

Welcome to the Lincoln County Flood Study Open House May 18, 2017

Schedule

5:00: Doors Open

5:15: Presentation

5:50–7:00: Open House



Lincoln County: Flood Study Open House



May 18, 2017



FEMA

THE BIG PICTURE

RiskMAP

Increasing Resilience Together

Goals

Deliver High-Quality Risk Data



- Intuitive Flood Maps
- Credible data- reliable, accurate, watershed-based
- Illustrations of Flood Depths
- Valuable Flood Risk Assessments

Increase Awareness of Flood Risk



- Tools to understand how flood risk has changed
- Continuous engagement with communities
- Enable communities to communicate flood risk to constituents

Promote Community Mitigation Actions



- Support that allows communities to identify and risks and promote:
- Community resiliency
 - Sustainability
 - Reduced need for federal disaster assistance

Products

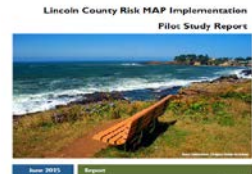
Processes

MITIGATION PLANNING

Enhance delivery of Risk MAP Products

Collaborate across all levels of government

Reduce Risk to Lives and Property



FEMA Building Science Branch Brochure



DisasterAssistance.gov
ACCESS TO DISASTER HELP AND RESOURCES



STRONGER AND SAFER COMMUNITIES

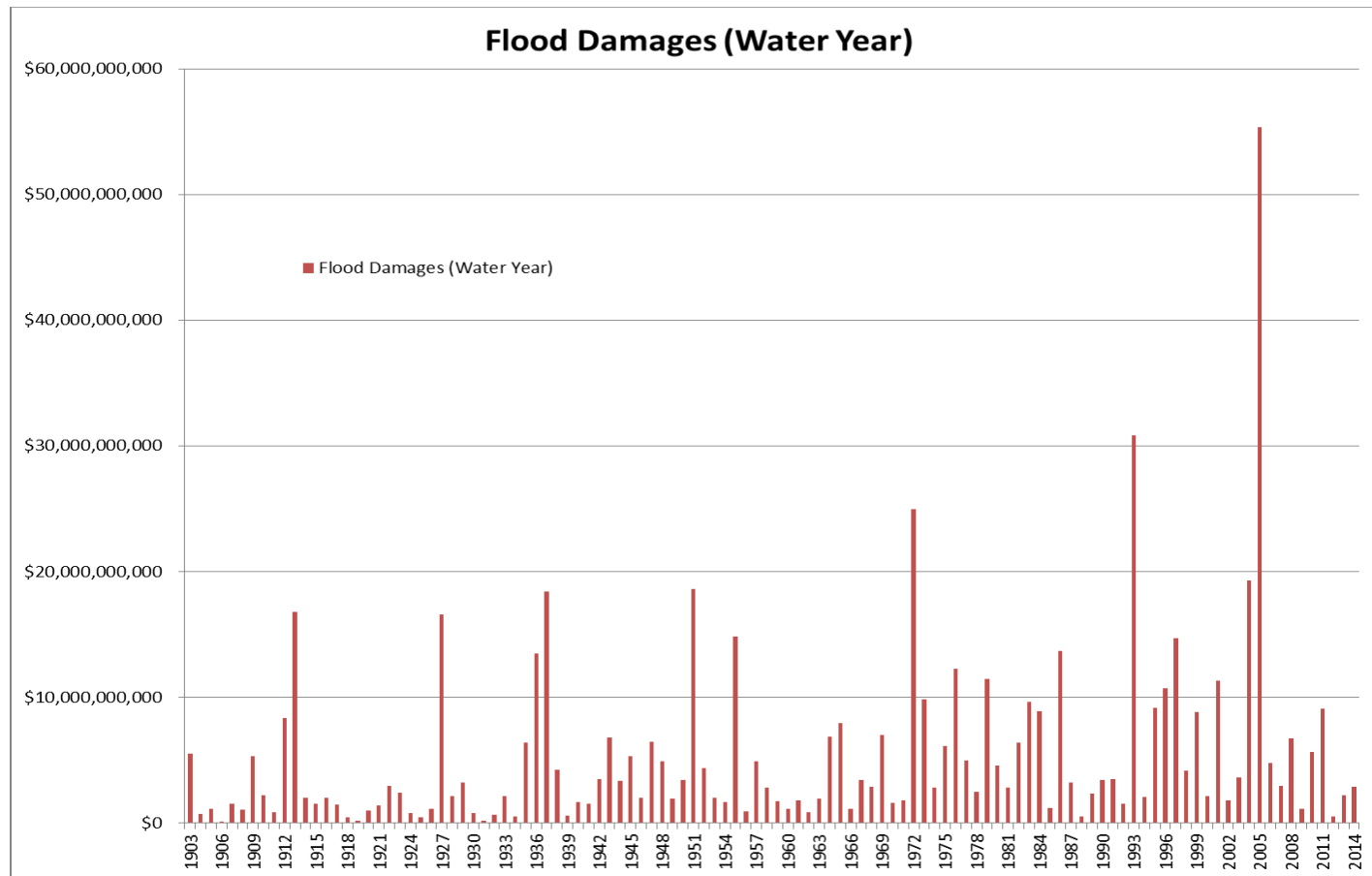
- **Current flood analysis is out of date – 1970s**
- **Flood risk has changed in the past 45+ years**
 - More people and more development
 - Rivers and coastlines move and change over time
 - Changing weather patterns and rainfall/surge data
- **Our goal is to reduce risk to lives and property in Lincoln County**
- **Flooding is the most costly, deadly natural hazard in the United States, yet is highly predictable.**



Figure 1. Flooding at Coyote Rock RV Resort on Siletz River in Lincoln City in January 2011. Source: KATU.com.

