**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: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_