/ undercut slopes, and some segments that are full of sediment. Portions of this channel have intermittent flow, and some appear to have perennial flow. This feature flows southeast to northwest for most of the length of the Study Area, and drains stormwater from a large culvert under Route 127. The channel eventually loses a defined

streambed and banks in a wetland delineated within the Study Area (VHB-delineated Wetland 2018-2).

The typical substrate is sand and gravel, and ordinary high water ("OHW") width is widely variable, ranging from approximately three feet wide in the western section, to over 15 feet wide in the southern portion. The banks are also widely variable throughout the feature, ranging in height from less than six inches to over six feet high. Stream mapping was reviewed and verified during the site visit conducted with the Vermont Department of Environmental Conservation ("DEC") District Wetland Ecologist, Tina Heath, on October 23, 2018.

Outfall Infrastructure

Stabilization work was completed on a portion of the outfall channel in 2016, and approximately 400-450 feet of the channel was repaired and armored during that time. This repair served IV11.0, CSO 002, IV12.0, and IV51.0.

Outfalls IV8.0, IV9.0 and IV10.0 are in various degrees of disrepair, with the worst erosion existing between outfalls IV9.0 and IV10.0. While the pipes serving IV10.0 and IV9.0 are HDPE, IV8.0 was constructed using several sections of corrugated metal pipe that were fastened together using collars set on risers anchored to the slope. In the fall of 2018, the areas of the pipe that were joined began to separate, resulting in rapid erosion under the pipe structure. DPW staff initially proposed to stop the erosion issue by installing a Cured-In-Place-Pipe (CIPP) liner. However, erosion under the pipe accelerated rapidly over the next 24 hours resulting in the pipe separating completely, with a roughly 12-15 foot gully opening up underneath.

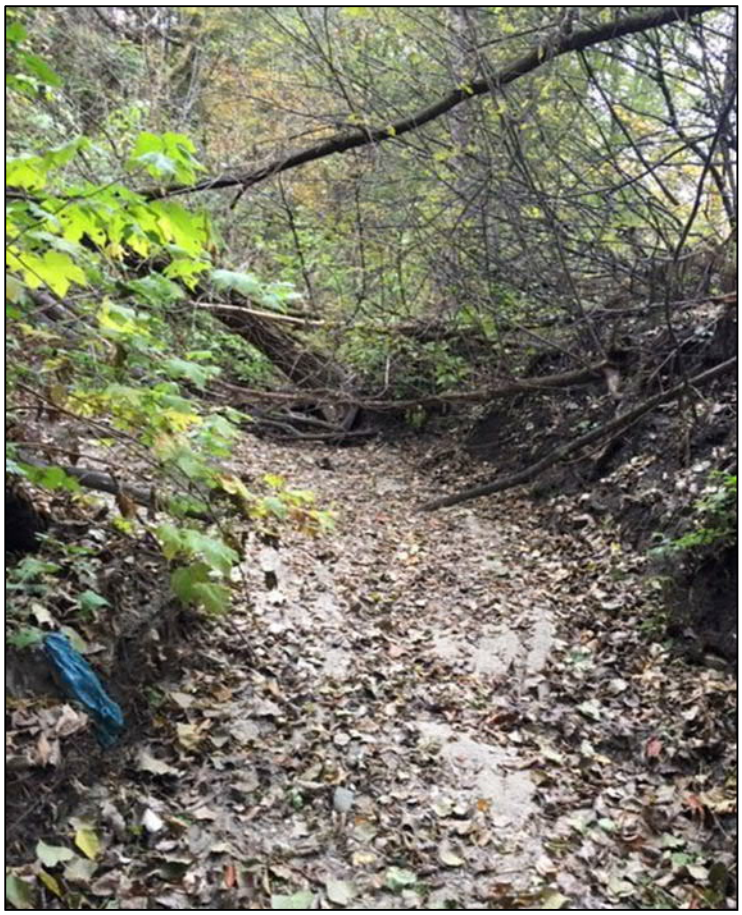
This pipe failure, in addition to the ongoing erosion at the outfalls of IV9.0 and IV10.0, has resulted in further deposition of sediment within the wetland and wetland buffer. Sediment deposition has damaged habitat in these areas, destroying wetland plant life and releasing nutrients and other stormwater pollutants to the area.

An emergency repair was completed over the following days, which included filling the gullied area with crushed stone, and raising / reattaching the separated pipe sections. To ensure the pipe would not separate again in the future, a CIPP liner was installed on December 19, 2018 by Green Mountain Pipeline Services.

The following photos show the conditions at each of the outfalls subject to this report.