PURPOSE OF THE NATIONAL FLOOD INSURANCE PROGRAM

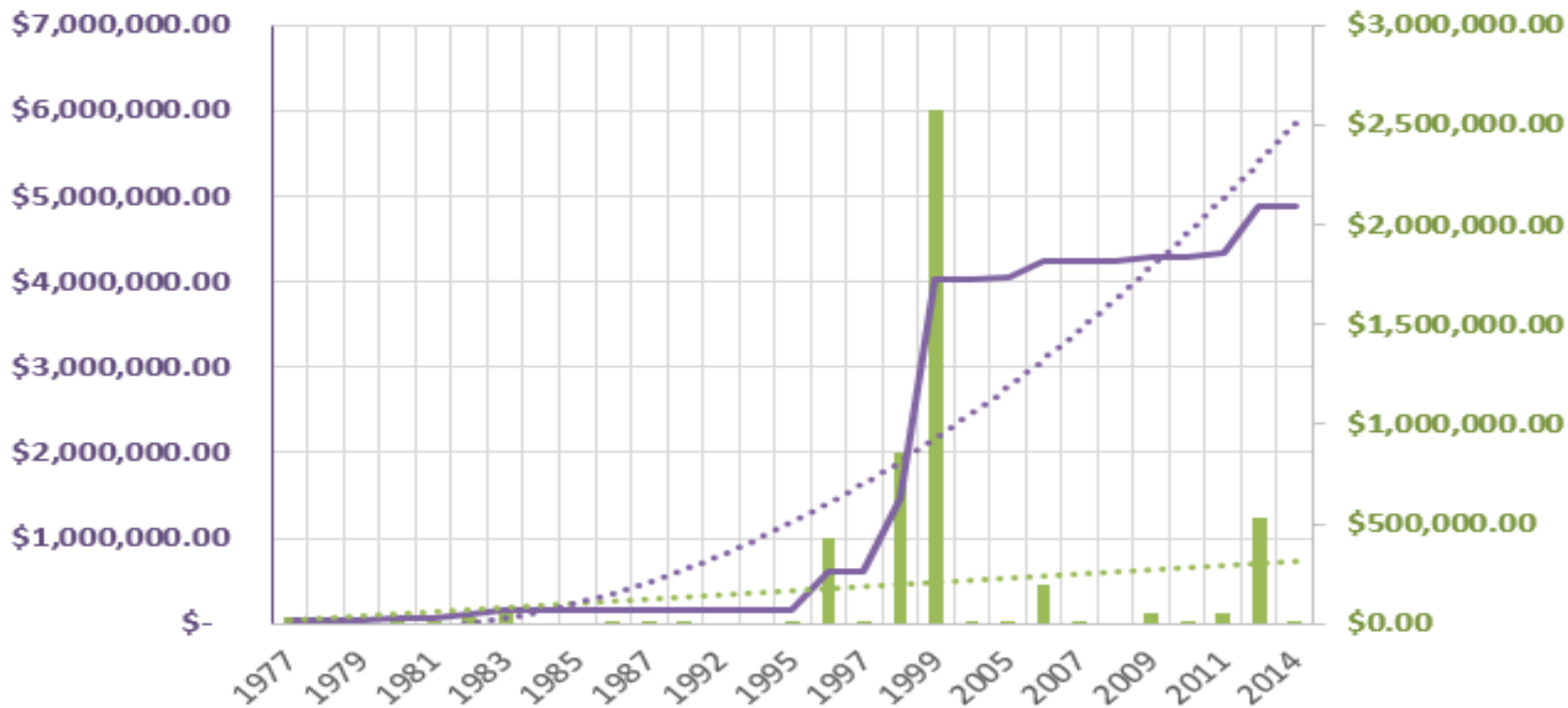
Reduce Economic Loss Caused by Flood Events



- Losses total nearly \$8 Billion per year
- 85% of declarations
- Average of 82 fatalities per year

PURPOSE OF THE NATIONAL FLOOD INSURANCE PROGRAM

Lincoln County and Incorporated Cities - Claims
(Annual Totals and Cumulative)



PURPOSE OF THE NATIONAL FLOOD INSURANCE PROGRAM

Reduce Economic Loss Caused by Flood Events



National Flood Insurance Program

How the NFIP Works



- Maps the flood risk and assigns insurance rates
- Makes flood insurance available
- Sets minimum floodplain construction standards
- May reduce the dependency on structural flood control
- Promotes floodplain management practices increasing resilience

MY HOUSE NEVER FLOODS...

- **If you have a 30-year mortgage and are in a floodplain, you have a 26% chance of being flooded over the term of the mortgage.**
- **One-out-of-four of all flood claims nationally are outside the highest risk areas.**



<http://photos.oregonlive.com>

LINCOLN COUNTY MAPPING

Process to Date:

Discovery – September 2009 through September 2011

Discuss proposed scope of work, identify available data, and update needs.

Participants: Lincoln County, Cities of Siletz, Depoe Bay, Newport, Toledo, Waldport, Yachats, Lincoln City, Grand Ronde Tribe, Confederated Tribes of the Siletz Indians, FEMA, DLCD, DOGAMI, STARR)

Draft Maps/Flood Study Review – May 28, 2014

Discuss engineering methods and data changes.

Preliminary Maps Released – August 5, 2016

Consultation Coordination Officer (CCO) Meeting – September 12, 2016

Revised Preliminary Maps Released – February 27, 2017


Second Consultation Coordination Officer (CCO) Meeting – April 6, 2017

REGULATORY PRODUCTS

Flood Insurance Study (FIS)

FLOOD INSURANCE STUDY
FEDERAL EMERGENCY MANAGEMENT AGENCY


VOLUME 1 OF 2



**LINCOLN COUNTY,
OREGON
AND INCORPORATED AREAS**

COMMUNITY NAME	COMMUNITY NUMBER
CITY OF DEPOE BAY	410283
CITY OF LINCOLN CITY	410130
CITY OF NEWPORT	410131
CITY OF SILETZ	410132
CITY OF TOLEDO	410133
CITY OF WALDPOR	410134
CITY OF YACHATS	410135
CONFEDERATED TRIBES OF SILETZ INDIANS	410244
LINCOLN COUNTY UNINCORPORATED AREAS	410129

