

## Spirit Stormwater Study RFP Questions

09/11/25

1. Is SMRAA envisioning investigation of BMPs outside of its property? Drainage areas to some of the issue/erosion areas extend well beyond the SMRAA property.
  - a. Issues that are outside the SMRAA manage property need to be identified as larger issues and not who the responsible party may be to resolve the issue. Our plans are put of the public records and will be useful to partners such as the City of Cloquet, MnDOT, and MnDNR.
2. Is the SMRAA or City of Duluth aware of any base H/H modeling to build from/reference for this study?
  - a. We are not aware of any specific H&H modeling completed for Spirit Mountain.
  - b. Knowlton Creek, 84th and 85th Ave W Creeks are mapped as FEMA floodplains. There should be modeling available on the DNR webpage available for download.
  - c. Previous modeling may be available for the lower chalet and the stormwater conveyance system installed as part of the snowmaking upgrades and the construction of the Lower Chalet. This modeling will be shared with the winning consultant if it can be recovered.
3. Page 4 indicates the FEMA/HSEM Grant was intended to be attached. Could this still be provided along with approved work plan (if available) in advance of RFP due date?
  - a. See attached
4. Has any modeling been completed or will it be completed for design of the Upper Spirit Chalet and adjacent parking area improvements? Can SMRAA provide preliminary drawings or sketches for the improvements contemplated?
  - a. No modeling is available.
  - b. Improvements contemplated have ranged from large scale basins in the upper gravel parking lots to rate control structures and down-drains from the top of the mountain to the creeks. There are no concepts to share. The intent of this study is to have engineered recommendations based on sound best practices.
5. Please clarify due date. The cover and proposed bid schedule indicates that responses are due 9/3, whereas the instructions to bidders indicate they are due 9/4.
  - a. The stormwater study deadline will be extended to September 18th. Please submit all questions by September 11th to Ryan Abel at [rael@spiritmt.com](mailto:rael@spiritmt.com) and Jim Shoberg at [jshoberg@duluthmn.gov](mailto:jshoberg@duluthmn.gov)
6. Will SMRAA share responses to all questions received?
  - a. Yes
7. Would SMRAA consider extending the RFP due date to afford consideration of response to questions, especially considering the long holiday weekend?
  - a. See #5 above.
8. The RFQ notes that the building will follow B3 requirements and that design of the building is ongoing. Is SMRAA requesting that the stormwater plan consultant coordinate with the building design firm to address B3 requirements?
  - a. This study only needs to be aware that a new upper Chalet will be built at some point in and around the footprint of the existing upper Chalet. Any recommendations that come out of this study need to support but not hinder such

development. The Chalet development will have its own BMPs that will tie into the greater system. There will be coordination necessary if the projects overlap. The SMRA/City will work with selected consultant team on what assumptions to make about the future chalet.

9. Can you provide a copy of the grant application and the grant agreement?
  - a. Yes see addendum #1.

## Purpose

Complete a stormwater vulnerability and feasibility analysis of Spirit Mountain Recreation Area (Spirt) and develop a Stormwater Management Plan. 139 acres of the hillside were converted from forested lands to grassed alpine runs and approximately 13.5 acres converted to impervious parking lots and buildings during the development of Spirt. Artificial snow from the ski runs and stormwater runoff from the impervious surface at the top produce flashy flows without rate checks or water quality BMPs. Several creeks, including Knowlton Creek, a designated trout stream, flow through Spirt. The altered hydrograph results in substantial bank erosion and sediment deposition into the St. Louis River estuary. The City will pursue multiple funding avenues based on the Plan priorities and develop a timeline for funding applications and project implementation. The Plan is crucial to demonstrate that Duluth has “done the homework” and is well positioned to begin work.

## Deliverables

Stormwater Management Plan (Plan) with BMP action items to reduce erosion and sedimentation into adjacent receiving waters, including the St. Louis River and Knowlton Creek. The Plan will provide schematic level affordable and practical design solutions for each of the identified issues, including all impervious and natural features such as; buildings, roads, parking, campground, trail and ski runs, creeks, culverts, ditches; and the snowmaking/stormwater conveyance treatment system. The Plan will also guide the design of the stormwater BMP s for the new Upper Spirt Chalet and adjacent parking and circulation routes expected to begin construction in late 2025/2026. The building will follow the Minnesota B3 new building construction requirements.

## Rationale

### Climate projections:

Duluth is addressing climate change in all areas of planning, maintenance, and upgrades with an eye to resiliency, especially regarding precipitation and storm intensity. Two primary climate change characteristics that Duluth must address are increased heavy rainfall events that increase flood potential and greater variability in temperature and precipitation trends. From 1950 through 2015, Duluth experienced increases in annual average temperature and the number of heavy rain events, and a decrease in the number of days below 32 degrees. The pace of change accelerated annually from 1980 to 2010. Duluth experienced an increase in heavy rain events; annual precipitation increased 11% while heavy precipitation events increased 37%. From June 2007 to June 2017, St. Louis County experienced a 58% increase in storm events. Trends noted on Lake Superior itself include increasing wind speeds (~ 5% per decade) and climate variability and extremes, and more frequent and intense coastal storms.

Precipitation variability is anticipated to increase in Winter and Spring, exacerbating the run-off associated with the snowmelt off Spirit Mountain and the ski runs. Several washouts exist at the Spirt Chalet complex including at Spirit Mt. Place, parking lots A, B, and C, and Skyline Parkway (Please see Exhibit A). The significant elevational changes, 750 feet from top to bottom, and the rates of stormwater runoff complicated by the mountain terrain present significant challenges. Further, late average freezing temperatures contribute to higher runoff rates in the spring due to the need to produce more artificial snow early and late in the season.

These predictions drive the intent for the City and Spirit to quickly analyze and address the many snowmelt and stormwater issues on the mountain.

