

**TO:** PROJECT L-612 FILE

**FROM:** BILL OSTRUM, ACTING HANFORD NEPA COMPLIANCE OFFICER

**DATE:** AUGUST 31, 2022

**RE:** ANALYSIS OF NORTH LOOP DESIGN CHANGES AND DETERMINATION NO SUPPLEMENTAL ANALYSIS IS NEEDED ON EA AND FONSI

## **PURPOSE**

The Department of Energy (DOE) evaluated the *Environmental Assessment for the Rebuild of the North Loop 230-kV Electrical Transmission Line, Hanford Site, Washington* (DOE/EA-2033, Final EA) in light of Bonneville Power Administration's (BPA) final design changes. Those changes could have bearing on the potential environmental impacts. This memo identifies the standards and describes the information analyzed to determine whether (1) to supplement an existing EA, (2) to prepare a new EA or EIS, or (3) no further NEPA documentation is required.<sup>1</sup>

The Council on Environmental Quality NEPA regulations direct agencies to prepare a supplement to either a draft or final EIS when a "major federal action" has not yet occurred and the agency either:

1. "makes substantial changes to the proposed action that are relevant to environmental concerns" or
2. there are "significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts."<sup>2</sup>

DOE's NEPA regulations state that when it "is unclear whether or not an EIS supplement is required, DOE shall prepare a Supplement Analysis (SA)."<sup>3</sup> DOE NEPA regulations do not require that DOE prepare SAs for EAs. Instead, when the adequacy of an EA is unclear, an analytical process "similar to that used in preparing an SA" is appropriate to help resolve the uncertainty.<sup>4</sup>

## **BACKGROUND**

DOE operates and maintains the Hanford Site (Figure 1) 230-kV electrical transmission system as a source of power for Hanford Site 100, 200, and 600 Area facilities. The 53-mile loop-type system comprises two separate electrical transmission lines (North Loop and South Loop) and three active substations (Midway, A6, and A8).

## **NEED AND PURPOSE FOR ACTION**

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<sup>1</sup> 10 CFR 1021.314(c)(2)(i)–(iii).

<sup>2</sup> 40 CFR 1502.9(d)(1)(i)–(ii).

<sup>3</sup> 10 CFR 1021.314(c).

<sup>4</sup> Recommendations for the Supplement Analysis Process (DOE, 2019).

The Purpose and Need is the same as described in the Final EA sections 1.3 and 1.4. The North Loop was built in the 1940s. Because of its deteriorating condition, the existing system is not sufficiently reliable. Much of the South Loop was rebuilt in 1982, does not require rebuilding at this time, and is not within the scope of this project.

The purpose for DOE's Proposed Action includes maintaining electrical transmission system reliability in support of mission requirements. DOE must also continue to meet its contractual and statutory obligations related to transmission system operations and maintenance while minimizing environmental impacts and improving safety for electrical transmission line workers. Finally, DOE must maximize life cycle cost effectiveness and use facilities and resources efficiently.

## **PROPOSED ACTION**

The Proposed Action, as described in the Final EA section 2, is to rebuild the existing 230-kV North Loop (Figure 2), decommission and remove the deactivated portions of the existing North Loop, and conduct operations and maintenance of the completed system. The Proposed Action would replace several components (e.g., towers/poles, conductors, counterpoise, hardware, and support structures), shorten the 28-mile circuit length by approximately 8 miles, provide separate circuits for BPA and DOE, and improve long-term reliability of the system. The existing North Loop would be decommissioned and removed following completion of the rebuilt system. Operations and maintenance activities for the rebuilt North Loop would be similar to those for the existing system.

