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The Existing System: Capacity, Constraints, and Current Trends

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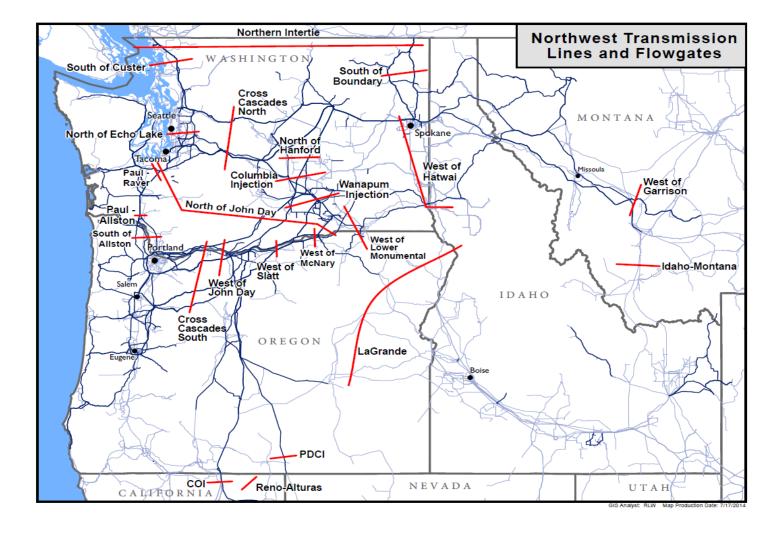August 12, 2016

Northwest Transmission

Existing Transmission Capacity and Known Constraints

- Most existing NW transmission paths have been optimized for N->S and E->W flow
  - Limits based on thermal, voltage stability and transient stability considerations
  - Remedial action schemes (RAS) and voltage support maximize the usable capacity
- Paths that are fully subscribed in the long-term may be congested for only certain times of the year or hours of the day

Existing Transmission Capacity and Known Constraints

- BPA has recently built several 500 kV projects in Washington and Oregon that enhance the ability to move renewables to load

- Consider transmission adequacy on all paths between generation and load

- Imports from CA?
  – Over 3000 MW of northbound Long-Term Firm Available Transfer Capability on BPA share of COI & PDCI

Generation Fleet Trends

- Coal retirement presents an opportunity to be proactive about locating replacement resources in favorable locations and repurposing existing transmission

- Uncertainty about replacement resource locations creates challenges for planning long lead time transmission projects

Institutional Changes

- Greenhouse gas emissions reduction benefits from renewable additions should be realized as long as renewable additions displace emitting resources

- More flexibility to adjust generation dispatch and loads can be a cost effective solution in some cases