



Horse Heaven Wind Farm

Exclusion Mitigation

Sean Greene, Environmental Planner





Veg-10: Shrubland and PHS Avoidance

Original	Proposed (As of 12/20/23)
N/A	No solar arrays would be sited on any rabbitbrush shrubland or WDFW-designated Priority Habitat types.



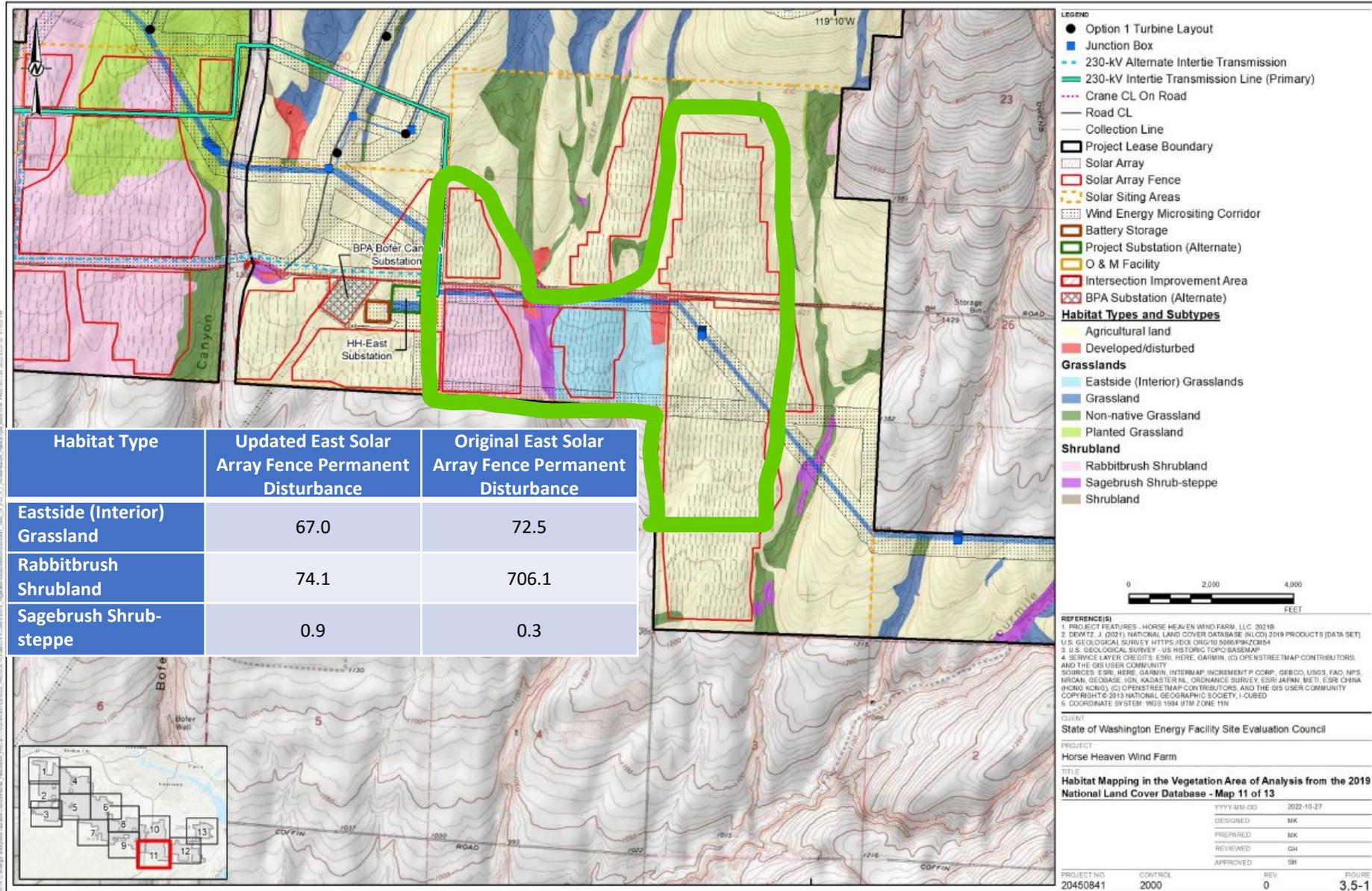


Figure 3.5-1: Habitat Types and Subtypes within the Project Lease Boundary page 11 of 13



Veg-10: Shrubland and PHS Avoidance – Council Question

- Should all solar arrays be:
 - A. Allowed on rabbitbrush shrubland and Priority Habitats with compensatory mitigation at the FEIS-recommended ratios (FEIS Version); or
 - B. Excluded from all rabbitbrush shrubland and Priority Habitats (Proposed Version)?



