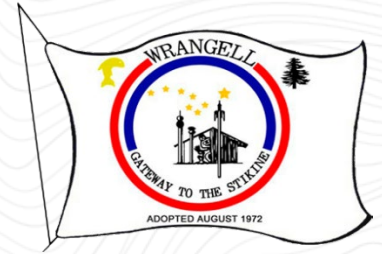


CITY & BOROUGH OF WRANGELL

BOROUGH MANAGER'S REPORT

Tuesday, April 9th, 2024



TO: HONORABLE MAYOR AND MEMBERS OF THE
ASSEMBLY OF CITY AND BOROUGH OF WRANGELL

FROM: MASON F. VILLARMA, *INTERIM BOROUGH
MANAGER/FINANCE DIRECTOR*

SUBJECT: BOROUGH MANAGER'S REPORT

DATE: TUESDAY, APRIL 9TH, 2024

UPCOMING JOB POSTINGS

The Borough will be hiring several positions over the next few weeks. The following positions will be advertised:

- Chief of Police
- Fire Chief
- Harbor Maintenance and Security
- Finance Director
- Public Works Foreman
- Facilities Maintenance Specialist

In addition to an employment application, cover letter, and resume, applicants will be required to submit three references and pass a background check. For information about any of the above positions, please visit www.wrangel.com/jobs.

FEMA PUBLIC ASSISTANCE APPROVAL

On Saturday, April 6th, the Borough received notice that President Biden issued a federal declaration for the Southeast Landslide disaster. The Borough will receive FEMA public assistance as a result of the declaration and will also be eligible for hazard mitigation funding in the future.

FEMA is hosting a Disaster Recovery Center (DRC) in the Nolan Center this week from 9am - 7pm Monday through Friday. The DRC has been organized to assist residents and businesses seek assistance for costs incurred during the landslide. The Borough has noticed the DRC schedule on Wrangell.com as well as on social media. Various resources

for information on individual assistance can be found at the following link: <https://www.wrangell.com/community/11-mile-landslide-individual-assistance-resources>

LANDSLIDE UPDATE

The Alaska Department of Transportation (ADOT) has issued another landslide status report for the month of March indicating that no material erosion or deposition occurred during the month. The full analysis can be found at the end of this report.

WVFD ASSISTING SOUTH TONGASS VOLUNTEER FIRE DEPARTMENT

The Wrangell Volunteer Fire Department (WVFD) received notice that early this morning that the South Tongass Volunteer Fire Department's fire station had a fire occur at the station burning their facility and equipment. WVFD graciously offered one of our three ambulances and sent it out on the barge for them to use until they can get a new ambulance to Ketchikan. There have been very few cases in the Borough's history when all three ambulances have been deployed, and the Borough feels comfortable loaning an ambulance to Ketchikan to help them in this time of need.

UPCOMING EVENTS

- Property Assessment Appeal Deadline - Friday, April 19th @4pm
- USFS Forest Plan Revision Open House -Monday, April 22nd from 3-6pm at the Nolan Cener
- USGC Port Safety & Security Committee (PSSC) Meeting -Wednesday, April 24th @9am
- April 20th - Community Clean-up Organized by WCA

FOREST SERVICE MOU & LOA

Borough administration had a productive introductory meeting with the new leadership at the Wrangell Ranger District. We discussed our draft Memorandum of Understanding and are looking forward to have that adopted during the April 23rd Regular Assembly meeting.

Additionally, the Borough has made strides to becoming a cooperating agency so that there is a formal process for collaboration and feedback in the forest plan revision process. Administration will bring forth the signed LOA to the next Assembly meeting.

The Borough has also requested that the M/V Chugach be uncovered and displayed during the summer months for visitors and residents to enjoy. The request is still pending, but updates will be provided as they are received.

As always, I am at the Assembly's disposal. I look forward to continuing the meaningful progress we are making.

Sincerely,

Mason F. Villarma

Mason F. Villarma
Interim Borough Manager/Finance Director


MEMORANDUM

State of Alaska

Department of Transportation & Public Facilities Design and Engineering Services - Southcoast Region Materials Section

TO: File

DATE: April 1, 2024

FROM: Travis Eckhoff, P.E.  04/01/24
Mitch McDonald
Patrick Dryer
Andrew Dyke
SR Geohazards Group

SUBJECT: SDRER0561– WRG Zimovia
Highway Milepost 11.2 Landslide;
March 2024 Monitoring Summary

TELEPHONE: (907) 328-8693
EMAIL: travis.eckhoff@alaska.gov

1.0 Introduction

This memo summarizes the Alaska Department of Transportation & Public Facilities' (DOT&PF) monitoring efforts at the Zimovia Highway Milepost 11.2 Landslide in Wrangell, Alaska for the monitoring period March 1, 2024 through March 31, 2024.