## **PROPOSED CHANGE AND NEW INFORMATION**

The project's final design includes a number of design changes not previously analyzed under NEPA, and not previously mitigated under the existing National Historic Preservation Act Memorandum of Agreement (MOA). The AR-4 route, however, continues to be the preferred alternative consistent with the analyses performed in the EA and FONSI. Other changes are:

- Some sections of the electrical transmission system would substitute steel lattice towers where tubular steel monopoles were planned (Figure 3) and reuse existing single circuit poles and steel lattice towers, where appropriate.
- Short spur roads would be constructed to connect nearby roads directly to new steel lattice towers for maintenance activities rather than constructing new access roads along and parallel to the entire electrical transmission system alignment.
- Additional staging areas may be needed at some points along the electrical transmission system alignment (i.e., corners) to allow adequate space for conductor pulling and tensioning stations.
- Existing access roads would require upgrading (e.g., mowing, grading, and/or gravel) to allow large equipment to move support structures and spools of conductors and reduce wildfire hazards.
- Other changes would occur at the various switching and substations including changes to the utility poles, steel lattice towers, conductors, and counterpoise.

- Fiber optic cable would be routed overhead on DOE single circuit towers with spooling of 1000-feet of cable in vaults adjacent to the Midway Substation and A8 Substation.

#### Area-Specific Changes and Impacts:

##### ***Midway-Ashe-1 Transmission Line***

Changes involve modifications in Bay 5 at the Midway Substation, the transition of conductor to new double circuit steel lattice towers, and switching from existing single circuit steel monopoles along the alignment. Temporary conductor pulling and tensioning stations would also be required. The original cultural Area of Potential Effect (APE) was expanded but did not result in new adverse effects to cultural resources that were not addressed in the original determination of adverse effects and their resolution through the MOA. The ecological study area also expanded but effects are temporary and affected areas would be revegetated.

##### ***Midway-HEW-1 Transmission Line***

Changes involve reuse of four existing single circuit towers and reuse or replacement of existing 3-pole structures with towers. New conductor would be strung from the existing structures to the new Midway-Ashe double circuit. Additional conductor pulling and tensioning stations would not be required in this area so there was no modification of the original cultural APE or ecological study area.

##### ***Grant County Public Utility District – Priest Rapids Transmission Line***

Design in this section would be unchanged but connections would be relocated from Bay 5 to Bay 8 at the Midway Substation. There was no modification of the original cultural APE or ecological study area.

##### ***Midway-Benton No. 2 Transmission Line***

Changes involve keeping the ground wire on the transmission line, rather than adding a structure to remove the ground wire. The Midway-Ashe line would now go over the top of the conductor and ground wire. The added structure is no longer needed and was eliminated from the design. There was no modification of the original cultural APE or ecological study area.

##### ***A3 Line***

Changes involve providing power to the A9 Substation through other ongoing electrical distribution system projects in the 100 Areas (i.e., DOE/CX-00194, “Activity Specific Categorical Exclusion for Project L-898, 100 Area Mission Critical Electrical Distribution System Modifications”). The A3 line would no longer be refurbished and reused. While a portion of the A3 line corridor would be reused as part of the AR-4 route, the portion from Cutoff Road north to the A9 Substation would be removed and revegetated resulting in beneficial environmental effects. Some pole/tower structures may be cutoff below the ground surface and concrete foundations abandoned in-place further reducing environmental effects associated with excavation of foundations. There was no modification of the original cultural APE or ecological project study area.

##### ***Hanford-Wautoma Transmission Line***

The two 500-kV Hanford-Wautoma transmission lines would be raised more than specified in the original design so the newly installed transmission lines can be routed safely under these lines. Temporary conductor pulling and tensioning stations would be required. The APE was

expanded but did not result in new adverse effects to cultural resources that were not addressed in the original determination of adverse effects and their resolution through the MOA. The ecological study area also expanded but effects are temporary and affected areas would be revegetated.

#### ***A6 Substation Junction***

Changes involve use of single circuit steel lattice towers instead of steel monopoles with the original design otherwise remaining the same. Temporary conductor pulling and tensioning stations would also be required. The APE was expanded but did not result in new adverse effects to cultural resources that were not addressed in the original determination of adverse effects and their resolution through the MOA. The ecological study area also expanded but effects are temporary and affected areas would be revegetated.