Hab-1: Movement Corridors

Original	Current (As of 12/20/23)
<p>The Applicant would locate Project components, including roads and powerlines, outside of movement corridors modeled in WWCWG (2013) as medium to very high linkage, to the extent feasible. The Applicant would provide rationale to EFSEC for siting components within movement corridors, and a Corridor Mitigation Plan would be required that describes:</p> <ul style="list-style-type: none">• Extent of direct and indirect habitat impact within the movement corridor• Proposed measures to be implemented to reduce potential impacts on movement corridors (e.g., habitat enhancements to promote continued use of corridors)• Proposed features (e.g., open-bottom culverts) to accommodate wildlife movement for linear Project components (e.g., roads, powerlines)• Proposed restoration in movement corridors following Project decommissioning• Performance standards to assess the effectiveness of mitigation measures and restoration• Methods to monitor and measure performance standards <p>The Corridor Mitigation Plan would be developed in consultation with the PTAG and reviewed and approved by EFSEC prior to implementation. Results of corridor monitoring would be reviewed annually with the TAC to evaluate the effectiveness and apply additional measures if necessary. Data would be provided to EFSEC with additional mitigation measures for review and approval prior to implementation.</p>	<p>The Applicant would locate secondary Project components, including such as roads and powerlines, outside of movement corridors modeled in WWCWG (2013) as medium high to very high linkage and primary Project components, specifically turbines, solar arrays, and BESS, outside of movement corridors modeled as medium to very high linkage., to the extent feasible. The Applicant would provide rationale to EFSEC for siting any secondary components to be sited within medium-linkage movement corridors, and a Corridor Mitigation Plan would be required that describes:</p> <ul style="list-style-type: none">• Extent of direct and indirect habitat impact within the movement corridor• Proposed measures to be implemented to reduce potential impacts on movement corridors (e.g., habitat enhancements to promote continued use of corridors)• Proposed features (e.g., open-bottom culverts) to accommodate wildlife movement for linear Project components (e.g., roads, powerlines)• Proposed restoration in movement corridors following Project decommissioning• Performance standards to assess the effectiveness of mitigation measures and restoration• Methods to monitor and measure performance standards <p>The Corridor Mitigation Plan would be developed in consultation with the PTAG and reviewed and approved by EFSEC prior to implementation. Results of corridor monitoring would be reviewed annually with the TAC to evaluate the effectiveness and apply additional measures if necessary. Data would be provided to EFSEC with additional mitigation measures for review and approval prior to implementation.</p>



Hab-1: Movement Corridors

Current (As of 12/20/23)	WDFW Staff Feedback
<p>The Applicant would locate secondary Project components, including such as roads and powerlines, outside of movement corridors modeled in WWCWG (2013) as medium high to very high linkage and primary Project components, specifically turbines, solar arrays, and BESS, outside of movement corridors modeled as medium to very high linkage., to the extent feasible. The Applicant would provide rationale to EFSEC for siting any secondary components to be sited within medium-linkage movement corridors, and a Corridor Mitigation Plan would be required that describes:</p> <ul style="list-style-type: none">• Extent of direct and indirect habitat impact within the movement corridor• Proposed measures to be implemented to reduce potential impacts on movement corridors (e.g., habitat enhancements to promote continued use of corridors)• Proposed features (e.g., open-bottom culverts) to accommodate wildlife movement for linear Project components (e.g., roads, powerlines)• Proposed restoration in movement corridors following Project decommissioning• Performance standards to assess the effectiveness of mitigation measures and restoration• Methods to monitor and measure performance standards <p>The Corridor Mitigation Plan would be developed in consultation with the PTAG and reviewed and approved by EFSEC prior to implementation. Results of corridor monitoring would be reviewed annually with the TAC to evaluate the effectiveness and apply additional measures if necessary. Data would be provided to EFSEC with additional mitigation measures for review and approval prior to implementation.</p>	<ul style="list-style-type: none">• EFSEC staff asked WDFW staff how “primary Project components” should be defined for the purposes of mitigation.<ul style="list-style-type: none">• <i>WDFW staff believe that “primary Project components” should be defined as turbines, solar arrays, and BESS, consistent with the current version of Hab-1.</i>• EFSEC staff asked WDFW staff whether primary Project components should be excluded from medium to very high linkage corridors or high to very high linkage corridors.<ul style="list-style-type: none">• <i>WDFW staff believe that primary Project components should not be sited in medium to very high linkage corridors, consistent with the current version of Hab-1.</i>• EFSEC staff asked WDFW staff whether secondary Project components should be excluded from high to very high linkage corridors or allowed in corridors with a Corridor Mitigation Plan.<ul style="list-style-type: none">• <i>WDFW staff believe that primary Project components should not be sited in high to very high linkage corridors, but could be sited in medium linkage corridors with a Corridor Mitigation Plan, consistent with the current version of Hab-1.</i>

