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Pierce County (PC) and Washington State Patrol (WSP) are jointly deploying a 3-site narrowband VHF radio system along the Highway 410 corridor east of Enumclaw. This new VHF radio system will provide improved day to day and interoperable communications for law enforcement (LE) and fire agencies (Fire) that operate in this area. Not only will it provide wide-area communications from the City of Buckley to past Crystal Mountain, it will also provide a critical communications link back to South Sound 911 (SS911) and WSP dispatch.

Wireless communications in the Highway 410 area is hampered by steep terrain and dense foliage making it difficult for emergency responders such as Search & Rescue, Fire, LE, and other responding agencies coming into the area to communicate effectively. Traditionally, emergency communications in this area has been addressed with VHF simplex operations where units are only able to communicate with other units that are within a certain range, much like walkie-talkies. VHF simplex operations has worked well for situations where multiple units are responding into the same area, or when units are within range of simplex *base stations* located on top of specific fire stations. However, VHF simplex operations has proved extremely challenging when units are responding independently or out of range of other responding agencies or a fire station.

This new VHF communications system has three sites along Highway 410, including two mountaintop sites that have good wide-area visibility, and one site located at the fire station which will provide the density necessary for continuous communications along the highway. All three sites will have permanent connections back to South Sound 911 dispatch (SS911) and WSP dispatch, which will allow 24-hour monitoring of the channels. This critical link back to central dispatch locations will vastly improve the safety and security of emergency responders and the citizens in the area.

In addition, all three sites will be tied together in a simulcast configuration where the group of sites is seen as a single large wide-area *base station*. This will allow units to communicate with each other as long as they are in range of any of the three-site simulcast locations. The improved coverage area of the mountaintop sites and the simulcast operations will greatly improve the ability of first responders to communicate with each other and with other agencies that are coming into the area.