#### ***Ashe Tap***

Activities affecting the Ashe Tap (e.g., conversion to a simple pass-through, switches to be bypassed and removed, removal of disconnect switches, jumpers, and risers) would remain the same. Conductor pulling and tensioning stations would also be used to accommodate the use of steel lattice towers, as described above. The APE was expanded but did not result in new adverse effects to cultural resources that were not addressed in the original determination of adverse effects and their resolution through the MOA. The ecological study area also expanded but effects are temporary and affected areas would be revegetated.

## **ENVIRONMENTAL CONSEQUENCES**

The Final EA eliminated from detailed analysis impacts to soils, mineral resources, geologic hazards, air quality and climate, surface water, groundwater, wetlands, visual resources, land use, noise, socioeconomics and environmental justice, water use, transportation systems, public health and safety, and aircraft operations. Because activities associated with the proposed change are similar to those analyzed in the Final EA, impacts to these resource areas would be similar to those described in Table 3-1 of the Final EA and are not analyzed in detail in this analysis.

These four resource areas that were analyzed in detail in the Final EA were not analyzed again:

- Flooding and floodplains
- Health and safety
- Utilities and infrastructure
- Waste management.

It is clear that these types of resources will not be substantively affected by the changes to the Proposed Action or new circumstances or information. See alternative AR-4 analysis in Table 3-13 in the Final EA.

DOE did analyze potential effects to cultural and ecological resources because those resources could have been affected. DOE also had discussions with Hanford area tribes. The effects were the same, or less, as those described in the Final EA. See the cultural resource analysis, [HCRC#2016-600-005a] and the ecological resources analysis [ECR-2022-637] for more

information. For cultural resources, DOE concluded no new adverse effects are anticipated that were not addressed in the original determination of adverse effects, and the existing MOA to resolve adverse effects need not be amended. For ecological resources, DOE reaffirmed the original finding that although a variety of plants, mammals, and birds are observed in the project area (some with a conservation status), none are federal and state listed or candidate threatened or endangered species, and no designated critical habitat exists. DOE concluded that there would be no adverse effects to ecological resources, and the impacts are primarily temporary and would be addressed through revegetation following construction in accordance with HNF-68161, "Site Specific Revegetation Plan Project L-612: Construction of 230-kV Line from BPA Midway Substation to Ashe Tap"; HNF-68162, "Site Specific Mitigation Plan Project L-612: Construction of 230-kV Line from BPA Midway Substation to Ashe Tap"; DOE/RL-2011-116, Revision 2, "Hanford Site Revegetation Manual"; and DOE/RL-96-32, Revision 2, "Hanford Site Biological Resources Management Plan."

The following resource areas were analyzed in detail:

<b>Comparison of Potential Environmental Impacts from Changes to Proposed Action in DOE/EA-2033, “Final Environmental Assessment for Rebuild of the North Loop 230-kV Electrical Transmission Line, Hanford Site, Washington”</b>			
<b>Resource Area</b>	<b>Summary of Potential Environmental Impacts in DOE/EA-2033</b>	<b>Summary of Potential Environmental Impacts from Changes in the Proposed Action, New Information, or Changing Circumstances</b>	<b>Difference in Potential Environmental Impacts and Mitigation Measures</b>
Biological Resources (See Final EA Section 3.3.1.1.1 through 3.3.1.1.4 for description of the methodology and field surveys)  <u>ACRONYMS</u>  <i>T&amp;E – Threatened and Endangered</i>  <i>BRMP – Hanford Biological Resources Management Plan (DOE/RL-96-32, Rev 2)</i>  <i>DOE – U.S. Department of Energy</i>  <i>EA – Environmental Assessment</i>	<ul style="list-style-type: none"> <li>Total area of permanent and temporary impacts to biological resources from access roads, electrical transmission line structures, and construction support areas would be 188 acres.</li> </ul>	<ul style="list-style-type: none"> <li>Total area of permanent and temporary impacts to biological resources from access roads, electrical transmission line structures, and construction support areas would be 123 acres.</li> </ul>	<ul style="list-style-type: none"> <li>Total area of permanent and temporary impacts to biological resources from access roads, electrical transmission line structures, and construction support areas would be reduced by 65 acres or 35%.</li> <li>Impacts to biological resources would be reduced by changes to access roads (short spur roads to towers instead of road along entire 2.1 miles of electrical transmission line) and change from 130 steel monopoles to 90 steel lattice towers.</li> </ul>
	<ul style="list-style-type: none"> <li>Of the 188 acres of biological resources impacted, 47 acres would be permanent and 141 acres would be temporary.</li> </ul>	<ul style="list-style-type: none"> <li>Of the 123 acres of biological resources impacted, 10 acres would be permanent and 113 acres would be temporary.</li> </ul>	<ul style="list-style-type: none"> <li>Total area of permanent impacts to biological resources would be reduced by 37 acres or 79%.</li> <li>Total area of temporary impacts to biological resources would be reduced by 28 acres or 20%.</li> <li>Impacts to biological resources would be reduced by changes to access roads (short spur roads to towers instead of road along entire 2.1 miles of electrical transmission line) and change from 130 steel monopoles to 90 steel lattice towers.</li> <li>Temporary impacts to biological resources would be rectified by onsite revegetation of affected areas in accordance with the Revegetation Plan,</li> </ul>