#### Work to date:

The Knowlton Creek Restoration Project repaired 6,500 feet of degraded stream channel and restored 8 acres of wetlands, reduced sediment entering the St. Louis River Estuary, and re-established a naturally reproducing brook trout population. The project implemented a snowmaking/stormwater conveyance treatment system takes water from the St Louis River estuary and blows it onto the mountain as snow. In the spring the system is reversed and collects the meltwater and discharges it back to the estuary. A concurrent project in 2010 removed 53,000 cubic yards of sediment behind Tallus Island, which restored connectivity to the estuary.

The long-term remediation of Knowlton Creek and the estuary is dependent upon mitigation of upstream hydrological impairments that restores stream channels and riparian zones. Knowlton Creek and several sources continue to contribute sediment to the estuary including the 82 Ave W. Creek, two tributaries to Knowlton Creek, Gogebic, and Lenroot Creek (Please see Exhibit B). Large storm events will result in additional movement of sediments into the estuary and threaten the remediation completed to date. Exhibit C illustrates the extent of the sediment blooms impacting the estuary behind Tallus Island. Addressing the issues with the built and natural environments at Spirit Mountain will ensure the continuing efforts to delist the St. Louis Estuary AOC and promote improved quality of life for residents and terrestrial and aquatic systems.

#### Relationship to State Plans

The project incorporates the MN Climate Action Framework critical actions that are required to achieve climate change resiliency. They include:

Sub-initiative 3.2: Healthy community green spaces and water resources, Action Step 3.2.3 Protect and improve water quality and quantity prioritizes strategies identified to achieve four of the 2020 State Water Plan's primary goals: (1) Manage landscapes to protect and improve water quality; (2) Manage landscapes to hold water and reduce runoff; (3) Manage built environments and infrastructure for greater water resiliency; and (4) Promote resiliency in quality of life.

Sub-initiative 3.3.3; Expand green infrastructure and stormwater management Action Steps recommend: Expand the use of green stormwater infrastructure practices in developments within stormwater regulatory programs and Promote water storage and water management to hold or distribute water during and after large rain events in urban landscapes, including restoring wetlands to support water storage in flood-prone areas, to protect buildings and infrastructure and support watershed health.

#### Impact on Environmental Justice Communities

The St. Louis River was highly degraded with industrial pollutants: Residents recall being told not to "touch the water" as youngsters. Federal, state and local efforts to clean-up the St. Louis River has removed four of nine AOC Beneficial Use Impairments. Duluth residents and visitors are returning to the restored river. Public access to the riverfront is limited but is being improved with trail construction, habitat restoration, and water access improvements. Duluth and partner agencies including the MPCA, MN DNR, and EPA have focused environmental remediation and

restoration projects in these areas and continue to improve and develop equitable recreational amenities on the river.

#### Workplan

Total number of months for entire Project: 19

#### **Task 1 of 5: Inventory of stormwater infrastructure issues**

**Subtask 1a:** Study existing aerial imagery and LiDAR contour data from spring 2021.

**Brief description of activities involved:** Desktop analysis to identify problem areas. Spring field visit during snowmelt conditions to observe drainage characteristics.

**Timeframe:** March 2025 – May 2025

**Name and Title of person(s) responsible:** Contractor/consultant TBD with oversight by Jim Shoberg PLA, Tom Johnson PE, Ryan Abel Mountain Manager

#### **Subtask 1b:** Field investigation

**Brief description of activities involved:** Site visit after snowmelt to inspect existing stormwater infrastructure and drainage swales. Field verify desktop analysis from LiDAR/aerial imagery and identify any additional failing areas and needed improvements.

**Timeframe:** April - May 2025

**Name and Title of person(s) responsible:** Contractor/consultant TBD and Jim Shoberg PLA, Tom Johnson PE, Ryan Abel Mountain Manager

#### **Subtask 1c:** Develop a matrix for infrastructure improvements

**Brief description of activities involved:** Identification and ranking of the most critical sites; Documentation of impacts on SMRA and surrounding down gradient water resources.

**Timeframe:** June - July 2025

**Name and Title of person(s) responsible:** Contractor/consultant and Jim Shoberg PLA, Tom Johnson PE, Ryan Abel Mountain Manager

#### **Task 2 of 5: Feasibility study**

**Subtask 2a:** Modeling for BMP's

**Brief description of activities involved:** A hydrologic/hydraulic study (H&H) of the SMRA site to determine drainage characteristics that will help determine the most efficient and appropriate BMP's, that include green or hybrid solutions, that will achieve the goals of the stormwater management plan.

**Timeframe:** September - November 2025

**Name and Title of person(s) responsible:** Contractor/consultant TBD and Jim Shoberg PLA, Tom Johnson PE, Ryan Abel Mountain Manager

#### **Task 3 of 5: Design**

**Brief description of activities involved:** Schematic level design solutions for each of the identified areas and corresponding issues with cost estimates. Develop a portfolio of BMPs that can be implemented throughout SMRA.

**Timeframe:** December 2025 - March 2026

**Name and Title of person(s) responsible:** Contractor/consultant TBD and Jim Shoberg

PLA, Tom Johnson PE, Ryan Abel Mountain Manger

**Task 4 of 5: Develop Implementation Plan**

**Subtask 4 a:** Rank and prioritize projects

**Brief description of activities involved:** Rank and prioritize projects on the basis of feasibility, cost-benefit analysis, and the need to address runoff issues immediately that are significantly impacting SMRA and surrounding down gradient water resources.

**Timeframe:** March - June 2026

**Name and Title of person(s) responsible:** Jim Shoberg PLA, Ryan Abel Mountain Manager

**Subtask 4b:** Funding

**Brief description of activities involved:** Begin planning and searching for funding with completed Plan for support.

**Timeframe:** July – Sept 2026 and ongoing.

**Name and Title of person(s) responsible:** Ann Gulmac SMRA Exe. Director and Christine Penney City of Duluth Grants Coordinator

**Task 5 of 5: Final Report and Project Deliverables – June 2026**

**Subtask 4a:** Submit Grant Final Report

**Brief description of activities involved:** Will provide a final grant project report at completion of the project.

**Timeframe:** June 2026

**Name and Title of Person(s) Responsible:** Jim Shoberg, Landscape Architect Planner, Christine Penney, City of Duluth Grants Coordinator, Ann Glumac, SMRA Exe. Director.