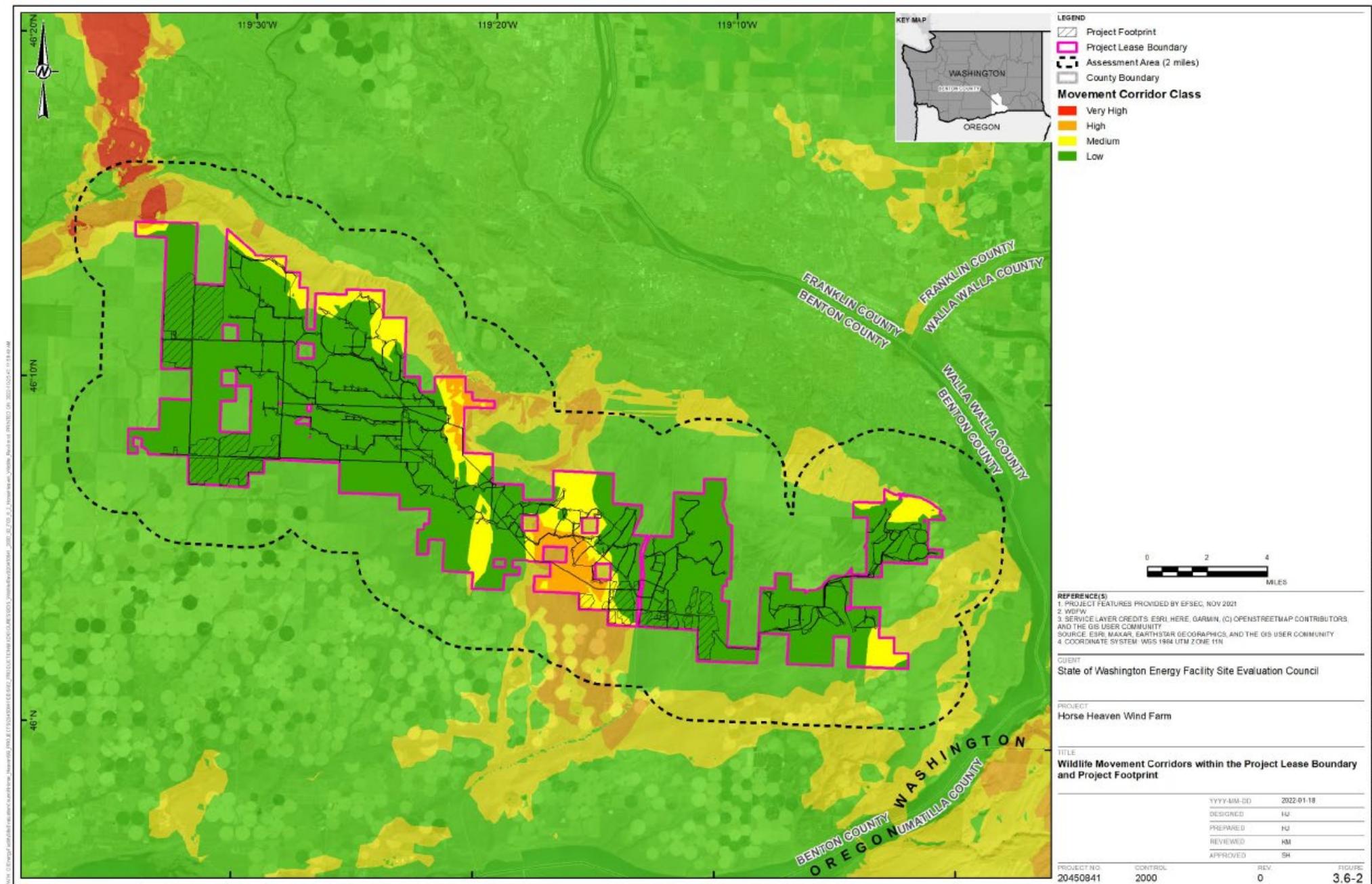
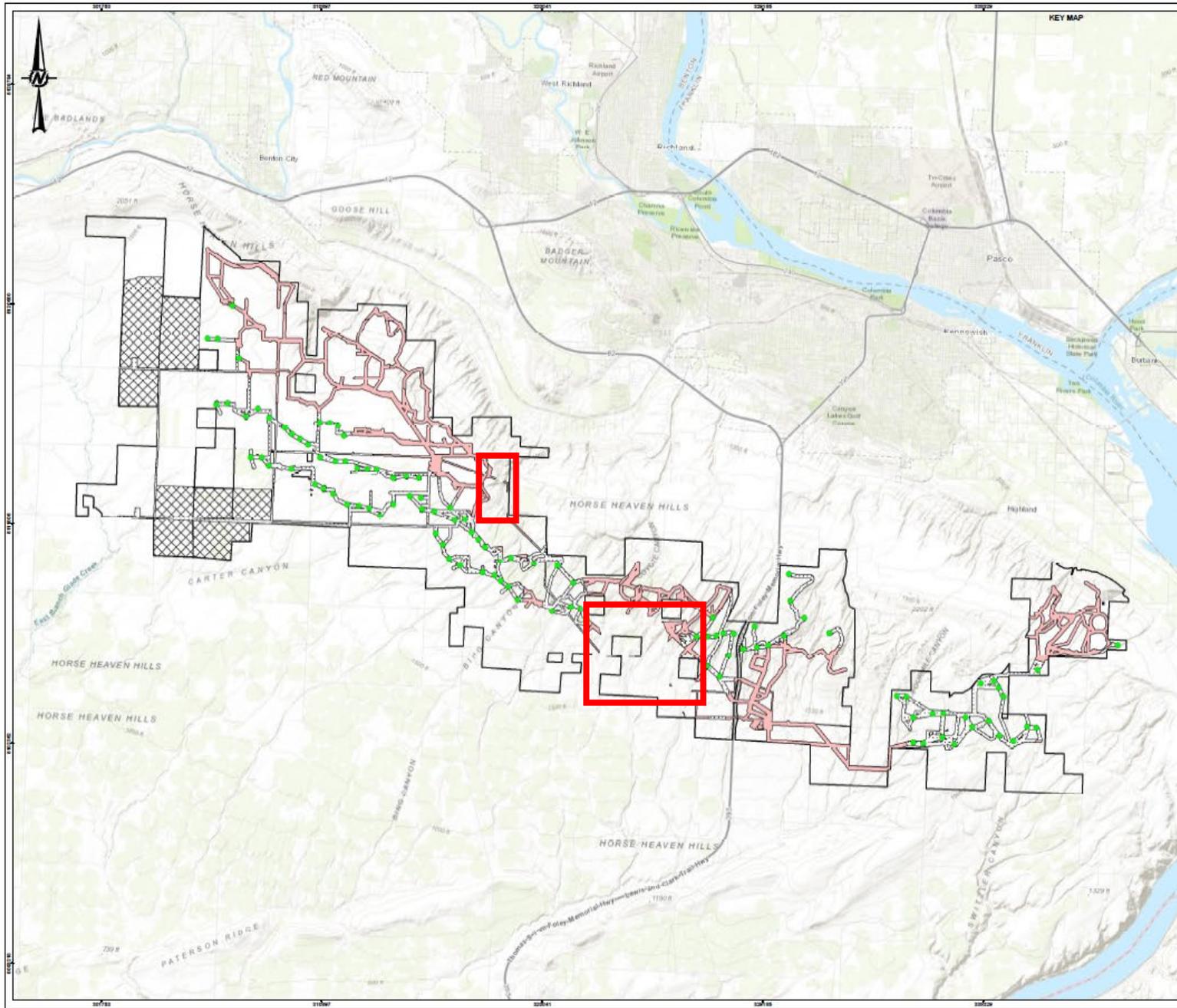


