

# Vertical Assets Inventory Toolkit



## *Elevating Broadband Connectivity in Virginia.*

Mobile computing technology is advancing rapidly, and Virginia citizens expect to stay connected from any location. Wireless connectivity is improving, but there are still many areas where signal strength and network carrying capacity are insufficient to meet consumer demand. Wireless Internet Service Providers (WISPs) and public safety officials are looking for innovative ways to reach more potential customers. However, in developed areas, finding open spaces suitable for installation of transmission equipment can be difficult. Even in rural areas, scouting potential new sites can be a labor intensive process. Fortunately, options abound - the Vertical Assets Inventory exists to make those options known.

A Vertical Asset is any structure, building, tower, or geographical feature that could offer a suitable location for installation of wireless transmission equipment. A grain silo or water tower could qualify, as could buildings of all sizes, depending on their geographical setting and the coverage needed. Adding transmission equipment to an existing structure is cost effective for WISPs, and also benefits the private or public managers of the land or structure utilized. In some cases, it can eliminate the need to erect a new tower, greatly streamlining the process of permitting and installation. Ultimately, when wireless broadband access becomes more accessible and more robust, the entire community benefits.



*Urban settings, (Arlington, above) may benefit from greater use of existing vertical structures to expand wireless coverage. On Tangier Island (right), an existing telecommunications tower, silos, or church steeple could provide options to help residents and tourists to stay connected without requiring major construction.*



The Vertical Assets Inventory Toolkit (<http://www.ecorridors.vt.edu/verticalassets>) makes it easy to identify structures or land that could serve as a site for installation of wireless communications equipment. Locations can be entered into the Vertical Assets database by property owners or civic leaders. Once in the database, each potential location becomes accessible to planning districts, public and private economic development groups, and WISPs, making it easier to reach informed decisions.

[ecorridors.vt.edu/verticalassets](http://www.ecorridors.vt.edu/verticalassets)



*A comprehensive inventory of terrain features and tall structures suitable for mounting wireless transmission equipment is an invaluable resource for localities and enterprises interested in promoting robust wireless connectivity. Left to right: a classic monopole wireless tower; wireless transmitters are added to an existing water tower; an electric transmission pylon serves more than one purpose; an air traffic control radar tower is employed to increase wireless connectivity.*

Each entry in the Vertical Assets database contains detailed information, which in most cases includes a description of the asset, base elevation, the structure's height above the ground, asset location, and contact information. The Vertical Assets Inventory Toolkit allows owners and managers of desirable sites to be found more easily by WISPs or public officials looking to develop their resources in a specific area. Having this information readily available can speed up the scouting process, and lower the costs of system development and deployment.

The Vertical Assets Inventory Toolkit is part of a suite of tools for broadband analysis and planning under development through the collaboration of the Center for Geospatial Information Technology and the eCorridors program at Virginia Tech. Also planned are tools for RF propagation modeling and field validation, spectrum utilization mapping and visualization, broadband mapping data verification, case studies, and guidance on consensus-building for wireless broadband technology deployment.

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**Secretary of Technology  
Commonwealth of Virginia**



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