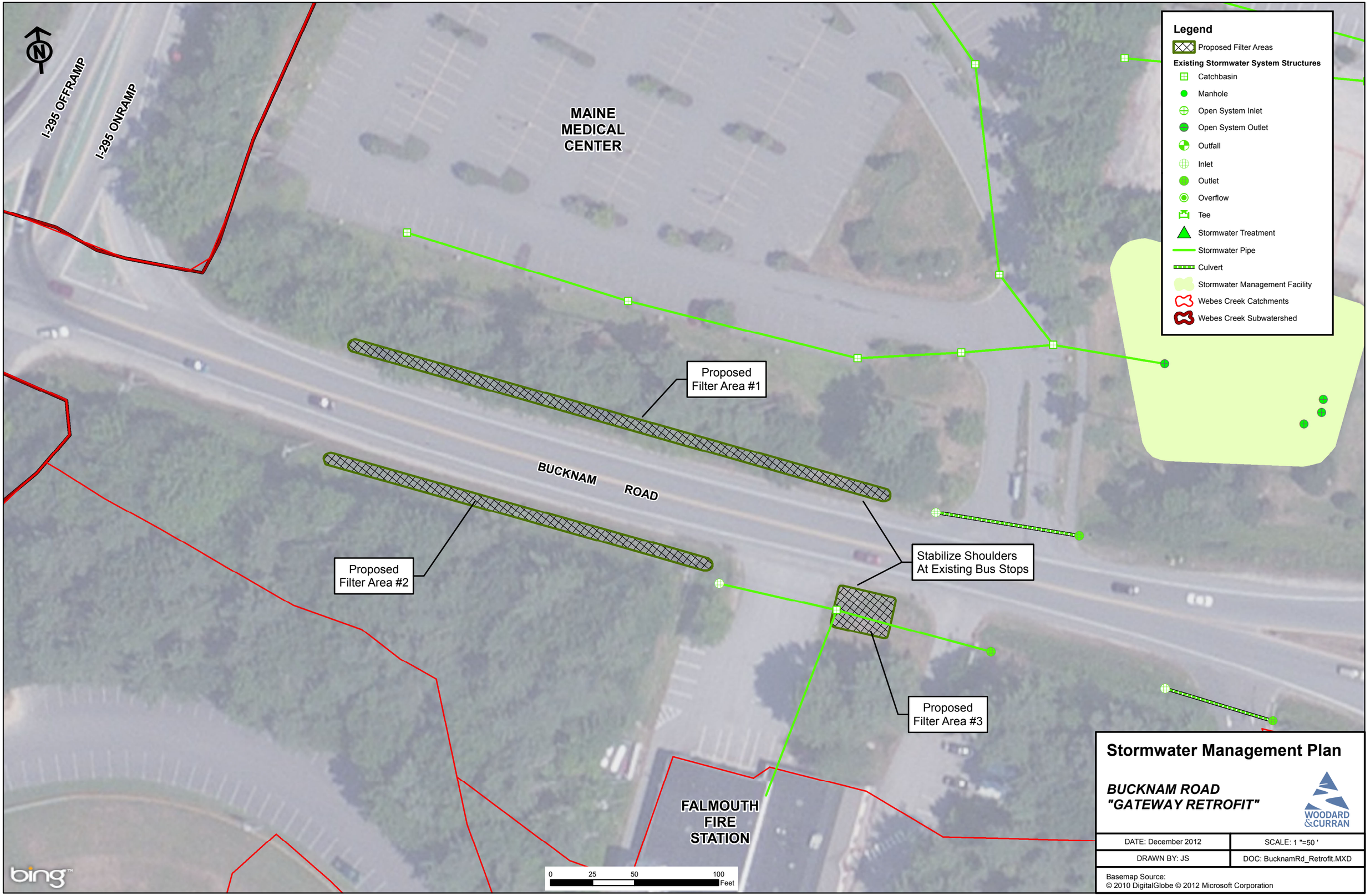
# APPENDIX E: BUCKNAM ROAD GATEWAY RETROFIT CONCEPT




# Stormwater Management Plan

***BUCKNAM ROAD***
***"GATEWAY RETROFIT"***

WOODARD &CURRAN

| | |
|---|---|
| DATE: December 2012 | SCALE: 1 "=50 ' |
| DRAWN BY: JS | DOC: BucknamRd_Retrofit.MXD |

Basemap Source:

WOODARD &CURRAN
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PROJECT Falmouth Rte 1 SW Plan
DESIGNED BY AEA DATE 12-12-12
CHECKED BY _____ DATE _____
PROJECT NO. 225740 SHEET NO. 1 OF 2

# Bucknam Road Conveyance - Water Quality Sizing & Cost

(Note: These estimates are preliminary)

## * Area 1:

Watershed = 47,713 SF = 27,648 SF Pervious
20,065 SF Impervious

Water Quality Volume (WQV) = (0.5" x Impervious)

→ $WQV = \left[\left(\frac{0.5"}{12"/1'}\right)(20{,}065\ SF)\right]$

= 836 CF

Assuming 4" deep swales,

→ $A_{req'd} = \frac{WQV}{4"} = \frac{836\ CF}{4"/12"/1'} = 2{,}508\ SF$

Available Space = 3,135 SF ✓ OK

Approximate Cost per SF of Filtration Swale = $15/SF

*Note: Unit cost from Stormwater Retrofit Cost estimate - Appendix D of Route 1 Falmouth Commercial District Stormwater Management Plan

∴ Cost = $\frac{\$15}{SF} \times 2{,}508\ SF = \$37{,}620$

## *Area 2:

Watershed = 61,328 SF = 46,994 SF Pervious
14,334 SF Impervious

→ $WQV = \left[\left(\frac{0.5"}{12"/1'}\right)(14{,}334\ SF)\right]$

= 597 CF

→ $A_{req'd} = \frac{597\ CF}{4"/12"/1'} = 1{,}791\ SF$

Available Space = 12,685 SF ✓ Ok

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# Buckman Road Conveyance - Water Quality Sizing & Cost

*Area 2 Cont'd...

Cost = $\frac{\$15}{SF}$ × 1,791 SF = $ 26,865

*Area 3:

Watershed = 13,401 SF = 6,597 SF Pervious
6,804 SF Impervious

→ WQV = [(0.5"/12") (6,804 SF)]
= 284 CF

→ $A_{reqd}$ = $\frac{284\ CF}{4"/12"/1}$ = 852 SF

Available Space = 2,245 SF ✓ OK

Cost = $\frac{\$15}{SF}$ × 852 SF = $ 12,780

Total Cost = $ 37,620
$ 26,865
$ 12,780
$ 77,265