CHAPTER 11 – MAINTENANCE, TRACTS AND EASEMENTS

Chapter Organization

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11.1 MAINTENANCE

11.1.1 INTRODUCTION

Insufficient maintenance of stormwater control facilities can lead to poor performance, shortened life, increased maintenance and replacement costs, and property damage.

The local jurisdiction maintains the stormwater system structures located within the public road right of way and structures located within border easements that serve public road runoff, unless a separate agreement exists whereby the homeowner, property owner or other independent entity is responsible for the maintenance. Drainage tracts created by public projects will be maintained by the local jurisdiction. The project proponent is to provide for the perpetual maintenance of all elements of the stormwater system located outside the public right of way. The high-frequency maintenance of vegetated cover, turf grass and other landscaping within the public right of way and within border easements that accommodate public road runoff is the responsibility of the adjacent property owner. When applicable, the following maintenance-related items shall be submitted with the Drainage Submittal (refer to Chapter 3) for all projects:

- A copy of the conditions, covenants and restrictions (CC&Rs) for the homeowners' association (HOA) in charge of operating and maintaining all elements of the stormwater system;
- A Financial Plan outlining the funding mechanism for the operation, maintenance, repair, and replacement of the private stormwater system, including contingencies; and,
- An Operations and Maintenance (O&M) Manual.

Appendix 5A and 6A of the *Stormwater Management Manual for Eastern Washington* outline facility maintenance recommendations and frequencies.

11.1.2 APPLICABILITY

All projects that meet the regulatory threshold and that propose drainage facilities or structures shall comply with the Basic Requirement for operation and maintenance. All projects that propose UIC facilities also must comply with the operation and maintenance requirements, regardless of whether they meet the regulatory threshold.

11.1.3 HOMEOWNERS' AND PROPERTY OWNERS' ASSOCIATIONS

For privately maintained stormwater systems in residential neighborhoods, a homeowner's association, or alternate entity acceptable to the local jurisdiction, shall be formed to maintain the facilities located outside of the public right of way.

A draft copy of the CC&Rs for the HOA in charge of operating and maintaining the facilities associated with the stormwater system shall be submitted as part of the Drainage Submittal review package. The CC&Rs shall summarize the maintenance and fiscal responsibilities of the HOA, reference the O&M Manual (Section 11.1.4), and include a copy of the sinking fund calculations and Financial Plan (Section 11.1.5). Annual HOA dues shall provide funding for the annual operation and maintenance of all facilities associated with the stormwater system and for the eventual replacement of these facilities.

For commercial/industrial and multi-family residential developments with joint stormwater systems and multiple owners, a property owners' association (POA) or similar entity such as a business shall be formed, or a reciprocal-use agreement executed.

Homeowners' associations and property owners' associations are to be non-profit organizations accepted by the Washington Secretary of State. A standard business license is not acceptable for this purpose.

11.1.4 OPERATION AND MAINTENANCE MANUAL

For stormwater systems operated and maintained by a HOA or POA, an O&M Manual is required. The O&M Manual summarizes the tasks required to ensure the proper operation of all facilities associated with the stormwater system and must include, as a minimum:

- Description of the entity responsible for the perpetual maintenance of all facilities associated with the stormwater system, including legal means of successorship;
- Description of maintenance tasks to be performed and their frequency;
- A list of the expected design life and replacement schedule of each component of the stormwater system;
- A general site plan (drawn to scale) showing the overall layout of the site and all the facilities associated with the stormwater system; and,
- A description of the source control BMPs.

11.1.5 FINANCIAL PLAN

A Financial Plan is required in order to provide the entity responsible for maintenance with guidance with regard to financial planning for maintenance and replacement costs. The Financial Plan shall include the following items:

- A list of all stormwater-related facilities and their expected date of replacement and associated costs;
- Sinking fund calculations that take into consideration probable inflation over the life of the infrastructure and estimates the funds that need to be set aside annually (an example is provided in Appendix 11A); and,
- A mechanism for initiating and sustaining the sinking fund account demonstrating that perpetual maintenance of all facilities associated with the stormwater system will be sustained.

