APPENDIX F

STORMWATER FACILITIES OPERATION AND MAINTENANCE PLAN FOR MAGEE PRESERVE, SUBDIVISION 9291

STORMWATER FACILITIES OPERATION AND MAINTENANCE PLAN

for

Magee Preserve

Subdivision 9291

March 2021

Project 091015IP

prepared for:

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Abbreviations

C.3	Provision C.3 in the Municipal Regional Stormwater Permit issued by the California Regional Water Quality Control Board for the San Francisco Bay Region
IMP	Integrated Management Practice
O&M Plan	Operations and Maintenance Plan
AD	Area Drain
BMP	Best Management Practices
CO	Cleanout
DMA	Drainage Management Area
DI	Drainage Inlet
INV	Invert Elevation
PERF	Perforated Pipe
SD	Storm Drain
SF	Square Feet

This Stormwater Facilities Operation and Maintenance Plan was prepared using the template dated 4/2/2019.

I. INSPECTION AND MAINTENANCE LOG

Facility Name	
Address	
Begin Date	End Date

Date	BMP ID#	BMP Description	Inspected by:	Cause for Inspection	Exceptions Noted	Comments and Actions Taken

Instructions: Record all inspections and maintenance for all treatment BMPs on this form. Use additional log sheets and/or attach extended comments or documentation as necessary.

- BMP ID# — Always use ID# from the Operation and Maintenance Manual.
- Inspected by — Note all inspections and maintenance on this form.
- Cause for inspection — Note if the inspection is routine, pre-rainy-season, post-storm, annual, or in response to a noted problem or complaint.
- Exceptions noted — Note any condition that requires correction or indicates a need for maintenance.
- Comments and actions taken — Describe any maintenance done and need for follow-up.

II. UPDATE TO DESIGNATION OF RESPONSIBLE INDIVIDUALS

** Use this form to update the plan when responsible individuals change. ** Date Completed	
Facility Name	
Facility Address	
Designated Contact for Operation and Maintenance	
Name:	Title or Position:
Telephone:	Alternate Telephone:
Email:	
Off-Hours or Emergency Contact	
Name:	Title or Position:
Telephone:	Alternate Telephone:
Email:	
Corporate Officer (authorized to execute contracts with the City, Town, or County)	
Name:	Title or Position:
Address:	
Telephone:	Alternate Telephone:
Email:	

III. UPDATES, REVISIONS, AND ERRATA

Date	Num.	Updates, Revisions, or Errata Title	Description/Purpose	By (full name):

IV. INTRODUCTION

This plan addresses operation and maintenance of facilities constructed as part of the following development project:

Subdivision 9291 – Magee Preserve.

The final, approved Stormwater Control Plan for this project is in Attachment 1.

IV.A. Background

This Stormwater Facilities Operation and Maintenance Plan (O&M Plan) is for facilities constructed as part of the development project referenced above. Construction of these facilities was required by Provision C.3 in the Municipal Regional Stormwater Permit issued by the California Regional Water Quality Control Board for the San Francisco Bay Region. Provision C.3 also requires the County/Town to verify ongoing operation and maintenance of stormwater treatment and hydromodification management facilities, and certain pervious pavement installations.

IV.B. Associated Agreements

This O&M Plan is referenced in an O&M Agreement between the property owner and the Town. The agreement, between Davidon Homes and the Town of Danville, grants the Town access to the property to conduct inspections and, if needed, to perform maintenance on the facilities at the owner's expense. The agreement also grants access for inspections to the Contra Costa Mosquito and Vector Control District (CCMVCD).

The property has been annexed into a Geologic Hazard Abatement District (GHAD), which provides funding for inspections and, if necessary, maintenance or replacement of the facilities.

As provided in the O&M Agreement, this O&M Plan may be modified, but only with the review and consent of the Town of Danville City Engineer. The official O&M Plan is the version which is on file at the Town of Danville Development Services Department at 510 La Gonda Way, Danville, CA. Any modifications made to the O&M Plan under the consent of the City Engineer must be filed at the Development Services Department.

IV.C. Funding for and Organization of Facility Operation and Maintenance

Funding and maintenance of stormwater treatment facilities and private storm drain infrastructure is by and for the homeowner's association for subdivision 9291 & 9320-Magee Preserve.