<p>Mitigation Plan, Revegetation Manual, and BRMP.</p> <ul style="list-style-type: none"> <li>• Permanent impacts to biological resources would be addressed by offsite compensatory mitigation in accordance with Revegetation Plan, Mitigation Plan, Revegetation Manual, and BRMP habitat replacement ratios.</li> </ul>			
<ul style="list-style-type: none"> <li>• No difference in potential impacts to federal and state listed T&amp;E or special status plant and animal species or their designated critical habitat as these resources are not present in the biological resources study area.</li> <li>• No mitigation measures would be required for T&amp;E or special status plant and animal species or their designated critical habitat since none exist in the biological resources study area.</li> <li>• Impacts to plant, mammal, and bird species with a federal or state conservation status would be mitigated through pre-construction surveys in the biological resources study area to identify and avoid affected resources.</li> </ul>	<ul style="list-style-type: none"> <li>• Proposed Action would continue to not impact federal and state listed T&amp;E or special status plant and animal species or their designated critical habitat as these resources are not present in the biological resources study area.</li> <li>• Several plant, mammal, and bird species with a federal or state conservation status were observed within the biological resources study area.</li> </ul>	<ul style="list-style-type: none"> <li>• Proposed Action would not impact federal and state listed T&amp;E or special status plant and animal species or their designated critical habitat as these resources are not present in the biological resources study area.</li> </ul>	
<ul style="list-style-type: none"> <li>• Negligible difference in potential disturbance and mortality impacts to wildlife.</li> <li>• Nesting bird and other wildlife surveys would be performed prior to conducting ground disturbing activities to avoid impacts.</li> <li>• Reduction in potential spread of nonnative weed species along access roads, construction sites, and other support areas due to decreases in</li> </ul>	<ul style="list-style-type: none"> <li>• Potential disturbance and mortality impacts to wildlife would continue to be minimal, occur at the level of the individual(s), and not result in local or regional population level impacts.</li> <li>• Potential spread of nonnative weed species along access roads, construction sites, and other support areas would continue.</li> </ul>	<ul style="list-style-type: none"> <li>• Potential disturbance and mortality impacts to wildlife are expected to be minimal, would occur at the level of the individual(s), and would not result in local or regional population level impacts.</li> <li>• Potential spread of nonnative weed species along access roads, construction sites, and other support areas.</li> </ul>	

