

Appendix D

Maintenance and Operations Plan

MWRDGC OPERATIONS & MAINTENANCE PLAN FOR GREEN INFRASTRUCTURE PROJECTS

UPON COMPLETION OF THE PROJECT CONSTRUCTION THE FOLLOWING OPERATION AND MAINTENANCE PROCEDURES SHALL TAKE EFFECT.

ACTIVITY SCHEDULE (STRUCTURE MAINTENANCE)

INFILTRATION BASINS, STORMWATER STRUCTURES, AND CLEANOUTS ARE DESIGNED SO THAT THE STRUCTURE CAN HAVE EASY ACCESS FOR INSPECTION AND MAINTENANCE. STRUCTURE MAINTENANCE PROCEDURES MUST MEET OSHA CONFINED SPACE ENTRY REQUIREMENTS.

AS NEEDED

- REMOVAL OF SEDIMENT AND DEBRIS FROM STRUCTURES WHEN THE SEDIMENT ZONE IS FULL AS WELL AS FROM INLET AND OUTLET PIPES. SEDIMENTS SHOULD BE TESTED FOR TOXICANTS IN COMPLIANCE WITH APPLICABLE DISPOSAL REQUIREMENTS IF LAND USES IN THE CATCHMENT INCLUDE COMMERCIAL OR INDUSTRIAL ZONES, OR IF INDICATIONS OF POLLUTION ARE NOTICED.

QUARTERLY

- FLOATING DEBRIS SHOULD BE REMOVED.

SEMI-ANNUALLY

- INSPECTION OF DRAINAGE STRUCTURES.

MAINTENANCE GUIDELINES

POURED IN PLACE SURFACES

- BRUSH SURFACE TO KEEP IN CLEAN OF MOSS, LEAVES, OR OTHER LITTER AS NEEDED.
- REMOVE CHEWING GUM, WEEDS, MOSS, AND ALGAE. REMOVE ANY MUD THAT HAS BEEN TRACKED ON TO THE SURFACE. ENSURE PRODUCTS USED ARE ACCEPTABLE FOR USE ON POURED IN PLACE SURFACE.
- ANNUALLY INSPECT FOR ANY SIGNS OF DETERIORATION TO THE SURFACE. CONTACT POURED IN PLACE VENDOR IF DAMAGED AND REQUIRING REPAIR.

IRRIGATION SYSTEM

- START UP SYSTEM IN THE SPRING.
- PERIODICALLY CHECK THE IRRIGATION CONTROLS AND SYSTEM HEADS AT LEAST THREE TIMES ANNUALLY.
- SHUT DOWN SYSTEM IN THE FALL.

ADDITIONAL NOTES

THE MINIMUM REQUIREMENTS BELOW SHALL BE INCORPORATED INTO THE INSPECTION AND MAINTENANCE REGIMEN.

- O&M PLAN PROCEDURES AND PRACTICES MUST BE REVIEWED AND ASSESSED ANNUALLY.
- ACCESS ROUTES INCLUDING ROADWAYS AND SIDEWALKS SHALL BE INSPECTED ANNUALLY AND MAINTAINED AS NEEDED.

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- PERMEABLE PAVER MAINTENANCE GUIDELINES
AS WITH MOST STORMWATER MANAGEMENT PRACTICES, PERMEABLE PAVEMENT SYSTEMS REQUIRE REGULAR MAINTENANCE TO ENSURE A PROLONGED LIFESPAN. SEE BELOW LIST OF MAINTENANCE ACTIVITIES.

ACTIVITY SCHEDULE AS NEEDED

- DO NOT USE SAND DURING THE WINTER MONTHS.
- KEEP LANDSCAPED AREAS WELL-MAINTAINED AND PREVENT SOIL FROM BEING TRANSPORTED ONTO THE PAVEMENT.
- MONITOR REGULARLY TO ENSURE THAT THE PAVING SURFACE DRAINS PROPERLY AFTER STORMS.
- ENSURE THAT SURFACE IS FREE OF SEDIMENT.
- REMOVE VEGETATION ESTABLISHED IN GRAVEL SPACES IN PAVEMENT TWICE PER YEAR.
- BI-ANNUALLY VACUUM SURFACE TO KEEP FREE OF SEDIMENT. VACUUMING SHOULD OCCUR IN THE FALL AND SPRING BY USING A LITTLE WONDER WALK BEHIND VACUUM OR APPROVED EQUAL. IF SURFACES HAVE SEVER CLOGGING, USE A LOW-PRESSURE WATER SPRAY TO LOOSEN SEDIMENT AND FOLLOW WITH A WALK BEHIND VACUUM.
- CLEAN OUT INLET STRUCTURES WITHIN OR DRAINING TO THE SUBSURFACE BEDDING BENEATH SURFACE ONCE PER YEAR.
- INSPECT SURFACE FOR SIGNS OF DETERIORATION OR SETTLING.
- INSPECT VOID AREAS AND REPLACE OR ADD JOINT MATERIAL.
- DRAINAGE STRUCTURES AND FLOW RESTRICTOR MUST BE INSPECTED AND CLEANED SEMI-ANNUALLY.
- ALL PERMEABLE SURFACES SHALL BE INSPECTED SEMI-ANNUALLY AND AFTER SIGNIFICANT RAINFALL EVENTS EXCEEDING 1.5 INCHES.
- VEGETATION SHALL BE MAINTAINED ON A REGULAR BASIS.
- PEST CONTROL MEASURES SHALL BE IMPLEMENTED TO ADDRESS INSECTS AND RODENTS.
- SIGNAGE AND FENCING SHALL BE INSTALLED AND MAINTAINED WHERE NECESSARY TO PROTECT PROPERTY AND THE PUBLIC.
- CONFINED SPACE SAFETY PROCEDURES MUST BE FOLLOWED FOR MANHOLE ENTRY.
- THE OWNER SHALL KEEP AN UPDATED LOG BOOK DOCUMENTING THE PERFORMANCE OF THE REQUIRED O&M ACTIVITIES FOR PERPETUITY. LOG BOOKS MUST BE PRODUCED UPON THE REQUEST OF A MWRDGC INSPECTOR.