IV.D. Site Description

The Magee Preserve project (Project) is a planned residential development in the Town of Danville, Contra Costa County, California. The property encompasses roughly 410 acres located south of Diablo Road in Danville, California. The Magee Ranches is a portion of a historically larger ranch that was subdivided in the early 1980's. Currently, the property is used for cattle ranching activities.

Magee Preserve is one of the last remaining open areas available for development along the edges of the Town's development boundary; situated along the south side of Diablo Road between McCauley Road to the west and the older Magee Ranch (Subdivision 7669) to the east. The project is split into two development areas; the larger eastern area will develop the flat area along Green Valley Creek with 66 single family homes and supporting infrastructure, while preserving the adjacent upland areas

as permanent open space. The smaller western portion will develop three single family residential lots with supporting infrastructure off of McCauley Road near the intersection with Diablo Road.

Stormwater from the majority of the eastern subdivision is treated in the stormwater basin adjacent to the Emergency Vehicle Access (EVA)/Trail adjacent to Diablo Road. Smaller bio-retention planters along the project entry on Appaloosa treat stormwater runoff from the entry drive. Additional smaller bio-retention planters along the EVA treat stormwater from the EVA.

Stormwater from the smaller western subdivision is treated in a stormwater basin near the intersection of McCauley and Diablo Roads. Upland drainage from both subdivisions bypass the treatment facilities via underground pipes.

V. DESIGNATION AND TRAINING OF RESPONSIBLE INDIVIDUALS

V.A. Designated Contact for Operation and Maintenance

Davidon Homes
TBD

V.B. Off-Hours or Emergency Contact

TBD

V.C. Corporate Officer (authorized to execute agreements with the County)

Steve Abbs
Davidon Homes
1600 South Main Street
Walnut Creek, CA 94596
(925)945-8000
Sabbs@davidonhomes.com

V.D. Initial Training of Responsible Individuals

Following completion of construction, the bioretention facilities will be maintained by the contractor during the warranty period (typically 1 year), except for routine policing for trash, which will be done by the owner's/ HOA/GHAD personnel. During this warranty period, the HOA/GHAD landscape maintenance crew will coordinate to meet with the contractor's personnel on-site during maintenance. At these times, the contractor's personnel will demonstrate proper maintenance procedures.

V.E. Ongoing Training of Responsible Individuals

Within the homeowner's maintenance group, there will be one person designated to oversee maintenance of the site's BMPs. This person will keep copies of all project stormwater documents, including recorded agreements and stormwater management plans. This person will be familiar with all stormwater facilities and will be responsible for overseeing their maintenance and inspection.

VI. FACILITIES TO BE MAINTAINED

VI.A. Facility Descriptions

The site is treated by 6 bio-retention planters designated on the project plans and stormwater management plan as IMPs A-F. These facilities are passive, in-ground stormwater treatment facilities. Stormwater enters on the surface via overland flow or bubble-up drains where it percolates through an 18-inch layer of imported sandy loam material which is underlain by 12-33 inches of drain rock with perforated sub-drains which convey the treated stormwater to the underground storm system. Run-off in excess of the volume requiring treatment drains directly to the underground system via overflow drains within the bio-retention area. These drains are purposefully set a minimum of 6 inches above finished grade. Bio-retention areas are landscaped with specific planting listed in the county stormwater guidelines.

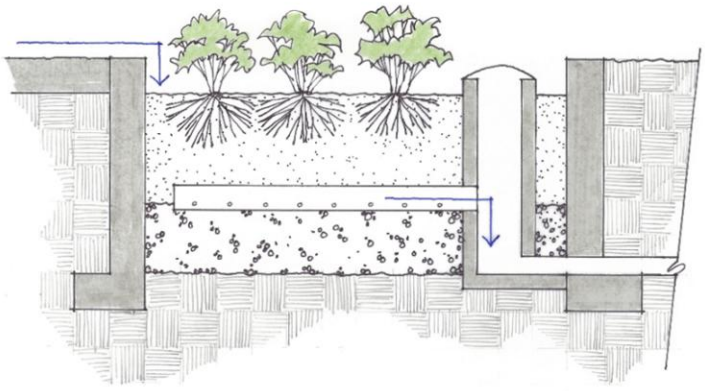

Figure [A]. Bioretention Cross-Section (schematic)

The site also includes one self-retaining area. This area predominately impervious and retains the first inch of rainfall without generating runoff.

