BergerABAM

MITIGATION BANK USE PLAN

Enterprise Transmission Line

Prepared for
Clark Public Utilities
Vancouver, Washington

A14.0046.02

February 2018

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Prepared for

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1 INTRODUCTION

Clark Public Utilities (CPU) is proposing to install an overhead transmission line that would traverse right-of-way and properties in unincorporated Clark County (County) and the cities of Ridgefield and La Center (Cities).

CPU is required to mitigate impacts to wetlands and waterbodies and their associated buffers that will result from the installation of the proposed transmission line. In preparation for the proposed project, CPU contracted with BergerABAM to investigate the existence of jurisdictional wetlands and waterbodies as defined and regulated by the U.S. Army Corps of Engineers (USACE), the Washington State Department of Ecology (Ecology), and/or the County/Cities. BergerABAM delineated and assessed a wetlands and waterbodies along the route of the proposed transmission line (study area).

The approximately 6-mile-linear study area consists of portions of public right-of-way and private residential and commercial properties. The study area is located in Sections 4, 9, 15, 22, and 23 of Township 4 North, Range 1 East, of the Willamette Meridian. (Figure 1; all figures are included as Appendix A.)

Dustin Day, BergerABAM senior scientist and Professional Wetland Scientist (PWS), and Allison Kinney, BergerABAM environmental scientist, used the routine on-site wetland delineation method described below for the delineation and assessment. They identified six palustrine emergent wetlands within the study area. In addition, the scientists identified two perennial, fish-bearing streams and three intermittent, non-fish-bearing streams within the boundaries of the proposed transmission line corridor.

To the greatest extent possible, the project has been designed to minimize or avoid impacts to jurisdictional wetlands as defined and regulated by the USACE, Ecology, County, and Cities. This wetland bank use plan documents the measures that have been implemented to avoid and minimize impacts to wetlands and the activities that are proposed as mitigation for impacts that are unavoidable.

2 EXISTING CONDITIONS

The northern terminus of the proposed route of the transmission line is located near the intersection of NW 26th Avenue and 324th Street in Clark County. From there, the transmission line would run parallel to NW 324th Street to the north and then divert south along the eastern side of Paradise Park Road. Continuing to the south, where Paradise Park Road curves east and becomes 299th Street, the transmission line would parallel the north side of 299th Street, until its intersection with NW 11th Avenue. The transmission line would then continue to the south, paralleling NW 11th Avenue (which becomes N 65th Avenue) to the east, before again diverting east along the south side of

N 10th Street, which becomes NW 279th. At the intersection of 279th Avenue and NE 10th Avenue, the transmission line would divert south along the western side of NE 10th Avenue, before reaching the southern terminus of the route, near the intersection of NE 10th Avenue and 264th Street (Figure 1).

In addition, the project will require undergrounding of existing electrical distribution lines from the location of the future Enterprise substation located in northern Clark County to the Shell Station in La Center. The proposed transmission line will remain overhead throughout the entire alignment.

Topographically, the study area is generally flat, except for steep slopes adjacent to the southern portion of Paradise Park Road associated with the stream crossing (Figure 2). Vegetation varies greatly, and largely results from the land use in this rural area. Generally, vegetation is characterized into one of three of the following categories: facultative roadside and pasture grasses, mature coniferous/deciduous forest species, and emergent wetland species. The following species were identified within the project area.

- **Herbaceous species:** colonial bentgrass (*Agrostis capillaris*), timothy (*Phleum pratense*), English plantain (*Plantago lanceolatea*), tall fescue (*Schedonorus arundinaceus*), reed canarygrass (*Phalaris arundinacea*), oxeye daisy (*Leucanthemum vulgare*), purple leaved willowherb (*Epilobium ciliatum*), Himalayan blackberry (*Rubus armeniacus*), cattail (*Typha latifolia*), sheep sorrel (*Rumex aetosella*), Siberian miner's lettuce (*Claytonia sibirica*), English ryegrass (*Lolium perenne*), toad rush (*Juncus bufonius*), horsetail (*Equisetum arvense*), bird's-foot trefoil (*Lotus corniculatus*), stinging nettle (*Urtica dioica*), trailing blackberry (*Rubus ursinus*), sword fern (*Polystichum munitum*), Canada thistle (*Cirsium arvense*), and velvet grass (*Holcus lanatus*).
- **Shrubs:** baldhip rose (*Rosa gymnocarpa*), spiraea (*Spiraea douglasii*), Nootka rose (*Rosa nutkana*), snowberry (*Symphoricarpos albus*), elderberry (*Sambucus racemosa*), bittersweet nightshade (*Solanum dulcamara*), and serviceberry (*Amelanchier alnifolia*)
- **Trees:** cascara (*Rhamnus purshiana*), choke cherry (*Prunus virginiana*), red-osier dogwood (*Cornus sericea*), Douglas fir (*Pseudotsuga menziesii*), bigleaf maple (*Acer macrophyllum*), vine maple (*Acer circinatum*), hazelnut (*Corylus cornuta*), western white pine (*Pinus monticola)*, and Oregon ash (*Fraxinus latifolia*)

Most of the study area is within the McCormick Creek sub-watershed; however, north of NW La Center Road, a portion of the study area is within the East Fork Lewis sub-watershed, a section at the southern terminus is within the Gee Creek (upper) sub-watershed, and a small section of NW 11th Avenue is within the Allen Canyon Creek sub-watershed (Figure 3) (Clark County 2018).

3 WETLANDS

While numerous wetlands and stream corridors are mapped throughout the general vicinity of the study area, few are mapped within or near the locations proposed for the

utility poles that would support the transmission line. The U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) online mapper indicates there are four locations where wetlands are mapped within, or near, the proposed location of a utility pole (USFWS 2018). One wetland is mapped in the central portion of NW299th Street, two are mapped on NW 279th Street, and one is mapped in the northern portion of 10th Avenue (Figure 4). These mapped wetlands are identified on NWI as

- **PFO1A** – Palustrine (P), Forested (FO), Broad-Leaved Deciduous (1), Temporary Flooded (A)
- **R4SBC** – Riverine (R), Intermittent (4), Streambed (SB), Seasonally Flooded (C)
- **PEM1C** – Palustrine (P), Emergent (EM), Persistent (1), Seasonally Flooded (C)

The BergerABAM scientists conducted a wetland delineation and assessment that identified a total of six palustrine emergent wetlands within the project boundaries (BergerABAM 2017). The findings of the wetland delineation are discussed below.

The wetlands were named sequentially (Wetlands A through F) as they were identified, and Figures 4 and 5 show their locations. Wetlands A, B, and C are located within the jurisdiction of Clark County, and Wetlands D, E, and F are located within the jurisdiction of Ridgefield; there are no wetlands within the utility line corridor in the city of La Center.

Guidance for BergerABAM's determination of the wetland boundaries came from the 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region Version 2* (the regional supplement) (USACE 2010). The scientists classified the delineated wetlands according to the USFWS classification system (Cowardin et al. 1979) and the hydrogeomorphic (HGM) classification system (Adamus 2001), and used Ecology's *Washington State Wetland Rating System for Western Washington Revised* (Publication 04-06-025) to rate the wetlands. The scientists identified six palustrine emergent wetlands within the boundaries of the study area and sections 3.1 through 3.6 below describe each wetland.

3.1 Wetland A

Wetland A is a small (approximately 0.25 acre) palustrine emergent/forested wetland located north of 299th Street, west of the intersection of NW 299th Street and NW 18th Place. Vegetation in Wetland A consists of reed canarygrass, baldhip rose, Himalayan blackberry, and cattail, among other species. Precipitation, runoff, a seasonally high water table, and over-bank flooding by an associated stream influence this wetland hydrologically. Soils to a depth of 16 inches consisted of a very dark gray (10YR 3/1) loam with dark yellowish brown (10YR 3/4) mottling. This soil profile meets the criteria for the hydric soil indicator redox dark surface (F6). Indicators of wetland hydrology included saturation within 12 inches of the surface (A3) and oxidized rhizospheres along living root channels (C3). Wetland A meets the riverine HGM classification, and

received a Category III classification with a total of 17 points using the updated wetland rating system (Hruby 2014).