Spirit Mountain Recreation Area



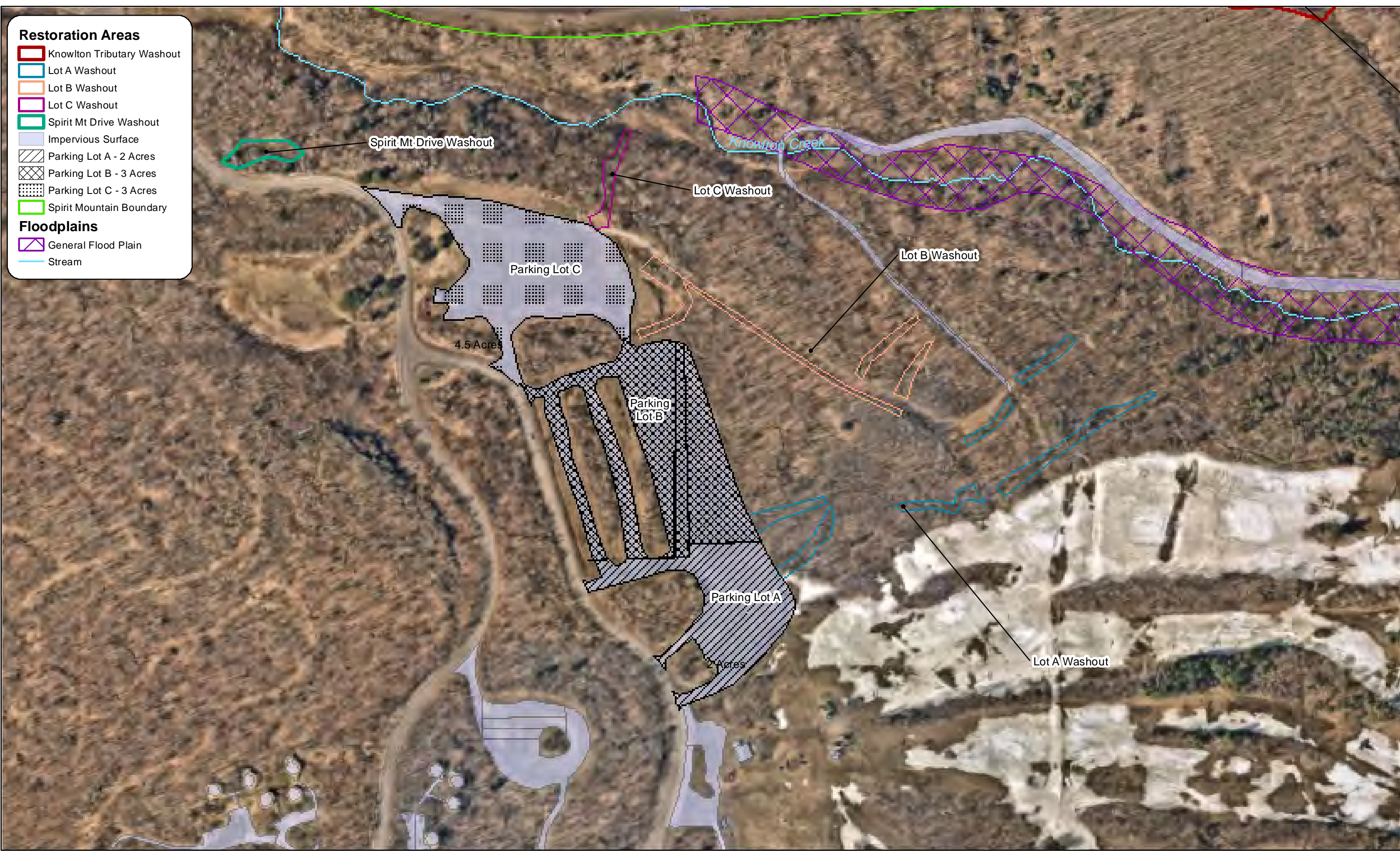
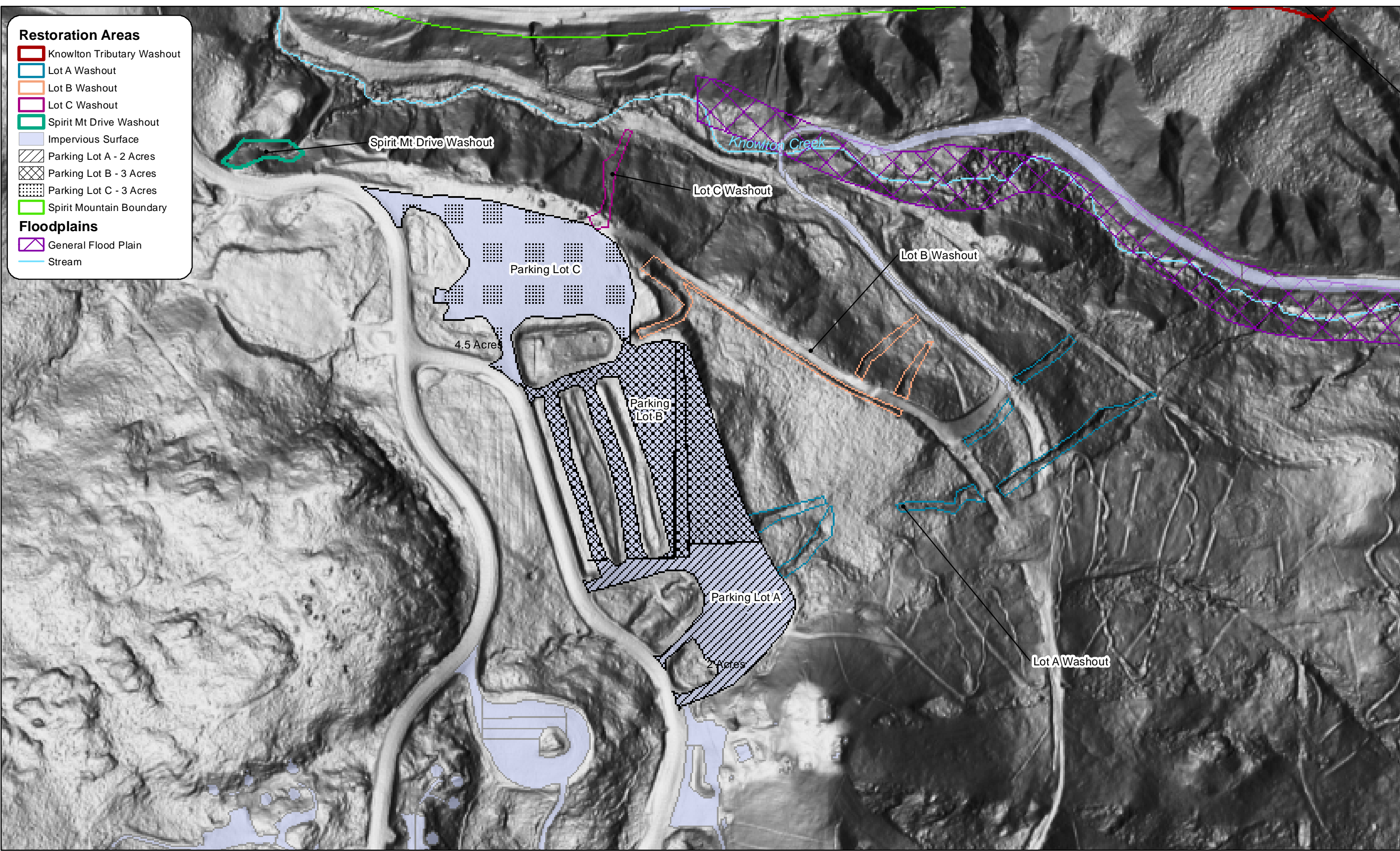


