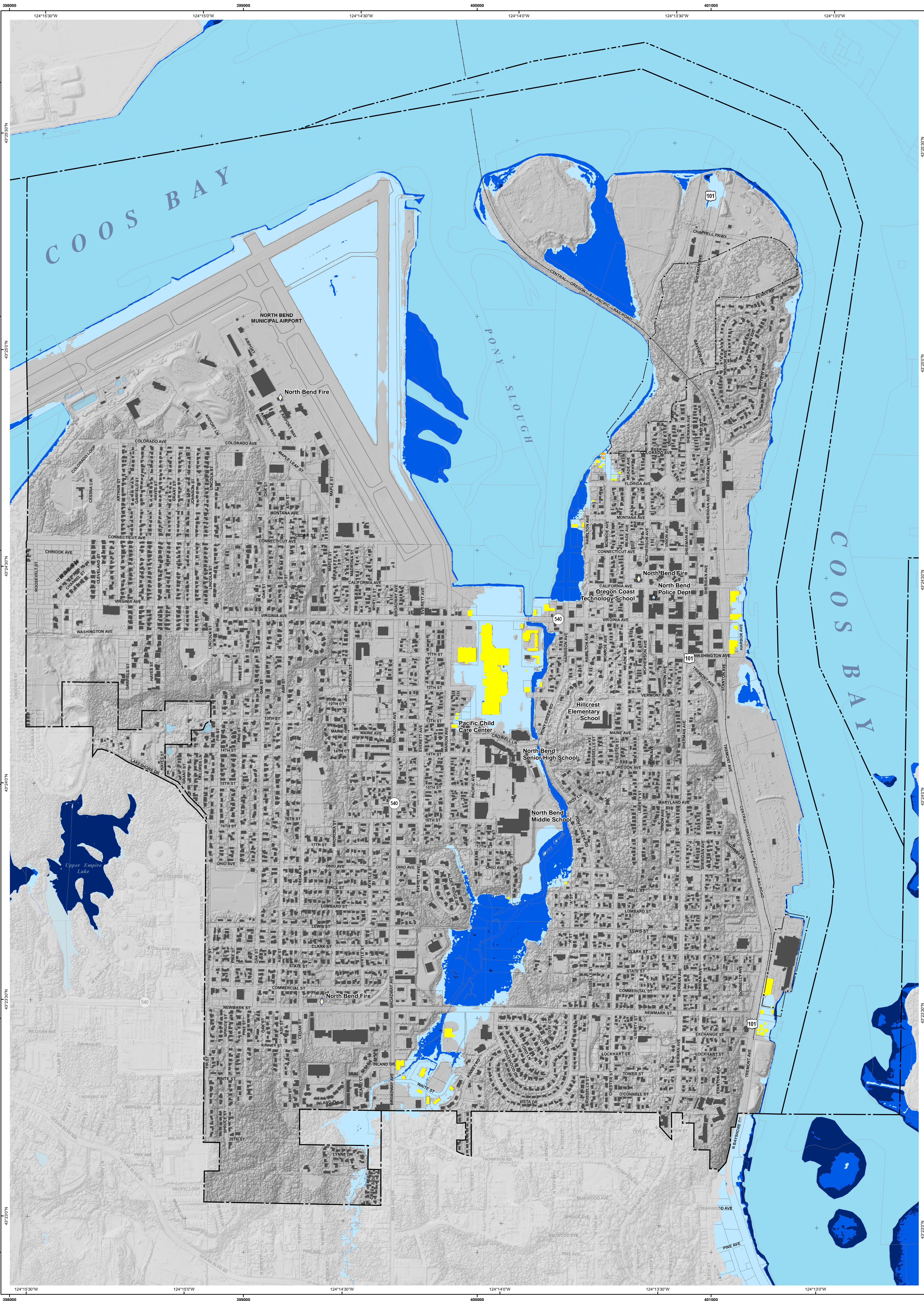


One-Percent Annual Flood Hazard and Exposure Risk Map City of North Bend, Coos County, Oregon 2010

OPEN-FILE REPORT O-10-10

One-Percent Annual Flood Hazard and Exposure Risk Map
City of North Bend, Coos County, Oregon
By Mathew A. Tilman
Funding provided by Federal Emergency Management Agency as part of the Flood
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EMS-2008-GR-0013.