Figure 3.6-2: Wildlife Movement Corridors within the Project Lease Boundary and Project Footprint



LEGEND

- Project Lease Boundary
- Solar Siting Area
- Micrositing Corridor - No Turbines
- Micrositing Corridor - Turbines
- Proposed Turbine - Option 1

SCALE

0 2.5 5
1" = 2.5 mi MILES

NOTES

1. ALL INFRASTRUCTURE REMOVED:
 - WITHIN HIGH OR ABOVE WILDLIFE MOVEMENT CORRIDORS
2. PROJECT COMPONENTS (TURBINES, SOLAR ARRAYS, AND BESS) REMOVED:
 - WITHIN MEDIUM OR ABOVE WILDLIFE MOVEMENT CORRIDORS
 - WITHIN THE 200' FISH NEST BUFFER

REFERENCE(S)

1. COORDINATE SYSTEM: WGS 1984 UTM ZONE 11N
2. MOVEMENT CORRIDORS: WDFW 2021 ([HTTPS://WACONNECTED.ORG/WP_ACCENDUMANALYSES/](https://wacnected.org/wp_accendumanalyses/))

CLIENT
STATE OF WASHINGTON ENERGY FACILITY SITE EVALUATION COUNCIL

PROJECT
HORSE HEAVEN WIND FARM

TITLE
TURBINE LAYOUT OPTION 1
REMOVAL OF TURBINES - FOR COUNCIL REVIEW CONSIDERATION NO. 1

CONSULTANT	YYYY-MM-DD	2024-01-08
DESIGNED	MK	
PREPARED	SCH	
REVIEWED	JP	
APPROVED	AH/SI/AM	

PROJECT NO. 31405435.000 CONTROL 01 REV. 0 FIGURE X0.1-1

IF THESE OR ANY OTHER INFORMATION IS FOUND TO BE IN ERROR, THE USER SHALL BE RESPONSIBLE FOR THE SAME.



Hab-1: Movement Corridors – Council Questions

- Should primary Project components (turbines, solar arrays, and BESS) be:
 - A. Allowed within corridors when combined with a Corridor Mitigation Plan (FEIS Version);
 - B. Excluded from high to very high linkage corridors; or
 - C. Excluded from medium to very high linkage corridors (Current Version)?



Hab-1: Movement Corridors – Council Questions

- Should secondary Project components (i.e., roads, substations, transmission lines, etc.) be:
 - A. Allowed within corridors when combined with a Corridor Mitigation Plan (FEIS Version);
 - B. Excluded from high to very high linkage corridors (Current Version); or
 - C. Excluded from medium to very high linkage corridors?



