

Drainage Maintenance Plan - HPA Provisions

MANAGED WATERCOURSE WITHOUT HEADWATERS (Magenta)

GENERAL

1. Drainage maintenance activities shall only occur with the equipment operated from the top of the channel bank.
2. Equipment shall not enter or cross the channel when water is present.
3. Existing vegetation shall be retained on the sidewalls of the channel to the maximum extent possible.
4. Disturbance of the channel banks and woody stem riparian vegetation shall be held to an absolute minimum necessary to access the channel and to conduct the drainage maintenance activity.
5. Disturbed soils along the shoreline at risk of re-entering the watercourse shall be protected from erosion using vegetation and/or other means.
6. Dredged, excavated or bucket mowed materials shall be deposited landward of the top of the channel bank.
7. Dredged, excavated or bucket mowed materials shall not be stockpiled below the top of the channel bank.
8. Project activities shall be conducted to minimize the introduction of silt-laden water into the watercourse.
9. Piling or lumber treated with creosote or pentachlorophenol shall not be used for project construction.
10. All treated wood shall be professionally treated and completely cured prior to installation below the high water line to minimize leaching into the water or substrate.
11. Wet concrete shall be prevented from entering the watercourse. Footings, foundations and/or super structures constructed with fresh concrete shall be sufficiently cured prior to contact with water to avoid leaching. Forms and impervious materials shall remain in place until the concrete is cured.
12. All debris or deleterious material resulting from drainage maintenance activities shall be removed from the watercourse and prevented from re-entering the channel.

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GENERAL (continued)

13. No petroleum products or other deleterious materials shall be allowed to enter the surface waters in the channel.
14. If a fish kill occurs or fish are observed in distress, in-water drainage maintenance activities shall immediately cease and the Area Habitat Biologist listed below shall be immediately contacted.
15. Removal of trash and plant debris blocking culverts, bridges, trash racks, pump facilities, and floodgates shall not be subject to a timing limitation.

MAINTENANCE DREDGING

1. Timing Limitations: When water is present in the channel, maintenance dredging below the waterline and within 300 feet of the confluence with a marine water body, natural watercourse or an managed watercourse with headwaters will occur from August 1 through November 30 of any year for the protection of migrating juvenile salmon.
2. Dredging shall be conducted with a dragline, excavator, and/or hand tools.
3. Each pass with the dragline or excavator bucket in the channel shall be complete.
4. Dredging shall be held to the absolute minimum necessary to achieve the target channel width, depth and gradient.
5. The channel banks shall be sloped such that the resulting channel banks are stable.

CULVERT MAINTENANCE, REPAIR AND REPLACEMENT

1. Timing Limitations: When water is present in the channel, culvert maintenance below the waterline and within 300 feet of the confluence with a marine water body, natural watercourse or a managed watercourse with headwaters shall only occur from August 1 through November 30 of any year for the protection of migrating juvenile salmon.
2. The damaged culvert and associated fill shall be removed from the watercourse and deposited upland so that it cannot re-enter the watercourse.
3. The culvert shall be installed to pass the 100-year peak flow with consideration of the debris likely to be encountered.

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CULVERT MAINTENANCE, REPAIR AND REPLACEMENT (*continued*)

4. Fill associated with the culvert installation and approach material shall be structurally stable and be composed of material that, if eroded into a marine water body, natural watercourse or managed watercourse with headwaters, shall not be detrimental to fish life.
5. Fill associated with the culvert installation and approach material shall be protected from erosion to the 100-year peak flow.
6. If an existing culvert is replaced by a bridge structure, then the existing culvert and associated fill shall be completely removed from the watercourse and the new bridge shall be subject to the bridge provisions listed below.

BRIDGE MAINTENANCE, REPAIR AND REPLACEMENT

1. Timing Limitations: When water is present in the channel, bridge maintenance below the waterline and within 300 feet of the confluence with a marine water body, natural watercourse or a managed watercourse with headwaters shall only occur from August 1 through November 30 of any year for the protection of migrating juvenile.
2. The damaged bridge elements shall be removed from within the banks of the watercourse and deposited upland so that they cannot re-enter the watercourse.
3. The bridge shall be constructed to pass the 100-year peak flow with consideration for debris likely to be encountered.
4. Fill associated with the bridge or water crossing structure installation shall be protected from erosion to the 100-year peak flow.
5. Approach material for the bridge shall be structurally stable and be composed of material that, if eroded into a marine water body, natural watercourse or managed watercourse with headwaters, shall not be detrimental to fish life.

TRASH RACK MAINTENANCE, REPAIR AND REPLACEMENT

1. Timing Limitations: When water is present in the channel, trash rack maintenance below the waterline and within 300 feet of a the confluence with a marine water body, natural watercourse, or managed watercourse with headwaters shall only occur from August 1 through November 30 of any year for the protection of migrating

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TRASH RACK MAINTENANCE, REPAIR AND REPLACEMENT (*continued*)

2. The damaged elements of the trash rack shall be removed from the watercourse and deposited upland so that it cannot re-enter the watercourse.

PUMP FACILITY MAINTENANCE, REPAIR AND REPLACEMENT

1. **Timing Limitations:** When water is present in the channel, pump facility maintenance below the waterline and within 300 feet of the confluence with a marine water body, natural watercourse or managed watercourse with headwaters shall only occur from August 1 through November 30 of any year for the protection of migrating juvenile salmon.
2. The damaged elements of the pump facility shall be removed from the watercourse and deposited upland so that it cannot re-enter the watercourse.
3. Pump facility intakes within 300 feet of a functioning tide gate or floodgate that discharges into a marine water body, a natural watercourse or managed watercourse with headwaters shall be enclosed with screen material where the narrow dimension of the rectangular slots or mesh does not exceed .25 inch to prevent juvenile fish from entering the pump system and shall have enough surface area to ensure that the velocity through the screen is less than 0.4 feet per second. A screen shall remain in place whenever water is withdrawn from the watercourse through the pump intake unless otherwise approved by WDFW per the following provision: In the event established screen criteria cannot be met, the Drainage Maintenance Plan shall identify an alternative technology that meets or exceeds these criteria and will identify a mutually acceptable strategy and timeline for implementation.

FLOODGATE MAINTENANCE, REPAIR AND REPLACEMENT

No known floodgates exist in watercourses without headwaters.

MAINTENANCE CHANNEL IN-WATER BUCKET MOWING

1. **Timing Limitations:** When water is present in the channel, maintenance channel in-water bucket mowing below the water line and within 300 feet of the confluence with a marine water body, natural watercourse or an managed watercourse with headwaters shall only occur from August 1 through November 30 of any year for the protection of migrating juvenile salmon.
2. Maintenance channel in-water bucket mowing shall be conducted with mowing equipment identified in the District's Drainage Maintenance Plan.

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MAINTENANCE CHANNEL OUT-OF-WATER MOWING

1. Channel out of water mowing of woody stem riparian vegetation shall be limited to the banks of the watercourse necessary for equipment access to the channel as identified in the District's Drainage Maintenance Plan.