For a more detailed view of the bio-retention IMPs, see the Stormwater Control Plan exhibit in the attachments of the attached Stormwater Control Plan report for Magee Preserve.

VI.A.1. [Bio-retention Area A]

Bio-retention Area A is a large bio-retention basin (approximately 44,650 SF) treating runoff from DMA 1 which is comprised of approximately 253,200 SF of roofs, 242,482 SF of various pavements, and 634,264 SF of landscaping and other pervious surfaces. Runoff is collected and conveyed via an underground storm drain system and discharges directly to the basin.

VI.A.2. [Bio-retention Area B-1]

Bio-retention Area B-1 is a linear bio-retention area (approximately 800 SF) along Appaloosa Street treating runoff from DMA B-1 which is comprised of approximately 11,939 SF of asphalt and concrete, and 14,600 SF of landscaping and other pervious surfaces. Runoff drains overland and enters the IMP via curb openings.

VI.A.3. [Bio-retention Area B-2]

Bio-retention Area B-2 is a linear bio-retention area (approximately 500 SF) along Appaloosa Street treating runoff from DMA B-2 which is comprised of approximately 5,705 SF of asphalt and concrete, and 6,903 SF of landscaping and other pervious surfaces. Runoff drains overland and enters the IMP via curb openings.

VI.A.4. [Bio-retention Area B-3]

Bio-retention Area B-3 is a linear bio-retention area (approximately 300 SF) along Appaloosa Street treating runoff from DMA B-3 which is comprised of approximately 3,950 SF of asphalt and concrete, and 6,217 SF of landscaping and other pervious surfaces. Runoff drains overland and enters the IMP via through-curb drains.

VI.A.5. [Self-Retaining Area C]

Self-retaining Area C is the impervious area along the east side of Appaloosa Street that is graded to retain the first inch of runoff from approximately 19,445 SF of streets and 54,291 SF of landscaping and other pervious surfaces. Runoff drains overland and enters via through-curb drains.

VI.A.6. [Bio-retention Area D]

Bio-retention Area D is a linear bio-retention area (approximately 800 SF) along the EVA Street treating runoff from DMA 4 which is comprised of approximately 14,690 SF of asphalt and concrete, and 7,729 SF of landscaping and other pervious surfaces. Runoff drains overland and enters the IMP via through-curb drains.

VI.A.7. [Bio-retention Area E]

Bio-retention Area E is a linear bio-retention area (approximately 200 SF) along the EVA Street treating runoff from DMA 5 which is comprised of approximately 2,030 SF of asphalt and concrete, and 2,410 SF of landscaping and other pervious surfaces. Runoff drains overland and enters the IMP via through-curb drains.

VI.A.8. [Bio-retention Area F]

Bio-retention Area F is a large bio-retention basin (approximately 3,178 SF) treating runoff from DMA 6 which is comprised of approximately 15,000 SF of roofs, 12,117 SF of various pavements, and 37,376 SF of landscaping and other pervious surfaces. Runoff is collected and conveyed via an underground storm drain system and discharges directly to the basin.

VII. MAINTENANCE ACTIVITIES

VII.A. General Maintenance Rules

At no time will synthetic pesticides or fertilizers be applied, nor will any soil amendments, other than aged compost mulch or sand/compost mix, be introduced. The top of soil surface will be maintained at or near the design elevation throughout. Irrigation systems will be maintained to conserve water while maintaining plant health.

Although it is unlikely to be needed, if plants are not thriving compost tea may be applied at a recommended rate of 5 gallons mixed with 15 gallons of water per acre, up to once per year between March and June. Compost tea will not be applied when temperatures are below 50°F or above 90°F or when rain is forecast within the next 48 hours.

The following may be applied for pest control if needed:

- Beneficial nematodes

- Safer® products
- Neem oil

Plants may need to be replaced with the following mix as specified by the landscape architect [list species] or with similar plantings appropriate for the unique conditions.