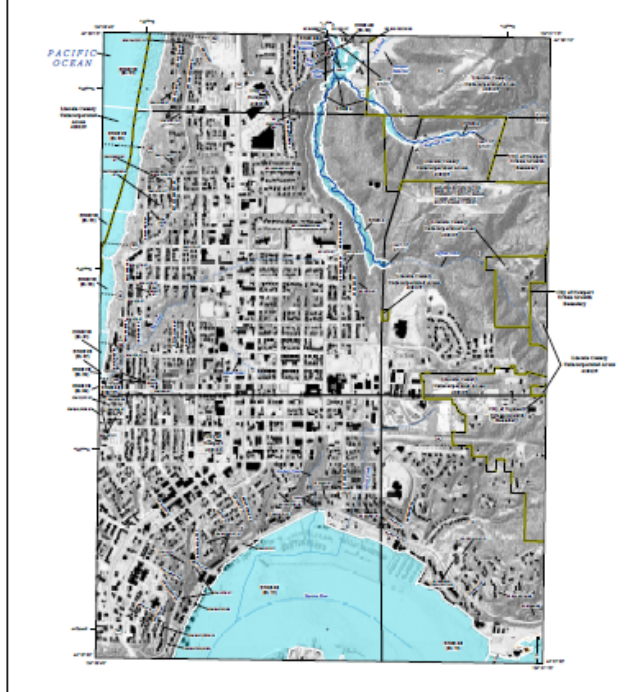
PRELIMINARY
8/5/2016



REVISED:

FLOOD INSURANCE STUDY NUMBER
41041CV001B
Version Number 2.3.2.1

Flood Insurance Rate Map (FIRM)




FLOOD HAZARD INFORMATION

NOTES TO USERS

SCALE

PANEL LOCATION



FEMA
National Flood Insurance Program

REVISIONS

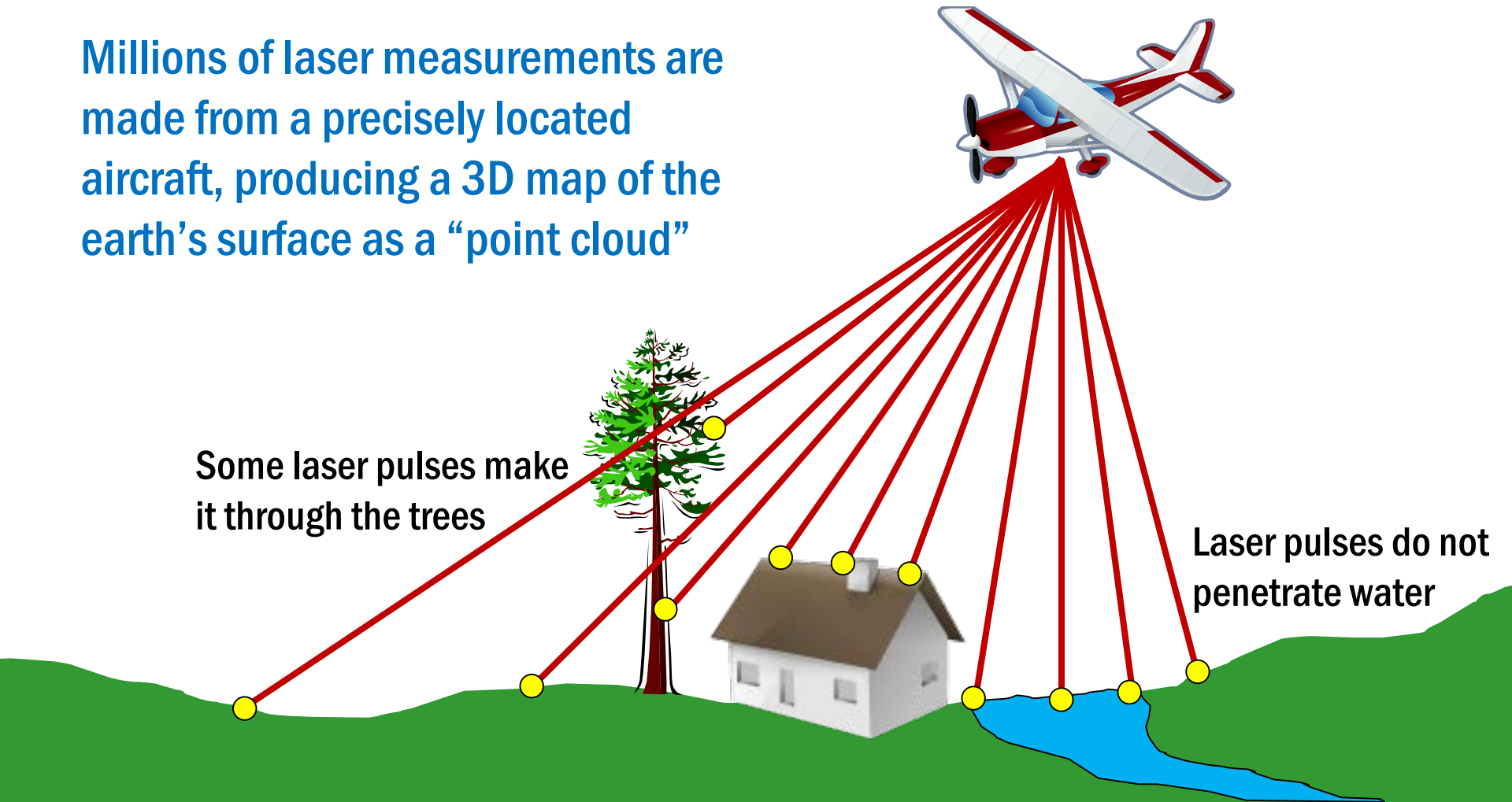
DATE

BY

DESCRIPTION

LIDAR (LIGHT RADAR)