Exhibit B Facility washouts

Spirit Mountain Recreation Area













City of Duluth



MPCA Stormwater



Exhibit B Stormwater photos





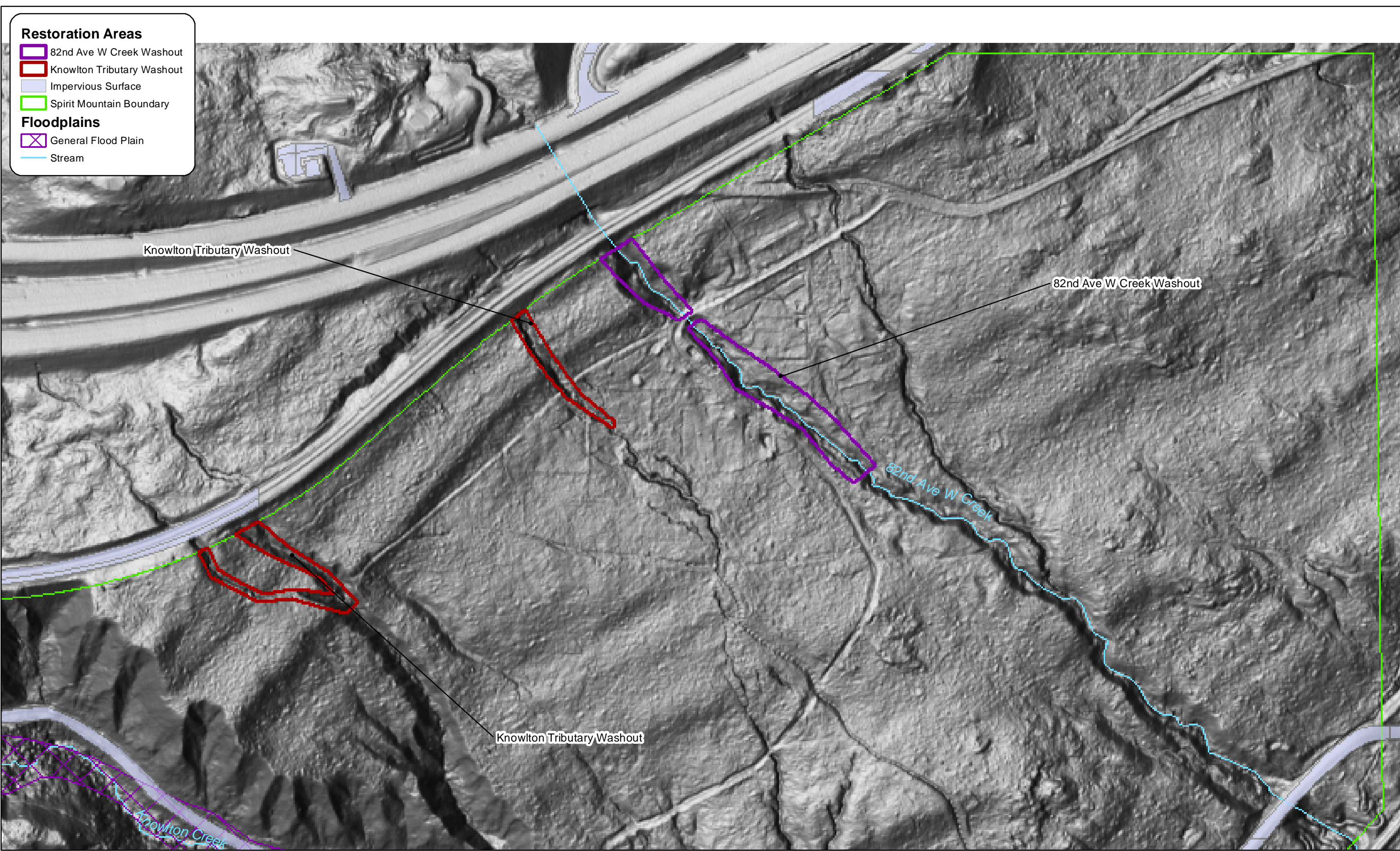




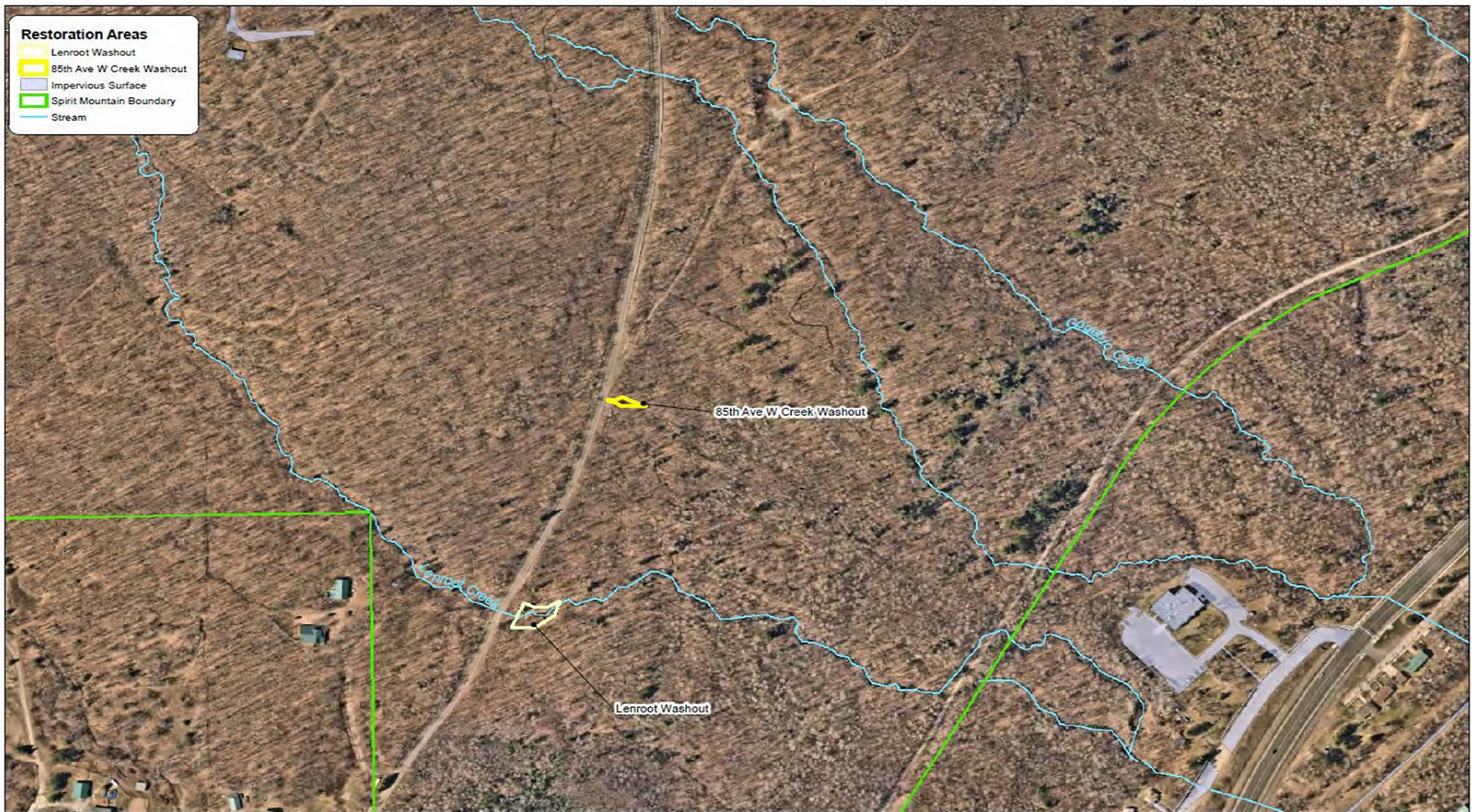




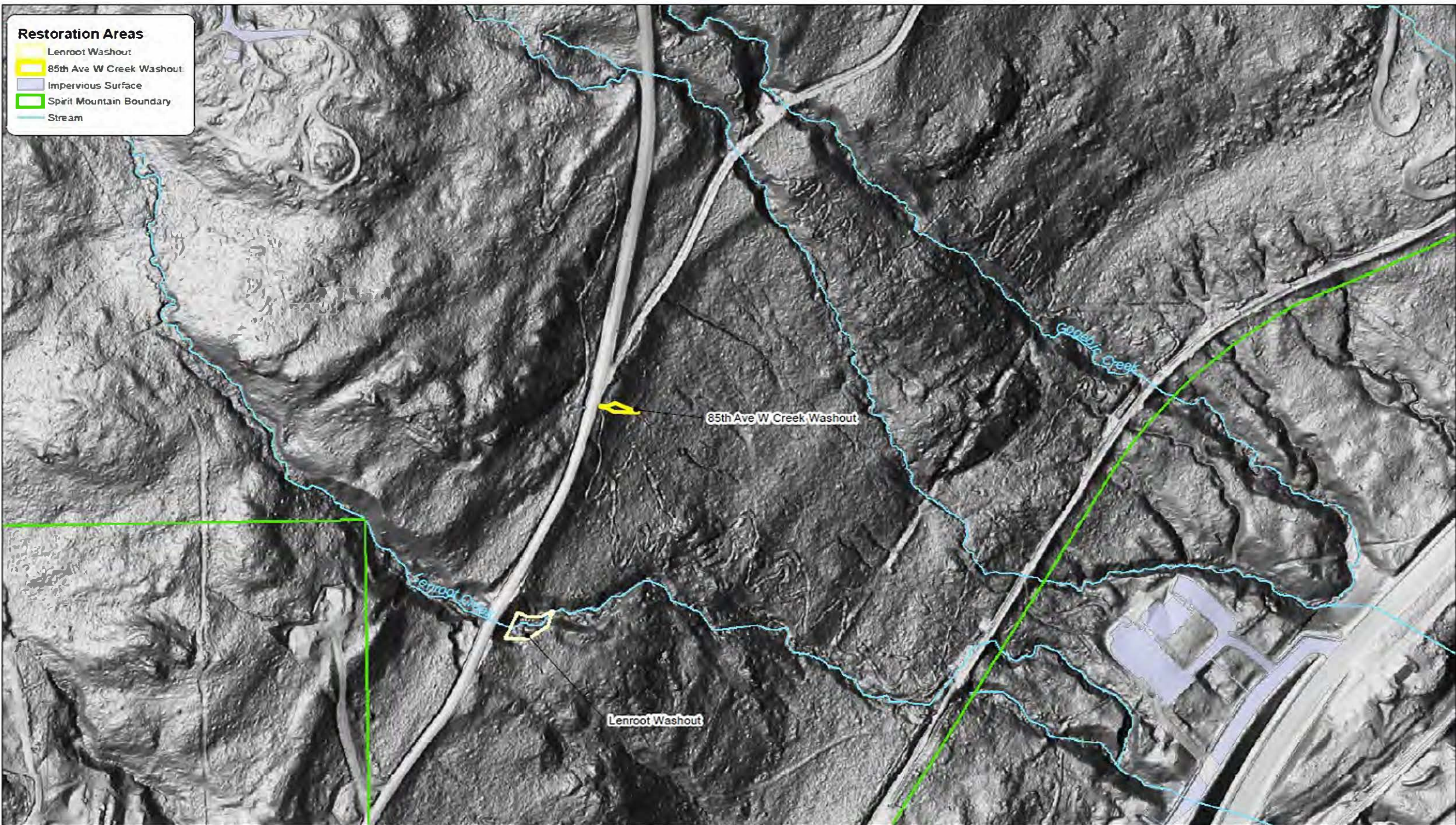






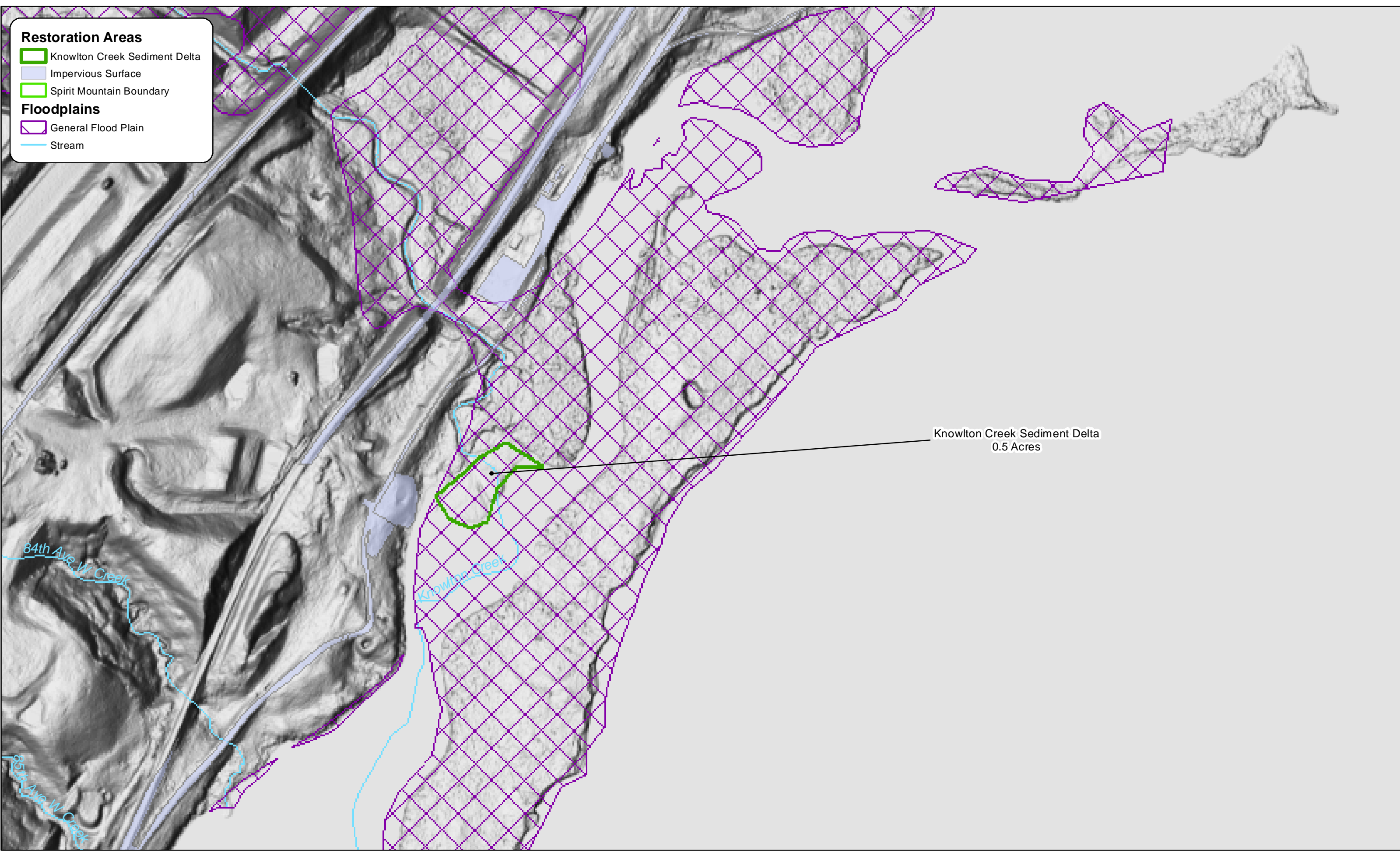