No significant slope movements were observed during this monitoring period. The banks of the main stream channel within the landslide path continued to erode during periods of heavy precipitation. Two weather events with 3-hour total precipitation greater than 0.3 inches occurred during the monitoring period.

2.0 Background

A catastrophic landslide occurred on Zimovia Highway near Milepost 11.2 on November 20, 2023. Since the initial emergency response DOT&PF has continued periodic monitoring of the landslide to understand the geomorphology of the landslide path and the resulting impacts to Zimovia Highway. Monitoring activities include the evaluation of precipitation data and temporal change detection using digital surface models derived from Unmanned Aerial Systems (UAS). Monitoring efforts are primarily intended to inform decision making related to road reconstruction, maintenance, and operations.

Details on the monitoring equipment and observations from previous monitoring periods are summarized in the following memoranda:

- SDRER00561 – WRG Zimovia Highway Milepost 11.2 Landslide; 11/2023 – 02/2024 Monitoring Summary

3.0 Drone Operations

Table 1 lists orthoimagery mapping missions of the full landslide path successfully completed to date. Based on previous observation, the scheduled orthoimagery mapping mission frequency was reduced to one mapping mission per month or as needed based on precipitation events. Figure 2 shows the initial orthoimagery dataset collected on 11/22/2023. Figure 3 shows the latest orthoimagery dataset collected on 3/15/2024.

Table 1 - Summary of DOT&PF Drone Mapping Missions

Date	Notes
11/22/2023	Collected during initial response. Baseline for change detection analysis.
12/06/2023	Collected during initial response. First dataset with debris removed from highway.
01/11/2024	First dataset collected with remote drone dock. Landslide path obscured by snow.
02/01/2024	Snow melted from landslide path. First dataset after End of January Storm Event.
02/07/2024	Landslide path partially obscured by snow.
02/15/2024	Landslide path partially obscured by snow.
02/20/2024	Landslide path partially obscured by snow.
03/15/2024	Headscarp and upper slope obscured by snow.

4.0 Weather Observations

Total precipitation measured at DOT&PF’s on-site weather station (Station ID WEMA2) for the month of March 2024 was 5.3 inches. Precipitation data from WEMA2 for the subject monitoring period is provided graphically in Appendix A. Precipitation data from November 17, 2023 through March 31, 2024 is also provided in Appendix A for reference.

Each figure in Appendix A provides 3-hour, 6-hour, and 24-hour total precipitation amounts. These total precipitation amounts are monitored because debris flow type landslide initiation is typically a function of soil saturation due to cumulative rainfall and the rainfall intensity immediately before landslide initiation. Table 2 below summarizes precipitation events with a 3-hour total precipitation amount greater than 0.3 inches during the subject monitoring period. Field observations during the initial landslide response and subsequent monitoring indicate that at least 0.3 inches of precipitation over a three-hour period is required to mobilize sufficient material from the landslide path for the material to collect in the highway ditch. The November 17, 2023 through November 20, 2023 precipitation data is provided for reference.

One significant weather event occurred during the March 2024 monitoring period. This weather event started on March 12, 2024 and ended on March 15, 2024. The peak of the storm occurred on March 14, 2024 with a maximum hourly rainfall rate of 0.21 inches per hour recorded at 0600H and 1.66 inches of precipitation recorded over 24 hours. The maximum 3-hour total precipitation during this storm was 0.61 inches. The storm caused erosion within the landslide path but did not impact Zimovia Highway.

Table 2 – Precipitation Events with 3-hour Total Precipitation >0.3 in., 11/27/2023 - 2/28/2024

Date	24-Hour Total Precipitation (in.)	Maximum 3-hour Total Precipitation (in.)	Maximum 6-hour Total Precipitation (in.)
11/17/2023	1.96	0.64	1.01
11/18/2023	0.64	0.36	0.89
11/20/2023 (Landslide)	2.65	0.61	1.15
03/08/2024	0.76	0.31	0.51
03/14/2024	1.66	0.61	1.06

5.0 Change Detection Analysis

No significant slope movements were observed during this monitoring period. Results of the change detection analysis between the 11/22/2023 baseline dataset and most recent 03/15/2024 dataset are provided graphically in Figure 4. This figure shows total changes in the landslide area since the

landslide occurred. Warmer red colors represent elevation loss or material erosion, and cooler blue colors represent elevation gain or material deposition. The largest area of change is located near Zimovia Highway and is due to debris removal from the roadway and property within the slide path. These areas show an elevation decrease of about three to 15 feet from the baseline dataset. The accumulation of material on the downhill side of the road is due to construction of the temporary traffic bypass.