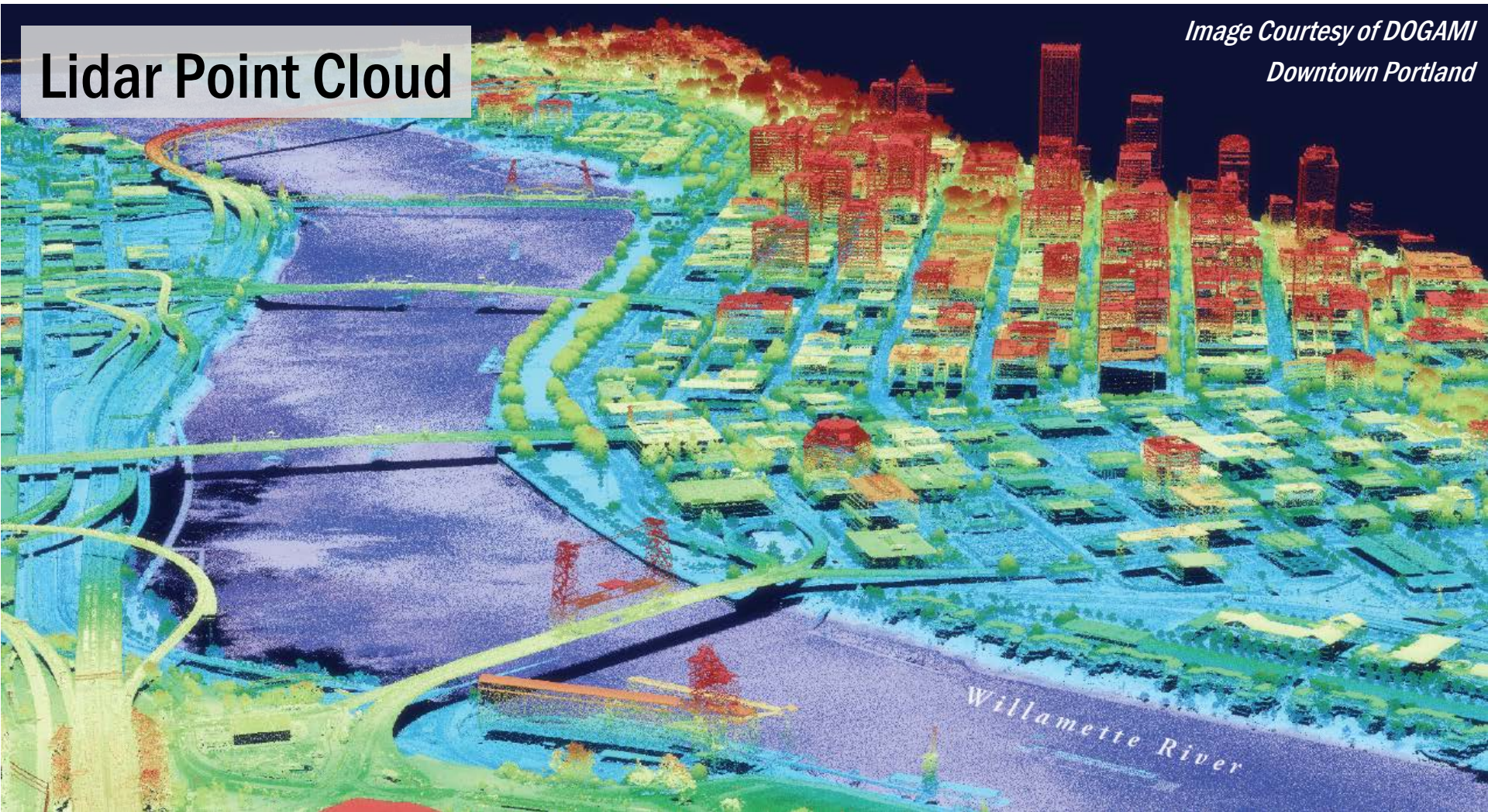
Millions of laser measurements are made from a precisely located aircraft, producing a 3D map of the earth's surface as a "point cloud"



LIDAR (LIGHT RADAR)

Lidar Point Cloud

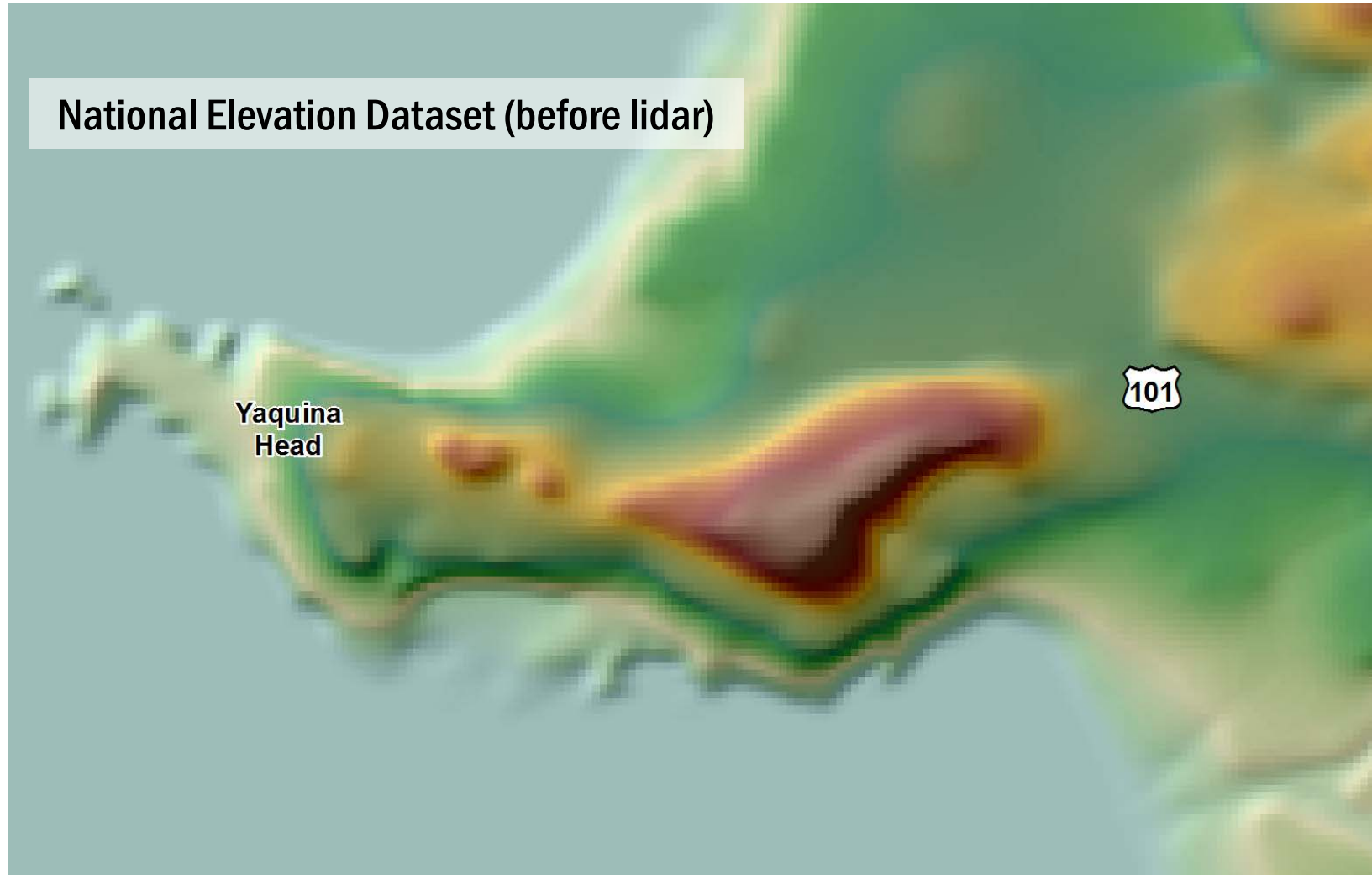
*Image Courtesy of DOGAMI
Downtown Portland*



