



OPERATION AND MAINTENANCE PLAN

**18-20 AYERS VILLAGE ROAD
METHUEN PARCELS 702-72A-4 & 702-72A-4C
HAVERHILL PARCEL ID 573-1-9
METHUEN, MASSACHUSETTS 01844**

GPI

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PREPARED FOR:

**Sonny Valley, LLC
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(GPI Project No.: MAX-0466019)

**Sonny Valley, LLC
18-20 Ayers Village Road
Operation and Maintenance Plan
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SECTION 1

O&M DOCUMENTATION REQUIREMENTS

The property owner shall be responsible for the operation and maintenance of all stormwater management systems after construction in accordance with the below criteria. The responsibility for maintenance of the stormwater management system shall run with the property in perpetuity. Logs of inspections and cleanings shall be maintained by the owner and annual BMP inspection forms shall be made available to the City of Methuen upon request.

As required by the MassDEP Stormwater Management Handbook, which serves as guidance on the Massachusetts Stormwater Policy, and in accordance with Stormwater Standard #9, the following post construction operation and maintenance plan has been prepared.

Stormwater Management System Owner: Property owner

Party or Parties Responsible for Operation and Maintenance: Property owner

Documentation: A maintenance log shall be kept summarizing inspections, maintenance and any corrective actions taken. The log shall include the date on which each inspection or maintenance task was performed, a description of the inspection findings or maintenance completed, and the name of the inspector or maintenance personnel performing the task. If a maintenance task requires the clean out of any sediments or debris, the location where the sediment and debris was disposed after removal will be indicated. Disposal of the accumulated sediment and hydrocarbons must be in accordance with applicable local, state, and federal guidelines and regulations. The logs shall be made accessible to the City of Methuen upon request.

All stormwater facilities associated with this redevelopment are identified on Figure 1 contained within Section 4 of this manual and listed individually on the log form included herein and shall be inspected and maintained in accordance with the procedures outlined in Section 2.

SECTION 2

BMP SPECIFIC O & M PROCEDURES

Driveway/Parking Lot Sweeping

Sweeping shall be done once in the early fall and then immediately following spring snowmelt using a Mechanical Sweeper (Rotary Broom) to remove sand and other debris and when visual buildup of debris is apparent. At a minimum sweeping shall be required to occur on a monthly average in addition to the spring and fall cleanup. Pavement surfaces shall be swept at other times such as in the fall after leaves have dropped to remove accumulated debris. Since contaminants typically accumulate within 12 inches of the curbline, street cleaning operations should concentrate in cleaning curb and gutter lines for maximum pollutant removal efficiency. Other areas shall also be swept periodically when visual buildup of debris is apparent. Once removed from paved surfaces, the sweeping must be handled and disposed of properly. Disposal of the accumulated sediment and hydrocarbons must be in accordance with applicable local, state, and federal guidelines and regulations.

Deep Sump Hooded Catch Basins

Inspect catch basins at least 4 times per year and at the end of the foliage and snow removal seasons (preferably in spring and fall) to ensure that the catch basins are working in their intended fashion and that they are free of debris. Sediment must also be removed 4 times per year of whenever the depth of deposits is greater than or equal to one half the depth from the bottom of the invert of the lowest pipe in the basin. If the basin outlet is designed with a hood to trap floatable materials check to ensure watertight seal is working. At a minimum, remove floating debris and hydrocarbons at the time of the inspection. Sediment and debris can be removed by a clamshell bucket however, a vacuum truck is preferred. A vacuum truck must be used at a minimum of once per year for sediment removal. Disposal of the accumulated sediment and hydrocarbons must be in accordance with applicable local, state, and federal guidelines and regulations.

Hydrodynamic Separator (First Defense Units)

Initial maintenance to be performed twice a year for the first year after the unit is online and operational. A vacuum truck must be used at a minimum of once per year for sediment removal. Refer to the attached First Defense Maintenance Guide for operation and maintenance procedures and schedules thereafter.