Figure 5 provides the results of a change detection analysis between the 02/15/2024 and 03/15/2024 datasets. This figure highlights the continued erosion of the main stream channel banks within the landslide path. For example, over 5 feet of elevation change due to erosion is shown where the main stream turns west from the logging road, approximately 2,000 feet upstream from Zimovia Highway.

The island of standing trees within the landslide path causes significant noise in the data. This area is outlined in Figure 4. Most other areas showing elevation changes are due to vegetation, woody debris, and the camera's inability to photograph the ground surface through dense vegetation. Areas of movement on the margin of the slide path are mostly due to noise caused by vegetation blocking the camera's view of the ground from various angles. Some areas are showing deposition along the upper margins of the landslide due to post landslide tree fall.

Attachments:

Figure 1 – Site Map

Figure 2 – November 22, 2023 Orthoimagery

Figure 3 – March 15, 2024 Orthoimagery

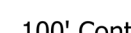



Figure 4 – 03/15/2024 vs. 11/22/2023 Change Detection

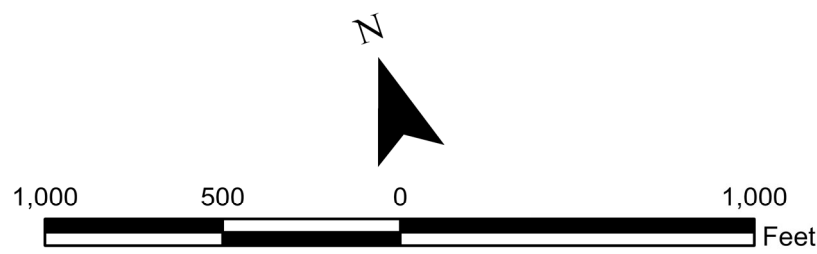
Figure 5 – 03/15/2024 vs. 02/15/2024 Change Detection

Appendix A – Graphical Weather Data




Legend

-  100' Contours Post-Landslide
-  20' Contours Post-Landslide
-  Wrangell Zimovia Hwy 11.2 Mile Landslide Boundary (Interpreted)
-  Drone Dock and Weather Station

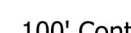





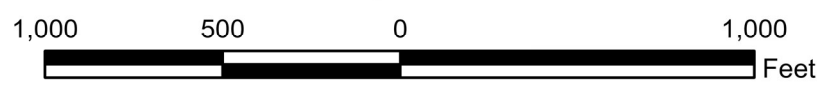
HILLSHADE BASE MAP AND CONTOURS DERIVED FROM ALASKA DGGS RDF 2024-1

SITE MAP	
<i>Wrangell Zimovia Highway MP 11.2 Landslide</i>	
	<p>State of Alaska Department of Transportation and Public Facilities Southcoast Region</p>
FIGURE 1	



Legend

-  100' Contours Post-Landslide
-  20' Contours Post-Landslide
-  Wrangell Zimovia Hwy 11.2 Mile Landslide Boundary (Interpreted)
-  Drone Dock and Weather Station