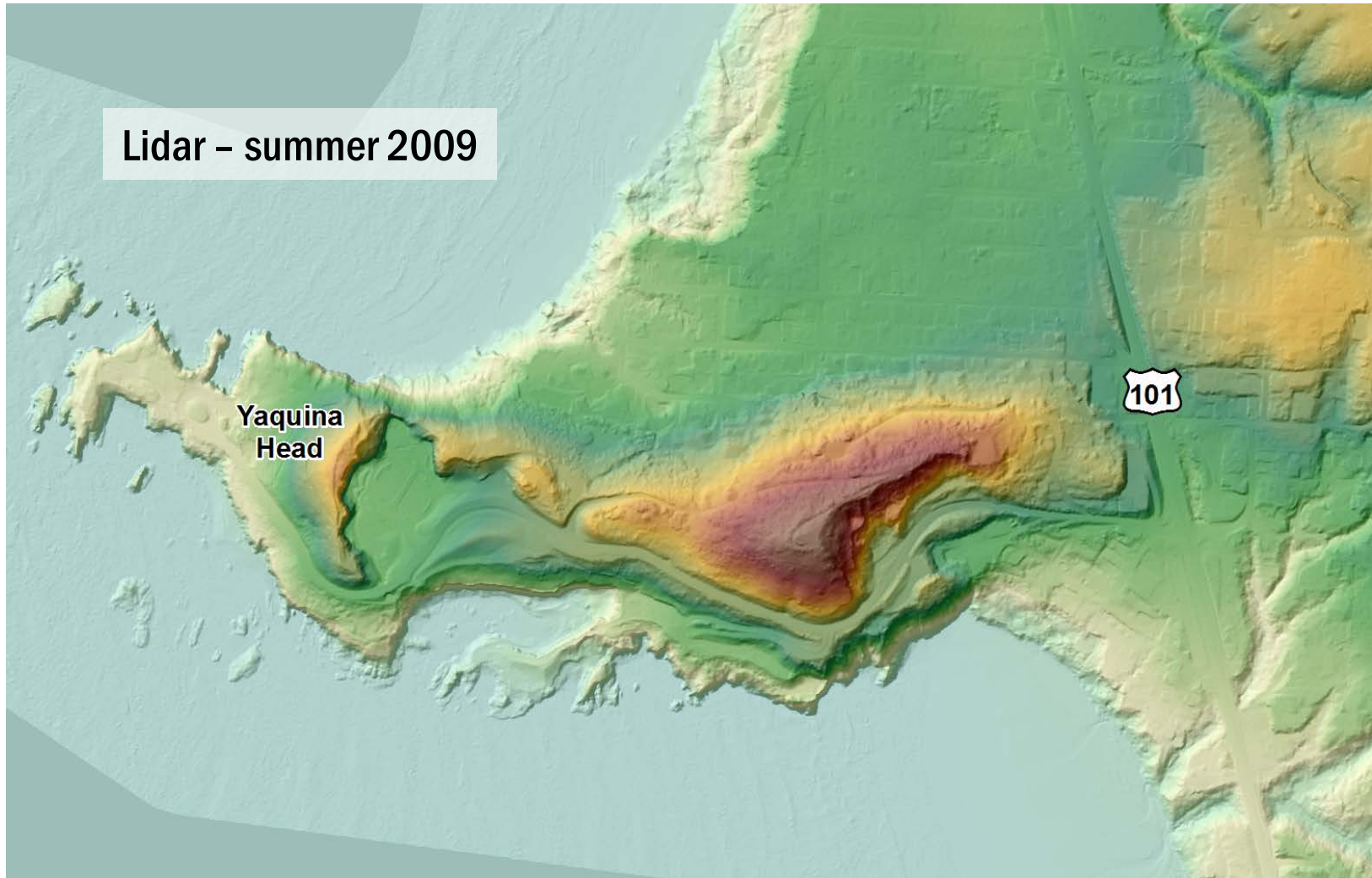
FEMA

LIDAR (LIGHT RADAR)

National Elevation Dataset (before lidar)



LIDAR (LIGHT RADAR)



COASTAL

- New methodology, guidelines, and policies for mapping coastal flood zones;
- 30 years of new tidal gage records and storm wave measurements;
- Changes in development and land use;
- Construction or removal of shore protection structures;
- Changes to bathymetry and/or shoreline
- Availability of better topographic information (i.e. lidar)
- FEMA HQ made it a national priority



Damage from storm waves during a “moderate” event at Neskowin, Tillamook County.



