# DRAFT PRELIMINARY RESULTS

This map shows preliminary results from the Alaska Division of Geological & Geophysical Surveys (DGGS) for the Sitka landslide mapping component of the Federal Emergency Management Agency (FEMA) Sitka Multi-Hazard Assessment Study.

The red hypothetical debris flow runouts are preliminary results from the landslide modeling program Laharz that were generated using the same volume and parameters that fit the 2015 South Kramer debris flow. The blue hypothetical debris flow estimations are based on the same volume but are simulated with more resistance to flow, as observed in the 2015 North Kramer debris flow where more trees were present to slow down the mud mixture. **Both flow estimations are highly preliminary and will be refined and improved after collection of new high-resolution lidar elevation data this spring.** The multi-colored polygons are the source basins for the modeled hypothetical debris flows and the green lines are the outlines of the 2015 debris flows.

In 2016, the FEMA RiskMAP program awarded funding to DGGS for a multi-project grant to include Sitka Landslide Assessment and Emmonak Channel Migration Assessment. Final landslide assessment maps will be released by the end of 2018.

**Important Note:**
*This preliminary debris flow runout map is intended to provide users with relative hazard information. The map is not intended to replace site-specific engineering-geologic or geotechnical investigations. It is intended that this map will provide useful information to guide regional and site-specific investigations for future developments, assist in regional planning, and to reduce risk in areas where hazards intersect vulnerable population.*

*The boundaries and polygons shown are based on computer modeling and assessment of coarse lidar hillshades, and should be considered **approximate and preliminary**. No subsurface exploration was performed for this study. Accurate prediction of runout distance and direction is not possible with currently available scientific knowledge. This work has been performed using practices consistent with modern geologic standards for slope stability; however, prediction of slope movement with absolute certainty is not possible with currently available scientific knowledge. The runout modeling analysis cannot be solely relied upon—factors such as water content, surface roughness, and routing may contribute to differences between modeled runout distances and actual distances.*

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## Preliminary Debris Flow Runout Models for Sitka, Alaska