HILLSHADE BASE MAP AND CONTOURS DERIVED FROM ALASKA DGGS RDF 2024-1

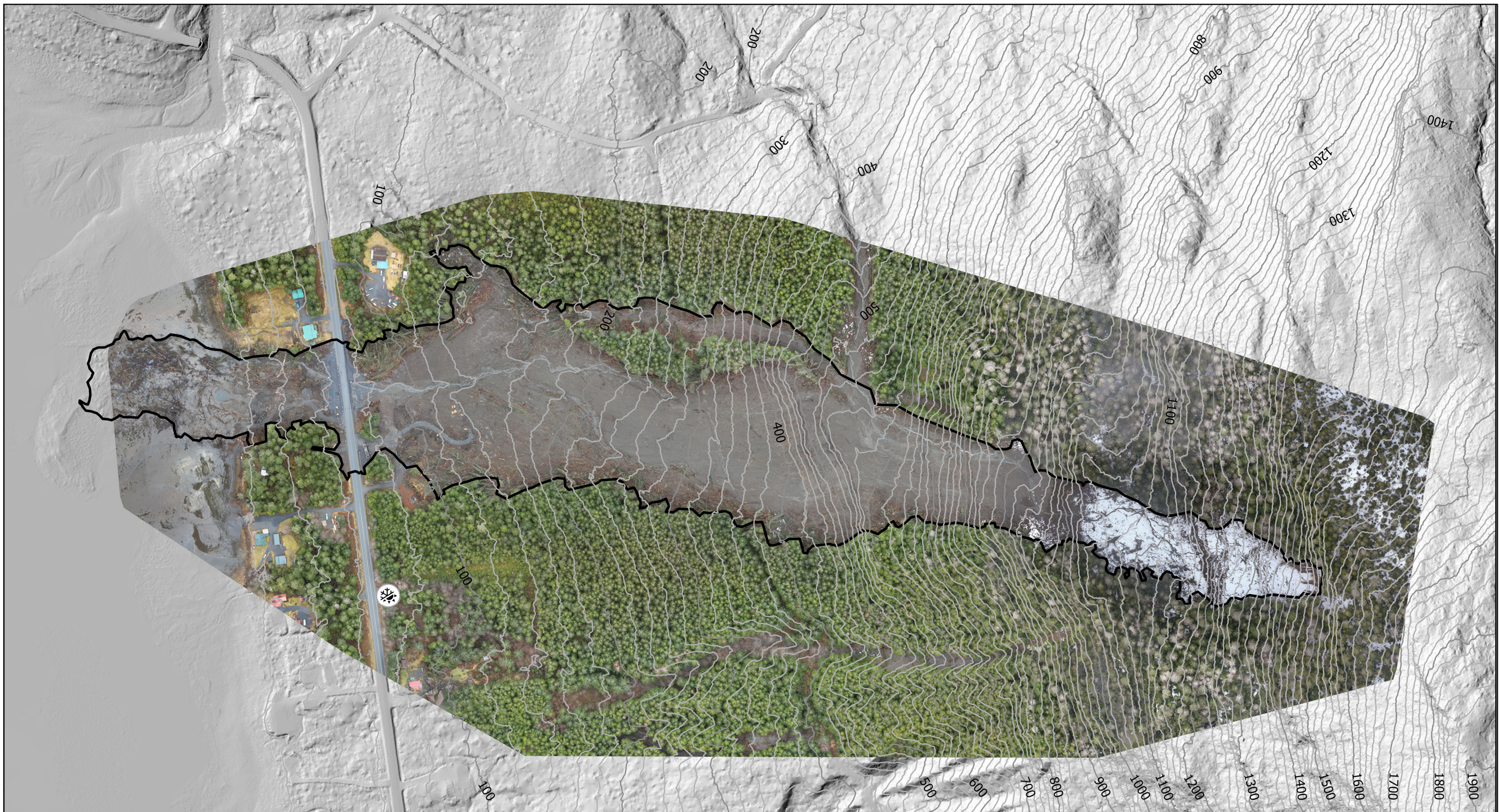
NOVEMBER 22, 2023 ORTHOIMAGERY

*Wrangell Zimovia Highway
MP 11.2 Landslide*

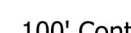





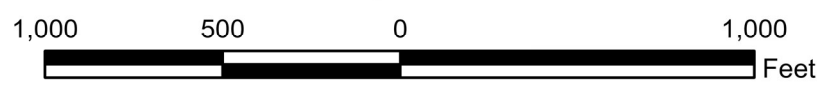
*State of Alaska
Department of Transportation
and Public Facilities
Southcoast Region*

FIGURE 2



Legend

-  100' Contours Post-Landslide
-  20' Contours Post-Landslide
-  Wrangell Zimovia Hwy 11.2 Mile Landslide Boundary (Interpreted)
-  Drone Dock and Weather Station



