

Why all the route options go from Castle Rock to Troutdale

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For more than a decade, increasing local demand for energy and requests for service on the Bonneville Power Administration transmission system have led us to evaluate ways to relieve a growing electric bottleneck between the Longview, Wash., area and the Portland/Vancouver area. BPA has considered a number of potential solutions to reinforce its grid in this area, but any solution must tie into lines and substations that can deliver the energy to utilities that serve the congested area.

The proposed solution is BPA's I-5 Corridor Reinforcement Project. Early in the process, we identified two potential southern endpoints for the line: a new substation in Troutdale, Ore., and additions to our existing Pearl Substation in Wilsonville, Ore. Both seemed at the time to be electrically feasible, but neither had undergone in-depth evaluations to determine route feasibility or other considerations.

In early 2009, BPA began the project's environmental review and preliminary design. Between March and September 2009, prior to the official scoping effort, we carefully examined the Castle Rock, Wash., to Wilsonville, Ore., route options. During that time, BPA crews physically mapped and inspected more than 40 potential route segments in between those points. After careful consideration, BPA determined there were environmental, technical and other serious obstacles to pursuing a route between Castle Rock, Wash., and Wilsonville, Ore. These obstacles are detailed below.

New Columbia River crossing near Longview, Wash.: Crossing the Columbia River downstream from Longview presented a major engineering and environmental challenge. To provide sufficient clearance for marine traffic, this crossing would require special towers more than 400-feet tall, more than twice the height of standard towers and among the largest in North America. The new towers at this crossing would require highly visible special markings and strobe lights. The larger the towers, the more likely they are to pose risks to aircraft. Crossing the river there would also require building new towers on islands that are

managed for wildlife, or may become, wildlife refuges. Crossing the Columbia River at Troutdale allows use of a narrower, existing utility river crossing.

No existing right-of-way available: BPA searched and found that there is no existing right-of-way that could accommodate a new 500kV line in Oregon. BPA planners talked with other utilities about creative solutions such as swapping rights-of-way in an attempt to assemble a corridor in Oregon, but unfortunately no such opportunities exist.

BPA has an existing vacant right of way to consider that covers most of the way from Castle Rock to Troutdale.

Pearl Substation constraints: BPA's Pearl Substation in Wilsonville, Ore., is surrounded by industrial buildings with no room for expansion. The significant challenges in and around the substation and existing 500-kilovolt lines would be more extensive than those BPA is proposing at the Troutdale Substation. Fortunately, there is room at Troutdale for expansion near the existing substation.

Complications due to existing 500-kilovolt lines in northwest Ore.: Any new Oregon route to Wilsonville would cross or parallel one or more existing 500-kilovolt lines. To do so would create vulnerability to the Northwest's electrical grid. A failure of parallel lines could compromise two critical electrical backbones at once. Regulatory standards establish lower limits for lines or paths in these situations to keep the system within safe operating levels. BPA and other transmission owners could not make full use of their lines and this could force us to propose even more new lines to meet regional power needs. The routes to Troutdale avoid this limitation.

These obstacles convinced experienced power line planners and designers, environmental specialists and realty staff that no realistic routes to the Pearl Substation could meet the power system needs. BPA carefully weighed and considered these needs and impacts in eliminating a potential route that the agency found presented formidable obstacles.



This early map shows some of the previously considered route options in Oregon that were eliminated, based on the reasons identified.

