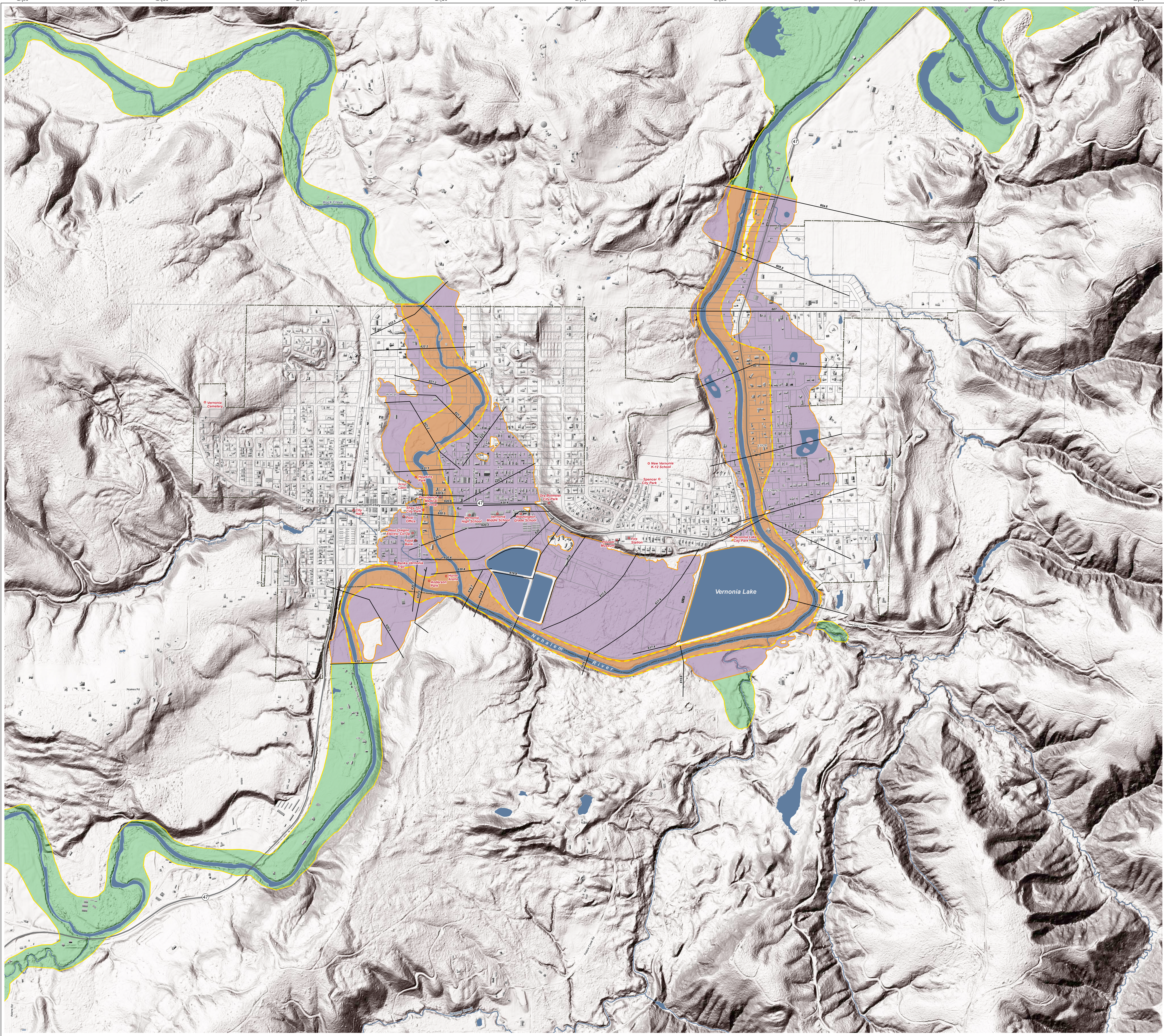


Lidar-Based Digital Flood Insurance Rate Map (DFIRM)
City of Vernonia, Columbia County, Oregon
2013



INTRODUCTION

Much of the public infrastructure and property in the city of Vernonia, Oregon, was damaged by a long-duration winter storm in December 2007. A series of three storms arrived over three consecutive days, producing extreme winds and heavy rain that resulted in widespread severe flooding throughout the region. As directed by the State of Oregon Executive Order No. 10-07, "Rebuilding Vernonia's Schools and the Surrounding Community in the Wake of December 2007 Storms," the Oregon Department of Geology and Mineral Industries (DOGAMI) created a set of lidar-based maps to aid in assessing the vulnerability of critical and essential facilities to flood and landslide hazards. Landslide inventory maps for the city of Vernonia were also created in conjunction with this map series. See DOGAMI publications DBS-54 and DBS-55 for more information.