HILSHADE BASE MAP AND CONTOURS DERIVED FROM ALASKA DGGS RDF 2024-1

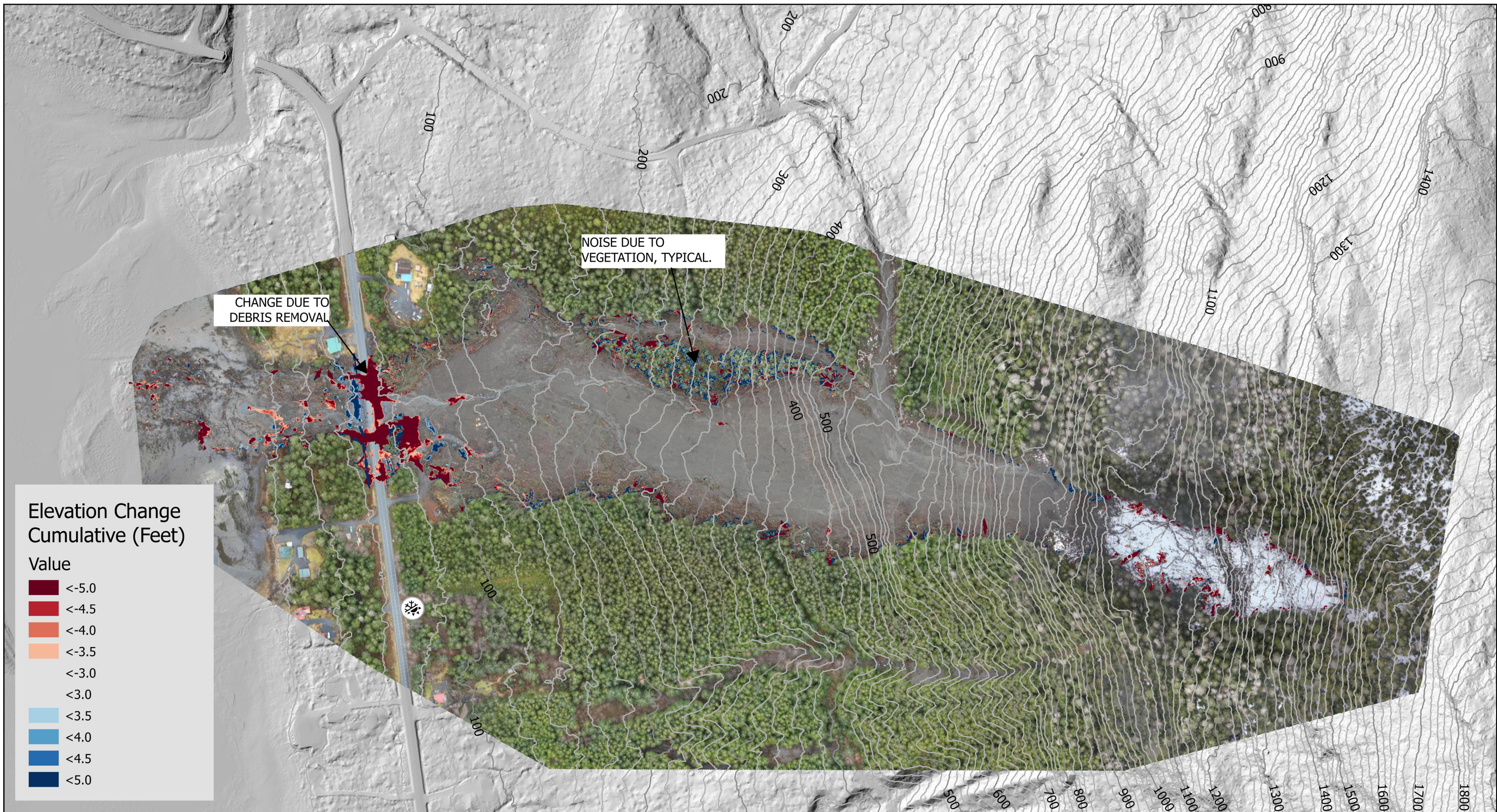
MARCH 15, 2024 ORTHOIMAGERY

*Wrangell Zimovia Highway
MP 11.2 Landslide*



*State of Alaska
Department of Transportation
and Public Facilities
Southcoast Region*

FIGURE 3



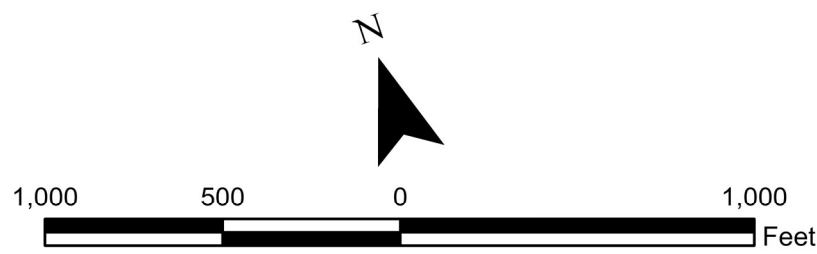
Elevation Change Cumulative (Feet)

