

Comments submitted 5/14/2013

City of Portland

Development Review Application  
Planning Division Transmittal Form

Site Visit

4/25/13

with Jeff & Nell

Application Number: 2013-097

Application Date: 04/17/2013

CBL: 156 F006001

Application Type: Level I Site Alteration

Project Name: Slope Re-Construction - Back Cove Estates

Address: 1 BACK COVE ESTATES

Project Description: Reconstruction of a failed embankment. Original embankment slid down the hill and came to rest in and adjacent to Fallbrook.

Zoning: R3

Other Required Reviews:

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Traffic Movement | <input type="checkbox"/> 14-403 Streets | <input type="checkbox"/> Housing Replacement   |
| <input type="checkbox"/> Storm Water      | # Units _____                           | <input type="checkbox"/> Historic Preservation |
| <input type="checkbox"/> Subdivision      | <input type="checkbox"/> Flood Plain    | <input type="checkbox"/> Other:                |
| # Lots _____                              | <input type="checkbox"/> Shoreland      |  |
| <input type="checkbox"/> Site Location    | <input type="checkbox"/> Design Review  |  |
| # Unit _____                              |   |  |

Distribution List:

Planner	Nell Donaldson	Parking	John Peverada
Zoning	Marge Schmuckal	Design Review	Alex Jaegerman
Traffic Engineer	Tom Errico	Corporation Counsel	Danielle West-Chuhta
Civil Engineer	David Sensus	Sanitary Sewer	John Emerson
Fire Department	Chris Pirone	Inspections	Tammy Munson
City Arborist	Jeff Tarling	Historic Preservation	Deb Andrews
Engineering	David Margolis-Pineo	DRC Coordinator	Phil DiPierro
		Outside Agency	

Ko Sanibekian - 774-6002

158-A-10

Comments needed by 5/21/2013

5/14/13  
left message  
notification

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**MEMORANDUM**

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**To:** FILE

**From:** Nell Donaldson

**Subject:** Application ID: 2013-097

**Date:** 5/14/2013

- 1 BACK Core  
156-F-006

4/17/13

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**Comments Submitted by: Marge Schmuckal/Zoning on 5/14/2013**

A site visit on 4/25/2013 revealed the necessity for re-establishing the embankment. A severe slump has already happened with indications of additional slumping abutting the original slump. The area is in a shoreland area as designated on City Zoning maps.

I would like to see a plan to show how the work is to be accomplished. Although the planting plan shows a significant planting of trees (which I will default to the City's Arborist to approve), I would also like to see what ground vegetation will also be introduced to help hold soils.

Section 14-449(d) of the Shoreland Ordinance states that "Best Management Practices" must be followed with a plan of action to stabilize the area within 1 week of completion. "Where mulch is used, it shall be applied at a rate of at least one (1) bale per 500 sq ft and shall be maintained until a catch of vegetation is established". Also additional measures shall be taken where necessary in order to avoid siltation into the water. Such measures may include the use of staked hay bales and/or silt fences.

A separate permit is required from Inspections Services.