**Restoration Areas**

- Knowlton Creek Sediment Delta
- Impervious Surface
- Spirit Mountain Boundary

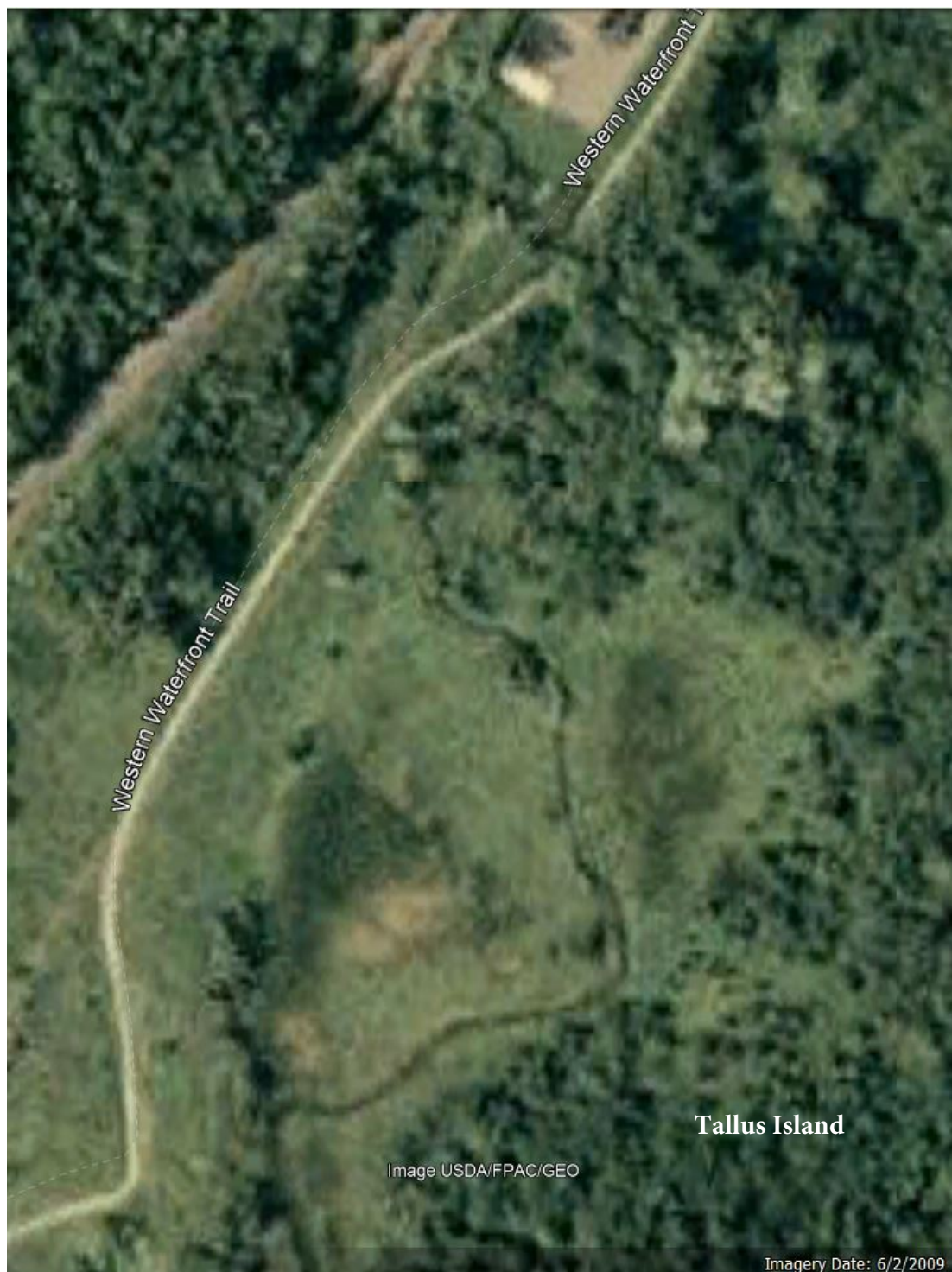