11.1.6 MAINTENANCE ACCESS REQUIREMENTS

An access road is required when the stormwater system facilities/structures are located 8 feet or more from an all weather drivable surface and are maintained by the local jurisdiction. Privately maintained facilities located 15 feet or more from an all weather drivable surface are also required to have an access road. When required, maintenance access roads shall meet the following minimum requirements:

- The horizontal alignment of all access roads shall be designed and constructed to accommodate the turning movements of a Single-Unit Truck (as defined by *AASHTO Geometric Design of Highways and Streets*, Exhibit 2-4, 2004 Edition). The minimum outside turning radius shall be 50 feet. The minimum width shall be 12 feet on straight sections and 15 feet on curves;
- Access roads shall consist of an all weather, drivable surface;
- Access roads shall be located within a 20-foot-minimum-width (or as required by the horizontal alignment requirements) tract or easement, extending from a public or private road;
- Access roads shall have a maximum grade of 10 percent;
- A paved apron must be provided where access roads connect to paved public roads; and,
- Gravel access roads shall have a minimum of 6 inches of crushed surfacing top course, in accordance with WSDOT Standard Specifications and shall be designed to support the heaviest anticipated maintenance vehicle year round.

The following access road requirements apply only when the local jurisdiction has assumed the responsibility of the maintenance and operation of the facilities, though

it is recommended that access roads for privately maintained facilities also be designed to meet these criteria:

- If the maintenance access road is longer than 150 feet, a turn-around is required at or near the terminus of the access road. Turn-arounds are required for long, winding, or steep conditions, regardless of the length of the drive, where backing up would otherwise be difficult; and,
- Turn-arounds shall conform to the jurisdiction's standard plan.

11.2 TRACTS AND EASEMENTS

Flow control and treatment facilities must be located within the right of way, within a border easement parallel to the road or within an individual tract. For lots larger than 1 acre, the drainage facility may be located within a drainage easement if the facility does not occupy more than 10% of the lot and does not straddle private property lines. Stormwater facilities serving commercial projects do not generally require separate tracts or easements unless they serve more than one parcel.

A stormwater facility, as defined for this section, is a swale or pond. It is acceptable for other types of facilities, such as a pipe, to be in a drainage easement.

11.2.1 TRACTS

A drainage tract for access, maintenance, operation, inspection and repair shall be dedicated to the entity in charge of the maintenance and operation of the stormwater system. Unless otherwise approved by the local jurisdiction, a tract will be dedicated when any of the following situations are present:

- Facilities associated with a stormwater system serving a residential development are located outside of the public right of way;
- Drainage ditches are located in residential neighborhoods. The limits of the tract may have to be delineated with a permanent fence when the ditch is located near property lines; or,
- A drainageway is present on a lot of 1 acre or smaller (refer to Section 8.3.4).

Tracts shall be of sufficient width to provide access to, and maintain, repair or replace elements of, the stormwater system without risking damage to adjacent structures, utilities and normal property improvements, and without incurring additional costs for shoring or specialized equipment.

11.2.2 EASEMENTS

A drainage easement for access, maintenance, operation, inspection and repair shall be granted to the entity in charge of the maintenance and operation of the stormwater system. The easement shall grant to the local jurisdiction the right to ingress/egress over the easement for purposes of inspection or emergency repair. If not in a tract, the following infrastructure shall be placed within drainage easements:

- Elements of a stormwater system, such as a pipe, located outside the public right of way. Easements for stormwater conveyance pipes shall be of sufficient width to allow construction of all improvements, including any associated site disturbances, and access to maintain, repair or replace the pipe and appurtenances without risking damage to adjacent structures or incurring additional costs for shoring or special equipment. No storm pipe in a drainage easement shall have its centerline closer than 5 feet to a private rear or side property line. The storm drain shall be centered in the easement. The minimum drainage easement shall be 20 feet;
- For drainage ditches and natural drainageways, the easement width shall be wide enough to contain the runoff from a 50-year storm event for the contributing stormwater basin, plus a 30% freeboard or 1 foot, whichever is greater. Constructed drainage ditches will not typically be allowed to straddle lot lines. Natural drainageways (refer to Section 8.3.4) located on lots larger than 1 acre may be placed in an easement; and,
- Easements for access roads and turnarounds shall be at least 20 feet wide.

Easement documents shall be drafted by the project proponent for review by the local jurisdiction and recorded by the project proponent.

Off-Site Easements

When a land action proposes infrastructure outside the property boundaries, an off-site easement shall be recorded separately from plat documents, with the auditor's recording number placed on the face of the plat. The easement document shall include language prescribed by the local jurisdiction. The easement language shall grant the local jurisdiction the right to ingress and egress for purposes of routine or emergency inspection and maintenance. The following will be submitted to the local jurisdiction for review:

- A legal description of the site stamped and signed by a surveyor;
- An exhibit showing the entire easement limits and easement bearings, stamped and signed by a surveyor;
- Proof of ownership for the affected parcel and a list of signatories; and,
- Copy of the draft easement.

The legal exhibit and description shall have 1-inch margins for all four sides of the page. All text shall be legible and at least 8 point.

For plats and binding site plans, the off-site drainage facility must be clearly identified on the plans and operation and maintenance responsibilities must be clearly defined prior to acceptance of the project.

APPENDIX 11A – EXAMPLE CALCULATION: SINKING FUND

LIST OF QUANTITIES

Description	Units	Quantity	Unit Price		Total
24" Pipe	LF	175	$40.00	$	7,000.00
21" Pipe	LF	50	$40.00	$	2,000.00
18" Pipe	LF	700	$26.00	$	18,200.00
15" Pipe	LF	650	$24.00	$	15,600.00
12" Pipe	LF	1600	$22.00	$	35,200.00
10" Pipe	LF	50	$20.00	$	1,000.00
			Pipe Total	**$**	**79,000.00**
Inlets	EA	22	$500.00	$	11,000.00
Type B Drywells	EA	4	$2,500.00	$	10,000.00
			Structure Total	**$**	**21,000.00**

ANNUAL MAINTENANCE AND OPERATION COSTS

Description	Units	Quantity	Unit Price		Total
Inspect Structures	DAY	4	$50.00	$	200.00
Flush/Clean Inlets	EA	26	$100.00	$	2,600.00
Flush Pipes				$	-
Inspect Ponds and Clean Outlets	LS	1	$500.00	$	500.00
Mowing & Irrigation of Ponds	DAY	34	$250.00	$	8,500.00
			Annual Maintenance Cost	**$**	**11,800.00**

REPLACEMENT COST & ANNUAL COST PER LOT

Description		Total
Assume 50% of Pipe is Replaced in 20 years (=Pipe Total*0.5)	$	39,500.00
Assume 25% of Structures are Replaced in 20 years (=Structure Total*0.25)	$	5,250.00
Total Present Value (PV) of Replaced Pipe and Structures	**$**	**44,750.00**
Future Value of Pipe and Structures (FV), assume inflation=4%, n=20		
FV = PV(F/P, 4%, n=20)	$	98,052.76
Annual Set-Aside for Future Replacement (A), assume interest=6%, n=20		
A = FV(A/F, 6%, n=20)	$	2,665.52
Annual Maintenance and Operation Costs (from subtotal above)	$	11,800.00
Total Annual Costs	**$**	**14,465.52**
Total Charge per Lot, assume 100 Lots		
Charge per Lot = Total Annual Costs / # of Lots		
Charge per Lot	**$**	**144.66**

NOTE: F/P, A/F factors are from interest tables

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