- KEY**
- Buildings Affected (Building Count)**
- Greater than 6 feet (0)
 - 3 to 6 feet (3)
 - 0 to 3 feet (64)
 - Not Affected (4,061)
- Flood Depth Ranges**
- Greater than 6 feet deep
 - From 3 to 6 feet deep
 - From 0 to 3 feet deep
- Public Services**
- Fire
 - Hospital
 - Police
- Political Boundary Lines**
- County
 - Corporate
 - Urban Growth Boundary
 - Forest, Park, Reservation, or Miscellaneous Public Land Boundary
- Bays, Rivers, or Lakes**
- USACE Navigation Range Lines**

PURPOSE

FEMA (Federal Emergency Management Agency) produces flood maps that show areas that have a 1 in 100 chance of being flooded in any year (the 100-year flood). These maps are made by using the historical record of flood height and frequency, a hydrologic computer model, and the best available topographic data. The resulting map, called DFIRM (Digital Flood Insurance Rate Map), are used to determine which properties need flood insurance.

The Oregon Department of Geology and Mineral Industries (DOGAMI) has updated the DFIRMs for Coos County, Oregon, by using new, extremely accurate topographic data collected with a laser scanning system called lidar (light detection and ranging). The new DFIRMs much more accurately show flood zone boundaries and also allow us to measure flood depth at any point. At the same time, lidar data allow us to locate every building in a community and make a GIS (geographic information system) map that shows the exact location, elevation, zoning class, and assessed value of each building collected from tax assessor records. Together, these new types of information can provide a very detailed map that shows the general level of flood risk exposure for each building in a community.

This information can be used by city officials, emergency managers, property owners, lenders, and insurers to better understand flood risk and reduce risk from future floods.

UNDERSTANDING THE MAP

This map shows areas expected to be flooded during a 100-year flood. The expected depth of flooding is shown by one of three colors:

- light blue: 0- to 3-foot flood depth
- medium blue: 3- to 6-foot flood depth
- dark blue: 6-foot or more flood depth

Buildings are color coded to show exposure to flood risk. Note that this color scheme is based on the assumption that all buildings are constructed with slab-on-grade foundations that is, the color codes are for the worst case scenario (see Figure 1).

- black: outside the 100-year flood zone
- yellow: partly or completely in the 0 to 3 foot flood depth zone
- orange: partly or completely in the 3 to 6 foot flood depth zone
- red: partly or completely in the 6 foot or more flood depth zone

Figure 2 shows zoning (commercial, residential, industrial, etc.) types within the city along with the area predicted to be flooded in a 100-year flood. This map is intended to provide an overview of exposure to flood risk for the city from an urban planning perspective.

Table 1 provides a risk exposure summary for the city. The table shows total land value, total improvement value, total real market value, total parcel acreage, and total parcel acreage flooded on the basis of four categories:

- parcels with one or more structures with at least one structure flooded
- parcels with one or more structures where some ground is flooded but no structures are flooded
- parcels that are either completely or partially flooded but have no structures
- parcels that are not flooded

The summation line gives totals for the land value, improvement values, real market values, full tax lot acreage, and acres flooded per tax lot. The table also shows the percentage of land within the city boundary that is flooded.

What do the building colors mean?

The building colors on the map show the worst-case scenario. In reality, individual buildings may be anywhere in the range from worst-case to best-case scenario (see below). Only site-specific studies can show where an individual building falls in this range.

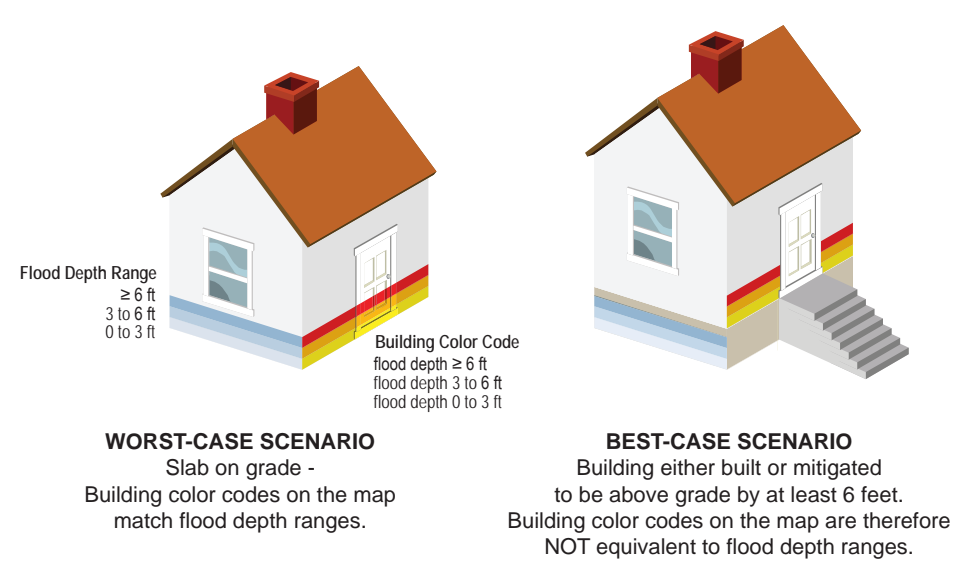


Figure 1. Worst-case and best-case scenarios for exposure to flood risk.

