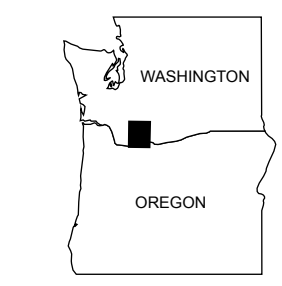
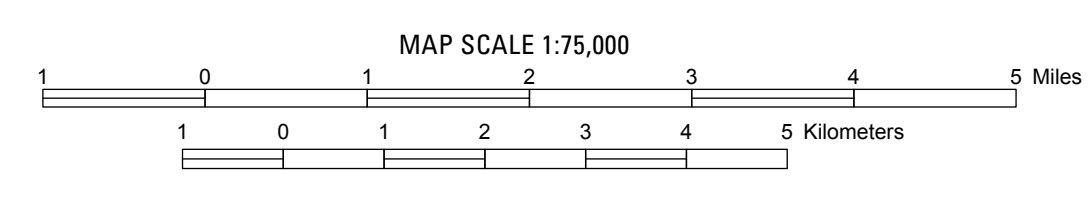
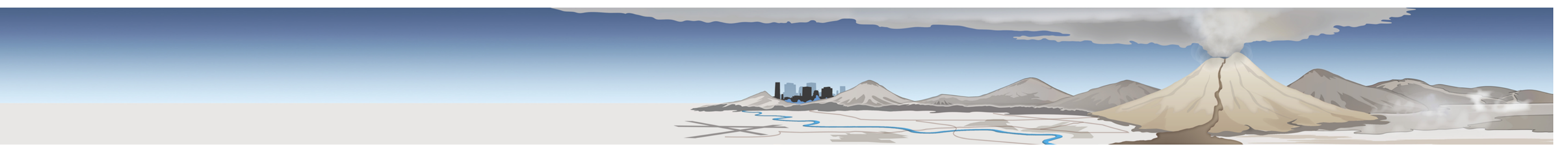


Topographic base from U.S. Geological Survey (USGS) National Elevation Dataset (NED), 2008. Other GIS base data layers are publicly available from state, county, and other federal agencies including USGS Open-File Report 98-176, U.S. Census Bureau, The National Hydrography Dataset (NHD), The National Map, National Agriculture Imagery Program (NAIP), 2015, and StreamNet Mixed-Scale Hydrography - version 3.1



Data compiled by J. P. Griswold and T.C. Pierson
Digital cartography by J.A. Bard
Edited by J.L. Zygar
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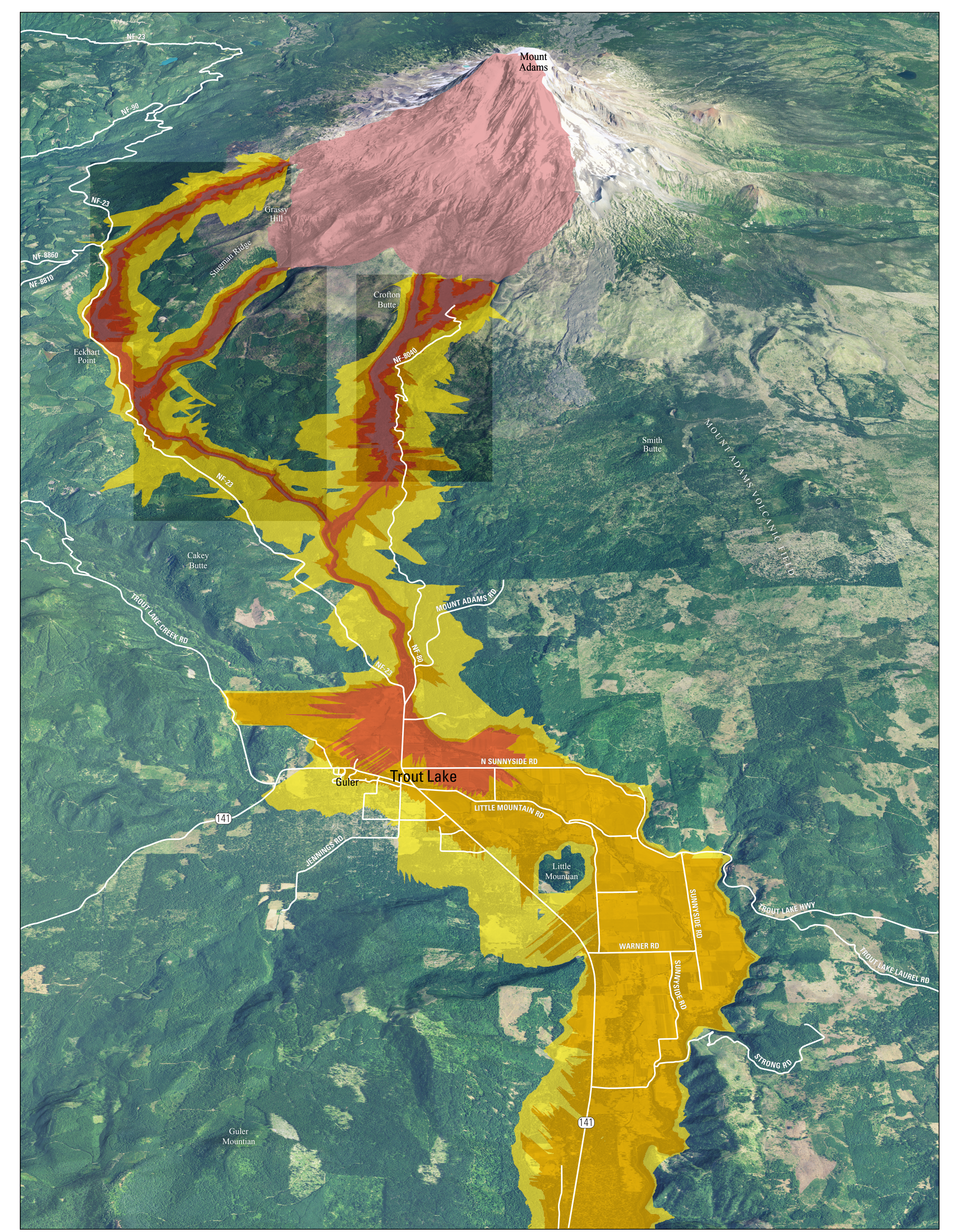
LAHAR FLOW VOLUMES USED IN MODEL