Gully erosion at IV8.0 – Fall 2018 (prior to emergency repair work)

Channelized erosion between outfalls IV10.0 and IV9.0 – Summer 2015



Channelized erosion facing north of IV9.0 – Fall 2018

Buried outfall energy dissipation structure, formerly located at IV9.0 – Fall 2018

d. Financial Status of any Existing Facilities

The City of Burlington operates a Stormwater Utility, with planned revenue in the amount of $1,726,882.00 as of the beginning of Fiscal Year 2020. A more detailed summary of the City's financials is included in Section 6(f) of this report.

Emergency repairs on outfall IV8.0 cost the City $63,171.12 during the fall of 2018. The proposed repair and stabilization project will mitigate the need for unanticipated emergency repairs in the future. Any future maintenance costs will be built into the Stormwater Program's annual maintenance budget.

e. Water/Energy/Waste Audits

The project does not involve any water, energy, or waste audits.

3. NEED FOR PROJECT

a. Health, Sanitation, and Security

As part of the work conducted by Stantec Consulting in 2017 and 2018, an assessment was completed on several of the City's stormwater outfalls – focusing on those where there were known erosion issues. Using the City's previously established Asset Management framework as reference, the outfall locations were assessed and ranked based on the overall risk of failure and overall consequence of failure. As a result of that inventory and assessment, the outfall facilities proposed for repair as part of this project were categorized as the highest priority. Copies of the assessment tables used to categorize and rank these outfalls is attached as *Appendix I*. Additional images of previous inspections on IV9.0 and IV10.0 have also been included in this appendix for reference.

Public Safety

These outfalls discharge below a densely populated residential area. Erosion at the toe of this slope poses significant bank stability concerns, and as a result public safety. As part of the design process, significant consideration was given to the geotechnical analysis of the various repair options presented.

Water Quality Impacts

As previously discussed, sediment deposition from stormwater facilities contains high levels of Phosphorous, contributing to Phosphorous loading in Lake Champlain – which is the final receiving water of the Winooski River Basin. Phosphorous contributes to cyanobacteria blooms in areas used for contact recreation during the summer months. These blooms may produce toxins that are dangerous and in some cases deadly for both animals and humans, resulting in public beaches being closed while blooms are underway. In areas not managed by the City or

another entity, individuals who are unaware of the dangers posed by Cyanobacteria blooms may be at risk.

In the event of a major slope failure multiple utilities on Manhattan Drive could be significantly impacted, including sewer and stormwater collection system infrastructure. Sewer manholes and pipes that could be impacted would interrupt service to customers, would pose a possible release point for raw sewage and would be costly to repair. Stormwater catch basins, manholes and pipes that could be impacted would result in potentially high stormwater flows that could increase erosion in and around the project area. Failed stormwater infrastructure would also be costly to repair.

Resource & Wildlife Habitat Impacts

Sediment deposition has filled large areas of the existing wetland and wetland buffer. This has caused habitat loss for small mammals, macro- and microinvertebrates, and plant life. The ongoing erosion continues to deposit additional sediment in these areas, which continues to hinder any natural recovery processes.

b. Aging Infrastructure

Stormwater outfalls represent a substantial portion of the infrastructure associated with Burlington's collection system. These outfalls were installed throughout the 19th and 20th centuries. The energy dissipaters at the end of the stormwater outfalls are aging and failing in the project area. These outfalls are aging quicker than they should be because the base of the slope where they are installed is eroding.

4. ALTERNATIVES CONSIDERED

Several factors were considered in the analysis of repair options for the outfalls and outfall areas presented for repair. Each of those factors is discussed in more detail below.

Habitat Restoration & Vegetative Repairs

The City put significant consideration into options that did not include the use of hardscape repairs such as stone. However, given the current extent of sediment deposited into the wetland and wetland buffer, as well as the ongoing storm flows discharging to this location, it was ultimately determined that revegetation alone would not be sufficient to repair this area. Further, the project team determined that some level of restoration was needed to re-establish vegetation lost through erosion and to restore habitat in the receiving wetland area.

Pipe & Outfall Condition Assessment

The outfall discharge locations were originally the main focus of restoration efforts for this project. The City has completed several other outfall repairs over the last several years, utilizing 'plunge pools' as a velocity reducing measure at the outfall discharge location to

eliminate erosion at the base of the outfall. Comparable designs have been shared with the Facilities Engineering Division.

Due to the unexpected failure of IV8.0 in the fall of 2018, the City expanded the scope to also include consideration of the pipe structures themselves. IV8.0 was constructed using corrugated metal pipe (CMP), whereas IV9.0 and IV10.0 were constructed with high-density polyethylene (HDPE) pipe. Further, while the sections of IV8.0 were joined using collars, IV9.0 and IV10.0 are fusion-welded and are therefore in far better condition than IV8.0 was at the time of failure.