**Floodplains**

- General Flood Plain
- Stream

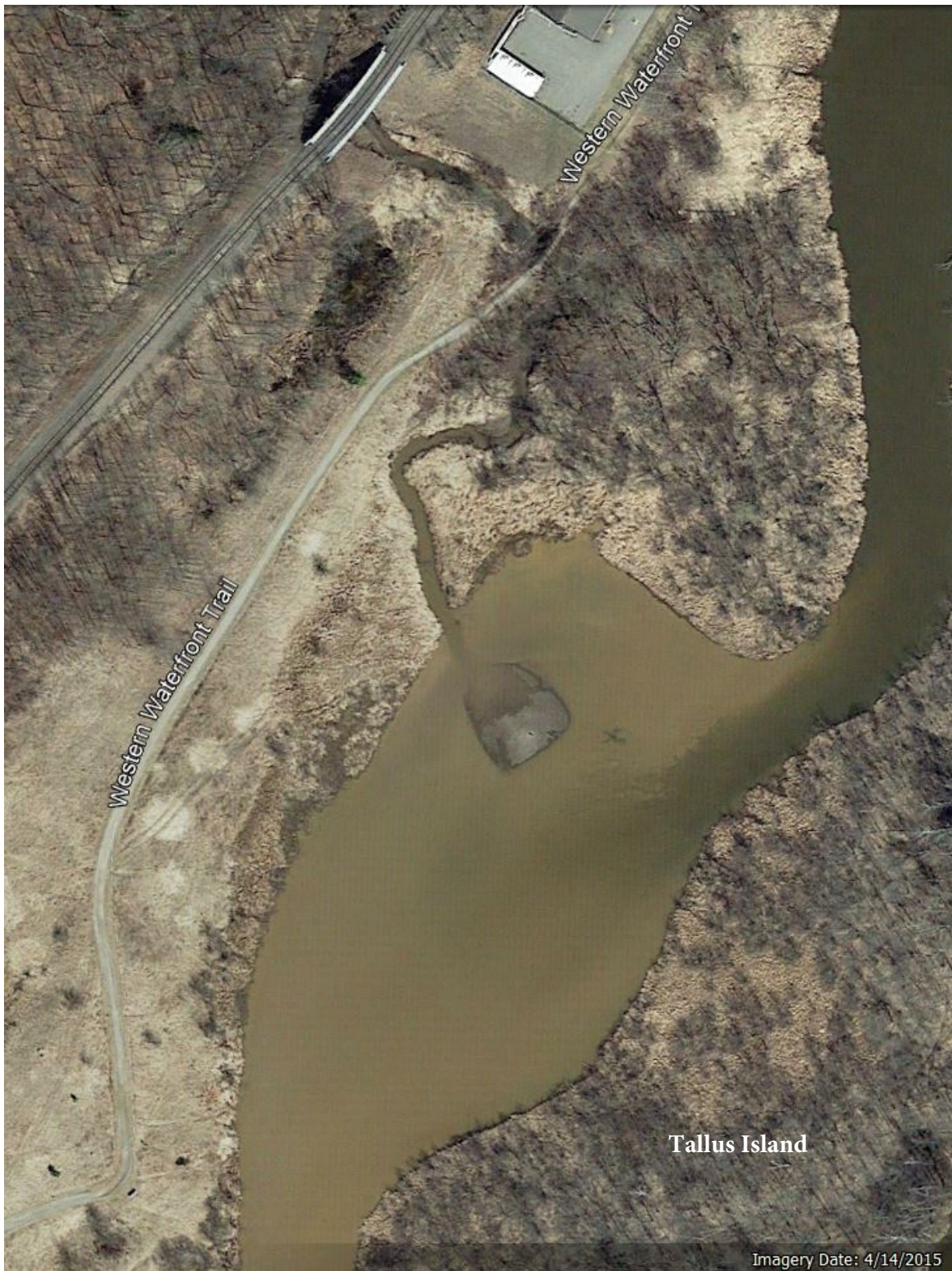
Knowlton Creek Sediment Delta  
0.5 Acres