VII.B. Maintenance Schedule

Routine inspection and maintenance shall be continuously ongoing. Detailed inspections should occur as follows:

- Visual inspections shall be conducted monthly, particularly after heavy runoff, to ensure normal functioning. (i.e., no pooling, or blockage).
- Detailed inspections shall be conducted at least twice annually with inspections occurring (1) at the end of the wet season to schedule summer maintenance, (2) before major fall runoff in preparation for winter, and (3) after periods of heavy runoff. The objective of detailed inspections is to identify erosion, damage to vegetation, grass or plant height, debris, litter, areas of sediment accumulation, and pools/standing water

VII.B.1. Routine Activities

The facilities will be examined routinely for visible trash, and trash will be removed. Any graffiti, vandalism, or other damage should be noted and addressed within 48 hours.

The planted areas will be weeded by hand approximately monthly. At this time, plants will be inspected for health and the irrigation system will be turned on manually and checked for any leaks or broken lines, misdirected spray patterns etc. Any dead plants will be replaced.

Other typical routine maintenance performed will consist of the following:

- Inspect bio-retention areas for channels, exposure of soils, or other evidence of erosion. Clear any obstructions and remove any accumulation of sediment. Soils and plantings must be maintained.
- Inspect bio-retention areas regularly and after storms for damage.
- Observe soil at the bottom of the bio-retention areas for uniform percolation throughout. If portions do not drain within 48 hours after the end of a storm, the soil should be tilled and replanted. Remove any debris or accumulations of sediment.
- Examine the vegetation to insure that it is healthy and dense enough to provide filtering and to protect soils from erosion. Replenish mulch as necessary, remove fallen leaves and debris, prune large shrubs or trees and mow turf areas. Confirm that irrigation is adequate and not excessive. Replace dead plants and remove invasive vegetation.
- Abate any potential vectors by filling holes in the ground in and around the bio-retention areas and by insuring that there are no areas where water stands longer than 48 hours following the storm. If mosquito larvae are present and persistent, contact the Contra Costa County Vector Control District for information and advice. Only a licensed individual or contractor should apply Mosquito larvicides only when absolutely necessary and then only sparingly.
- Inspect storm drain pipes at inlets, cleanouts, or any other openings for debris or other obstructions. Remove as necessary.

- Inspect pervious asphalt for deposits of sediments. Clean pervious asphalt with commercial vacuum sweeper twice per year.
- Inspect and repair damaged pavers. Refer to the project record drawings for pervious paver installation.

VII.B.2. Following Significant Rain Events

A significant rain event will be considered to be one that produces approximately a half-inch or more rainfall in a 24-hour period. Within 24 hours after each such event, the following will be conducted:

- The surface of the facility will be observed to confirm there is no ponding.
- Inlets will be inspected, and any accumulations of trash or debris will be removed. Any erosion at inlets should be restored to grade.
- The surface of the mulch layer will be inspected for movement of material. Mulch will be replaced and raked smooth if needed.
- Outlet structure will be inspected for any obstructions to assure that mulch is not washed out.

VII.B.3. Prior to the Start of the Rainy Season

In September of each year, facility inlets and outlets will be inspected to confirm there is no accumulation of debris that would block flow. Stormwater should drain freely into the bioretention facilities. If not previously addressed during monthly maintenance, any growth and spread of plantings that blocks inlets or the movement of runoff across the surface of the facility will be cut back or removed.

If the facilities are not completely drained within 48 hours, the underdrain may be clogged. Check the overflow outlet to determine if the underdrain is performing properly. There should be no filter fabric or geotextile in the horizontal layers or wrapped at the underdrain. If the underdrain is working, the bioretention media may contain fines. Replace material with mixture of 30-40% aged compost and 60-70% washed granular sand, no fines.

VII.B.4. Annually During Winter

Once, in December – February of each year, vegetation will be cut back as needed, debris removed, and plants and mulch replaced as needed. The concrete work will be inspected for damage. The elevation of the top of soil and mulch layer will be confirmed to be consistent with the 6-inch reservoir depth.

Attachments

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