3.2 Wetland B

Wetland B is a palustrine emergent wetland located north of NW 299th Street, between NW 18th Place and NW 11th Avenue, and is approximately 4.9 acres in size. Hydrology in this HGM-classified depressional wetland is supported by runoff, precipitation, and a seasonally high water table. Vegetation consists of purple leaved willowherb, sheep sorrel, Siberian miner's lettuce, English ryegrass, and toad rush, among others. Indicators of wetland hydrology include oxidized rhizospheres along living root channels (C3) and inundation visible on aerial imagery (B7). Soils consist of a very dark greyish brown (10YR 3/2) layer 4 inches deep, followed by a 6-inch very dark grayish brown (10YR 3/2) layer with dark yellowish brown (10YR 3/6) concentrations within the matrix and along pore linings. Finally, to a depth of 16 inches, is a very dark grayish brown (10YR 3/2) layer with dark brown (10YR 3/3) mottles. This soil profile meets the criteria for the redox dark surface (F6) hydric soil indicator. Wetland B received 15 points for a Category IV rating.

3.3 Wetland C

Wetland C is an approximately 1.1-acre palustrine emergent wetland located southeast of the intersection of NW 299th Street and NW 11th Avenue. Vegetation within Wetland C consists of reed canarygrass, horsetail, bird's-foot trefoil, and velvet grass, among other species. Oxidized rhizospheres along living root channels were the primary hydric soil indicator for this wetland. Soils in Wetland C consist of a very dark grayish brown (10YR 3/2) loam with dark yellowish brown (10YR 3/6) mottling, to a depth of 16 inches. This soil profile meets the criteria for the redox dark surface (F6) hydric soil indicator. Rated as a slope HGM classification, Wetland C received a Category III rating with a score of 16 points.

3.4 Wetland D

Wetland D is located directly south of the intersection of NW 279th Street and NE 2nd Avenue. Vegetation in this approximately 2.4-acre wetland consists of colonial bentgrass, baldhip rose, purple-leaved willowherb, spiraea, and Himalayan blackberry. Hydrology is supported by precipitation, runoff, and a seasonally high water table, and indicators of hydrology in Wetland D include oxidized rhizospheres along living root channels (C3), saturation (A3), high water table (A2), geomorphic position (D2), and inundation visible on aerial imagery (B7). Soils in Wetland D consist of a very dark grayish brown (10YR 3/2) layer 9 inches thick, above a 7-inch layer of dark gray (10YR 4/1) soil with dark yellowish brown mottles. This soil profile meets the criteria for the depleted below dark surface (A11) hydric soil indicator. Rated as a slope HGM classification, Wetland D received 13 points for a Category IV rating.

3.5 Wetland E

Wetland E is located between Wetland D and the intersection of NW 279th and NE 10th Avenue. Wetland E is approximately 1.13 acres, and its vegetation consists primarily of Nootka rose and reed canarygrass. Hydrology is supported by precipitation, runoff, and a seasonally high water table. Indicators of wetland hydrology include a high water table (A2), saturation (A3), oxidized rhizospheres along living root channels (C3), stunted and stressed plants (D1), and geomorphic position (D2). Soils to a depth of 16 inches consist of a very dark gray (10YR 4/1) matrix with dark yellowish brown (10YR 4/6) mottling. This profile meets the criteria for the depleted matrix (F3) hydric soil indicator. Wetland E was rated as a depressional HGM classification wetland and received 17 points for a Category III rating.

3.6 Wetland F

Wetland F is situated west of NE 10th Avenue, south of the intersection with 279th Street. The vegetation in this approximately 0.87-acre wetland consists of reed canarygrass, Nootka rose, tall fescue, and Oregon ash. Indicators of wetland hydrology include surface water (A1), a high water table (A2), and saturation (A3) while precipitation, a seasonally high water table, and runoff from surrounding uplands support hydrology. Soils consist of a dark gray (10YR 4/1) matrix with dark brown (7.5YR 3/4) mottles, to a depth of 16 inches. This soil profile meets the criteria for the depleted matrix (F3) hydric soil indicator. Rated using the depressional HGM classification, Wetland F received a Category III rating with a score of 18 points.

Table 1 is a summary of the identified wetlands.

Table 1. Summary of Identified Wetlands

Wetland	Wetland Classification		Wetland Rating[d]	Approximate Wetland Area (Acres)	Local Jurisdiction
	Cowardin[a]	HGM[b]			
Wetland A	PEM	Riverine	III	0.25	Clark County
Wetland B	PEM	Depressional	IV	4.93	Clark County
Wetland C	PEM	Slope	III	1.10	Clark County
Wetland D	PEM	Slope	IV	2.40	Ridgefield
Wetland E	PEM	Depressional	III	1.13	Ridgefield
Wetland F	PEM	Depressional	III	0.87	Ridgefield

Notes:
a Cowardin et al. (1979) or NWI class based on vegetation: PEM = Palustrine Emergent
b HGM classification according to Hruby (2014).
c Habitat score according to Hruby (2014).
d Wetland rating according to Hruby (2014).

3.7 Wetland Buffers

The wetlands sections of each of the jurisdictions' critical areas ordinances establish protective buffers associated with wetlands and require that proponents obtain certain permits or approvals for projects containing wetlands and/or their buffers. All of the ordinances require the use of Ecology's revised wetland rating system to determine a wetland's category and its score for habitat, water quality, and hydrologic functions.[1]

Per guidance found in Ecology's updated wetland rating system, Wetland A was rated as a riverine HGM classification, wetlands C and D were rated as slope HGM classification, and wetlands C, E, and F were all rated as depressional HGM classification. Wetlands A, C, E, and F all received Category III ratings, scoring within the range of 16 to 19 points. Wetlands B and D received Category IV ratings with total scores within the range of 9 to 15 points.

The following sections discuss each jurisdiction's regulations for wetlands. Figure 5 shows the wetland buffers required for each wetland in the respective jurisdictions.

3.7.1 La Center

The wetland delineation and assessment determined that there are no utility pole locations within wetlands or their buffers in the jurisdiction of the city of La Center, and that city's regulatory requirements regarding wetlands are not discussed further.

3.7.2 Clark County

The delineated wetlands were rated using Ecology's revised wetland rating system (Publication 04-06-029). The delineation and assessment identified three wetlands within the County's jurisdiction, Wetlands A, B, and C. One power pole is proposed for

[1] Tom Hruby, Washington State Wetland Rating System for Western Washington—Revised, 2014.

placement in each of these three wetlands. They are subject to Clark County Code (CCC) 40.450 Wetland Protection. CCC 40.450.030.E establishes buffer widths for wetlands by comparing the wetland category and the intensity of land uses proposed per CCC Tables 40.450.030-2 through -5. As shown in Table 40.450.030-5, underground and overhead utility lines and power poles (without footings) are considered low-intensity land uses. Table 40.450.030-2 establishes base buffers required to protect water quality functions of wetlands based on category and proposed land use intensity; Category III wetlands in low-intensity land uses are provided a 40-foot base buffer. Furthermore, Table 40.450.030-4 establishes buffers required to protect habitat functions in Category III wetlands based on land use intensity and the habitat score determined for each individual wetland.

Wetlands A and C both received a habitat function score of six and would require a 65-foot buffer to protect habitat functions. The code states that the required water quality functions buffers are adequate to protect habitat features for Category IV wetlands, and thus Wetland B, a Category IV wetland, would require a 25-foot buffer. Additionally, CCC 40.450.030.E.4 states that areas that are functionally isolated from a wetland (including by pre-existing roads, structures, or vertical separation) and do not protect the wetland from adverse impacts are excluded from requiring the buffers otherwise required by Chapter 40.450. Table 2 below summarizes the classifications and buffer widths for the wetlands identified within the County's jurisdiction.