<p>Cultural Resources and Historic Properties (See Final EA Section 3.3.2.4 for description of the</p>	<ul style="list-style-type: none"> <li>• Decommisioning and removal of the existing North Loop system.</li> </ul>	<ul style="list-style-type: none"> <li>• No changes to the decommissioning and removal of the existing North Loop system.</li> </ul>	<p>temporary soil disturbance, which would result in reduced potential for noxious weed introduction and establishment.</p> <ul style="list-style-type: none"> <li>• Potential spread of nonnative weed species along access roads, construction sites, and other support areas would be avoided using vehicle undercarriage washing stations.</li> <li>• Following completion of all construction activities, temporary impact areas would be rectified by onsite revegetation to avoid potential spread of nonnative weed species in accordance with the Revegetation Plan, Mitigation Plan, Revegetation Manual, and BRMP.</li> <li>• Long-term control of potential nonnative weed species would be implemented through existing Hanford Site vegetation management programs (DOE/EA-1728).</li> </ul>
<p>Cultural Resources and Historic Properties (See Final EA Section 3.3.2.4 for description of the</p>	<ul style="list-style-type: none"> <li>• Potential impacts to 152 cultural resources and historic properties (20 recommended NRHP eligible, 18 recommended not eligible, and 114 unevaluated).</li> </ul>	<ul style="list-style-type: none"> <li>• Original APE would be expanded by 174.8 acres from 1172.8 acres to 1347.6 acres, or 15% increase to accommodate expanded conductor pulling and tensioning sites.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts to biological resources would be rectified by onsite revegetation of affected areas in accordance with the Revegetation Plan, Mitigation Plan, Revegetation Manual, and BRMP.</li> <li>• Decommisioning and removal of the existing North Loop system would have beneficial effects on biological resources.</li> <li>• Based on the findings of the revised cultural resources review, the APE expansions would not result in adverse effects to any cultural resources or historic properties that were not addressed in the</li> </ul>



<p>methodology and field surveys)</p> <p><u>ACRONYMS</u></p> <p><i>NRHP – National Register of Historic Places</i></p> <p><i>TCP – Traditional Cultural Property</i></p> <p><i>APE – Area of Potential Effects</i></p> <p><i>MOA – Memorandum of Agreement</i></p>	<ul style="list-style-type: none"> <li>● Potential impact to one known NRHP eligible cultural district.</li> <li>● Low potential for impacts to unknown cultural resources and historic properties due to Proposed Action being a greater distance from the Columbia River.</li> <li>● Proposed Action would potentially impact one archaeological district, one TCP, one historic district, and other archaeological resources from the presence of workers and equipment during decommissioning and demolition of the existing North Loop system.</li> <li>● Beneficial effects from removal of existing North Loop system components (where replacement of components would not occur) on historic, cultural, and archaeological districts; historic properties; and other cultural resources.</li> </ul>	<ul style="list-style-type: none"> <li>● Access roads and laydown, mowing, and counterpoise areas would remain within the original APE.</li> <li>● Three previously recorded historic properties present within the expanded APE and would not be adversely affected.</li> <li>● Portions of expanded APE overlap a TCP for which adverse effects were addressed and resolved in the original cultural resources review and MOA; expanded APE does not represent a new effect to the TCP and does not change the original findings.</li> <li>● No previously unidentified historic properties are within the expanded APE.</li> <li>● Treatment recommendations from the original cultural resources review would be applied as appropriate within the expanded APE.</li> <li>● No changes to the decommissioning and removal of the existing North Loop system as addressed by the EA, cultural resources review, and MOA.</li> </ul>	<p>original determination of adverse effects, which are resolved by the MOA.</p> <ul style="list-style-type: none"> <li>● No difference in the potential impacts or benefits due to the decommissioning and removal of the existing North Loop system as addressed by the EA, cultural resources review, and MOA.</li> </ul>
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## DETERMINATION

DOE prepared this document to evaluate whether changes to the Proposed Action and new circumstances or information require DOE (1) to supplement an existing EA, (2) to prepare a new EA or EIS, or (3) no further NEPA documentation is required. DOE concludes that the changes to the Proposed Action and new circumstances or information relevant to environmental concerns do not require a supplement to the EA for the Rebuild of the North Loop 230-kV Electrical Transmission Line, Hanford Site, Washington or a new EA or EIS. No further NEPA documentation is required.

Issued at Richland, Washington, this 31<sup>st</sup> day of August 2022.

