Stormwater BMP Maintenance Action Plan for the City of La Crosse, WI

1.0 Introduction

In order for stormwater BMPs (Best Management Practices) to remain effective, proper maintenance is not only essential, it is required. Maintenance includes: routinely scheduled inspections, and non-routine repairs to damaged devices. BMP maintenance is the responsibility of the entity owning the BMP; however, local governments with municipal separate storm sewer system (MS4) permits are responsible for ensuring that maintenance of privately owned BMPs occurs within their MS4. BMPs should be designed with maintenance as one of the key design considerations. The intent of this document is to work in tandem with the BMP Operations and Maintenance Plan to define the means and methods of "how" the city will perform these maintenance objectives on those devices specifically owned by the municipality.

2.0 Inspections

Routine inspection is necessary to determine maintenance needs and prevent unnecessary damage due to lack of care. Inspections are to be carried out by designated Stormwater Utility staff on a routine basis to monitor citywide BMP's to help reduce larger long-term costs associated with a failed BMP. Routine inspection will be performed:

Components of routine inspection shall include:

A) Visual Inspection of the device to determine general condition.
B) Measuring accumulated sediment debris depth (Bio-cells w/soil probe, wet ponds w/engineering rod). Engineered plans may need to be reviewed as well.
C) Photographs of any observed problem areas or concerns.

Routine Inspections shall occur:

A) Spring (April/May) – Following the snow melt after frozen ground conditions have thawed.
B) Fall (September/October) – Prior to frozen ground conditions.
C) Following any significant rainfall event in the community.
D) Complaint/concern based.

3.0 Maintenance

In an effort to minimize cost and improve efficiency City of La Crosse Stormwater Utility staff will conduct maintenance activities where practicable These efforts will be focused primarily on the approximately 60 bio-cells and swales throughout the city. While inspections will be conducted at the wet ponds; due to the equipment needs and complexity associated with maintenance of those BMP's they will likely need to be contracted out.

4.0 Types of Maintenance activities

Maintenance activities are divided into two categories:

1. **Routine/light:** this type of maintenance would include minor activities such as grass cutting, leaf raking, litter/debris cleaning.
2. **Heavy:** this type of maintenance will include: excavation, seeding mulching, earthwork and more labor-intensive repair type work.

5.0 Maintenance Equipment

Anticipated equipment to be utilized for maintenance of BMP's include:

Routine/Light:

1. Push mower
2. Rakes
3. Shovels
4. Various hand-held tools

Heavy:

1. Mini Excavator
2. Bobcat
3. Dump truck
4. Pick-up truck
5. Trailer

Materials

1. Silt fencing
2. Erosion mat
3. Seed
4. Mulch/Straw
5. Top soil

6.0 Projected Maintenance costs

It is difficult to put an exact time or dollar figure on these maintenance activities because these devices are highly subject to seasonal variation. Wetter years will lead to more time effort and maintenance cost. Dryer years will likely result in less intensive maintenance need/requirements. For cost projection purposes the following assumptions have been made:

1. There are approximately 60 bio-cell devices owned by the municipality.

2. All 60 will need to be inspected at least 2 + times per year (1 in spring, 1 in fall, and in response to any rainfall event greater than 2inches within a 24-hour time period.
3. Between inspections and maintenance all 60 will require between 3-6 labor hours of time investment (180 – 360 total hours).
4. There is currently 1 primary staff member dedicated to this work and 2 secondary staff members dedicated to assist as needed.
5. Estimated costs associated with this type of maintenance will range from approximately $25,000 - $50,000 on an annual basis depending upon the specifics of what is needed.
6. When breaking down individual costs, based upon internal staff projections and estimates received from private contractors we estimate costs to be:
    a) Small bio cell = $500.00 to $1000.00 (per cell)
    b) Large bio cell =$3000.00 - $5000.00 (per cell)
    c) Wet ponds are more difficult to determine due to the varying costs of dredging which is very subject to economic trends. On average it typically varies between $12.00 to $20.00 per cu. yd.

7.0 Prioritization of Maintenance projects

In order to most efficiently dedicate staff time and resources to those areas of highest priority, the following is intended to establish a priority ranking system:

1. Upon inspection completion staff will assign a numeric value (1-5, where 5 is the highest priority) to the priority level for maintenance on BMP's.
2. Priority will be determined predominantly by the following factors:
    a) Is there an immediate threat to public health or safety? (+1)
    b) Is there an immediate risk to water quality? (+1)
    c) Is there an immediate risk to private/public property? (+1)
    d) Is there a citizen complaint/concern which triggered the inspection? (+1)
        - Situations where none of the above apply will be of lower maintenance priority; and situations where all of the above apply will be of highest priority.