KEY

Area Affected by 1% Annual Flood

Taxlot Zoning Affected by Flooding (Parcel Count)

- Commercial (45)
- Industrial (38)
- Residential (87)
- Airport Operations (1)
- Zone not specified (9)

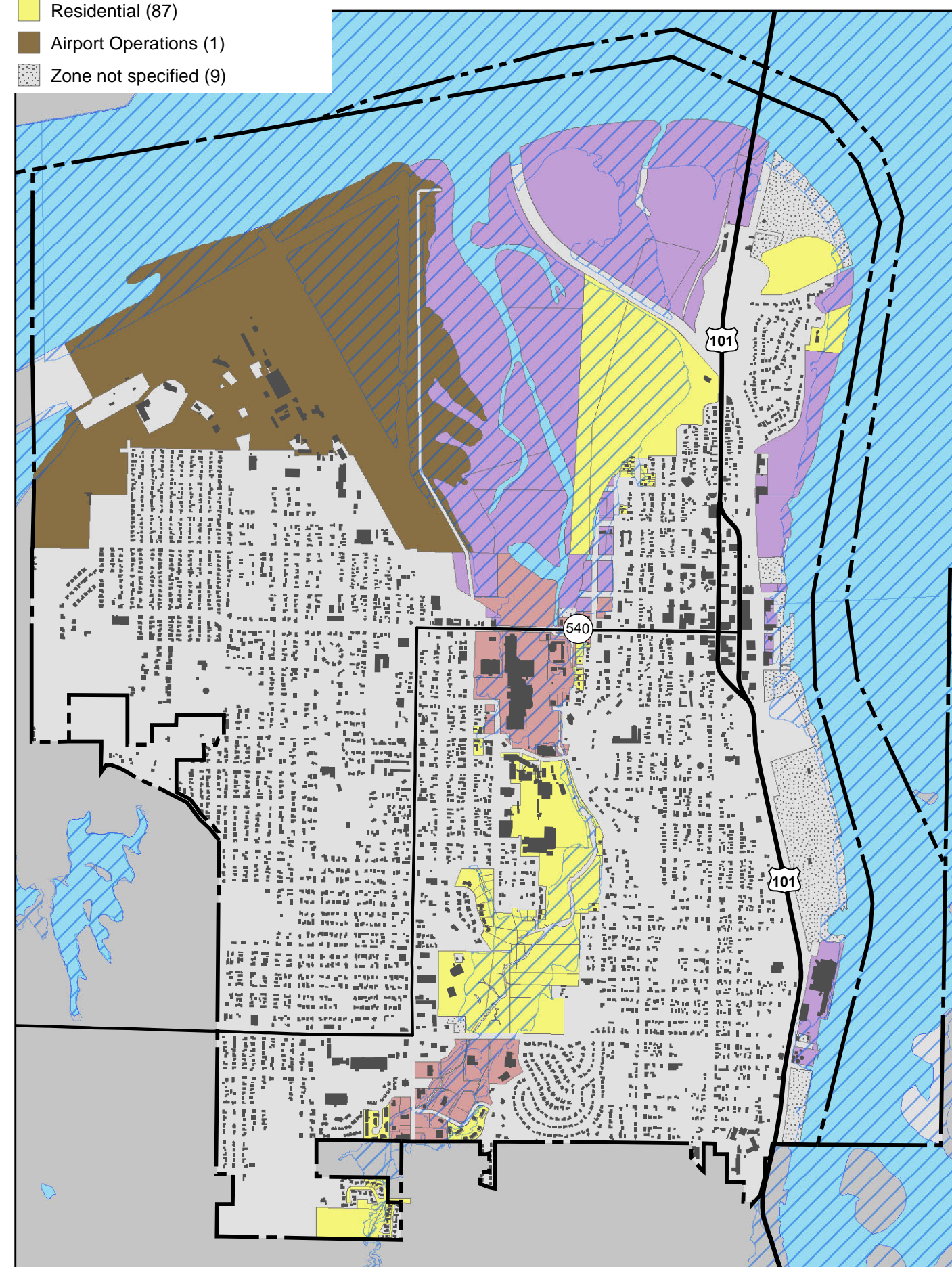


Figure 2. Taxlot zoning affected by flood.