Value

- <-5.0
- <-4.5
- <-4.0
- <-3.5
- <-3.0
- <3.0
- <3.5
- <4.0
- <4.5
- <5.0

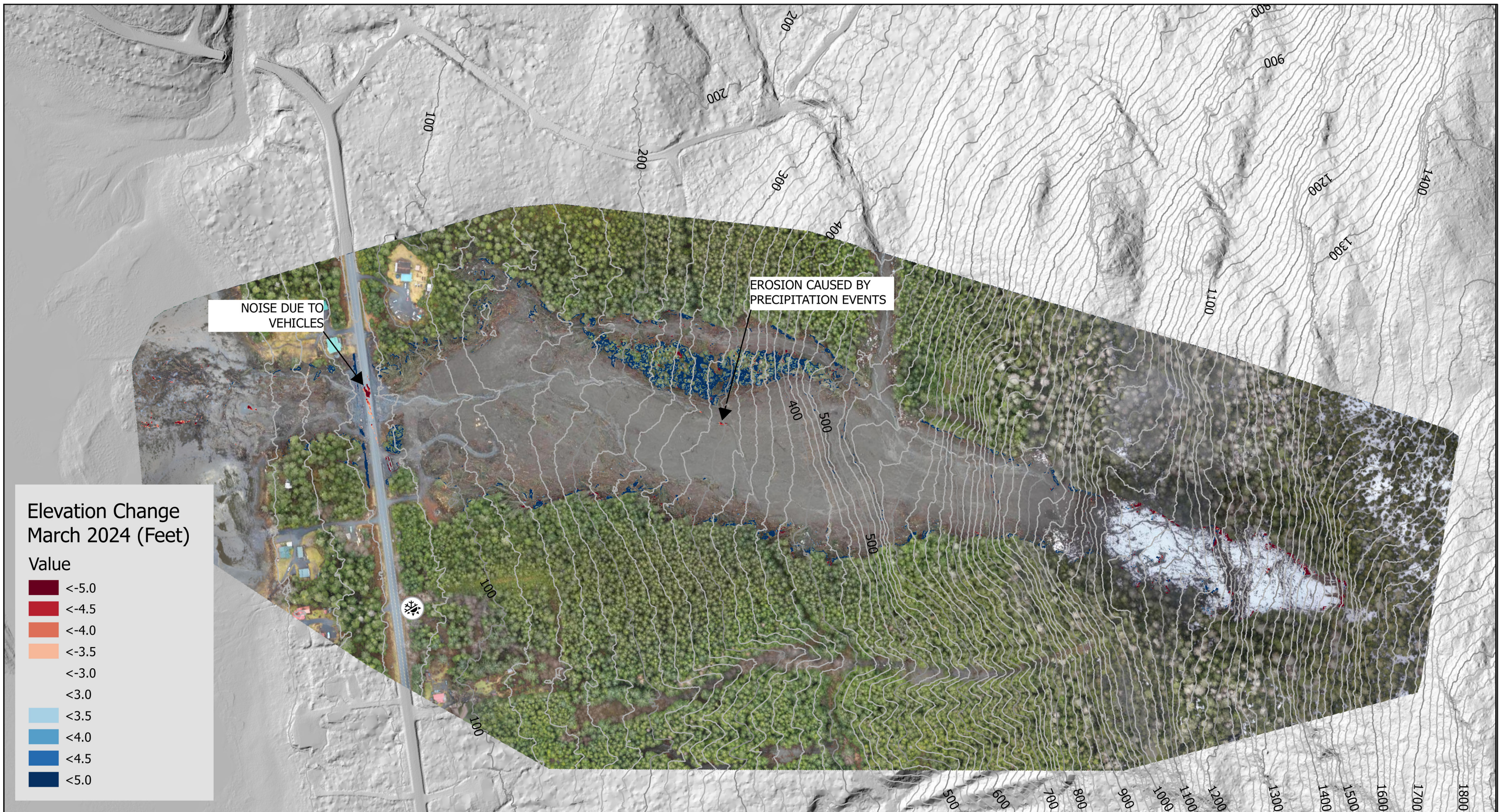
Legend

- 100' Contours Post-Landslide
- 20' Contours Post-Landslide
- Drone Dock and Weather Station



HILLSHADE BASE MAP AND CONTOURS DERIVED FROM ALASKA DGGS RDF 2024-1

03/15/2024 VS. 11/22/2023 CHANGE DETECTION	
<i>Wrangell Zimovia Highway MP 11.2 Landslide</i>	
	State of Alaska Department of Transportation and Public Facilities Southcoast Region
FIGURE 4	



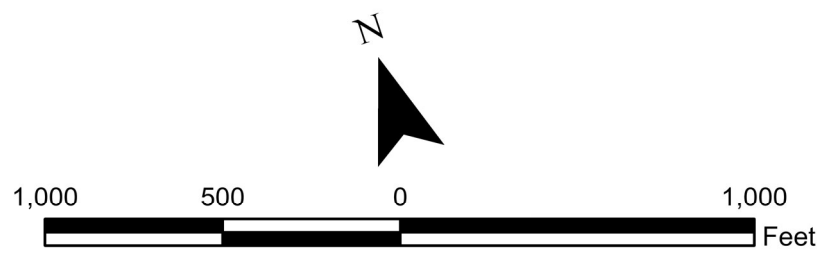
**Elevation Change
March 2024 (Feet)**

Value

	<-5.0
	<-4.5
	<-4.0
	<-3.5
	<-3.0
	<-4.0
	<-4.5
	<-5.0

Legend

- 100' Contours Post-Landslide
- 20' Contours Post-Landslide
- Drone Dock and Weather Station