Bank Stability Considerations

Outfall areas for IV9.0 and IV10.0 were included as part of the City's overall outfall assessment project, which was completed by Stantec Consulting in 2018. Conceptual repair options were provided as part of that project, which are included in *Appendix E*.

Given the high priority of these outfalls, in addition to the unanticipated failure at IV8.0 during the Fall of 2018, the City elected to utilize its existing on-call stormwater contractor, VHB, Inc., to complete the design for all three outfalls under the same construction contract.

VHB, in coordination with their geotechnical subcontractor, S.W. Cole, investigated four potential options for slope stabilization as an integral part to the stormwater outfall project. Theses outfalls, like many of the outfalls in Burlington, are on a slope. The slope stability is critical for the longevity of the stormwater outfall components which include but are not limited to: pipe, manholes and energy dissipaters. The alternatives for the pipe, manholes and energy dissipaters are small and therefore they remain constant in the alternatives analysis.

As part of their analysis, S.W. Cole modeled the slope using the computer program SLOPE/W. S.W. Cole's geotechnical report is attached as *Appendix F*. Through this exercise, S.W. Cole was able to identify the desired factors of safety. The following table shows the factors of safety for the existing conditions, as well as the acceptable safety factors.

EXISTING CONDITION	Static Case	Seismic Case - IBC/ASCE 7	Seismic Case - 475 year Return Period
Section A	1.13	0.78	0.99
Section B	1.04	0.69	0.90
Section C	1.27	0.86	1.10
ACCEPTABLE SAFETY FACTORS			
	1.30	1.10	1.10

A summary of S.W. Cole's analysis of the four repair options, including the factors of safety they would achieve as calculated by their model, is included below. Fields highlighted in green indicate a desirable factor of safety.

a. Repair Option 1: Toe Berm

This option would consist of constructing a toe berm along the entire length of the slope. This repair option would improve global stability against a rotational failure, as well as protect the toe against potential erosion from intermittent stream flows. However, this option would not address surficial stability concerns which may exist on the upper portions of this slope.

The toe berm would be keyed several feet into the existing slope, and the overall width of the toe berm would be constructed away from the toe until the desired factor of safety was achieved. The toe berm would be continuous along the length of the slope, and would need to be keyed into the slope along its entire length.

	Static Case	Seismic Case - IBC/ASCE 7	Seismic Case - 475 year Return Period
Section A	1.26	0.88	1.12
Section B	1.25	0.85	1.09
Section C	1.34	0.90	1.16

b. Repair Option 2: Installation of Sheet Piling

This option would involve driving steel sheet piling into the toe of the slope. This option would provide similar improvements in global stability against rotational failures, with the added benefit of armoring the toe of the slope against erosion in high flows. However, this option also does not provide any improvement to surficial stability.

The chief concern with this option would be the cost of installing sheet piling. There is also potential concerns over localized instability as a result of the vibrations occurring during the installation process.

	Static Case	Seismic Case - IBC/ASCE 7	Seismic Case - 475 year Return Period
Section A	1.43	1.01	1.26
Section B	1.60	1.10	1.39
Section C	1.64	1.10	1.42

c. Repair Option 3: Regrading

Regrading was considered, with the assumption that imported granular soils could be used for bulk fill placement. Based on S.W. Cole's analysis, the slope would need to be regraded to a

maximum inclination no steeper than 2:1 to provide an appropriate factor of safety against both global and surficial failures.

This option would require complete clearing of the existing slope, as well as significant amount of imported fill. Further, to achieve the desired grade, the toe of the slope would need to be shifted 35-60 feet east of its present location, resulting in extensive filling of the existing mapped wetland.

	Static Case	Seismic Case - IBC/ASCE 7	Seismic Case - 475 year Return Period
Section A	1.35	0.86	1.14
Section B	1.65	0.88	1.18
Section C	1.28	0.82	1.09

d. Repair Option 4: Toe Berm with Surface Treatment

This repair option would also address both surficial and global stability of the slope. This option would involve installation of a toe berm similar to Option 1, with a slight reduction of the height of the berm in Section C. Option 4 would provide the additional measure of installing a course of stone along the upper portion of the slope.

Similar to Option 3, this would also require clearing of all existing vegetation.