Table 2. Summary of Wetland Classifications and Buffer Widths – Clark County

	Wetland Classification			Low Land Use Intensity	
Wetland	HGM	Habitat Score	Wetland Rating	Water Quality Function Buffer (ft)	Habitat Functions Buffer (ft)
Wetland A	Riverine	6	III	40	65
Wetland B	Depressional	4	IV	25	25
Wetland C	Slope	6	III	40	65

3.7.3 Ridgefield

Section 18.280.150.C.2 of the Ridgefield Municipal Code (RMC) states that standard buffer widths are based on wetland category, wetland characteristics, and land use intensity. Table 18.280.150-1 of the Ridgefield code designates land use intensities as follows: High – Residential, Commercial or Industrial; Moderate – Park or Open Space Greenway; Low – Open Space Greenway or Open Space Natural. The Ridgefield code does not specifically designate the land use intensity of transmission lines, but it does reference Ecology's *Freshwater Wetlands in Washington State, Volume 2: Managing and Protecting Wetlands*, which states that utility corridors without maintenance roads and little or no vegetative management are low-intensity land uses. This report, therefore, assumes that the project would be classified as a low-intensity land use. Further guidance from the City of Ridgefield during the permitting process may change this

classification. Table 18.280.150-5 designates buffer widths for Category III wetlands based on the level of habitat function (which is based on the final habitat score in the rating system) and land use intensity. Table 18.280.150-6 designates buffer widths for all Category IV wetlands regardless of their level of habitat function.

According to the Ridgefield code, because Wetland D is a Category IV wetland, it would require a 25-foot buffer, regardless of land use intensity. Both wetlands E and F score 3 points for habitat function, which is considered a low level of function (RMC Table 18.280.150-2). Category III wetlands with a low level of function for habitat, and within areas of low-intensity land use, are afforded a 40-foot buffer. Figure 5 shows the regulated buffer areas for each wetland.

Table 3 below summarizes the classifications and buffer widths required for the wetlands identified within Ridgefield's jurisdiction.

Table 3. Summary of Wetland Classifications and Buffer Widths – Ridgefield

Wetland	Wetland Classification			Habitat Functions Buffer (ft)
	HGM	Level of Habitat Function (Score)	Wetland Rating	
Wetland D	Depressional	Moderate (5)	IV	25
Wetland E	Depressional	Low (3)	III	40
Wetland F	Depressional	Low (3)	III	40

4 STREAMS

According to MapsOnline and the Washington State Department of Natural Resources (DNR) Forest Practices Application Mapping Tool, multiple unnamed streams flow within the proposed transmission line corridor. In an attempt to avoid confusion and provide geographic clarity, the streams are referred to in this report by their closest street. Where multiple streams are in the vicinity of a single street, their direction relative to each other is added (e.g., Paradise Park creek north). A lower case "c" on "creek" is intentionally used to emphasize these unofficial names. Within the 6-mile transmission line corridor, three streams are mapped within the jurisdiction of the city of La Center, five in the County's jurisdiction, and two in the jurisdiction of the city of Ridgefield. Figures 6 through 9 show the location of identified streams within each jurisdiction.

4.1 La Center

Each of the three streams mapped within the project area flows east towards McCormick Creek, and all three are mapped as Type Ns streams. During the site investigation, it was determined that the mapping for the northern and southern streams is inaccurate, as no streams were identified within the corridor in these locations. It is assumed that the headwaters of these streams are located farther east, beyond the project corridor. The mapping of the central stream is also inaccurate as the headwaters are farther west than

shown on the mapping. Figure 7 shows the GPS-recorded boundary of the central stream as located within the transmission line corridor. The identified stream flows east from Paradise Park Road before converging with another stream and heading north. Vegetation in the vicinity of this stream consists of sword fern, Douglas spiraea, elderberry, Himalayan blackberry, trailing blackberry, and bigleaf maple.

4.2 Clark County

In the County's jurisdiction, the scientists were able to confirm the existence of the three streams mapped along Paradise Park Road (Paradise Park creek south) and NW 299th Street (299th creek west and 299th creek east), but not those mapped near NW 11th Avenue or N 65th Avenue (Figure 8).

Paradise Park creek south has headwaters west of Interstate 5 (I-5), flows northeast through culverts, and is discharged on the east side of Paradise Park Road. Upstream of the culverts, this stream is mapped as a Type Ns stream; downstream of the culverts, within the transmission line corridor, the stream is mapped as a Type F (fish-bearing) stream (DNR 2017). The stream is in a valley with relatively steep slopes, and vegetation is a reflection of the abrupt change from wetland to upland. Along the valley floor, reed canarygrass and stinging nettle dominate the vegetation, with scattered red-osier dogwood and few mature trees. Upslope, the vegetation transitions rapidly to a canopy of Douglas fir and bigleaf maple, a subcanopy of vine maple and hazelnut and an herbaceous layer of Siberian miner's lettuce, sword fern, and trailing blackberry, among other species. No utility poles are proposed for placement within the riparian buffer of Paradise Park creek south.

The 299th creek west is located just east of the intersection of Paradise Park Road and NW 299th Street, and is mapped as a Type Ns stream. The 299th creek west flows north, beneath NW 299th Street, and converges with 299th creek east, eventually draining into McCormick Creek. One utility pole is proposed for placement within the riparian buffer of 299th creek west.

The 299th creek east is located just west of NW 18th Place. This stream flows northwest, beneath NW 299th Street, and then beneath an unnamed private driveway, before converging with 299th creek west, and eventually draining into McCormick Creek. The stream is mapped as a Type Ns stream as it crosses the transmission line corridor, but is mapped as a Type F (fish-bearing) stream just north of the project boundaries. Two utility poles are proposed for placement within the riparian buffer of 299th creek east.

Vegetation consists primarily of reed canarygrass along the roadside, but a canopy of Douglas fir and western white pine dominates the forested area to the north of both 299th creek west and 299th creek east.

4.3 Ridgefield

According to the DNR Forest Practices Application Mapping Tool database, two streams are mapped in Ridgefield's jurisdiction – one crossing N 10th Street (10th creek) and one crossing NE 279th Street; however, the scientists could confirm the existence of only the stream mapped as crossing 10th Street. 10th creek is a tributary of McCormick Creek, that flows north beneath N 10th Street and is mapped as a Type F stream. The second stream is mapped at the eastern boundary of the project area along NE 279th Street; it is shown to originate in an agricultural field to the south, flow north across 279th Street, and converge with another stream. There are no defined bed or banks or any other stream features that would confirm the existence of the mapped stream at this location. Figure 9 shows the location of 10th creek and associated riparian buffers. The canopy above the identified stream is composed mostly of Oregon ash, reed canarygrass, Himalayan blackberry, Canada thistle, and bittersweet nightshade dominate the herbaceous layer of the riparian area associated with 10th creek.

5 STREAM AND RIPARIAN BUFFERS

The fish and wildlife habitat conservation areas section of each ordinance establishes and protects streams and rivers and their associated riparian buffers. The following sections discuss these regulations for each jurisdiction. Six potential utility poles are proposed within riparian buffers, one in La Center's jurisdiction, three within the County's jurisdiction, and two in Ridgefield's jurisdiction. Additionally, vegetation removal will be necessary within the riparian buffers for a 20-foot transmission line corridor. Impacts to riparian buffers are discussed in section 7.2 below. Figures 7 through 9 show the buffers in each jurisdiction.

5.1 La Center

The La Center code establishes and protects riparian areas under the fish and wildlife habitat conservation areas section of the City's critical areas ordinance (LCMC 18.300.090(2)). The code states riparian habitat includes those areas immediately adjacent to waterways that contain elements of both aquatic and terrestrial ecosystems that mutually influence each other. The critical area ordinance specifies minimum riparian buffers for streams in accordance with the DNR stream typing system (LCMC 18.300.090(2)(f)) and states that Type Ns streams require a 75-foot riparian buffer area. One utility pole is proposed within riparian buffers in the city of La Center and vegetation removal for the transmission line corridor will be necessary. Table 4 summarizes the characteristics of the streams identified within the project area.

5.2 Clark County

The County habitat conservation ordinance designates and protects priority riparian habitat under CCC 40.440.010.C.1.a. Riparian habitats are those areas extending outward on each side of the stream from the ordinary high water mark to the edge of the 100-year floodplain, or the following distances, if greater.