Spec-5: Ferruginous Hawk

Original	Current (As of 12/20/23)
<p>The Applicant would avoid siting Project components within core habitat in ferruginous hawk territories, defined as the habitat within a 2-mile radius surrounding ferruginous hawk nests documented in PHS data and in Horse Heaven Wind Farm, LLC (2022). Siting of features within 2 miles of a known ferruginous hawk nest may be considered if the Applicant is able to demonstrate that the nest site and foraging habitat is no longer available to the species and that compensation habitat, as described below, would provide a net gain in ferruginous hawk habitat. Habitat considered no longer available for ferruginous hawk would include habitat that has been altered by landscape-scale development (cropland conversion, residential development, industrial development) rendering the territory non-viable. This could include habitats that have been altered such that no native or foraging habitat remains and no nesting structures exist. Project infrastructure would not be sited within 2 miles of a ferruginous hawk nest without prior approval by EFSEC based on the process described below.</p>	<p>The Applicant would avoid not site siting primary Project components, specifically turbines, solar arrays, and BESS, within core habitat in ferruginous hawk territories, defined as the habitat area within a 2-mile radius surrounding ferruginous hawk nests documented in PHS data and in Horse Heaven Wind Farm, LLC (2022). Siting of features secondary Project components, such as transmission lines and roads, within 2 miles of a known ferruginous hawk nest may be considered if the Applicant is able to demonstrate that the nest site and foraging habitat is no longer available to the species and that compensation habitat, as described below, would provide a net gain in ferruginous hawk habitat. Habitat considered no longer available for ferruginous hawk would include habitat that has been altered by landscape-scale development (cropland conversion, residential development, industrial development) rendering the territory non-viable. This could include habitats that have been altered such that no native or foraging habitat remains and no nesting structures exist. Project infrastructure would not be sited within 2 miles of a ferruginous hawk nest without prior approval by EFSEC based on the process described below.</p>



Spec-5: Ferruginous Hawk

Original	Current (As of 12/20/23)
<p>The extent of encroachment into 2-mile core habitat may vary depending on the type of infrastructure proposed (e.g., turbine, power line, road). If encroachment is considered by the Applicant, the Applicant would provide the PTAG and EFSEC with:</p> <ol style="list-style-type: none">1. A set of habitat parameters, developed in consultation with the PTAG for approval by EFSEC, to document whether habitat in a core range is consider non-viable. The results of habitat surveys would be reviewed by the PTAG and approved by EFSEC.2. A description of the current nesting habitat available and a description of documented use of the core habitat by ferruginous hawk available through historic background information or field-based surveys.3. A description of the type and location of infrastructure proposed within the core habitat.4. The proximity of infrastructure to any known nest site or suitable foraging habitat.	<p>The extent of encroachment into 2-mile core habitat may vary depending on the type of infrastructure proposed (e.g., turbine, power line, road). If encroachment is considered by the Applicant, the Applicant would provide the PTAG and EFSEC with:</p> <ol style="list-style-type: none">1. A set of habitat parameters, developed in consultation with the PTAG for approval by EFSEC, to document whether habitat in a core range is consider non-viable. The results of habitat surveys would be reviewed by the PTAG and approved by EFSEC.2. A description of the current nesting habitat available and a description of documented use of the core habitat by ferruginous hawk available through historic background information or field-based surveys.3. A description of the type and location of infrastructure proposed within the core habitat.4. The proximity of infrastructure to any known nest site or suitable foraging habitat.



Spec-5: Ferruginous Hawk

Original	Current (As of 12/20/23)
<p>In the event that a Project component is proposed for siting within the 2-mile buffer, the Applicant would, in consultation with the PTAG for approval by EFSEC, develop a Project-specific ferruginous hawk mitigation and management plan:</p> <ol style="list-style-type: none">1. A description of efforts to site Project infrastructure to avoid core habitat, identified as the area within 2 miles of nests documented in PHS data and Horse Heaven Wind Farm, LLC (2022):<ol style="list-style-type: none">a) If Project components are sited within 2 miles of a ferruginous hawk nest, the infrastructure would be reviewed by the PTAG and approved by EFSEC.b) Additional mitigation measures would be developed to reduce potential ferruginous hawk strikes with turbines, including curtailing turbine operation within the 2-mile core habitat of any actively occupied nests during the breeding and rearing periods when ferruginous hawks are present in Benton County.c) The plan would explain how and where the Applicant would create offsetting habitat for direct and indirect habitat loss within the 2-mile core habitat of ferruginous hawk nests documented in PHS data and in Horse Heaven Wind, LLC (2022).	<p>In the event that a secondary Project component is proposed for siting within the 2-mile buffer, the Applicant would, in consultation with the PTAG for approval by EFSEC, develop a Project-specific ferruginous hawk mitigation and management plan:</p> <ol style="list-style-type: none">1. A description of efforts to site Project infrastructure to avoid core habitat, identified as the area within 2 miles of nests documented in PHS data and Horse Heaven Wind Farm, LLC (2022):<ol style="list-style-type: none">a) If secondary Project components are sited within 2 miles of a ferruginous hawk nest, the infrastructure would be reviewed by the PTAG and approved by EFSEC.b) Additional mitigation measures would be developed to reduce potential ferruginous hawk strikes with turbines, including curtailing turbine operation within the 2-mile core habitat of any actively occupied nests during the breeding and rearing periods when ferruginous hawks are present in Benton County.b) The plan would explain how and where the Applicant would create offsetting habitat for direct and indirect habitat loss within the 2-mile core habitat of ferruginous hawk nests documented in PHS data and in Horse Heaven Wind, LLC (2022).