**William F.  
Ostrum**

 Digitally signed by William F.  
Ostrum  
Date: 2022.08.31 14:08:46 -04'00'

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William (Bill) F. Ostrum  
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Richland Operations Office

## FIGURES

FIGURE 1 – HANFORD SITE

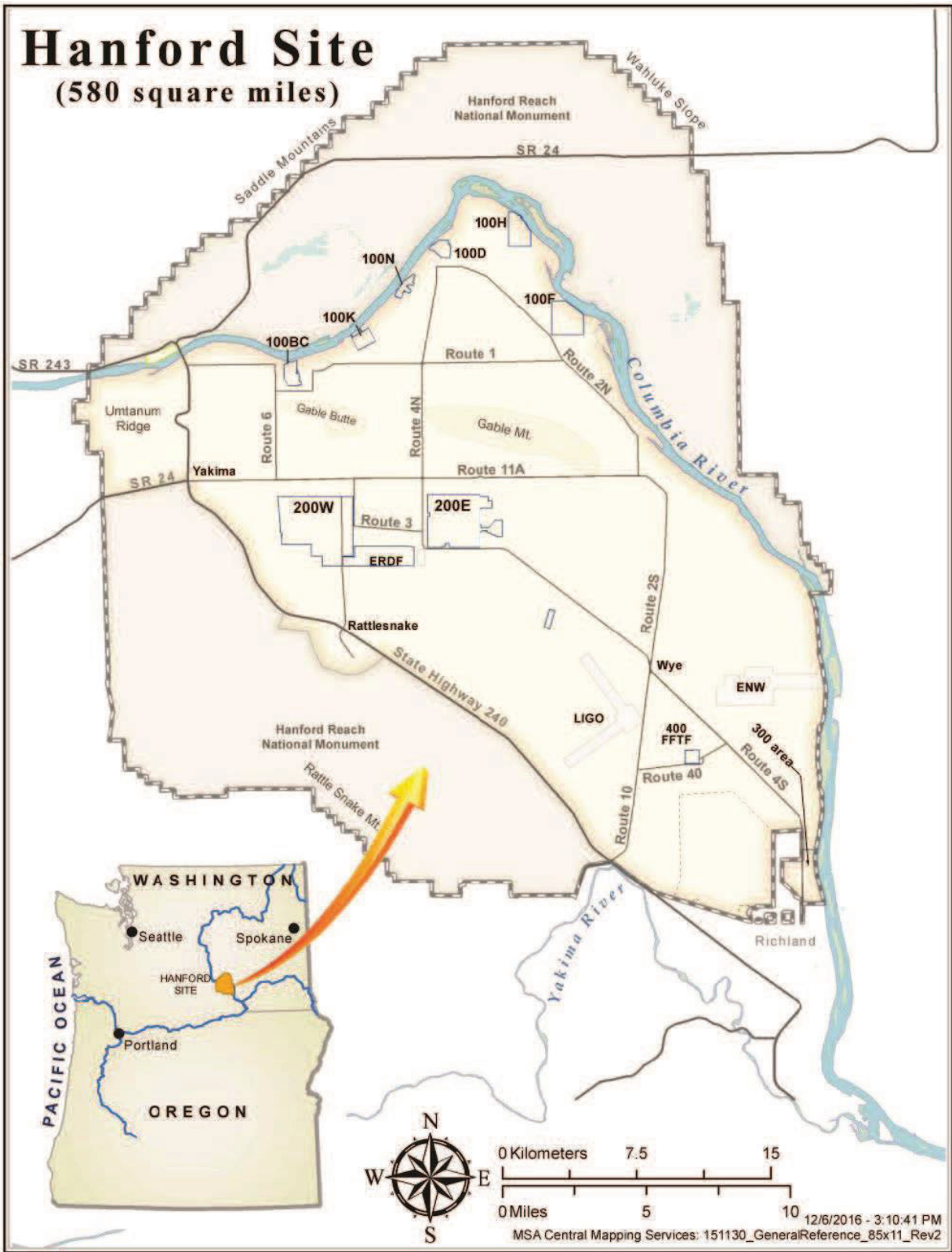
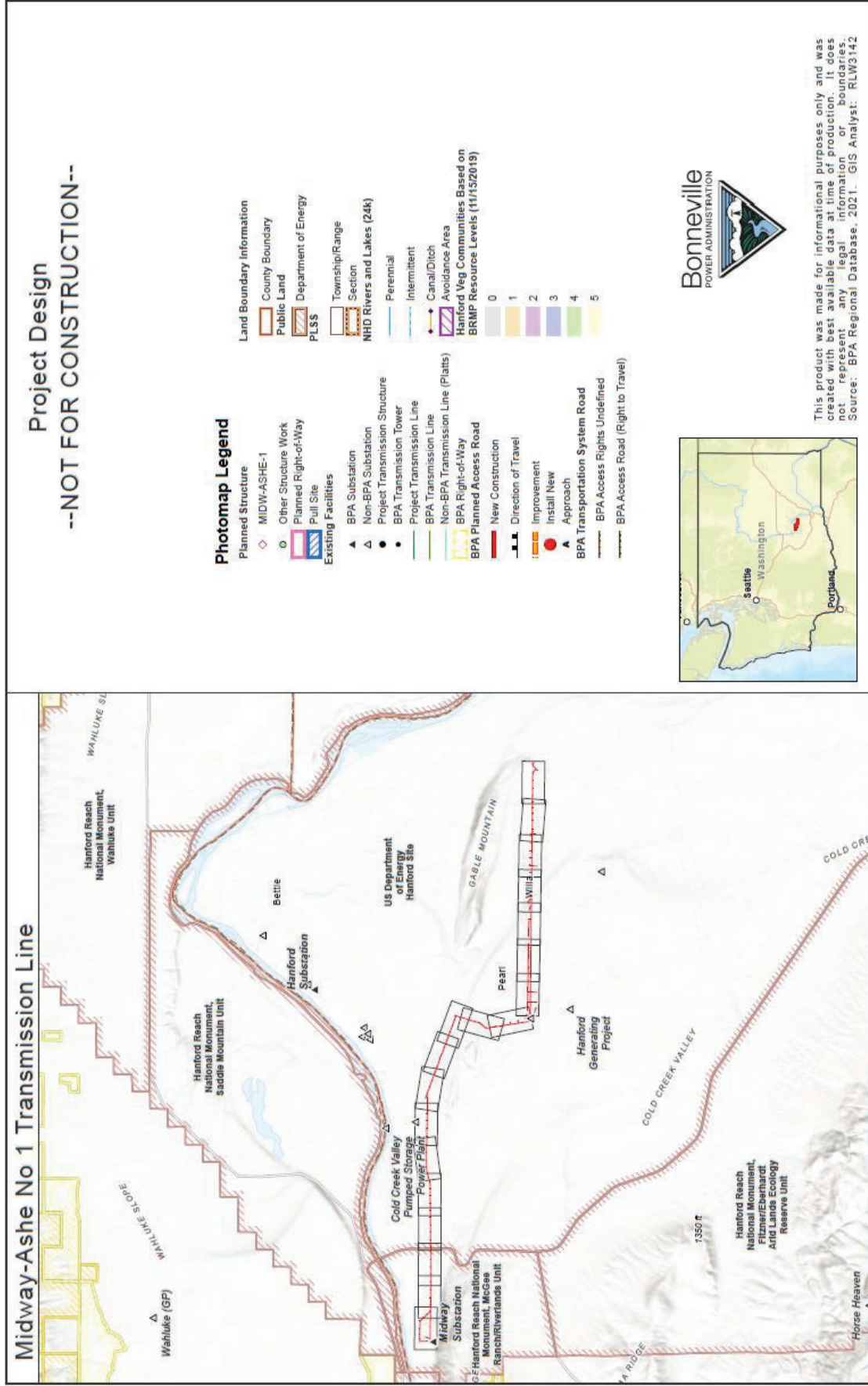


FIGURE 2 – BPA ROUTE MAP – SAME AS FINAL EA ALTERNATIVE ROUTE AR-4



**FIGURE 3 – STEEL LATTICE TOWER AND STEEL MONOPOLE DESIGN**