- DNR Type S waters – 250 feet

- DNR Type F waters – 200 feet
- DNR Type Np waters – 100 feet
- DNR Type Ns waters– 75 feet

Three streams were identified within the jurisdiction of the County, Paradise Park creek south, 299th creek west, and 299th creek east. Paradise Park creek south has headwaters west of I-5, flows northeast through culverts, and discharges on the east side of Paradise Park Road. Upstream of the culverts, this stream is mapped as a Type Ns stream; downstream of the culverts, within the transmission line corridor, the stream is mapped as a Type F (fish-bearing) stream. The other two streams (299th creek west and 299th creek east) are located along the western portion of 299th Street; both are mapped as Type Ns streams as they cross the transmission line corridor. Impacts are proposed for the riparian areas for each of the streams as a result of the 20-foot transmission line corridor. No utility poles are proposed for placement in the riparian buffer of Paradise Park creek south; however, a single utility pole is proposed for placement in the riparian buffer of 229th creek west and two are proposed for placement within 299th creek east. It should be noted that while three utility poles are proposed for placement within the riparian buffers, one also falls within Wetland A, and impacts associated with the installation of this utility pole are addressed above as wetland impacts; the other two utility poles fall within the 20-foot utility corridor, which will require vegetation removal regardless of the installation of the utility poles, and so additional impacts have not been added to these areas for the installation of the utility poles. Table 4 summarizes the characteristics of the streams identified within the project area.

5.3 Ridgefield

RMC 18.280.110 designates and protects waterbodies, including lakes, streams, rivers, and naturally occurring ponds, under the fish and wildlife habitat conservation areas section of Ridgefield's critical areas protection ordinance. While two streams are mapped as occurring within the transmission line corridor, the assessment confirmed the existence of just one. While the stream to the east is mapped as flowing north, parallel to NE 10th Avenue, and associated with both Wetlands E and F, this stream was found not to exist as mapped. The stream to the west (10th creek) flows northwest across N 10th Street, parallel to NW 11th Avenue, and is mapped as a Type F stream. Table 18.280.110-1 shows the minimum riparian buffer width designated for streams in the jurisdiction of the city of Ridgefield, and indicates that Type F streams greater than 5 feet wide require a 150-foot buffer. Two utility poles are proposed for placement within the riparian buffer of 10th creek. Table 4 summarizes the characteristics the streams identified within the study area.

Table 4. Summary of Identified Streams

Stream	Stream Classification		Local Jurisdiction	Buffer Width
	Stream Order[a]	Stream Type[b]		
Paradise Park creek north	1	Ns	La Center	75[c]
Paradise Park creek south	1	F	Clark County	200[d]
299th creek west	1	Ns	Clark County	75[d]
299th creek east	1	Ns	Clark County	75[d]
10th creek	2	F	Ridgefield	150[e]

Notes:
a Strahler stream ordering system (Strahler 1952)
b DNR stream classification system (WAC 222-16)
c Based on LCMC Table 18.300.090(2)(f)
d Based on CCC 40.440.010.C.1.a
e Based on RMC 18.280.110.B.1

6 AVOIDANCE AND MINIMIZATION

The project has been designed to avoid and minimize wetland impacts to the greatest extent practicable. However, avoidance of impacts to wetlands and riparian buffers was not feasible due to site constraints and project requirements. To the extent feasible, the utility poles will be installed using an augering truck and cranes that will be positioned on the roadway so as to avoid ground disturbance and unnecessary wetland and buffer impacts. Additionally, within the transmission line corridor, short-statured trees and shrubs (those that will not grow to heights that may affect the transmission line) would be allowed to remain, minimizing impacts to vegetation, and limiting ground disturbance.

Additionally, the project will use several typical construction best management practices (BMPs) for working near wetlands, waters, and critical area buffers. The following BMPs will be applied during the construction of each project element in order to reduce, eliminate, or minimize the effects of the proposed action on wetlands and wetland buffers.

- Demarcating the regulated wetland boundaries in the field prior to construction with high visibility fencing and installing erosion control measures (i.e., straw bale sediment barriers or sediment fences) as necessary to prevent siltation of the wetland areas during construction.
- Preparing and implementing a construction temporary erosion and sediment control plan that will address measures to ensure that sediment-laden runoff does not reach nearby waters.
- Implementing a spill prevention, control, and countermeasures plan developed by the contractor that will outline preventive measures and procedures to minimize hazardous or regulated waste spills, as well as actions to be undertaken in the event of accidental spills. Typical measures include

  - Checking equipment for leaks and/or other problems that could result in the discharge of petroleum-based products.
  - Taking corrective actions, including those listed below, in the event of any discharge of oil, fuel, or chemicals.
  - In the event of a spill, beginning containment and cleanup efforts immediately and completing them expeditiously in accordance with all local, state, and federal regulations and ensuring they take precedence over normal work. Cleanup will include proper disposal of any spilled material and used cleanup material.
  - Assessing the cause of the spill and taking appropriate action to prevent further incidents or environmental damage.
  - Reporting spills to Ecology's Southwest Regional Spill Response Office at 360/407-6300.
  - Storing demolition and construction materials where upland runoff cannot cause materials to enter surface waters.
  - Ensuring oil-absorbent materials are present on the site to be used in the event of a spill.
- Prohibiting the storage of machinery, materials, stockpiled soils, and construction activity in wetlands/wetland buffers and installing a silt fence around their perimeters.
- Stockpiling excess soil on site and then disposing of it at an approved upland site.
- Covering temporary stockpiles when not in use.
- Using water trucks and dust controlling agents to control dust in excavation and fill areas. Temporary access road entrances and exits will consist of gravel.

7 UNAVOIDABLE IMPACTS

7.1 Wetland Impacts

The proposed project has minimized wetland impacts to the greatest extent practicable, although permanent wetland impacts are proposed to each of the wetlands identified within the study area. The project will result in approximately 1,934 square feet of impacts to wetlands and 314 square feet of impacts to wetland buffers (Figure 5). The impacts will result from clearing woody vegetation for the installation and maintenance of utility poles. All trees and shrubs within a 10-foot radius (314 square feet) at the proposed pole locations would need to be cleared for construction and maintenance, and to ensure that there is no potential for trees to come into contact with the transmission line. At those locations where no woody vegetation is present, impacts will

be equivalent to the footprint of the utility pole (12.5 square feet). Between poles, short-statured trees and shrubs (those that will not grow to heights that may affect the transmission line) would be allowed to remain. Vegetation removal cannot be avoided; vegetation must be cleared to give access to pole locations, to ensure the safety of construction and maintenance workers and the surrounding community, and to protect the utility poles and conductors from damage. Vegetation clearing will result in 2,248 square feet of impacts to wetlands and wetland buffers.

Within Wetland A, 314 square feet of impacts will result from clearing woody vegetation; within Wetlands B and C, there is no woody vegetation and 25 square feet of impacts will result from the installation of two utility poles (12.5 square feet for one pole within each wetland). Within Wetland D, 628 square feet of impacts will result from clearing woody vegetation at two pole locations plus 25 square feet of impacts will result from installing two poles, but no woody vegetation clearing will be required, for a total of 653 square feet of impacts. Wetland E will require 314 square feet of impacts from the removal of woody vegetation to install a single utility pole, and Wetland F will require 628 square feet impacts from vegetation removal to install two utility poles. Figure 5 shows the location of the proposed impacts.

There are no poles proposed for placement within the buffers of Wetland A, B, C, D, or F, but one proposed pole location is sited within the buffer of Wetland E. Pole placement within the buffer of Wetland E will require vegetation removal that will result in 314 square feet of impacts to the wetland buffer. Table 5 summarizes the proposed wetland and wetland buffer impacts.

Table 5. Summary of Wetland and Wetland Buffer Impacts

Wetland	Impact Area (sq ft)	Impact Area (acre)
Wetland A	314	0.0070
Wetland B	12.5	0.0003
Wetland C	12.5	0.0003
Wetland D	653	0.0150
Wetland E	314	0.0070
Wetland F	628	0.0140
Wetland E Buffer	314	0.0070
TOTAL	2,248	0.0506

7.2 Riparian Impacts

The proposed project has minimized wetland impacts to the greatest extent practicable; however, permanent buffer impacts are proposed to each of the riparian areas identified within the study area. The project will result in approximately 21,579 total square feet of impacts to riparian buffers.

In the jurisdiction of the city of La Center, the project corridor, which runs through the headwaters and riparian buffer of Paradise Park creek north, will result in approximately 2,703 square feet of impacts to the 75-foot riparian buffer (Figure 7). Vegetation clearing for the 20-foot transmission line corridor will result in 2,389 square feet of impacts to the riparian buffer, and an additional 314 square feet of impact will result from clearing for the installation of a utility pole.