Spec-5: Ferruginous Hawk

Original	Current (As of 12/20/23)
<p>2. A description of when construction activities would be undertaken to avoid sensitive timing periods for ferruginous hawk.</p> <p>3. A description of pre- and post-monitoring programs that would be conducted to establish:</p> <ul style="list-style-type: none">a) Habitat use within the Lease Boundary.b) Mapping of ground squirrel colonies and other prey items.c) Identification of potential flyways between nest sites and foraging habitat and monitoring of potential flyways to inform final turbine siting and orientation.d) Ongoing monitoring of nest use and territory success. <p>Results of ferruginous hawk monitoring programs and adaptive management would continue through Project operation and decommissioning with review by the TAC and approval by EFSEC.</p>	<p>2. A description of when construction activities would be undertaken to avoid sensitive timing periods for ferruginous hawk.</p> <p>3. A description of pre- and post-monitoring programs that would be conducted to establish:</p> <ul style="list-style-type: none">a) Habitat use within the Lease Boundary.b) Mapping of ground squirrel colonies and other prey items.c) Identification of potential flyways between nest sites and foraging habitat and monitoring of potential flyways to inform final turbine siting and orientation.d) Ongoing monitoring of nest use and territory success. <p>Results of ferruginous hawk monitoring programs and adaptive management would continue through Project operation and decommissioning with review by the TAC and approval by EFSEC.</p>



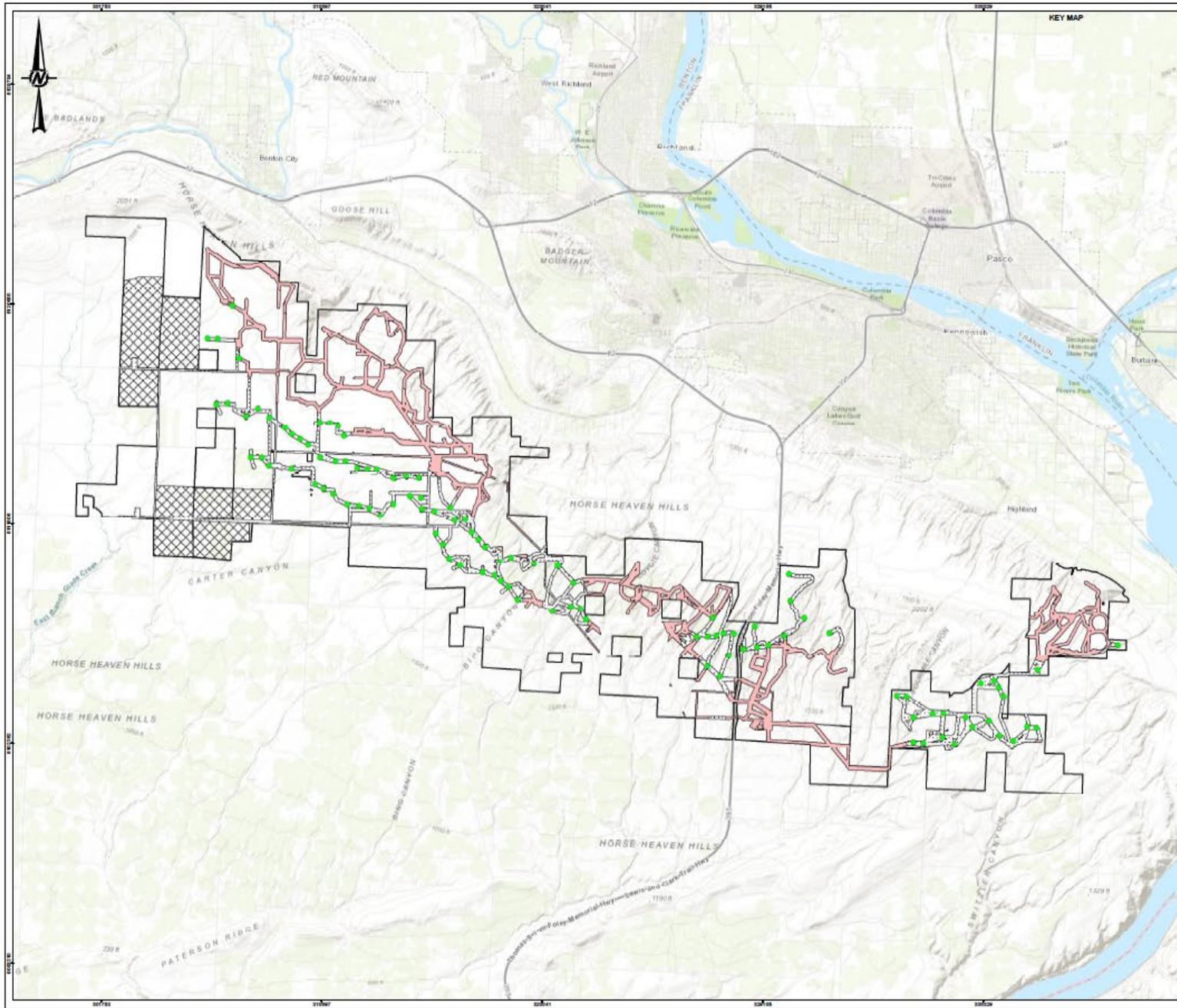
Spec-5: Ferruginous Hawk

Current (As of 12/20/23)

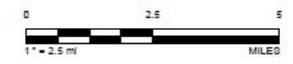
The Applicant would ~~avoid not site siting~~ primary Project components, ~~specifically turbines, solar arrays, and BESS~~, within core habitat in ferruginous hawk territories, defined as the ~~habitat area~~ within a 2-mile radius surrounding ferruginous hawk nests documented in PHS data and in Horse Heaven Wind Farm, LLC (2022). Siting of ~~features-secondary Project components, such as transmission lines and roads~~, within 2 miles of a known ferruginous hawk nest may be considered if the Applicant is able to demonstrate that the nest site and foraging habitat is no longer available to the species and that compensation habitat, as described below, would provide a net gain in ferruginous hawk habitat. ...