Table 1. 100-Year Flood Exposure Summary Table: Cumulative Assessor Parcel Exposure Analysis						
Parcels	Parcels and Buildings	Land Value (\$)	Improvements (\$)	RMV	Acres	Acres Flooded
46	Parcels with buildings where BOTH are flood affected	16,894,106	41,609,123	58,413,229	65.91	35.83
47	Parcels with flooding AND buildings that are not affected	38,793,984	52,690,701	91,384,685	563.92	217.13
87	Parcels with NO buildings affected but some flooding	11,692,337	2,211,769	13,904,106	490.01	339.18
4,430	Parcels with flooding AND buildings that are not affected	278,692,663	585,209,204	864,837,359	1,131.45	---
4,610	Parcels with NO flooding	\$ 345,885,090	\$ 681,720,797	\$ 1,028,551,379	2,270.89	592.14
Sum all						
Acreage affected by flood 26.1%						
Parcels with buildings where BOTH are flood affected						
Parcels with flooding AND buildings that are not affected						
Parcels with NO buildings affected but some flooding						
Parcels with NO flooding						
Sum all						
Acreage affected by flood 26.1%						
Parcels with buildings where BOTH are flood affected						
Parcels with flooding AND buildings that are not affected						
Parcels with NO buildings affected but some flooding						
Parcels with NO flooding						
Sum all						
Acreage affected by flood 26.1%						

NOTE: Values shown above are for parcels that lie within the City of North Bend city limits and the City of North Bend Urban Growth Boundary and include the Coquille Indian Tribe Trust lands, North Bend Municipal Airport, and a small section of Coos County unincorporated land sandwiched between the cities of North Bend and Coos Bay. RMV is Real Market Value.

Data disclaimer: Parcel boundaries and tax values were provided by the Coos County Assessor's Office and are used only as a guide to provide potential property damage estimates for a 100-year flood event. Please see the Coos County Assessor's Office for the most up-to-date parcel information. The results from the analysis are considered to be highly accurate but should be used for planning purposes only.

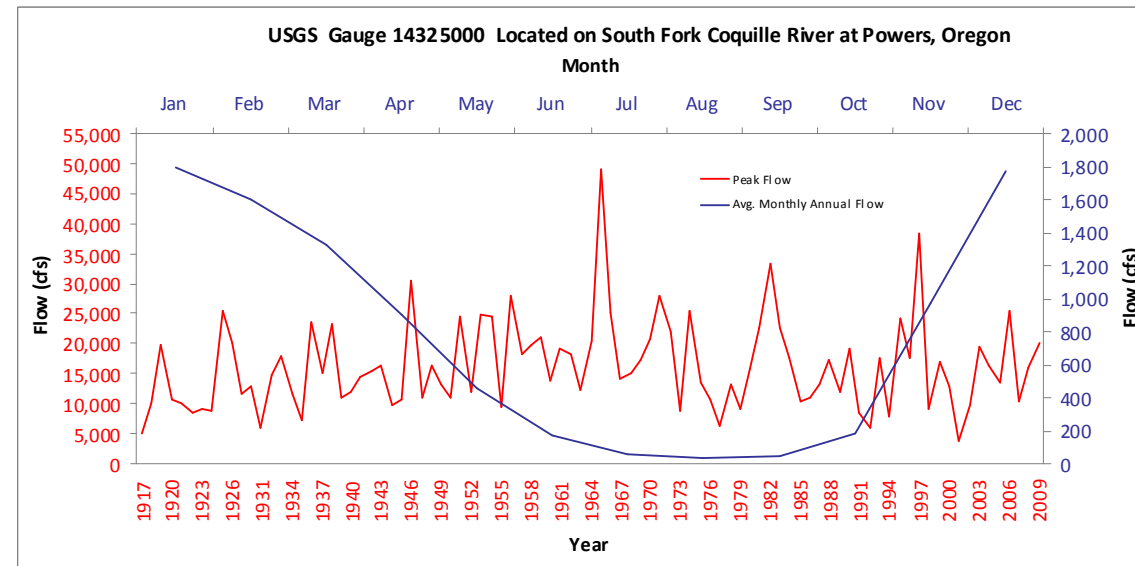


Figure 3. This figure is representative of the regional hydrology for Coos County, Oregon. The figure depicts historic peak flows (labels and line in red) and average annual monthly flow (labels and line in blue) in cubic feet per second (cfs). This figure describes both the years in which major flows occurred (i.e., 1964, 1980) and the seasonal variation in flow typical of an Oregon coastal stream. Although these values describe flows only at a specific gauge, the shape and peaks do describe the common hydrologic regime.

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