The project will result in approximately 15,830 total square feet of impacts to the 75- and 200-foot riparian buffers in the jurisdiction of the County (Figure 8). Within the 200-foot buffer of Paradise Park creek south, there will be 8,921 square feet of impacts, and the 75-foot buffers of 299th creek west and 299th creek east will have 3,038 square feet and 3,871 square feet of impacts, respectively.

The project, which runs perpendicular across the tributary to McCormick Creek and parallel to N 10th Street, will result in approximately 3,046 square feet of impacts to the 150-foot riparian buffer of 10th creek (Figure 9). Vegetation clearing between poles will result in 3,021 square feet of impacts, and an additional 25 square feet of impact will result from the installation of two utility poles.

Table 6 summarizes the proposed riparian buffer impacts resulting from the installation of utility poles and vegetation clearing for the 20-foot utility line corridor.

Table 6. Summary of Riparian Buffer Impacts by Impact Type

	Impacts from 20-foot corridor (sq ft)	Impacts from Utility Pole Installation (sq ft)	Total (sq ft)
Paradise Park Road creek north	2,389	314	2,703
Paradise Park Road creek south	8,921	0	8,921
299th creek west	3,038	0	3,038
299th creek east	3,871	0	3,871
10th creek	3,021	25	3,046
Total	**21,240**	**339**	**21,579**

As discussed in detail in section 8.5 below, mitigation for impacts to riparian areas depends on habitat characteristics (vegetation type), and the location of impacts within the inner or outer 50 percent of the riparian buffer. Table 7 below summarizes proposed impact areas based on these criteria.

Table 7. Riparian Impact Summary by Impact Location (Square Feet)

	Paradise Park creek north	Paradise Park creek south	299th creek west	299th creek east	10th creek	Total
Inner Buffer Trees > 12" DBH	0	4,094	0	0	0	**4,094**
Outer Buffer Trees > 12" DBH	0	4,827	0	0	0	**4,827**
Inner Buffer Trees < 12" DBH	1,599	0	1,514	0	2,878	**5,991**
Outer Buffer Trees < 12" DBH	1,104	0	1,524	3,871	143	**6,642**
Outer Buffer Pasture/Grass	0	0	0	0	25	**25**
Proposed Impacts (square feet)	**2,703**	**8,921**	**3,038**	**3,871**	**3,046**	**21,579**

Note: DBH=diameter at breast height

8 MITIGATION

8.1 Mitigation Goal

The overall goal of this plan is to ensure no net loss of wetland functions and values within the East Fork Lewis River Watershed and to satisfy the regulatory requirements of each applicable local jurisdiction. As discussed in section 7, the proposed project will have 1,934 square feet (0.044 acre) of wetland impacts, 314 square feet (0.007 acre) of wetland buffer impacts, and 21,579 square feet (0.5 acre) of riparian buffer impacts.

8.2 Site Selection Rationale

To offset the impacts to wetlands, CPU proposes to purchase credits from the East Fork Lewis Mitigation Bank (bank). The service area for this bank, which covers the southwest portion of the Lewis River Water Resources Inventory Area (WRIA 27), includes the portions of each of the three sub-watersheds in which the project area is located (Figure 10). CPU has opted to purchase mitigation credits because there is no opportunity for mitigation on site. The bank's mitigation banking instrument indicates that the purpose of the bank is to generate mitigation credits for projects that will have an adverse impact on the aquatic environment and need to compensate for those impacts as a condition of permits or regulatory requirements. The goals of the bank include restoring hydrology to the bank site, establishing native wetland habitat types, controlling invasive species, and creating and enhancing wildlife habitat. Purchasing mitigation credits to offset impacts to on-site wetlands and riparian buffers directly corresponds to the purpose and goals of the mitigation bank.

8.3 Wetland Mitigation Measures

To ensure no net loss of buffer functions or values, the 2,248 square feet (0.05 acre) of wetland and wetland buffer impacts will be mitigated through the purchase of mitigation credits at the bank. Located in the East Fork Lewis River Watershed, the

mitigation bank will provide high-quality wetland habitats and functions in the same watershed in which impacts are proposed.

In accordance with interagency guidance, this bank use plan documents the functions and values lost from permanent wetland and buffer impacts and the functions and values provided by the bank to confirm that the purchase of bank credits will appropriately ensure no net loss of wetland and buffer functions or values as a result of the project.[2]

The proposed impacts to wetlands will result in a reduction of limited water quality and hydrologic functions to each of the impacted wetlands, but will not result in a significant loss of habitat functions in any of the wetlands. The existing vegetation in the wetlands is composed of a dense stand of mostly grass species maintained through regular mowing, or planted agricultural species; these vegetative communities have limited capacity to slow the downhill movement of water from precipitation events. The overall habitat functions of the impacted wetlands will not be reduced by the loss of non-native grass or agricultural species within the footprint of the transmission line corridor, as this is low quality, disturbed habitat and provides very limited, if any, habitat functions within the wetlands.

8.4 Riparian Buffer Mitigation Measures

To ensure no net loss of buffer functions or values, the 21,579 square feet (0.50 acre) of riparian buffer impacts will also be mitigated through the purchase of mitigation credits at the bank. The mitigation bank will provide high-quality riparian habitats and functions in the same watershed in which impacts are proposed.

The proposed impacts to riparian buffers will result in a reduction of water quality and hydrologic and habitat functions to each of the riparian buffers. The existing vegetation in the riparian buffers varies, but includes mixed deciduous and conifer stands, at least in part, in each of the riparian buffers. Impacts to these areas, in the form of tree removal, will represent a reduction in available habitat and vegetation structure and complexity within the riparian buffer. There will also be a reduction in water quality and hydrologic functions, as woody vegetation helps to slow downhill movement of water, and improves infiltration.

In terms of biological and hydrological values, the portion of the bank that has been released by the governing agencies for the sale of mitigation credits has been planted with native trees and shrubs and has been maintained and monitored for at least three full years. In other words, the biological value of the bank credits has had at least three years to become established and provide biological functions to the ecosystem. This area contains biological value equal to or higher than the project area. Wetlands within the project area are highly disturbed, and the bank's wetland areas will provide a much

[2] Washington State Department of Ecology, Interagency Review Team for Washington State, "Using Credits from Wetland Mitigation Banks: Guidance to Applicants on Submittal Contents for Bank Use Plans," 2009.

higher level of functioning. The riparian buffers within the project area provide a moderate level of functions; the bank will offer a large contiguous habitat and functions that have been in place for at least three full years, so the purchase of mitigation credits for impacts to riparian areas would represent no net loss of functions or values.

Hydrologically, the bank sits within a portion of Fargher Lake, a large shallow basin thought to have formed in an ancient volcanic caldera. The soils are typically peat deposits and naturally hold a greater volume of water than mineral soils. This large, flat, peat deposit system displays greater water quality and hydrologic value than the project site, which has been altered by human activities and cannot store large amounts of precipitation. Therefore, the bank provides greater water quality and hydrological values than could be achieved at the project site.

8.5 Proposed Mitigation Credits

Mitigation ratios for purchasing credits at the mitigation bank vary based on the resource impacted and the quality of that resource. For wetlands, mitigation ratios are based on the wetland category determined using the Ecology wetland rating system. The wetland mitigation ratios for wetland impacts have been approved by the regulatory agencies. A mitigation ratio of 1:1 has been established for impacts to Category III wetlands and a ratio of 0.85:1 has been established for impacts to Category IV wetlands.

Riparian buffer mitigation ratios for this project were determined in cooperation with Washington Department of Fish and Wildlife biologists. Standard riparian buffer mitigation ratios are based on vegetation type and position within the inner or outer 50 percent of the buffer. Areas dominated by trees greater than 12 inches in diameter at breast height (DBH) require mitigation at a ratio of 4:1 if the area is within the inner 50 percent of the buffer, and a ratio of 3:1 if the area is within the outer 50 percent of the buffer. Areas with trees or shrubs less than 12 inches in DBH within the inner 50 percent of the buffer require mitigation at a ratio of 3:1, and 2:1 if within the outer 50 percent. Grass and pasture species within the inner 50 percent of the buffer require mitigation at a 2:1 ratio, and at a 1:1 ratio in the outer 50 percent of the buffer.