IN GENERAL, THE LOGBOOK SHOULD NOTE ALL INSPECTION DATES, FACILITY COMPONENTS INSPECTED, AND ANY MAINTENANCE PERFORMED AND REPAIRS MADE. ALL INSPECTIONS AND MAINTENANCE. BOTH ROUTINE AND EMERGENCY, SHOULD BE RECORDED IN THE LOGBOOK. EACH BMP-SPECIFIC O&M SHEET SHOULD SERVE AS A CHECKLIST FOR DESIGN ELEMENTS THAT REQUIRE INSPECTION, THE FREQUENCY OF INSPECTIONS, AND CONDITIONS THAT INDICATE THAT MAINTENANCE IS NEEDED.

LANDSCAPING AND TREES

ALL LANDSCAPE AREAS MUST BE MAINTAINED BY THE PROPERTY OWNER IN GOOD CONDITION. ANY DAMAGED OR DEAD TREES, SHRUBS, ORNAMENTAL GRASSES OR PERENNIALS MUST BE PROMPTLY REPLACED MAINTENANCE OF LANDSCAPED AREAS THROUGHOUT THE YEAR INCLUDES, BUT IS NOT LIMITED TO, WEEDING, TRIMMING, PRUNING, CULTIVATION, FERTILIZATION, WATERING, PEST CONTROL AND ANYTHING ELSE NECESSARY TO ENSURE HEALTHY, VIGOROUS PLANT GROWTH AND MAINTAIN THE AREA IN A SLIGHTLY CONDITION.

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TREES - LICENSED ARBORIST TO PRUNE ANNUALLY, FERTILIZE, MONITOR FOR DISEASE AND INSECT PROBLEMS, AND TREAT AS RECOMMENDED.

SHRUBS - LANDSCAPE MAINTENANCE CONTRACTOR TO MONITOR FOR DISEASE AND INSECT PROBLEMS, AND TREAT AS RECOMMENDED.

HYDRANGEA - CUT BACK TO 6" ABOVE GRADE IN SPRING. WHILE PLANTS ARE STILL DORMANT.

CORNUS - CUT BACK 1/3" OF BRANCHES TO 4" ABOVE GRADE IN SPRING, WHILE PLANTS ARE STILL DORMANT.

ORNAMENTAL GRASSES AND PERENNIALS - CUT BACK TO 3" ABOVE GRADE IN SPRING, WHILE PLANTS ARE STILL DORMANT.

VEGETABLES - FLUSH CUT OR REMOVE PLANT ENTIRELY AFTER FIRST HARD FROST.

RAINFALL TO BE SUPPLEMENTED WITH WATER FOR A TOTAL RATE OF ONE (1) INCH PER WEEK DURING THE GROWING SEASONS FOR THE FIRST THREE YEARS. SLOW RELEASE (E.G. "GATOR") BAGS ARE RECOMMENDED FOR SUPPLEMENTAL WATERING OF TREES.

ALL LANDSCAPE AREAS TO BE MAINTAINED AS PER THE ABOVE SPECIFICATION, FOLLOWING FINAL ACCEPTANCE. ALL RELATED COSTS FOR SAID MAINTENANCE TO BE PROVIDED AND PAID FOR BY THE OWNER, AS REQUIRED, OBLIGATION ASSUMED BY SUBSEQUENT OWNERS.

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MWRDGC Operation and Maintenance Plan Owner's Certification Statement

Property Name: _____

Property Address: _____

As the owner(s) of the subject property, by signing this document, I/we acknowledge that I/we have received and reviewed the Operation and Maintenance Plan, dated _____ and understand its contents.

In the event that I/we were to sell this property, I/we agree to give a copy of the Plan to the new Owner(s) and this Owner's Certification Statement for signature. This signed Certification Statement must be submitted to the MWRDGC upon transfer of ownership.

I/we further agree to follow adhere to the maintenance schedule to maintain of the best management practices included stipulated in this Plan, and in the event that I were to sell this property, I/we agree to give a copy of this plan to the new owner and explain to him/her the requirements of this plan. I/we also acknowledge that if I/we do not maintain the measures as shown on this plan, upon MWRDGC inspection, I/we could be liable for a violation of the MWRDGC's Stormwater Management Ordinance.

Initial Owner(s) Printed Name

Initial Owner(s) Signature Date Notary Public

2nd Owner(s) Printed Name

2nd Owner(s) Signature Date Notary Public
