

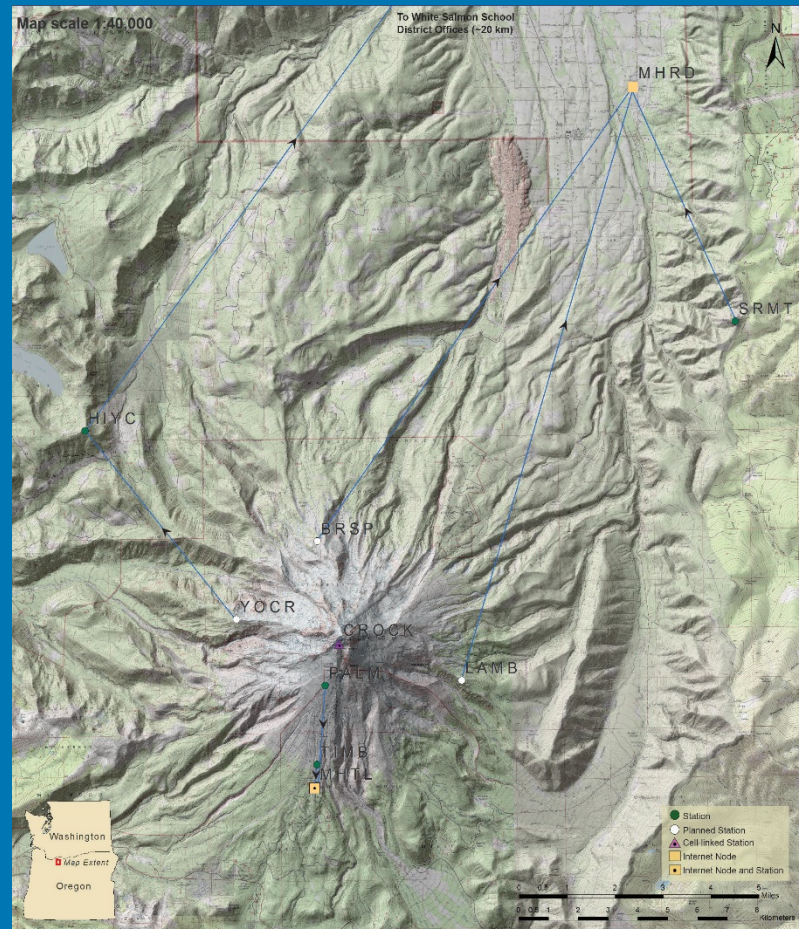


U.S. Geological Survey Cascades Volcano Observatory State of Health Monitoring

USGS/CVO State of Health Monitoring

- USGS/CVO – Currently has 31 Seismic stations – all digital
- CVO will be expanding at Mt. Hood, Glacier Peak, and Mt. Baker in the coming years, adding an additional 12 to 15 stations
- Majority of our stations are integrated digital seismic and dual frequency GPS stations
- Network extends from Southern Oregon to Northern Washington

USGS/CVO Networ Telemetry Complicated and Simplified



USGS/CVO State of Health Monitoring

- SOH monitored with a MySQL database – VALVE, a data visualization tool
 - Hypocenters, Helicorders, RSAM, spectrograms
- SOH features monitored at most stations include
 - RF Noise
 - RF Signal Strength
 - Antenna VSWR
 - Voltages - from radio, not always the digitizer
 - Network latencies

USGS/CVO State of Health Monitoring

- ICINGA – currently CVO uses ICINGA to monitor IT network connectivity to various network nodes
- Would like to move all of our process and server monitoring in to ICINGA – will allow for expanded SOH monitoring of servers, and potentially our seismic networks
- Would also like to implement alarming
 - Station outages, data gaps and station voltages