Because the project has proposed to purchase credits from the bank, and the riparian areas at the bank have been functioning for at least four years, ratios to determine required acre-credits were determined based on the cost of wetland and riparian mitigation. Because the prices of credits at the mitigation bank are generally consistent with the cost of wetland creation, and because typical riparian mitigation costs are approximately one-quarter those of wetland creation, the standard ratios for determining riparian mitigation were applied to the applicable area of impact and then multiplied by 0.25, to determine the acre-credits necessary for purchase to compensate for riparian buffer impacts. Table 8 below outlines the necessary mitigation ratios for riparian areas.

Table 8. Mitigation Ratios for Riparian Areas

Dominant Vegetation	Location within Buffer	Standard Mitigation Ratio	Credit-Acre Ratio
Shrubs/trees >12" DBH	Inner 50%	4:1	1:1
Shrubs/trees >12" DBH	Outer 50%	3:1	0.75:1
Shrubs/trees <12" DBH	Inner 50%	3:1	0.75:1
Shrubs/trees <12" DBH	Outer 50%	2:1	0.5:1
Pasture/Grass	Inner 50%	2:1	0.5:1
Pasture/Grass	Outer 50%	1:1	0.25:1

Note: DBH=diameter at breast height

Based on this information, the applicant is proposing to purchase 0.0413 acre-credits for impacts to wetlands, 0.0014 acre-credits for impact to wetland buffers, and 0.35 acre-credits for impacts to riparian buffers. Table 9 below outlines the proposed impacts, credit-acre ratios for the purchase of mitigation credits, and acre-credits proposed for purchase.

Table 9. Proposed Mitigation Bank Credits

Impact Area	Impacts for Bank Use (acre)	Mitigation Ratio	Acre-Credits Proposed for Purchase
Category III Wetlands	0.0283	1:1	0.0283
Category IV Wetlands	0.0153	0.85:1	0.013
Wetland Buffer	0.007	0.2:1	0.0014
Riparian Buffer Inner >12" DBH	0.09	1:1	0.09
Riparian Buffer Outer >12" DBH	0.11	0.75:1	0.083
Riparian Buffer Inner <12" DBH	0.136	0.75:1	0.102
Riparian Buffer Outer < 12" DBH	0.15	0.5:1	0.075
Riparian Buffer Outer Pasture	0.0006	0.25:1	0.00015
TOTAL	**0.54**		**0.39**

Note: DBH=diameter at breast height

8.6 Credit Purchase Schedule

The project will require approval of a critical areas permit from each of the applicable jurisdictions. CPU will purchase the mitigation credits once all the permits relevant to wetland impacts have been issued. Prior to impacting project wetlands, CPU will submit proof of purchase or transfer of credits to project managers for each of the applicable local jurisdictions.

9 CONCLUSIONS

Based on the avoidance and minimization activities and proposed mitigation measures described above, the proposed project satisfies the conditions established by Clark County Code Sections 40.440 (Habitat Conservation) and 40.450 (Wetland Protection); La Center Municipal Code Chapter 18.300 (Critical Areas); and Ridgefield Municipal Code Chapter 18.280 (Critical Areas Protection). The project will effectively result in no net loss of wetland, wetland buffer, and riparian buffer acreage, functions, and values.

The permanent impacts to the wetlands and buffers can be mitigated successfully by purchasing 0.39 acre-credits from the agency-approved mitigation bank. The use of the bank to compensate for wetland, wetland buffer, and riparian buffer impacts is supported by the following facts.

1. The restoration of the aquatic resources and uplands and their corresponding buffers are protected in perpetuity through the establishment of a conservation easement and long-term management fund, and credits are released only when required performance standards are met;
2. The location of the bank site and the extent of the bank's service area represent a watershed approach to implementing mitigation and the service area includes the project area; and
3. One credit from the bank represents the restoration of approximately 2.87 acres of wetlands, associated uplands, and buffer habitat at the bank.

All the temporal losses of functions and risks of failure will be fully mitigated by improving the functions of the impact site beyond what they were before the impact by improving the habitat function through increased native plant diversity.

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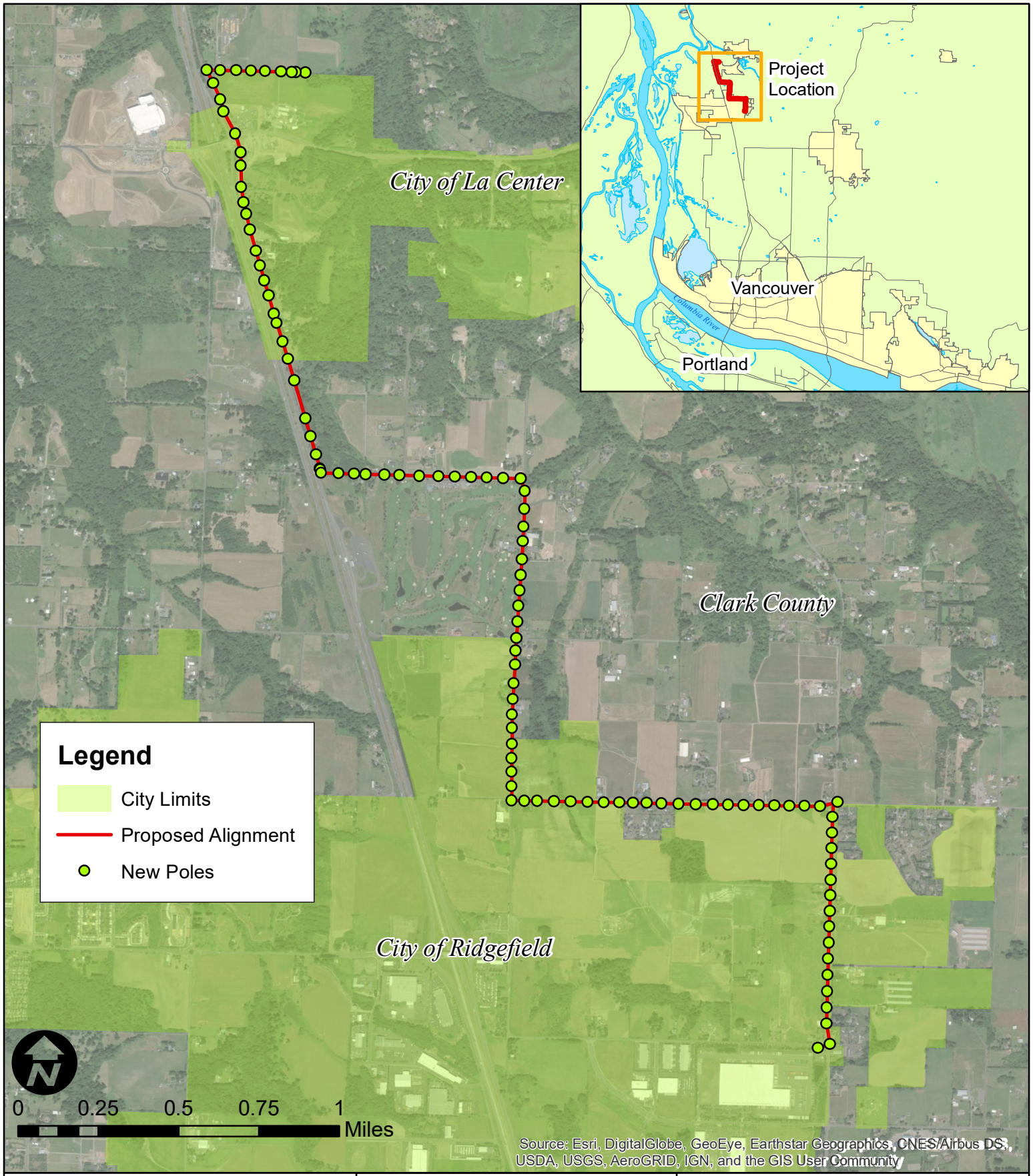
11 LIST OF ACRONYMS AND ABBREVIATIONS

bank	East Fork Lewis Mitigation Bank
BMP	best management practice
CCC	Clark County Code
Cities	Ridgefield and La Center
County	Clark County
CPU	Clark Public Utilities
DBH	diameter at breast height
DNR	Washington State Department of Natural Resources
Ecology	Washington State Department of Ecology
HGM	hydrogeomorphic
I-5	Interstate 5
LCMC	La Center Municipal Code
NWI	National Wetlands Inventory
PEM	Palustrine Emergent
PWS	Professional Wetland Scientist
RMC	Ridgefield Municipal Code
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