WDFW Staff Feedback

- EFSEC staff requested WDFW staff feedback whether there were any Project components that would not impact ferruginous hawks if sited within 2 miles of a documented nest.
 - *WDFW staff believe that any Project components sited within a 2-mile radius of a documented ferruginous hawk nesting territory would result in adverse impacts to the species.*



- LEGEND**
- Project Lease Boundary
 - ▨ Solar Siting Area
 - ▭ Micrositing Corridor - No Turbines
 - ▭ Micrositing Corridor - Turbines
 - Proposed Turbine - Option 1



- NOTE(S)**
1. ALL INFRASTRUCTURE REMOVED:
 - WITHIN HIGH OR ABOVE WILDLIFE MOVEMENT CORRIDORS
 2. PROJECT COMPONENTS (TURBINES, SOLAR ARRAYS, AND BESS) REMOVED:
 - WITHIN MEDIUM OR ABOVE WILDLIFE MOVEMENT CORRIDORS
 - WITHIN THE 200' FISH NEST BUFFER

- REFERENCE(S)**
1. COORDINATE SYSTEM: WGS 1984 UTM ZONE 11N
 2. MOVEMENT CORRIDORS: WDFW 2021 ([HTTPS://WACONNECTED.ORG/CP_ACCENDUMANALYSES/](https://wacconnected.org/wp_accendumanalyses/))

CLIENT
STATE OF WASHINGTON ENERGY FACILITY SITE EVALUATION COUNCIL

PROJECT
HORSE HEAVEN WIND FARM

TITLE
TURBINE LAYOUT OPTION 1
REMOVAL OF TURBINES - FOR COUNCIL REVIEW CONSIDERATION NO. 1

CONSULTANT	YYYY-MM-DD	2024-01-08
DESIGNED	MK	
PREPARED	SCH	
REVIEWED	JP	
APPROVED	AH/SI/AM	

PROJECT NO.	CONTROL	REV.	FIGURE
31405435.000	01	0	X0.1-1

IF THESE OR ANY OTHER INFORMATION CHANGES ARE REQUIRED, THE SHEET MUST BE REVISED AND REISSUED.



Spec-5: Ferruginous Hawk – Council Questions

- Should primary Project components (turbines, solar arrays, and BESS) be:
 - A. Allowed within 2 miles of a documented ferruginous hawk only when the Applicant can demonstrate that the nest is inactive, no viable foraging habitat is present, and produces a mitigation and management plan (FEIS Version);
 - B. Excluded from all areas within 0.5 miles (existing WDFW seasonal buffer) of a documented ferruginous hawk nest, but allowed from 0.5-2 miles of a documented ferruginous hawk only when the Applicant can demonstrate that the nest is inactive, no viable foraging habitat is present, and produces a mitigation and management plan; or
 - C. Excluded from all areas within 2 miles of a documented ferruginous hawk nest (Current Version)?



