

OPERATION AND MAINTENANCE PLAN

Valdez Glacier Stream EWP Project Valdez, Alaska

This document supplements the Operation and Maintenance Agreement #68-0150-17-001 signed by the USDA, Natural Resources Conservation Service (NRCS) and the City of Valdez (Sponsor).

This plan defines responsibilities for operating, inspecting, and maintaining the Valdez Glacier Stream EWP Project. These responsibilities shall remain in effect for 10 years from the date the project is determined complete by NRCS. After the expiration of this O&M Plan, the Sponsor may still continue to be liable until the structure is removed or modified to eliminate potential hazards.

Description of the Practice:

The Valdez Glacier Stream EWP Project is located along the bank of the Valdez Glacier Stream downstream of the Richardson Highway at Valdez, Alaska. The project serves to protect that section of bank and constructed training dike from excessive erosion. The primary structure is a rock riprap revetment approximately 2,050 feet in length.

Estimated Annual O&M Costs:

The Sponsor is responsible for financing the operation and maintenance activities for the Valdez Glacier Stream EWP Project. It is recommended that the Sponsor hold funds for these activities in an operation and maintenance escrow account until needed. It is estimated that the average annual cost of maintenance will be \$22,000 for this structure. Estimated annual O&M costs are broken down as follows (unused amounts should be added to the escrow account each year):

Rock riprap revetment repair:	\$10,000
Addressing localized aggradation that threatens to overtop structure:	\$10,000
Mowing and fertilizing of seeded areas:	\$1,000
Grading road surface to maintain crown and drainage:	\$1,000

Operation:

There are no special operation requirements for this project other than preventing any operation that is detrimental to the function and longevity of the rock riprap. The Sponsor desires to keep a public road open on top of a portion of the constructed training dike. It is the responsibility of the Sponsor to ensure this road is maintained in a safe condition.

Maintenance:

It is the responsibility of the Sponsor to ensure that the following maintenance items, as a minimum, are addressed annually.

- (1) Rock Riprap—Rock riprap that is dislodged from its original position shall be replaced or moved back into its original configuration. The rock shall meet the gradation and durability requirements for the project.
- (2) Promptly remove any debris that accumulates on the project site or immediately above or below the project site in a location that may induce flow conditions or other situations damaging to the project.
- (3) Take action as necessary to address aggrading streambed conditions if aggradation occurs to a degree that threatens to overtop the structure.
- (4) Mow and fertilize seeded areas as required to maintain a vigorous stand of vegetation in the seeded areas.
- (5) Grade the road surface to maintain crown and prevent puddles/ponding.
- (6) Easements/landrights—The terms and conditions of all easements and landrights required for operation and maintenance of the project shall be checked for potential violations.

A schedule for corrective actions shall be developed for completion of identified maintenance work in a timely manner.

Personnel:

All personnel involved in conducting inspections and performing O&M activities shall be properly trained and equipped. If requested, NRCS will assist in training Sponsor employees on how to properly inspect the project. NRCS shall accompany the Sponsor on annual inspections for the first two years following completion of the project. After the first two annual inspections, NRCS may continue to provide employees to accompany the Sponsor during subsequent O&M inspections, if requested by the Sponsor and if NRCS resources are available.

O&M Inspections:

Three types of inspections are required to ensure that the Valdez Glacier Stream EWP Project functions as designed.

- (1) **Monitoring** of the structure shall be accomplished to identify and report abnormal conditions between scheduled inspections. Personnel of the

Sponsor shall perform monitoring. Irregularities shall be promptly reported to the Sponsor and the NRCS Supervisory Soil Conservationist.

- (2) **Special** inspections shall be conducted immediately following severe storms, earthquakes, vandalism, and other significant events. Personnel of the Sponsor shall perform the special inspections.
- (3) **Annual** inspections shall be accomplished in fall each year after glacial outburst events end for the year. Trained personnel of the Sponsor shall perform the annual inspections. For the first two years after the installation of the project, an NRCS engineer will participate in the annual inspections.

Records:

The Sponsor shall maintain the following records in a permanent file at the City office: a record of all significant actions taken, the cost of performance and completion dates, as-built drawings, permits, and related material. Copies of all inspection reports shall be maintained in the City files and a copy shall be provided to the NRCS Supervisory Soil Conservationist.

Violations:

If NRCS determines that the Sponsor has failed to comply with the provisions of this O&M Plan, the Sponsor agrees to reimburse the Federal government for the financial assistance provided for the installation of the Valdez Glacier Stream EWP Project. The Federal government shall also have the right to take any further action it deems necessary as per the O&M Agreement.