COASTAL MODELING PROCESS

Regional Variation

Step 1: Offshore Water
Step 2: Offshore Waves

Statistical analysis of NOAA offshore buoy data; SWAN model to transform to nearshore (DOGAMI & Oregon State University)

Local Variation

Step 3: Nearshore Wave Setup, Runup & Overtopping

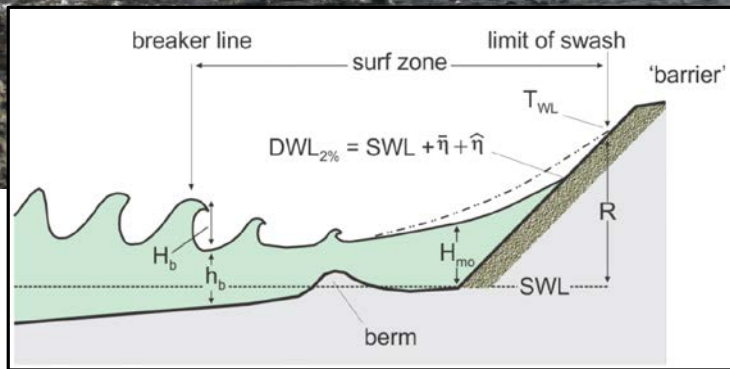
Bathymetric survey (OSU); transect surveys and hydraulic calculations (DOGAMI)

Step 4: Floodplain Mapping

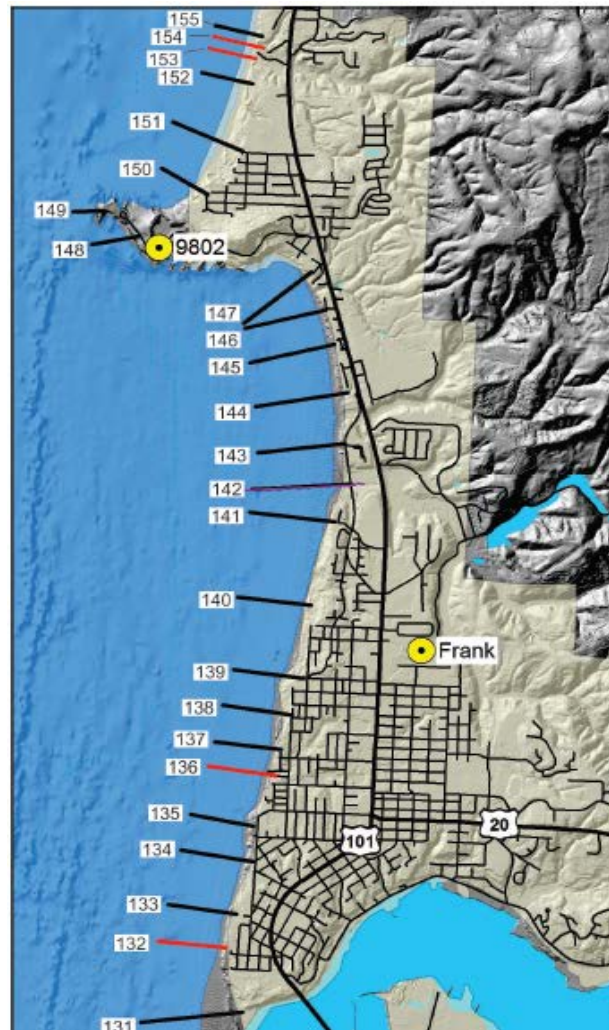
GIS mapping (DOGAMI)



COASTAL FIELD SURVEY



313 transects surveyed throughout Lincoln County



OREGON DEPT. OF GEOLOGY PUBLICATIONS

State of Oregon
Oregon Department of Geology and Mineral Industries
Ian P. Madin, Interim State Geologist

OPEN-FILE REPORT O-15-06

COASTAL FLOOD HAZARD STUDY, LINCOLN COUNTY, OREGON



By Jonathan C. Allan¹, Peter Ruggiero², Nick Cohn³, Gabriel Garcia², Fletcher E. O'Brien³,
Katherine Serafin², Laura L. Stimely², and Jed T. Roberts³



2015

¹ Oregon Department of Geology and Mineral Industries, Coastal Field Office, P.O. Box 1033, Newport, OR 97365

² College of Earth, Ocean and Atmospheric Sciences, Oregon State University, Corvallis, OR 97331

³ Oregon Department of Geology and Mineral Industries, 800 NE Oregon St., Ste. 965, Portland, OR 97232