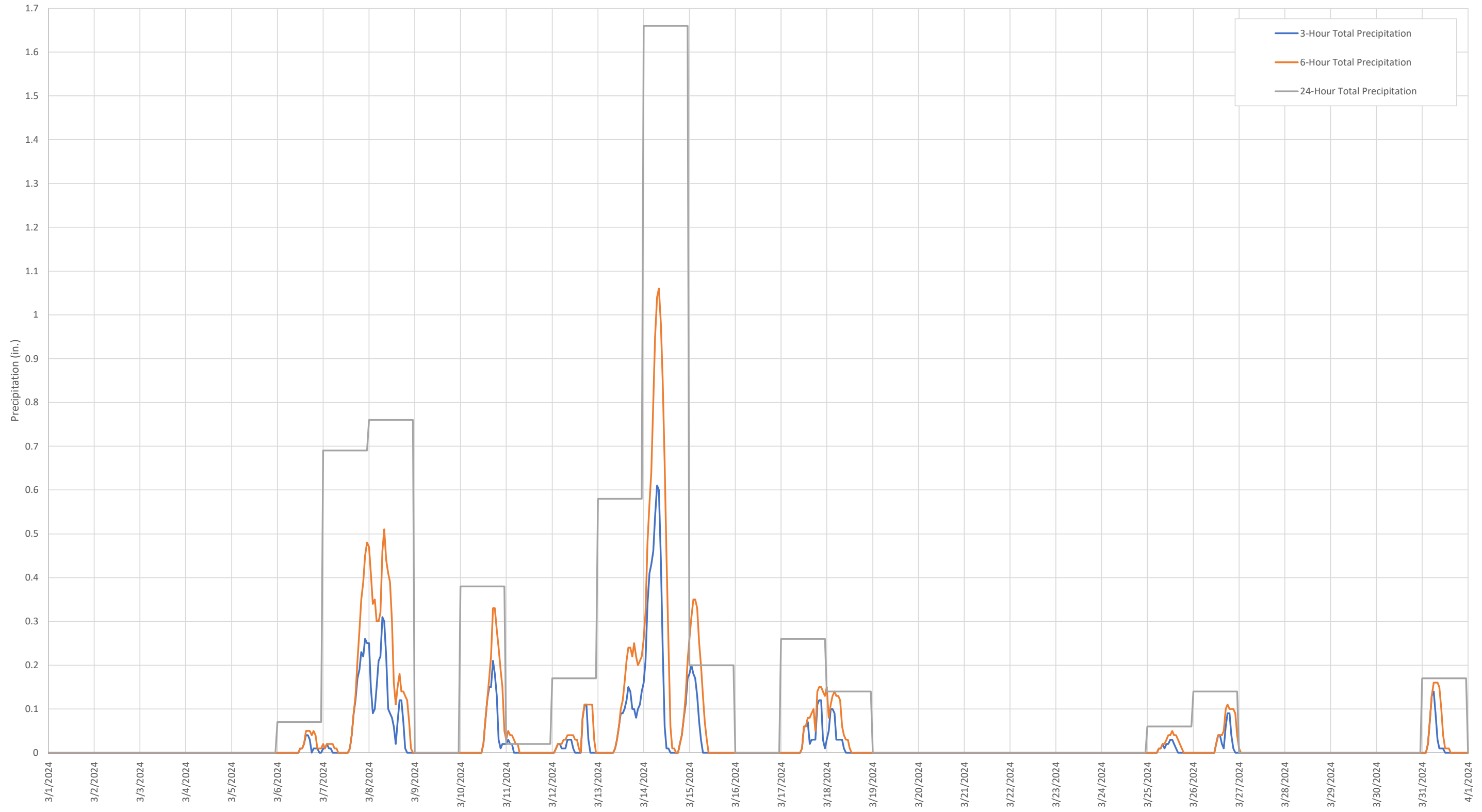


HILLSHADE BASE MAP AND CONTOURS DERIVED FROM ALASKA DGGS RDF 2024-1

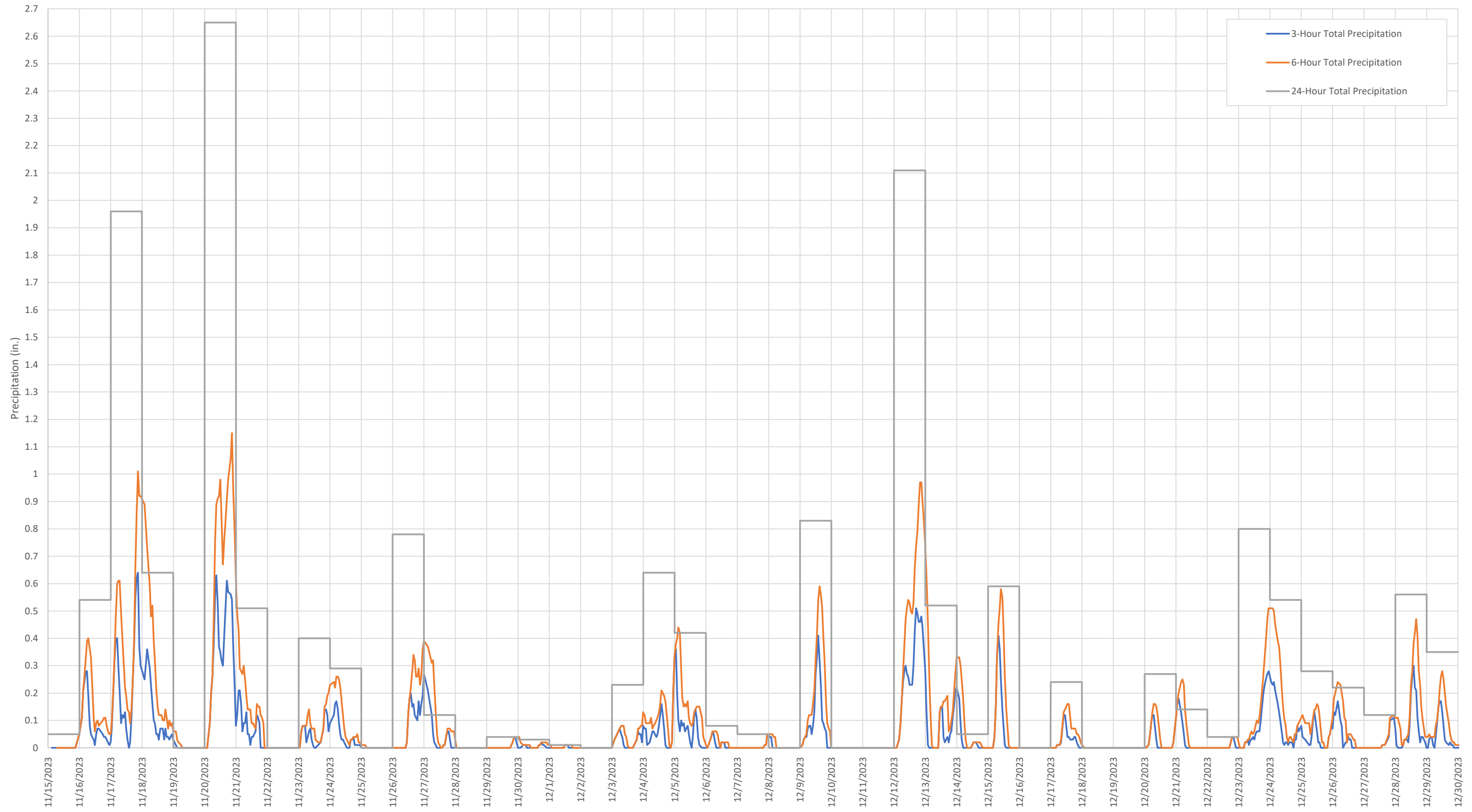
03/15/2024 VS. 02/15/2024 CHANGE DETECTION	
<i>Wrangell Zimovia Highway MP 11.2 Landslide</i>	
	State of Alaska Department of Transportation and Public Facilities Southcoast Region
FIGURE 5	

APPENDIX A – GRAPHICAL WEATHER DATA

Wrangell Zimovia Hwy MP 11.2 Landslide - Drone Dock Weather Station (WEMA2) Precipitation Data 03/01/2024 - 03/31/2024



Wrangell Zimovia Hwy MP 11.2 Landslide - Airport Weather Station (PAWG) Precipitation Data 11/15/2023 - 12/31/2023



Wrangell Zimovia Hwy MP 11.2 Landslide - Drone Dock Weather Station (WEMA2) Precipitation Data 01/15/2024 - 03/31/2024

