



**CITY OF BURLINGTON  
DEPARTMENT OF PUBLIC WORKS**

645 Pine Street  
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CITY ENGINEER*

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November 1, 2012

**Three major Bike Path Recovery Projects:**

- Lakeview Cemetery Slope Failure Recovery Project
- North Shore Slope Failure Recovery Project
- 127 Bike Path Slope Failure Recovery Project

**LAKEVIEW CEMETERY SLOPE FAILURE PROJECT**

**Project Description:**

The slope failure is located on the west side of the existing recreation path about 1,100 feet south of North Beach Campground (Longitude W 73-14-6 Latitude N 44-29-26.2). The slope failure was caused by a washout of the lakeside stone toe protection and subsequent erosion of the lakeshore during the high water event in the spring of 2011. The slope failure has removed a section of the recreation path. The damage has the potential of affecting the long term stability of this section of the bike path. On the west side of the path, there is a sharp drop off where once had a 2 foot gravel shoulder and fence. The stormwater runoff collection system has been compromised and runoff is flowing out of the existing damaged drainage structure further scouring the bank just west of the bike path.

Our design calls for an

- effective "Rip-Rap" key at the lakeshore up to elevation 106'. The slope above this point will then be reinforced with stone fill with a maximum slope of 1.5' horizontal to 1' vertical. Access to repair this segment will need to be gained from the south at the toe of the slope along the beach.
- Re-developed stormwater system of conveyance to the toe of the slope.

**Project Budget:**

Project Budget: \$237,000

Funding Sources: FEMA(75%),State of Vermont(15%),City Local Match(10%)



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**Tasks completed to date:**

- Meet with FEMA officials,
- Defined a scope of work, developed preliminary budgets,
- Procured a designer under our existing On-Call Consultant Contract
- Completed our design
- Acquired all necessary permits,
- Acquired construction easement/approval from Burlington College
- Prepared Bid Documents
- Received Bids
- Prepared Bid Award Recommendations for Finance Board & City Council
- Received the Approval to Award the Construction Contract to Engineers Construction, Inc.
- Executed construction Contract with Engineers Construction
- Engineers Construction is mobilized and is on site and they have started their work.

**Scheduled Items to occur:**

<b>ITEM</b>	<b>DURATION</b>	<b>START DATE</b>	<b>END DATE</b>	<b>STATUS</b>
Construction	41 days	Tue 10/23/12	Tue 12/18/12	On Schedule
Winter Demob	3 days	Tue 12/18/12	Thu 12/20/12	On Schedule
Final Paving	5 days	Mon 5/13/13	Fri 5/17/13	On Schedule



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## **NORTHSHORE BIKE PATH SLOPE FAILURE RECOVERY PROJECT**

### **Project Description:**

The slope failure is located on the west side of the existing recreation path about 1,700 feet north of Starr Farm Road (Longitude W 73-16-08.2, Latitude N 44-31-00.9). The slope failure was caused by a washout of the lakeside stone toe protection and subsequent erosion of the lakeshore during the high water even in the spring of 2011. The slope failure has removed a section of the recreation path and undermined the existing steel retaining wall. This is endangering the existing 6' diameter storm pipe and the 18" diameter sewer pipe underneath the path.

Our designed remediation calls for us to install an effective "Rip-Rap" key at the lakeshore up to elevation 106'. The slope above this point will then be reinforced with stone fill with a maximum slope of 1.5' horizontal to 1' vertical. This will also remove the unstable overburden above the wetland area. Access to this site will be down the slope being repaired.

### **Project Budget:**

Project Budget: \$ 526,000

Funding Sources: FEMA(75%),State of Vermont(15%),City Local Match(10%)

### **Tasks completed to date:**

- Meet with FEMA officials,
- Defined a scope of work, developed preliminary budgets,
- Procured a designer under our existing On-Call Consultant Contract
- Completed our design
- In the process of acquiring all necessary permits
- Have prepared bid documents
- Received bids
- Prepared Bid Award Recommendations for Finance Board & City Council
- Received the Approval to Award the Construction Contract to J.Hutchins, Inc..
- Executed construction Contract with J.Hutchins, Inc..

### **Scheduled Items to occur:**

<b>ITEM</b>	<b>DURATION</b>	<b>START DATE</b>	<b>END DATE</b>	<b>STATUS</b>
Construction	42 days	Fri 11/2/12	Mon 12/31/12	On Schedule
Winter Demob	2 days	Mon 12/31/12	Tue 1/1/13	On Schedule
Final Paving	4 days	Mon 5/6/13	Thu 5/9/13	On Schedule



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## 127 BIKE PATH RECOVERY PROJECT

### Project Description:

The slope failure is located on the west side of the existing recreation path about 2,500 feet north of Ethan Allen Homestead (Longitude W 73-14-12.81, Latitude N 44-30-55.14). The slope failure was caused by exceptionally high groundwater that was seeping out of the bank, which softened an already compromised existing soil condition (10' clay layer above bedrock that has limited bearing capacity, for the overburden of the existing bike path). The bulging slope failure resulted in a 150' section of the bike path collapsing and displacement of the shoulder of the high bank, leaving an open trench where once a bike path existed.

Our repair calls for the

- removal of 5 feet of thickness of the 10 foot thick clay layer and
- replace the removed 5 foot thick layer of clay with a 6 inch bed of sand, 4 foot-6 foot layer of lightweight aggregate made up of geo-foam blocks, followed by 2 foot thick layer of gravel and then the 3 inches of asphalt representing the finished surface of the bike path.

### Project Budget:

Project Budget: \$400,000

Funding Sources: FHWA(75%),City Local Match(25%)

### Tasks completed to date:

- Met with FHWA officials,
- Defined a scope of work, developed preliminary budgets,
- Procured a designer under our existing On-Call Consultant Contract
- Completed our design
- Have prepared bid documents
- Received bids
- Prepared Bid Award Recommendations for Finance Board & City Council



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**Scheduled Items to occur:**

ITEM	DURATION	START DATE	END DATE	STATUS
Finance Board-Bid Award	1 day	Wed 11/7/12	Wed 11/7/12	Hurricane Sandy-Delayed Decision
City Council-Bid Award	1 day	Wed 11/7/12	Wed 11/7/12	Hurricane Sandy-Delayed Decision
Notice of Award-Contractor	1 day	Thu 11/8/12	Thu 11/8/12	On Schedule
Notice to Proceed-Contractor	1 day	Thu 11/8/12	Thu 11/8/12	On Schedule
Execution of Construction Contract	1 day	Thu 11/8/12	Thu 11/8/12	On Schedule
Construction	37 days	Thu 11/22/12	Fri 1/11/13	On Schedule
Winter Demob	3 days	Mon 1/14/13	Wed 1/16/13	On Schedule
Final Paving	5 days	Mon 5/13/13	Fri 5/17/13	On Schedule