Appendix A
Figures



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APPLICANT: CLARK PUBLIC UTILITES
ATTN: DAVID TETZ
P.O. BOX 8900
VANCOUVER, WA 98668

PURPOSE: MITIGATION BANK USE PLAN

FIGURE 1. Vicinity Map

BergerABAM

PROJECT AREA IN: EAST FORK LEWIS RIVER WATERSHED

TOWN/RANGE: T4N, R1E

COUNTY OF: CLARK
STATE OF: WASHINGTON

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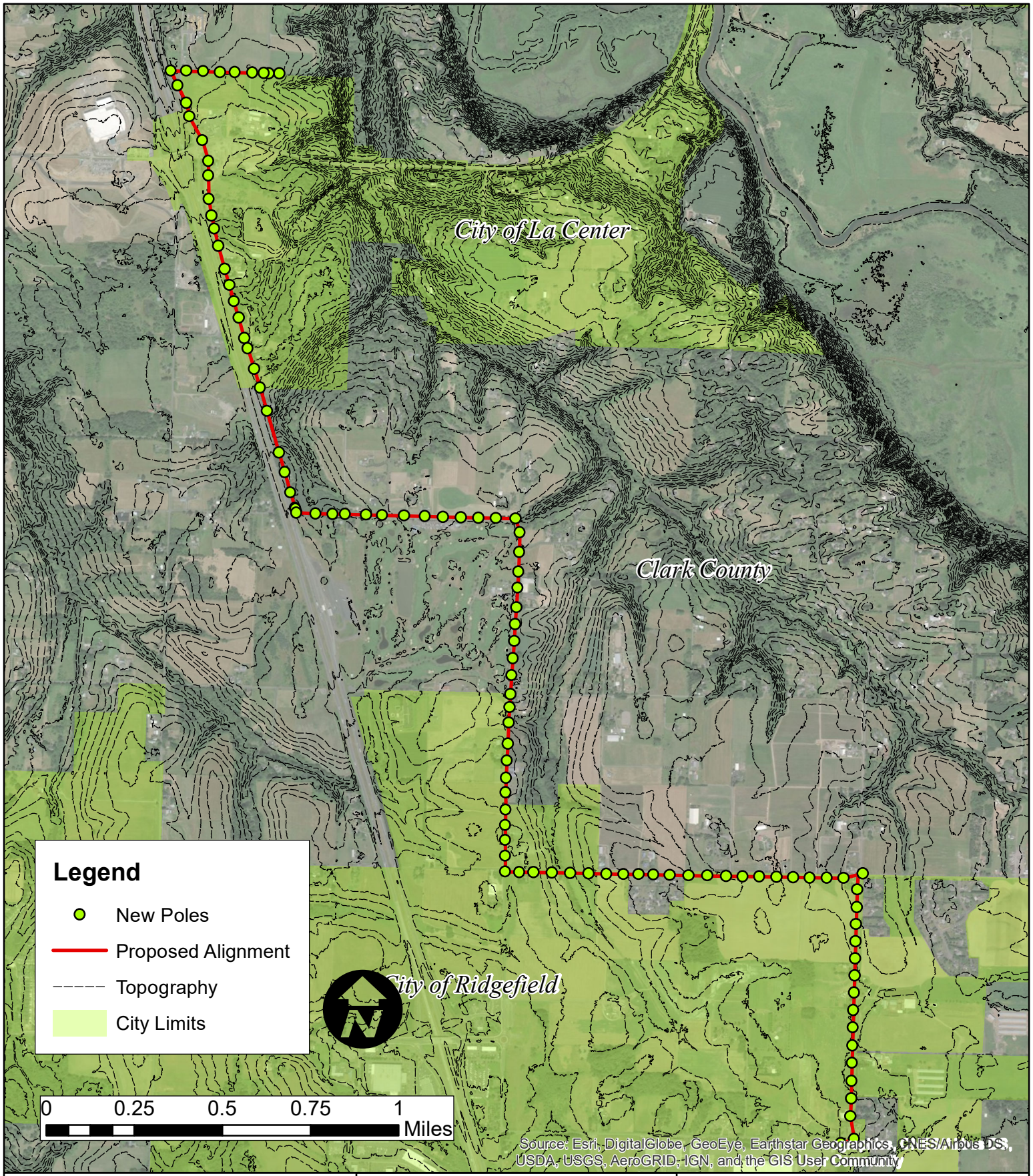

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FIGURE 2. Topography

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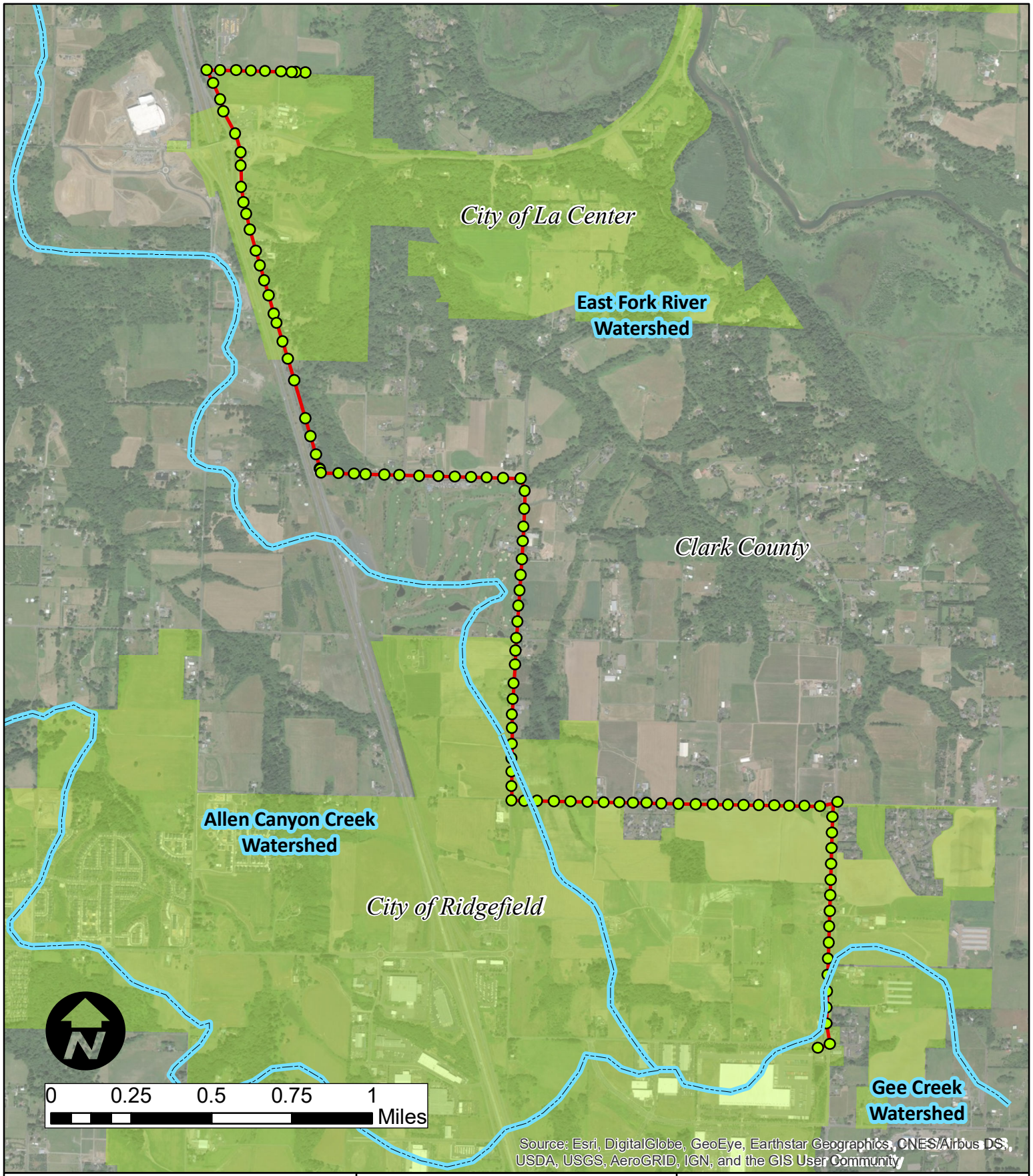