April 2009 - Before Restoration



April 2015 Sediment bloom and delta





May 2023 delta







<b>Minnesota Department of Public Safety (“State”)</b> Homeland Security and Emergency Management Division 445 Minnesota Street, Suite 223 St. Paul, MN 55101-2190	<b>Grant Program:</b> Hazard Mitigation Grant Program DR-4722  <b>Contract Agreement No.:</b> HMGP-DR4722.08-City of Duluth-Spirit Mountain Recreation Authority
<b>Sub-Recipient:</b> Spirit Mountain Recreation Area Authority 9500 Spirit Mountain Place Duluth, Minnesota 55810	<b>Contract Agreement Term:</b>  <b>Effective Date:</b> 05/01/2025 <b>Expiration Date:</b> 04/30/2029
<b>Sub-Recipient’s Authorized Representative:</b> Ann Glumac, Executive Director Phone: 218-624-8501 Email: aglumac@spiritmt.com	<b>Contract Agreement Amount:</b> Original Agreement \$ 112,500.00 Matching Requirement \$ 37,500.00
<b>State’s Authorized Representative:</b> Homeland Security and Emergency Management ATTN: Kristy Dellwo – State Hazard Mitigation Officer 445 Minnesota Street, Suite 223 St. Paul, MN 55101-2190 Phone: 651-201-7455 E-mail: kristen.dellwo@state.mn.us	<b>Federal Funding:</b> CFDA/ALN: 97.039  <b>FAIN:</b> 4722DRMNP00000085  <b>State Funding:</b> None  <b>Special Conditions:</b> None

Under Minn. Stat. § 299A.01, Subd 2 (4) the State is empowered to enter into this contract agreement.

**Term:** The creation and validity of this contract agreement conforms with Minn. Stat. § 16B.98 Subdivision 5. Effective date is the date shown above or the date the State obtains all required signatures under Minn. Stat. § 16B.98, Subdivision 7, whichever is later. Once this contract agreement is fully executed, the sup-recipient may claim reimbursement for expenditures incurred pursuant to the Payment clause of this contract agreement. Reimbursements will only be made for those expenditures made according to the terms of this contract agreement. Expiration date is the date shown above or until all obligations have been satisfactorily fulfilled, whichever occurs first.

The Sup-Recipient, who is not a state employee will:

Perform and accomplish such purposes and activities as specified herein and, in the Sub-Recipient’s approved Hazard Mitigation DR-4722 Application which is incorporated by reference into this contract agreement and on file with the State at 445 Minnesota Street, Suite 223. St. Paul, MN 55101-2190. The Sub-Recipient shall also comply with all requirements referenced in the Hazard Mitigation Grant Program DR-4722 Guidelines and Application which includes the Terms and Conditions and Grant Program Guidelines, which are incorporated by reference into this grant contract agreement.

**Budget Revisions:** The breakdown of costs of the Sub-Recipient’s Budget is contained in the Application, which is incorporated into this contract agreement. As stated in the Sub-Recipient’s Application and Hazard Mitigation Grant Program Guidelines, the Sub-Recipient will submit a written change request for any substitution of budget items or any deviation and in accordance with the Hazard Mitigation Grant Program Guidelines. Requests must be approved prior to any expenditure by the Sub-Recipient.

**Matching Requirements:** (If applicable.) As stated in the Sup-Recipient’s Application, the Sub-Recipient certifies that the matching requirement will be met by the Sub-Recipient.





**Payment:** As stated in the Sub-Recipient's Application and Hazard Mitigation Grant Program Guidance, the State will promptly pay the Sub-Recipient after the Sub-Recipient presents an invoice for the services performed and the State's Authorized Representative accepts the invoiced services and in accordance with the Hazard Mitigation Grant Program Guidelines. Payment will not be made if the Sub-Recipient has not satisfied reporting requirements.

**1. Sub-Recipient**

*The Sub-Recipient certifies that the appropriate person(s) have executed the State-Local contract agreement on behalf of the Sub-Recipient as required by applicable articles, bylaws, resolutions, or ordinances.*

Signed: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Signed: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Signed: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**2. STATE AGENCY**

Signed: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_  
(with delegated authority)

Date: \_\_\_\_\_