	Static Case	Seismic Case - IBC/ASCE 7	Seismic Case - 475 year Return Period
Section A	1.29	0.89	1.12
Section B	1.37	0.94	1.19
Section C	1.41	0.95	1.22

e. Repair Option 5: Do Nothing

The do nothing alternative has been considered. No capital cost would be expended in the near future but the risks out weight the benefits of this option. Risks of this option include but are not limited to:

- Further erosion at the base of the slope causing additional unwanted sediment transport.
- Further erosion at the base of the slope destabilizing infrastructure which includes sewer and stormwater collection system piping. The cost of repairing this infrastructure is high and the environmental impact associated with those pipes breaking is undesirable because untreated wastewater could be introduced into the environment.

5. SELECTION OF AN ALTERNATIVE

Upon review of the geotechnical report, the City identified Options 1 and 2 as the most desirable alternatives for repair, with Option 4 requiring additional consideration. This decision was based on the following considerations:

- Modeled factors of safety achieved by the repair option,
- Minimization of wetland and other resource impacts,
- Restoration of selected wetland areas through sediment removal and revegetation, and
- Preservation of existing vegetation on the slope.
- Improved stability to existing wastewater and stormwater utilities within and adjacent to the project area.

The City requested that VHB prepare cost estimates for Option 1 and Option 2.

Based on preliminary cost estimates, the materials and installation of the sheet piling associated with Option 2 would be approximately $1,500,000.00. At that point, the City requested that VHB conduct additional review and coordination with S.W. Cole to determine whether Option 1 could be enhanced to improve the factors of safety.

Upon further investigation, VHB provided an updated Option "1.1" which included enhancement of the toe berm option to achieve the desired factors of safety. The preliminary sketch of this option is also included in Appendix G. The following table shows the factors of safety achieved under this option:

	Static Case	Seismic Case - IBC/ASCE 7	Seismic Case - 475 year Return Period
Section A	1.31	0.91	1.15
Section B	1.25	0.85	1.09
Section C	1.34	0.90	1.16

6. PROPOSED PROJECT (RECOMMENDED ALTERNATIVE)

a. Preliminary Project Design

Based on the City's request, VHB has proceeded to the 100% design phase with Option 1.1. 100% design plans have been included as *Appendix G*.

b. Project Schedule

The following table outlines the current proposed schedule for this project. Please note that this schedule may be subject to change pending resolution of permit applications currently under review with the Agency of Natural Resources.

NEPA Review Process Complete	September 30, 2019
Step III Loan Executed	October 31, 2019
Bid Document Completion	October 31, 2019
Request for Bid Issued	November 29, 2019
Site Visit with Prospective Bidders	December 11, 2019
Bids Due / Bid Opening	January 10, 2019
Contract Completion	September 15, 2020
Construction Begins	October 1, 2020
Construction Completed	November 15, 2020

c. Permit Requirements

The project will require the following permit authorizations:

Permit Type	Issuing Authority	Date of Application
Vermont Wetland Permit	VT DEC	5/2/2019
Construction Stormwater Permit	VT DEC	6/3/2019
§404 General Permit	USACE	5/2/2019
Erosion Prevention & Sediment Control Approval	City of Burlington	6/18/19

Copies of these application documents are available upon request.

d. Sustainability Considerations

i. Water and Energy Efficiency

N/A. This project does not require the use of water or energy.

ii. Green Infrastructure

Although the City will continue to utilize GSI practices in the contributing drainage area, this specific project does not incorporate any green infrastructure components.

e. Total Project Cost Estimate (Engineer's Opinion of Probable Cost)

The following table includes cost estimates prepared by Stantec and VHB. The project components included in the estimate are described below. Copies of the estimates can be found in *Appendix H*.

Consultant	Project Scope	Estimated Construction Cost
Stantec	IV9.0 & IV10.0	$376,875.00
VHB	IV8.0, IV9.0, IV10.0	$911,000.00

f. Annual Operating Budget

The following table includes a summary of the Stormwater Program's FY20 Requested operating budget.

Annual Revenue	$1,726,882.00
Annual Operating Expenses	$1,708,795.00
Annual Debt Service Payment	$26,325.00
Reserve Fund Balance – FY2019	$1,088,763.00

Budget Worksheet Reports are attached to this report as *Appendix I*.

7. CONCLUSIONS AND RECOMMENDATIONS

- The existing outfall discharge locations are damaged, and in need of repair.
- Significant erosion has occurred as a result of the damaged outfalls, depositing phosphorous-laden sediment into downstream wetlands, which needs to be addressed.
- The erosion at the toe of this slope has further caused concerns over bank stability,, safety as well as impact to wastewater and stormwater utilities in and adjacent to the project site.
- The outfalls, as well as the toe of the existing slope, should be repaired and re-stabilized as soon as possible.
- A municipal bond for this work has been passed.
- We recommend pursuing bid and construction of the design prepared by VHB, Inc.