Agenda

• Washington lidar coverage and what’s coming
• Lidar quality
• Forested lands
• Forested lands – opportunities for collection
• Washington State Lidar Advisory Group and plan
• Washington Lidar Portal
• Lidar resources
Washington Lidar Coverage

Current state public lidar coverage – available on the Washington Lidar Portal today
Lidar collection has really gained traction, thanks to:

- Legislative funding
- 3D Elevation grant program
- Partnerships with federal agencies (FEMA, NRCS, USGS) and local governments
- Broader DNR participation
- PSLC

More Data Coming Soon!
However, Quality **Really** Matters

- Quality usually relates to the density of ground hits, or measurements, available in the dataset. This affects the ability to identify hazards, model streams, and do survey planning.
- \(~15,100\) square miles need to be recollected.
- With the area that has no public lidar available, \(~28,000\) square miles overall to be collected.

High quality data

Lower quality data
Quality and Technology Changes Over Time

Advancements in lidar technology, updates on older collections can help gain new insights, remap and learn a lot more!
In areas with heavier vegetation, not enough of the lidar pulse is returned and more interpolation of the ground surface is needed.
What Does This Mean for Forest Lands?

• 8,519 square miles of public and private forested lands still need collection or recollection

• Some of these lands are scattered, it is more economical to collect larger, more contiguous areas
Using average costs from previous DNR/USGS projects: ~$4,396,000 to acquire, and likely more to have efficient acquisition.

At current DNR funding levels within WGS, it would take three bienniums (6 years) to acquire, plus WGS has other factors to consider (hazard areas).

Other challenges include weather, smoke, snow and other environmental factors that impact acquisition and timelines.
Forest Lands - Opportunities

- Lidar is collected through direct funding and contracts, partnerships, and grants
  - Washington Geological Survey
  - USGS 3DEP grant program
  - Partnerships with USFS, FEMA
- WGS has a DNR contract as well as submits a proposal to the USGS each biennium
- Participation in the Lidar Advisory group helps set priorities and look for partnership opportunities

Stream typing using lidar data

Main stem

Tributary
Planning for the Future

- WGS, OCIO, and Lidar Advisory Group developed the Washington State Lidar Plan in 2019
- Looks at the uses and benefits to lidar in Washington State, high quality standards for lidar collection, and the outlook for statewide collection as well as refreshing areas on a regular basis
- Washington has already seen benefits to having a state plan with regards to federal partnership
- Companion story map created to make the plan accessible to all users and decision makers
Map 1: Current plan, until revised in June 2020

Map 2: Draft plan, to be discussed in June
The Washington Lidar Advisory Group

The Lidar Advisory Group works toward cooperation and collaboration across the state. Goals are:

• Work together on a project and find funding resources or strategies
• Synchronize project areas to extend a collection area
• Share project extents and intents early to facilitate decision making

The group will meet in June to discuss priorities, funding, and collection opportunities.
Public Distribution, the Lidar Portal

- Free to the public for data download
- Point clouds (.laz), DEMs, hillshades available
- Area of interest or project wide download options
- Data viewable at full resolution, great for exploring Washington’s topography and features

Visit [http://lidarportal.dnr.wa.gov](http://lidarportal.dnr.wa.gov)
Lidar for Forest Lands - In Summary

• 8,500+ square miles of public and private forested lands remain to be collected with high quality lidar in support of stream basin delineation and stream typing, slope stability, and other use cases

• With current estimates, funding needed is at least ~$4,400,000

• There are options and opportunities. Lidar collection does take time and dedication, funding and partnership. We can accomplish this and provide critical elevation data for programs on forested lands
Lidar Resources

WGS lidar download portal: http://lidarportal.dnr.wa.gov/

WGS lidar website: https://www.dnr.wa.gov/lidar

Information on:
• State lidar plan
• State plan story map
• How lidar works
• Lidar screensavers
Thank You!

Questions?

Lidar resources and images at: http://www.dnr.wa.gov/lidar