MAP EXPLANATION

Federal Emergency Management Agency (FEMA) creates standard Flood Insurance Rate Maps (FIRMs) for administration of the National Flood Insurance Program that show the regulatory flood zones for a city or community. These maps depict the Special Flood Hazard Areas (SFHA) which is commonly known as the 100-year floodplain. The SFHA is created using the historical records of flood heights and frequency, a hydrologic computer model, and topographic data. FEMA publishes digital versions of its FIRMs as DFIRMs (Digital Flood Insurance Rate Maps). FEMA publishes digital versions of its FIRMs as DFIRMs (Digital Flood Insurance Rate Maps). FEMA publishes digital versions of its FIRMs as DFIRMs (Digital Flood Insurance Rate Maps). FEMA publishes digital versions of its FIRMs as DFIRMs (Digital Flood Insurance Rate Maps).

DATA SOURCES

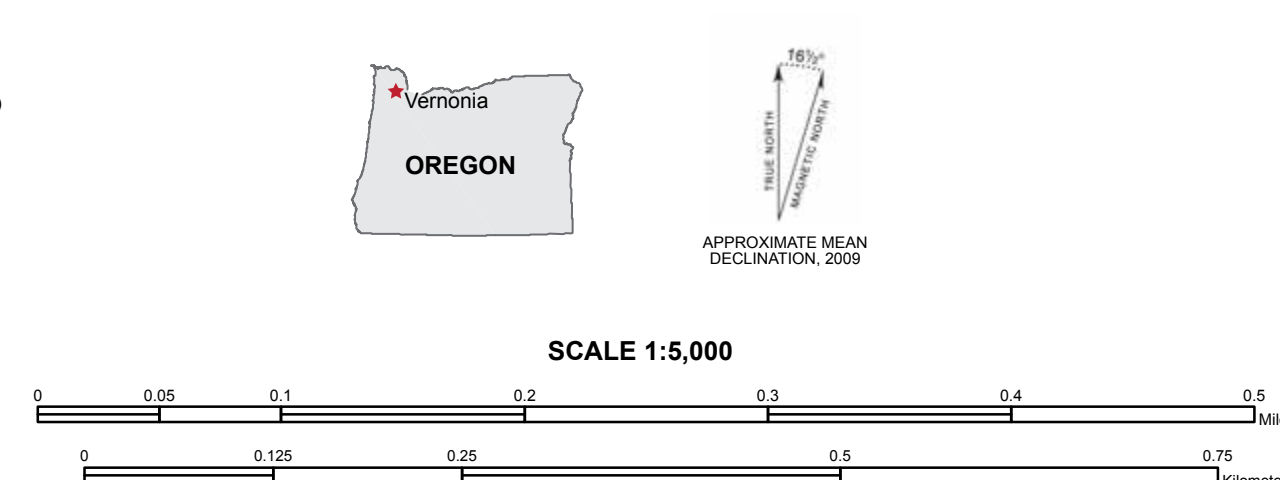
Lidar source: LIDAR 2011-0125-02 Vernonia. The lidar was flown in June 2009. Please see the following website for more information: <http://www.OregonGeology.org>
Flood data source: FEMA Digital Flood Insurance Rate Map (DFIRM) database for Columbia County, OR, Effective November 05, 2010. Please visit the FEMA Map Service Center for more information (<http://msc.fema.gov>).
Other data: The Vernonia city limit was provided by the Oregon Department of Transportation (ODOT, 2009). All other vector and raster datasets were created by the Oregon Department of Geology and Mineral Industries (DOGAMI).
Projection: UTM Zone 10 North, Datum: NAD83, Unit: meter
Software: Esri ArcGIS version 10.0 and Adobe Illustrator CS5

WHAT IS LIDAR?

The lidar data used to create this map were collected from a light aircraft carrying a highly accurate laser scanner. The scanner makes over 100,000 measurements each second to build up a three-dimensional "point cloud" model of the surface of the earth and the vegetation and structures on it. A computer sorts the points, separating those that measure the ground from those that measure other objects such as trees or buildings. Images derived from these sets of points are then merged with other forms of digital data to create this map.
The Oregon Department of Geology and Mineral Industries (DOGAMI) has been collecting lidar data in Oregon since 2006. The goal is to cover the entire state as funding for data collection becomes available. You can learn more about lidar and view lidar images of other parts of Oregon at www.OregonGeology.org.

MAP SYMBOL EXPLANATION

- Highway
- City Boundary
- Stream or Creek
- Waterbody
- Building
- 100-Year Flood Zone (A Zone: approximate riverine zone)
- 500-Year Flood Zone (AE Zone: detailed study zone)
- Floodway
- Base Flood Elevation (BFE)



MAP PLATE ACKNOWLEDGMENTS

Lidar feature extraction: Robert D. Chappell, Kalena L.B. Hughes, Matthew A. Tilsen
GIS analysis: Kalena L.B. Hughes
GIS technical support: Alan T. English, Joel T. Roberts
Technical review: Ian P. Madin
Cartographic: Kalena L.B. Hughes, Tracy J. Pollock
Map plate review: Rachel L. Smith
Publication: Deborah A. Scheller

NOTICE

This map series depicts an inventory of existing features based on published and unpublished reports and interpretations of topography derived from lidar data. These maps cannot serve as a substitute for site-specific investigations by qualified practitioners, which may give results that differ from those shown on the maps. These maps are not intended to provide authoritative locations for any of the features depicted. Although the maps are derived from highly accurate lidar imagery, they should not be used for engineering or survey purposes.