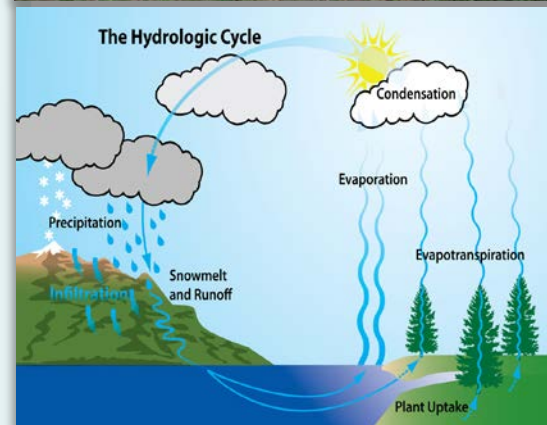
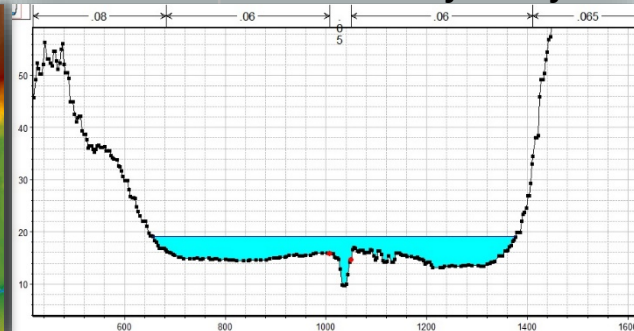
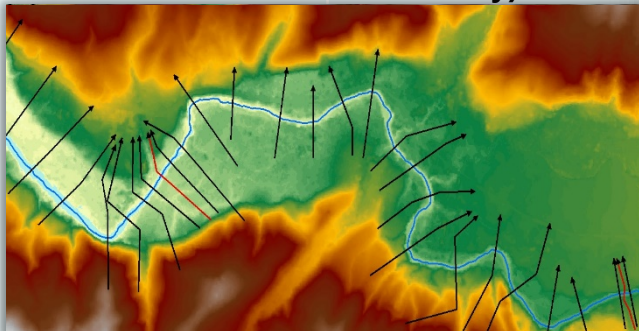
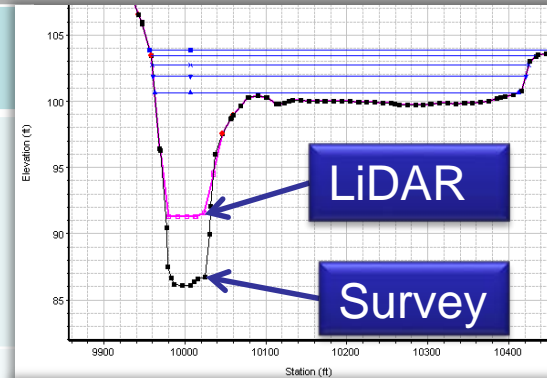
Technical details of coastal flood zone mapping are available in DOGAMI Open File Report O-2015-06

For other hazard mapping in Lincoln County by DOGAMI, visit: www.oregongeology.org/pubs and keyword search “Lincoln County”

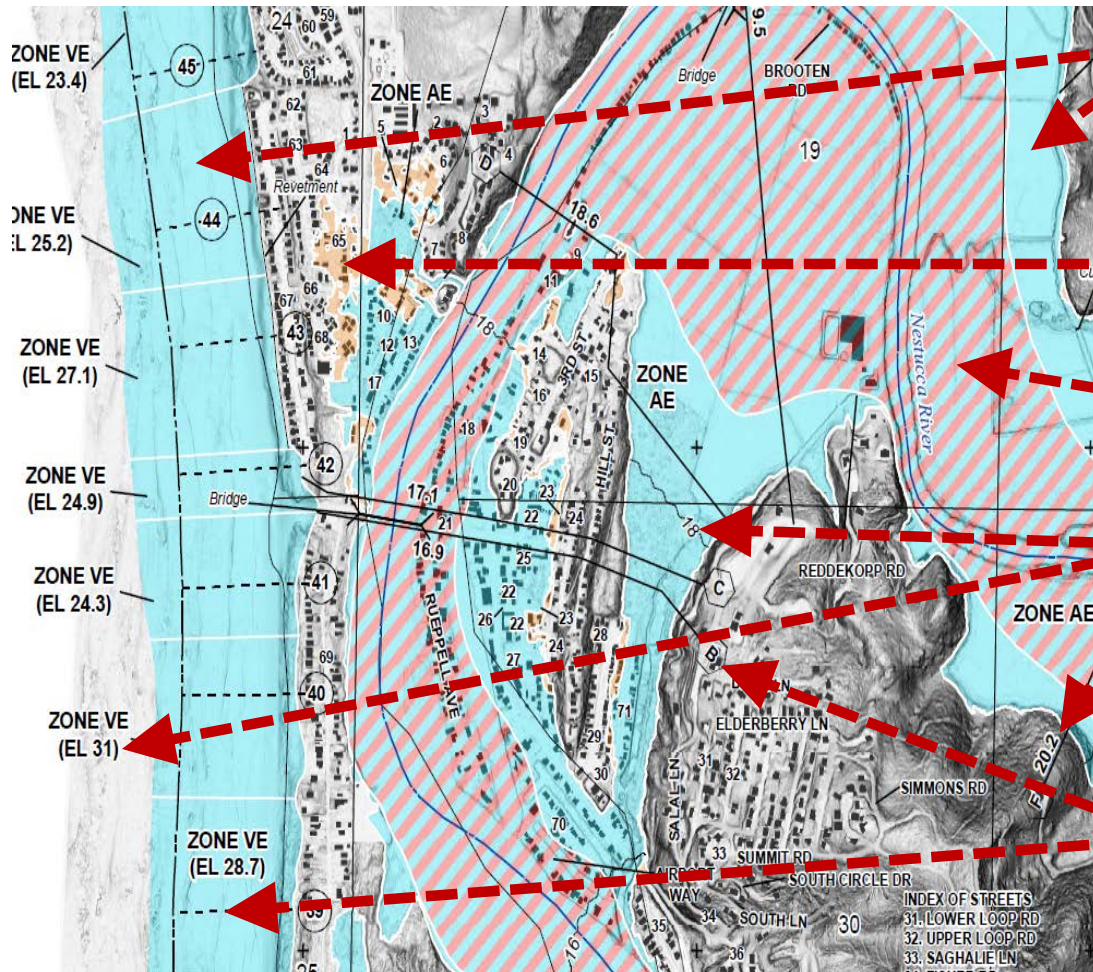
- Maritime tsunami response guidance for the Ports of Newport and Toledo (MTGR-2015-OR-01)
- Tsunami inundation mapping (TIM-Lincoln series, 2013)
- Coastal erosion hazard zones (O-2013-20, O-2007-03, O-2004-09)
- Landslide inventory maps of the Big Elk Creek watershed (O-2012-07)

FLOODPLAIN MODELING

Element	Approximate	Detailed
1. TERRAIN/ CROSS-SECTIONS	Extracted completely from Light Detection and Ranging (LiDAR)	Field survey of channel and bridges
2. HYDROLOGY	Regional Regression	
3. HYDRAULICS (HEC-RAS)	<ul style="list-style-type: none"> • HEC-RAS model (simplified) • Roughness is generalized • Structures are assumed (NBI/Aerial/Local Inventory) 	<ul style="list-style-type: none"> • Steady State HEC-RAS model • Roughness is examined closely • Structures are surveyed • Floodway Analysis



