

MetroWest Engineering, Inc.

August 17, 2020

Conservation Commission
Avon Town Hall
65 East Main Street
Avon, MA 02322

Re: Rain Garden/Infiltration Basin Operations and Management
27r Doherty Ave, Avon

Commissioners:

On August 17, 2020, I visited 25 Doherty Avenue to check on the conditions of the four infiltration basins and associated forebay rain gardens. I found that all the basins/gardens were fully vegetated and functioning properly. Vegetation of both planted materials and native recruitment exceeded 90% coverage across nearly all the areas. Both sideslopes and basin bottoms were fully vegetated. No evidence of excessive periods of standing water killing vegetation was observed. No signs of scouring or other erosion was detected.

Isolated pockets of undesirable plant species were observed in several areas. The main maintenance task currently at hand is to remove these plants before they take over entire areas. Two invasive, exotic species, purple loosestrife and Japanese knotweed, and one native tree, cottonwood compose these unwanted species. All have the capacity to overrun a basin/forebay area and reduce the functionality of the system.

I have included sheets detailing each basin/forebay area individually. The management practices to remove the invasive species are detailed therein. Considering the aggressive nature of these species, the best course of action in my opinion is a combination of mechanical removal and targeted herbicide controls.

Upon the Conservation Commission approval of the removal process a landscaping contractor will be authorized to proceed immediately with the first round of remediation and will be retained to see this through until eradicated.

Please contact me if you have any questions, or need more information.

Thank you,



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Form 1 - **INSPECTION FORM: RAIN GARDEN & INFILTRATION BASIN "A"**

INSPECTOR: Corey Van Wyhe _____ DATE: 08/17/2020 _____

Days since last rainfall: 1 _____ Amount of Last Rainfall: 0.1 _____ inches

Performance Measure	Condition
Erosion	Banks stabilized, none present
Vegetation	Fully vegetated, 75+% coverage
Sediment Depth	None Present in forebay or basin
Invasive Species	Purple loosestrife (forebay)& Japanese knotweed (basin) present.
Riprap Overflow	Undisturbed

General Observations:

Both forebay and infiltration basin are fully vegetated. Sideslopes are fully stabilized and vegetated. No evidence of any erosion into the basin or forebay areas. Forebay currently dry with evidence of recent water. No evidence of water observed in infiltration area. Forebay is completely covered in broadleaf vegetation. Infiltration basin is fully vegetated, composed primarily of several grass species.

This basin is the only location on site that contains Japanese knotweed. The infestation is currently limited to three or four plants, but this plant spreads aggressively and control should begin immediately. Additionally, purple loosestrife is found in the forebay area. This species is also established in a limited manner in forebay "A", but has the potential to overtake the area. As with the knotweed, control should be done now.

Maintenance Required:

Loosestrife Treatment: Purple loosestrife can be hand pulled or hand dug from the site. Removal should include as much root material as possible. Removal of loosestrife should also include removal of any seedheads from previous years. Place all removed plant pieces into plastic bags and dispose off site. Repeat the pulling/digging as plants return.

Knotweed Treatment: On a day where it will be free of rain for at least 1 hour after treatment, cut the stem of the plant 2-3 inches above the soil. Wearing rubber gloves, apply herbicide mixture directly to cut stem. Place all cut plant pieces into plastic bags and dispose offsite. Do not compost knotweed or loosestrife. Repeat this treatment 2-3x per growing season until plants are killed.

Form 2 - INSPECTION FORM: RAIN GARDEN & INFILTRATIONS BASIN "B"

INSPECTOR: Corey Van Wyhe _____ DATE: 08/17/2020 _____

Days since last rainfall: 1 _____ Amount of Last Rainfall: 0.1 _____ inches

Performance Measure	Condition
Erosion	Banks stabilized, none present
Vegetation	Fully vegetated, 90+% coverage Trees becoming established
Sediment Depth	None Present in forebay or basin
Invasive Species	Purple loosestrife (forebay)& (basin) present.
Riprap Overflow	Undisturbed and functional vegetation growing across

General Observations:

Both forebay and infiltration basin are fully vegetated. Sideslopes are fully stabilized and vegetated. No evidence of erosion into forebay or basin. Forebay contained standing water at the time of observation. Forebay nearly entirely vegetated by cattails. No water observed in infiltration basin. Vegetation present throughout. Woody vegetation in the form of cottonwood trees and willow shrubs are establishing in basin area. Trees should be removed from the basin.

Maintenance Required:

Cottonwood trees: Cottonwood trees are becoming established in the infiltration basin. Allowing the trees to remain will turn the basin into a forest, which is undesirable. Cottonwood stems should be cut and removed from the basin area. To keep the trees from resprouting, stems should be treated with a basal applied herbicide immediately upon cutting.

Loosestrife Control: Small numbers of purple loosestrife were noticed in both the forebay and infiltration basin. Purple loosestrife can be hand pulled or hand dug from the site. Removal should include as much root material as possible. Removal of loosestrife should also include removal of any seedheads from previous years. Place all removed plant pieces into plastic bags and dispose off site. Repeat the pulling/digging as plants return.

Form 3 - **INSPECTION FORM: RAIN GARDEN & INFILTRATION BASIN “C”**

INSPECTOR: Corey Van Wyhe _____ DATE: 08/17/2020 _____

Days since last rainfall: 1 _____ Amount of Last Rainfall: 0.1 _____ inches

Performance Measure		Condition	
Erosion		Banks stabilized, none present	
Vegetation		Fully vegetated, 90+% coverage	
Sediment Depth		None present in forebay or basin	
Invasive Species		Purple loosestrife (forebay) present.	
Riprap Overflow		Undisturbed and functional	

General Observations:

Both forebay and infiltration basin are fully vegetated. Sideslopes are fully stabilized and vegetated. No evidence of erosion into forebay or basin. Both forebay and basin are currently dry with high water marks evident on vegetation. No sedimentation was found in either area. Forebay contains the best mixture of plants of any of the planted areas. Infiltration basin “C” is a very robust stand of switchgrass. Vegetation coverage exceeds 90% in both areas. Purple loosestrife is the only invasive species found in the area.

Maintenance Required:

Loosestrife Control: Forebay “C” contained the highest concentration of purple loosestrife on the property. No loosestrife was noticed in infiltration basin “C”. Purple loosestrife can be hand pulled or hand dug from the site. Removal should include as much root material as possible. Removal of loosestrife should also include removal of any seedheads from previous years. Place all removed plant pieces into plastic bags and dispose off site. Repeat the pulling/digging as plants return.

Form 4 - **INSPECTION FORM FOR RAIN GARDEN "D"**

INSPECTOR: Corey Van Wyhe _____ DATE: 08/17/2020 _____

Days since last rainfall: 1 _____ Amount of Last Rainfall: 0.1 _____ inches

Performance Measure		Condition	
Erosion		Banks stabilized, none present	
Vegetation		Fully vegetated, 90+% coverage	
Sediment Depth		None present	
Invasive Species		None present	
Riprap Overflow		Undisturbed and functional	

General Observations:

This area is completely vegetated. The entire basin has undergone mowing, so few to no plantings remain. Sideslopes are fully stabilized and vegetated. No evidence of erosion into basin is evident. Basin is currently dry with no evidence of sediment accumulation occurring. No invasive species found in the area.

Maintenance Required:

No additional maintenance required at this time.