Bioretention Areas

The bioretention areas should initially be inspected within the first three months after completion of the site's construction and after any rainfall event exceeding 2.5 inches in a 24-hour period. The system should be inspected at least twice annually thereafter.

Preventative maintenance will aid in proper function of the bioretention area. Inspect for trash and debris on a month to month basis year-round. Additional mulch should be laid down on an annual basis, preferably in the springtime. Prune any plantings and remove dead vegetation on an annual basis in the spring or fall and any dead vegetation should be replanted in the springtime. At least annually, the system should be inspected for drawdown time. In the event the bioretention area needs to be replaced due to failure or other reasons, any vegetation & filter media should be replaced in either the late spring or early summer.

Water Quality Swales

Inspect swales during the first few months after construction to ensure vegetation gets established. Thereafter, inspect twice annually for slope integrity, erosion, sediment accumulation, vegetation loss and the presence of invasive species. Perform periodic mowing to prevent the emergence of woody vegetation however; do not cut shorter than 3-4-inches. Do not let grass height exceed 6 inches. Remove debris and accumulated sediment as needed, based on inspection. Manually remove sediment and debris at least once per year. Repair eroded areas, remove invasive species and dead vegetation and reseed with applicable grass mix as warranted by inspection.

Vegetated Areas

Inspect slopes and embankments early in the growing season to identify active or potential erosion problems. Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows. During the summer months, all landscape features are to be maintained with the minimum possible amount of fertilizers, pesticides or herbicides.

Winter Maintenance

Proposed snow storage is located along the edge of the roadways. Any excess snow is to be trucked offsite. During the winter months all snow is to be stored such that snowmelt is controlled. Avoid disposing of snow on top of storm drain catch basins or in stormwater drainage swales or ditches. The minimum amount of deicing chemicals needed is to be used.

For questions and additional information regarding snow storage or disposal, please contact the Mass DEP's Northeast Regional Office in Wilmington, 978-694-3200.

SECTION 3

LONG-TERM MAINTENANCE PLAN

The primary focus of the Long-Term Pollution Prevention Plan (LTPPP) is to establish procedures and controls for limiting the potential sources of pollutants, including nutrients that may contribute to excessive contaminant levels in the site's stormwater runoff. To this end the following source controls and procedures will be in place at the site:

- **Good House Keeping** – It shall be the responsibility of the property owner to keep the site clean at all times. Refuse disposal and pickup shall occur on a regular basis and all material shall be disposed of in the specified dumpster location area on the Site Development Plans.
- **Storing Material and waste products inside or under cover** – No material storage is to take place outside the proposed facility on either paved or lawn areas. All material stored on site will conform with all storage requirements of local, state and federal agencies.
- **Routine inspections and maintenance of stormwater BMP's** – Refer to the Operation and Maintenance procedures for each BMP as described in the O&M Plan as described herein.
- **Maintenance of lawns, gardens and other landscaped areas** – All landscaping and maintenance to be performed by an authorized company chosen by the property owner.
- **Storage and use of fertilizers, herbicides and pesticides** – All landscape maintenance will be conducted by an authorized company chosen by the property owner. Any application of herbicides or pesticides will be applied by a licensed applicator.
- **Proper management of deicing chemicals and snow** – Deicing chemicals and snow removal shall primarily be the responsibility of the property owner additional information can be found in the O&M Plan as described herein.
- **Nutrient management plan** - The goal of the nutrient management plan is to minimize the potential sources of excess nutrients on the site and the release of nutrients in the stormwater from the site. This minimization relates both to infiltrated water and runoff. In general, the nature of the site use will tend to reduce the nutrients in the stormwater. Further, procedures indicated above or in the O&M Plan related to deicing procedures, BMP maintenance procedures, and street sweeping will act to reduce the levels of nutrients in the stormwater, and the nutrients entering the adjacent wetland and the groundwater.

SECTION 4

LONG-TERM MAINTENANCE PLAN EXHIBIT

SECTION 5

STORMWATER OPERATION & MAINTENANCE LOG

SECTION 6

DE-ICING LOG