Lahars—rapidly flowing and highly destructive mixtures of water, mud, and rock fragments from volcanoes—have flowed tens of miles down the White Salmon River valley in the past. The weakened condition of rock in the summit area of Mount Adams suggests that future lahars capable of threatening populated downstream areas are possible. On the basis of results produced from computer modeling, this map shows approximate inundation areas from potential future lahars of different sizes in the White Salmon River valley. The potential lahar inundation extents generated for the White Salmon River Valley were prepared using the LAHARZ software package (U.S. Geological Survey Open-File Report 98-638, <https://pubs.er.usgs.gov/publication/of98638>). These maps should be considered part of a demonstration of the lahar inundation mapping methodology. Only lahars for this river valley are modeled; other river valleys around Mount Adams also have the potential for future lahars as shown in U.S. Geological Survey Open-File Report 95-492, <https://pubs.er.usgs.gov/publication/of95492>. Please see the pamphlet accompanying this map for discussion of past lahars in the White Salmon River valley, assumptions built into the computer model, uncertainties inherent in the model results, and references to other information sources.

Modeled volumes bracket the range of actual volumes of past lahars from Mount Adams. Note that 1 m³ is equivalent to 1.3 yd³. The 1921 ice-rich lahar was approximately 5 million m³. The 1766 (±7 years) Salt Creek lahar was approximately 13 million m³. The Trout Lake mudflow lahar, which occurred about 6,000 years ago, was about 66 million m³ in volume. The largest modeled lahar volume, 1 billion m³, represents the size of a lahar that could occur if the volume of the hydrothermally altered rock in the southwestern sector of the weakened summit rock mass were to collapse. Such a large-volume lahar is considered possible only if magma were to ascend into the Mount Adams cone.

EXPLANATION OF MAP SYMBOLS

- Lahar-Initiation Zone
- Lahar of 1 million cubic meters volume
- Lahar of 10 million cubic meters volume
- Lahar of 100 million cubic meters volume
- Lahar of 1 billion cubic meters volume
- Areas of potential lahar inundation—
Overlying Trout Lake wetlands and other lakes or ponds
- NF-88 National Forest road number



View of Mount Adams and the Trout Lake area, looking north (as a person would see the ground from an airplane) showing modeled lahar volumes overlying National Agriculture Imagery Program (NAIP) aerial imagery (2015).



Photograph 1. View of the flat-floored upper Trout Lake valley, looking upvalley to Mount Adams (partly covered in clouds). This is the surface of the 6,000-year-old Trout Lake mudflow deposit. USGS photo by T. Pierson.



Photograph 2. View of upper Trout Lake valley, looking west, taken from Trout Lake Hwy. USGS photo by T. Pierson.

Modeled Inundation Limits of Potential Lahars from Mount Adams in the White Salmon River Valley, Washington

By
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