READING A FLOOD INSURANCE RATE MAP



1 % Floodplain (AE, A, VE, or V)

0.2 % Floodplain

Floodway

Base Flood Elevation (1 % Water Surface Elevation)

Cross-section/Transect



FEMA

DUE PROCESS AND ADOPTION PHASE

Lincoln County and Incorporated Areas



DOGAMI OFR 0-2015-06



NEXT MILESTONES*

PUBLIC MEETING

MAY 18, 2017

90-DAY APPEAL PERIOD

STARTS SHORTLY AFTER THE PUBLIC MEETING

JUNE THROUGH SEPT 2017

FEMA ISSUES LETTER OF FINAL DETERMINATION

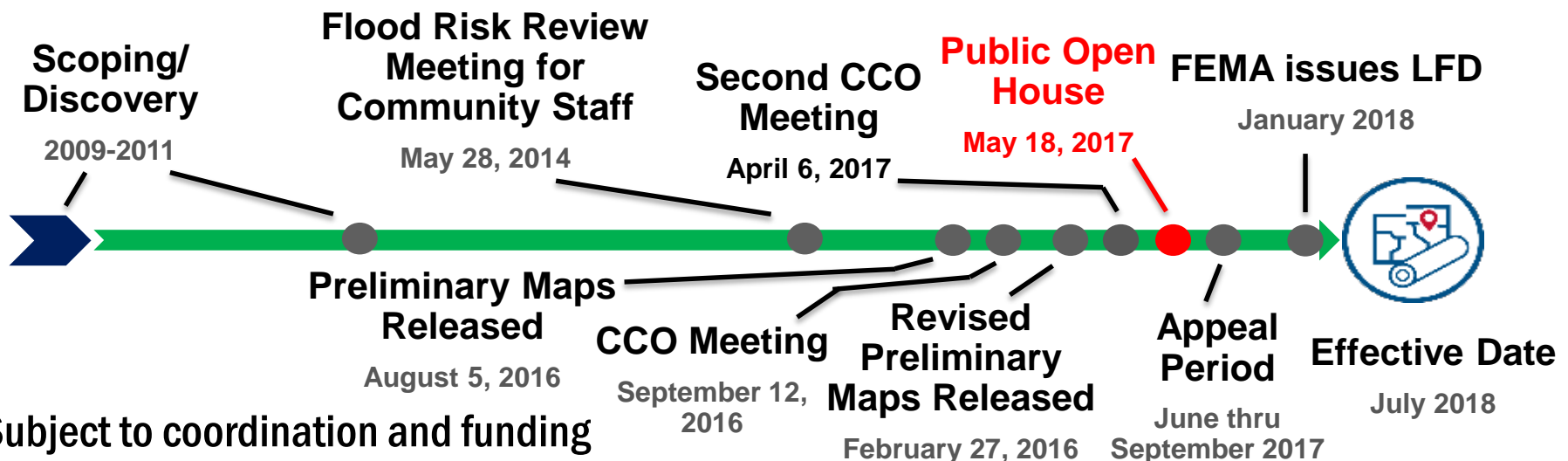
3-6 MONTHS FOLLOWING THE END OF THE APPEAL PERIOD. DEPENDENT ON COMMENTS AND APPEALS RECEIVED.

JANUARY 2018

EFFECTIVE DATE

6 MONTHS AFTER LFD

JULY 2018



APPEALS

- All appeals must be supported by scientific and technical data.
- Alternative methods or applications result in more correct estimates of base flood elevations.
- Criteria documentation available:
 - Establishes areas eligible for appeal
 - Identifies documentation needed to support an appeal of each flood hazard type (e.g. modeling, topography)
 - Reiterates:
 - Certification requirements
 - The importance of submitting analyses in the same vertical datum and tying into to the effective model and mapping



TERMINOLOGY



Expanded Appeals Process:

Appeal: a formal objection to the addition/modification of preliminary BFEs/flood depths, SFHA boundaries or zone designations, or regulatory floodway boundaries, subject to the due process requirements outlined in Part 67 of the NFIP regulations

Comment: an objection to a base map feature change or any other non-appealable change



APPEALS & COMMENTS

- **Submit to your community officials.**
- **Community bundles all the comments and forwards them to FEMA Region 10.**
- **Forms are available here at the open house at the engineering table.**



DOGAMI OFR 0-2015-06



PROCESS UPDATES (AT ANY TIME)



Figure 2-23. The erosion of Siletz Spit following a major storm on January 26, 1973, which eventually claimed one home (photo courtesy of Oregon Highway Department, January 26, 1973).

Letter Of Map Amendment (LOMA) – for property owners who believe a property was incorrectly included in a floodplain, primarily through showing that the lowest elevation of the structure is above the 1% flood elevation.

Letter Of Map Revision (LOMR) – for communities to submit better technical information to change a floodplain or to reflect physical changes made to the floodplain.

(LOMC) Hotline – 1-877-FEMA-MAP

INFORMATION TABLES

**Property
Identification &
Digital Mapping**

**Flood Study /
Engineering**

Flood Insurance

State Table

City Table

**Floodplain
Regulations**



INFORMATION TABLES

Property ID & Digital Mapping

Receive a printed map of your property and understand the flood zone and risks on or near your property

Flood Study/Engineering

Understand the methodology, data, and technical specifications of the analysis and learn about options to incorporate additional data and SOMAs

Flood Insurance

Learn about your insurance policy options and rates applicable to mapped flood zones

State Table

Gain insights into state floodplain mapping priorities, risk reduction, and the NFIP

County/City Table

Ask about local floodplain regulations, permitting processes, projects, and hazard planning

Floodplain Regulations

Gather information on the NFIP and building requirements / restrictions, and the NFIP Biological Opinion on the Endangered Species Act



DATA DISPLAY - GEOPLATFORM



Go to:
<http://arcg.is/2nwTnXx>



Lincoln County

Making Your Home and Community Safer and Stronger



FEMA