**Bioswales Design Review Check List**

**October 2017**

Applicant: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Submitted By: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Project Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Drainage Area \_\_\_\_\_\_\_\_\_\_\_\_\_SF and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Ac
2. How much of the DA is Impervious Surface \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_% and \_\_\_\_\_\_\_\_\_\_\_\_\_SF
3. Discuss soils investigation findings (i.e. texture, degree of compaction, percolation potentials, depth to water table, etc.) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Type of cross section (check one) \_\_\_\_\_ Trapezoidal \_\_\_\_\_ Parabolic
2. Length of Bioswale \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Ft (show calculations below or attach a copy)
3. Lbioswale = Tres x V x (60 sec/min) (See Iowa SW Mgt Manual)
4. Bottom Width (if trapezoidal)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Ft
5. Side Slopes (if trapezoidal)\_\_\_\_\_:\_\_\_\_\_\_
6. Top width (if parabolic) \_\_\_\_\_\_\_\_\_\_\_\_ Ft
7. Grade of Swale\_\_\_\_\_\_\_\_\_\_\_\_\_%
8. Residence time \_\_\_\_\_\_\_\_\_\_\_\_\_minutes
9. Velocity \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_fps
10. Type of berm (rock or earth) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
11. Height of berms \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_inches
12. Spacing of berms (from toe of upper berm to ridge of the next lower berm) \_\_\_\_\_\_\_\_ ft.
13. Describe the soil media. (Soil blend specified in the Iowa Stormwater Management Manual is 75% - 90% washed concrete sand, 0-25% topsoil, 0-10% organic material):
	1. Sand \_\_\_\_\_\_\_\_\_\_%
	2. Topsoil \_\_\_\_\_\_\_\_\_\_%
	3. Organic material \_\_\_\_\_\_\_\_\_\_%
14. Quantities (please attach a copy of materials calculations)
	1. Sand \_\_\_\_\_\_\_\_\_\_\_\_\_tons;
	2. Topsoil \_\_\_\_\_\_\_\_\_\_\_\_\_tons or CY;
	3. Organic material \_\_\_\_\_\_\_\_\_\_\_\_\_tons or CY
15. Depth of Rock Chamber the tile is bedded in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_inches. Quantity & Type of Rock \_\_\_\_\_\_\_\_\_\_\_\_tons of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
16. Was the tile trench filled with soil media or choker material (3/8” chip)? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
17. Quantity and Type of choker material \_\_\_\_\_\_\_tons of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
18. Size of perforated drain tile \_\_\_\_\_\_\_\_\_\_\_\_\_inch
19. Describe any pretreatment techniques provided (what practice(s) were used, how were things sized, etc.) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
20. Describe how the bioswale will safely convey large storm events?

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1. Describe outlet for the bioswale and the perforated drain tile \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Spacing of plants \_\_\_\_\_\_\_\_\_\_\_
2. Size of plants \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Quantity of plants \_\_\_\_\_\_\_\_\_\_ (Please attach a plant list and planting plan)
4. If seeding was done describe type and quantity of seed used and the rate that was applied (i.e. lbs/ac or per 1,000 SF \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Describe the erosion control installed to protect the bioswale until vegetation is established \_\_\_\_\_\_\_\_\_

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1. If residence time and velocities that manage the water quality volume (WQv) can’t be achieved, describe the treatment train components that will be added to manage the WQv \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Please attach a map of the drainage area.
2. Please attach a plan view, profile and cross sectional drawing

***FOR REVIEWERS USE ONLY***

[ ]  This design appears to comply with the standards in the Iowa Stormwater Management Manual.

[ ]  This design does not appear to comply with the standards in the Iowa Stormwater Management Manual.

Comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Name of Reviewer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_