Marge Schmuckal  
Zoning Administrator

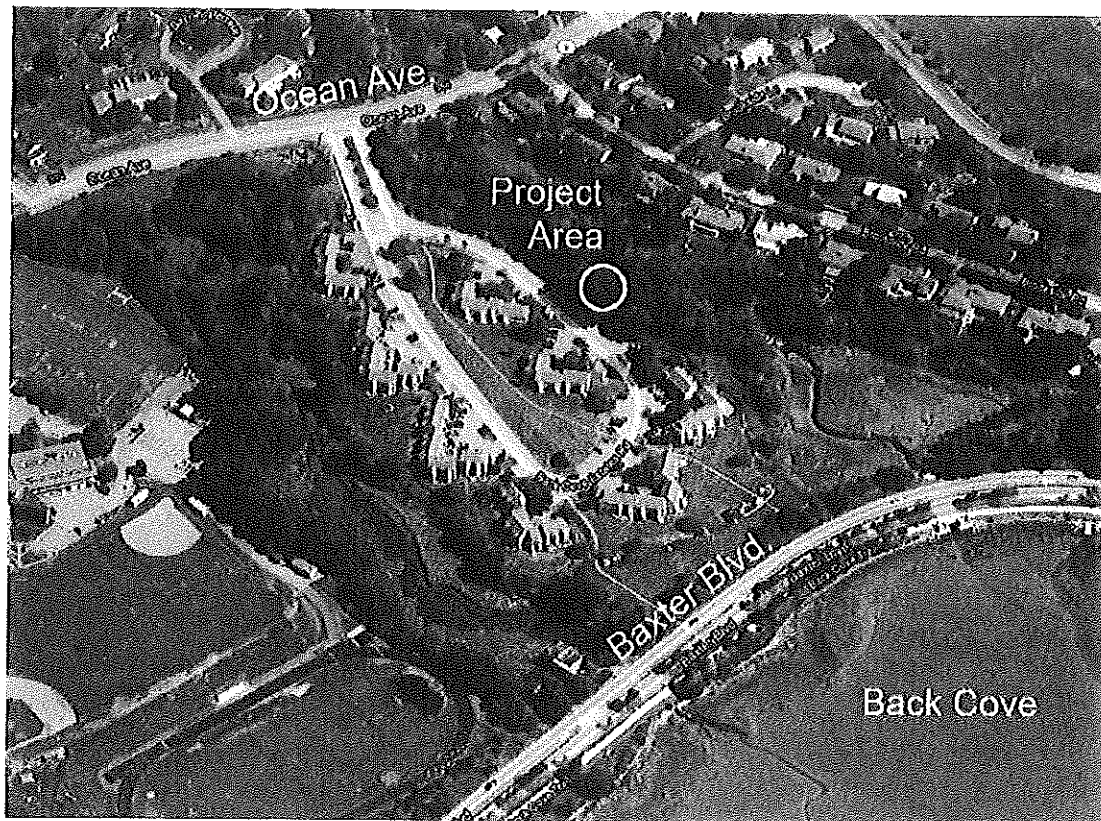


Civil Engineering - Land Planning - Stormwater Design - Environmental Permitting

## Activity Description

### ***Introduction***

Back Cove Estates is a 66 unit condominium development that is located on Ocean Avenue in Portland, Maine. It is bounded to the east by Fall Brook, to the west by an unnamed stream, to the south by Baxter Boulevard and to the north by Ocean Avenue. The Back Cove Estates Condominium Association is seeking a Level 1 – Site Alteration permit to repair the damage caused when a portion of the embankment that is located adjacent to the eastern loop of their access road slid down to the edge of Fall Brook. If not repaired & properly stabilized, the area of the slide will continue to grow, potentially threatening a portion of Back Cove Estates Road. The portion of Fall Brook that is directly adjacent to the project is tidally influenced. According to the attached high tide data, the highest annual tide elevation for Portland is 7.4'. The stream bed adjacent to the project is approximately at elevation 6'.



*Back Cove Estates is located just above Back Cove. The development is located between Ocean Ave, Baxter Blvd & two streams. The project area is shown on the above aerial photo.*

### ***Existing Conditions***

Back Cove Estates Road forms a loop through the property. Along the eastern side of the loop road - nearest to Unit #61- part of the embankment has washed down the slope, leaving a deposit of soft clay and top soil along the edge of Fall Brook. The slope failure is located approximately 15' east of the access road. A 6'-8' tall nearly vertical face has marks the beginning of the slide plane. The slide area is approximately 20' wide nearest to the access road and widens as it nears the brook. Another slide appears likely in the area directly to the south. A crack has formed that emanates out of the southern edge of the exposed vertical face. The crack runs away from the failure line at about a 30 degree angle and leads down the embankment toward the brook. We have labeled this crack on the attached plans as the location of potential secondary failure.

S.W.Cole performed a geotechnical reconnaissance to determine the likely cause of the embankment failure. They examined the embankment and performed a series of hand borings. They determined that the original embankment had a small layer of organics on top of a 5' deep layer of soft clay that was resting on top of a layer of hard clay. They concluded that the slope failure was likely due to toe erosion that undermined the stream bank and caused a shallow surface failure.



*A 6'-8' high vertical face is located along the upper rim of the slide.*

The slide plane formed at the interface of the soft & hard clay. They recommended that the area be repaired by armoring the stream bank with a boulder wall, removing the slide debris to expose undisturbed native clay and keying in a compacted granular borrow fill to re-establish the slope. A copy of their report is attached to this section.

The existing edge of roadway is approximately at elevation 35. There is grassed shoulder that is about 15' wide that drops away from the road at an approximate grade of 10%-15%. From there, the embankment slopes steeply down to the edge of the stream. The embankment is approximately 60' long and is generally sloped between 2:1

to 2.5:1 as it drops from elevation 33' down to elevation 7. The embankment failure is located at the interface of the shoulder and embankment.

### ***Proposed Improvements***

We propose to reconstruct the slope to its approximate original grade. The soft clay and organic slide material will be removed. The underlying stiff clay will be terraced to allow for the stable installation of granular fill material. The granular fill will allow for proper compaction of the reconstructed slope.

Riprap will be placed along the edge of Fall Brook and will extend up to the 100 year flood elevation. The riprap directly adjacent to the brook will have a large diameter, typically 2'-3'. We propose large boulders in this area for two reasons. First, the large stones will help to support the newly constructed embankment. Secondly, the shore of Fall Brook has an approximately 2' high vertical face in the area adjacent to the project area. The large rocks -being the same height as the existing vertical face- will allow for an easy transition back into the natural stream bed at the edge of the riprap.

The improvements have been limited to the areas necessary to re-construct the slide area and to address the secondary failure area, hopefully before it happens. The riprap boulders will be placed along approximately 78' of Fall Brook. The actual bed of Fall Brook will not be disturbed. A wetland delineation was not conducted since the majority of the material adjacent to the stream is comprised of topsoil that was deposited from the slope failure. The area that is not covered from slide material is located downstream of the potential secondary slide and will be covered once the hillside eventually collapses.

The riprap will be constructed at a 2:1 slope. Above that, a vegetated slope will extend to top of the hill. It will transition from 2:1 to 3:1 as it extends from the riprap to the grassy shoulder. The vegetated slope will be stabilized by a permanent erosion control mat.