Spec-5: Ferruginous Hawk – Council Questions

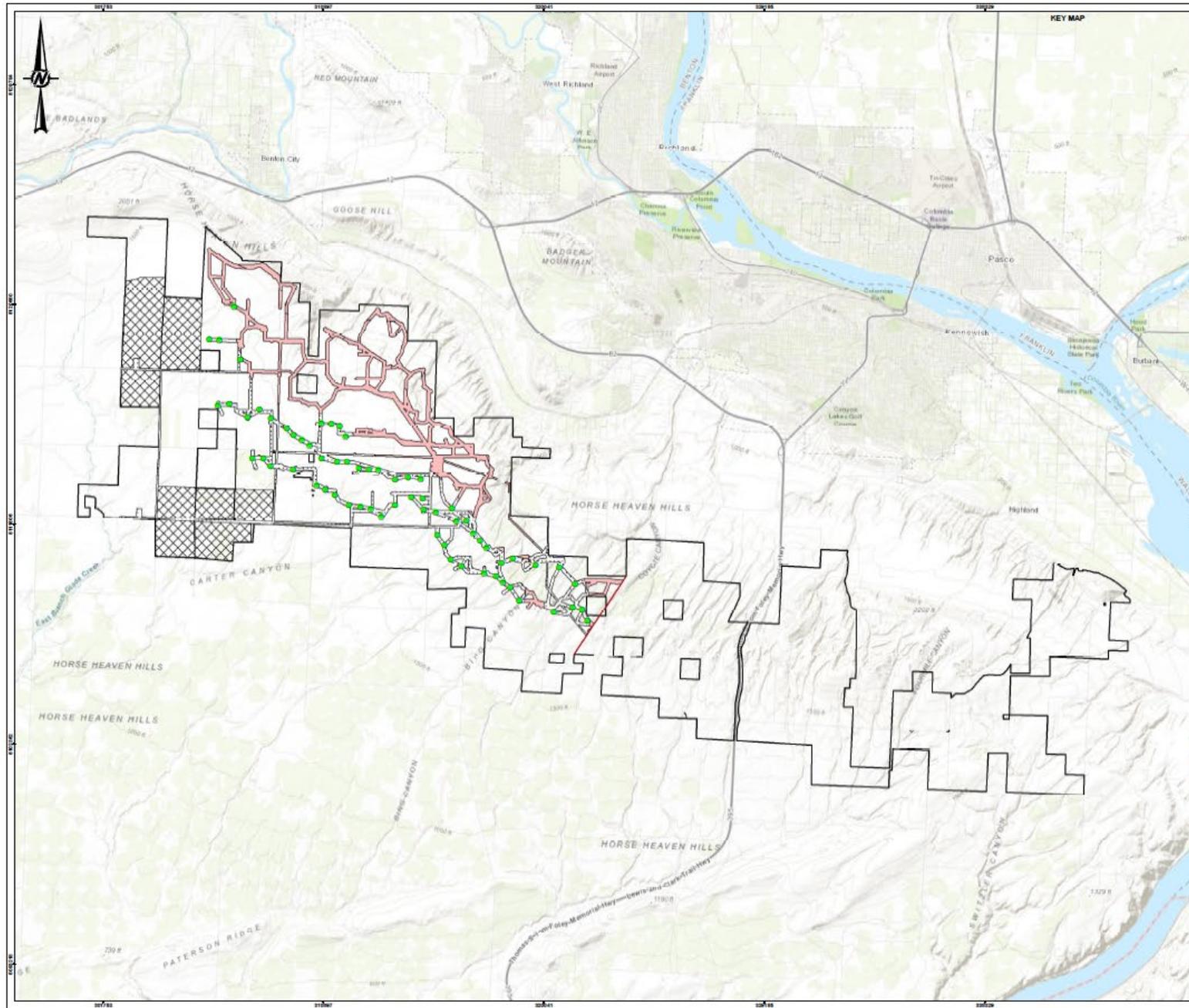
- Should secondary Project components (i.e., roads, substations, transmission lines, etc.) be:
 - A. Allowed within 2 miles of a documented ferruginous hawk only when the Applicant can demonstrate that the nest is inactive, no viable foraging habitat is present, and produces a mitigation and management plan (FEIS/Current Version);
 - B. Excluded from all areas within 0.5 miles (existing WDFW seasonal buffer) of a documented ferruginous hawk nest, but allowed from 0.5-2 miles of a documented ferruginous hawk only when the Applicant can demonstrate that the nest is inactive, no viable foraging habitat is present, and produces a mitigation and management plan; or
 - C. Excluded from all areas within 2 miles of a documented ferruginous hawk nest?



CR-3: TCP Minimization and Avoidance

Original	Proposed (As of 12/20/23)
N/A	To reduce Project impacts to identified TCPs, the Applicant would not locate any Project components east of the boundaries of Straub Canyon, as defined by EFSEC.





LEGEND

- Project Lease Boundary
- Solar Siting Area
- Micrositing Corridor - No Turbines
- Micrositing Corridor - Turbines
- Proposed Turbine - Option 1
- "East of Straub Canyon" Demarcation

0 2.5 5
1" = 2.5 mi MILES

NOTE(S)

1. ALL INFRASTRUCTURE REMOVED:
 - WITHIN HIGH OR ABOVE WILDLIFE MOVEMENT CORRIDORS
 - EAST OF STRAUB CANYON AS DEMARCATED ON THE FIGURE
2. PROJECT COMPONENTS (TURBINES, SOLAR ARRAYS, AND BESS) REMOVED:
 - WITHIN MEDIUM OR ABOVE WILDLIFE MOVEMENT CORRIDORS
 - WITHIN THE 2MI FEH NEST BUFFER

REFERENCE(S)

1. COORDINATE SYSTEM: WGS 1984 UTM ZONE 11N
2. MOVEMENT CORRIDORS: WDFW 2021 ([HTTPS://WACONNECTED.ORG/CP_ADDENDUMANALYSES/](https://wacnected.org/CP_ADDENDUMANALYSES/))

CLIENT
STATE OF WASHINGTON ENERGY FACILITY SITE EVALUATION COUNCIL

PROJECT
HORSE HEAVEN WIND FARM

TITLE
TURBINE LAYOUT OPTION 1
REMOVAL OF TURBINES - FOR COUNCIL REVIEW CONSIDERATION NO. 3

CONSULTANT	YYYYMMDD	2024-01-08
DESIGNED	MK	
PREPARED	SCH	
REVIEWED	JP	
APPROVED	AHSGIAM	

PROJECT NO.	CONTROL	REV.	FIGURE
31405435.000	01	0	X0.3-1



CR-3: TCP Minimization and Avoidance – Council Question

- Should all Project components be:
 - A. Allowed east of Straub Canyon (FEIS Version); or
 - B. Excluded from all areas east of Straub Canyon (Proposed Version)?



Questions and Discussion