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FIGURE 3. Watersheds

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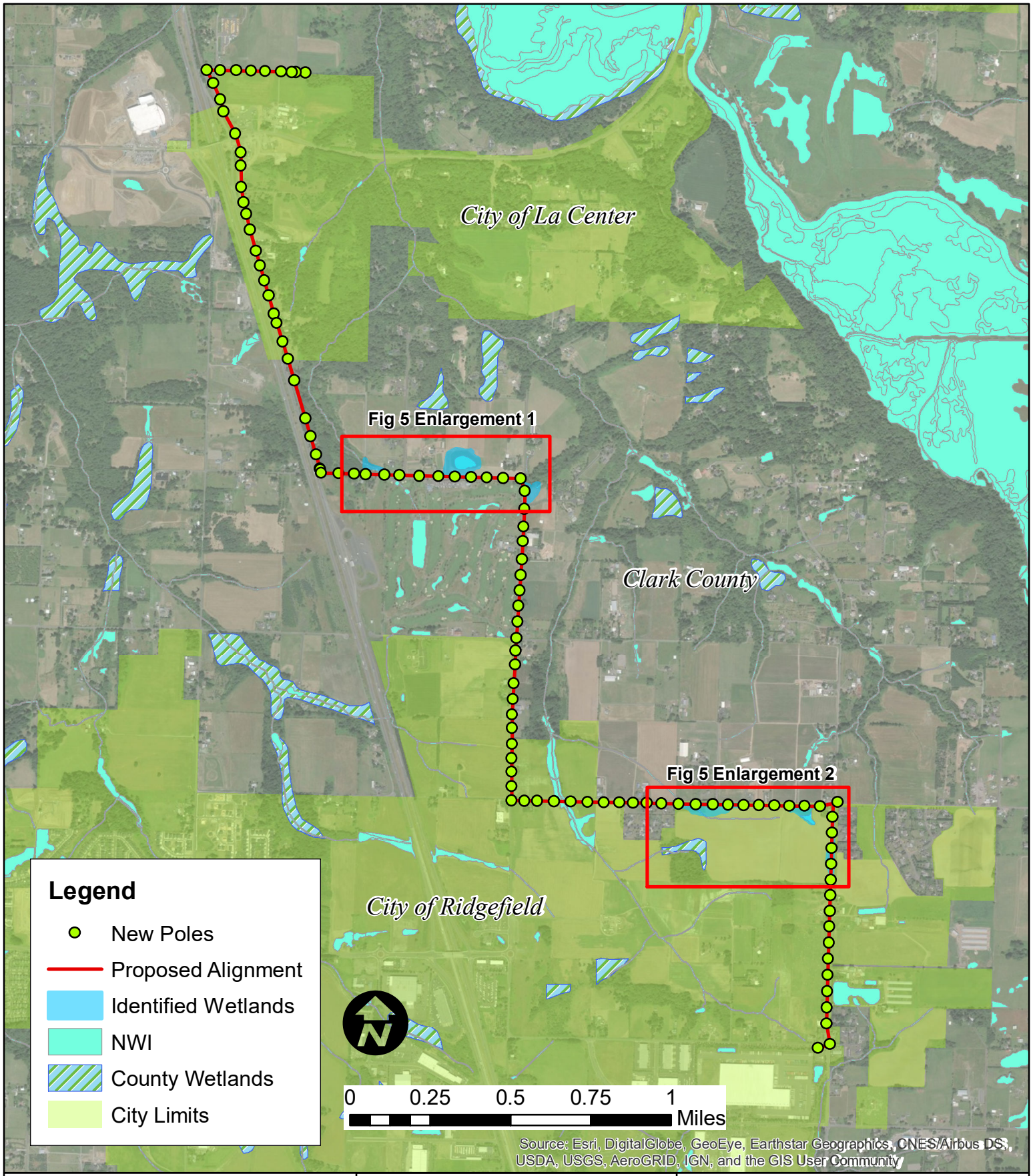

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FIGURE 4. Mapped and Identified Wetlands

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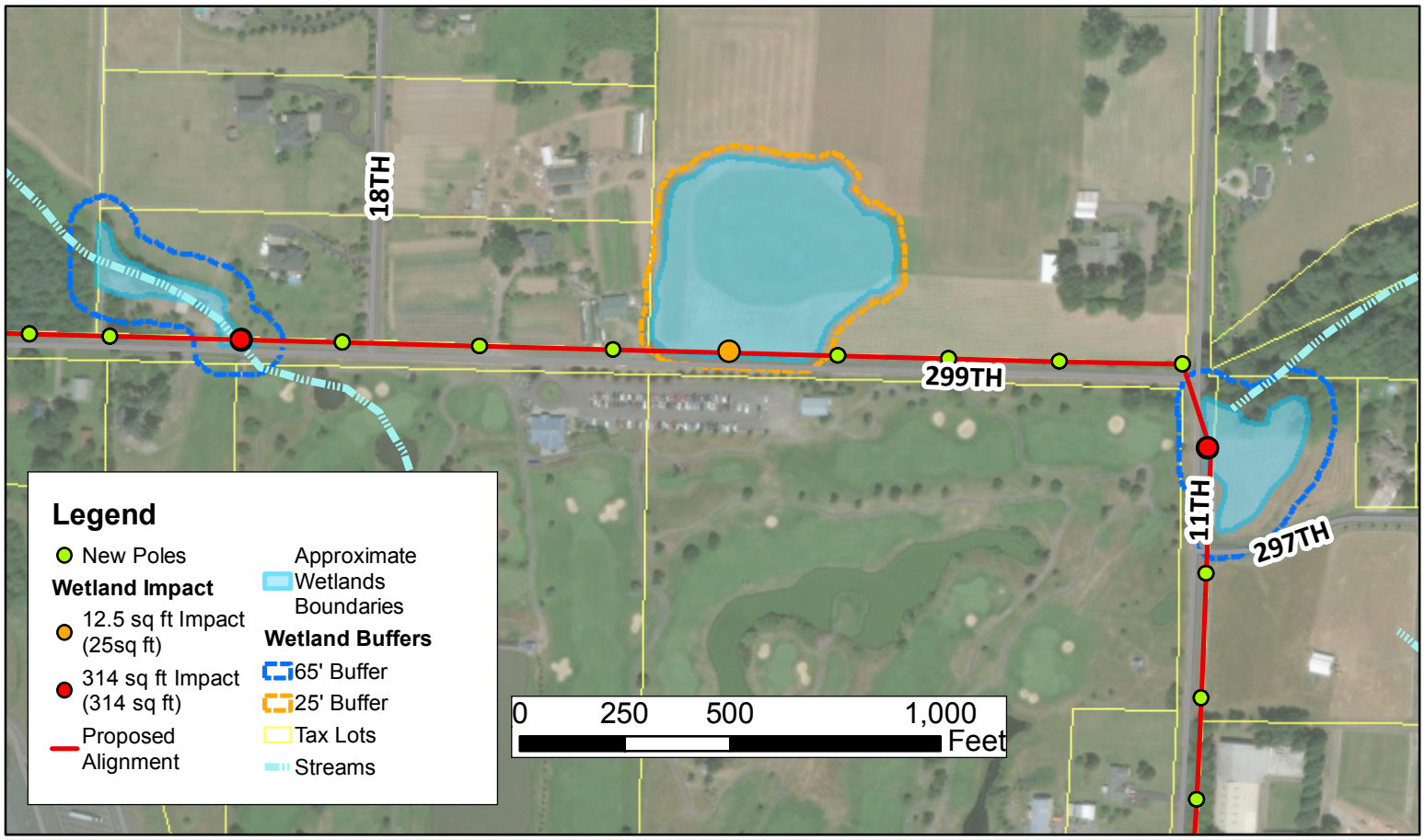

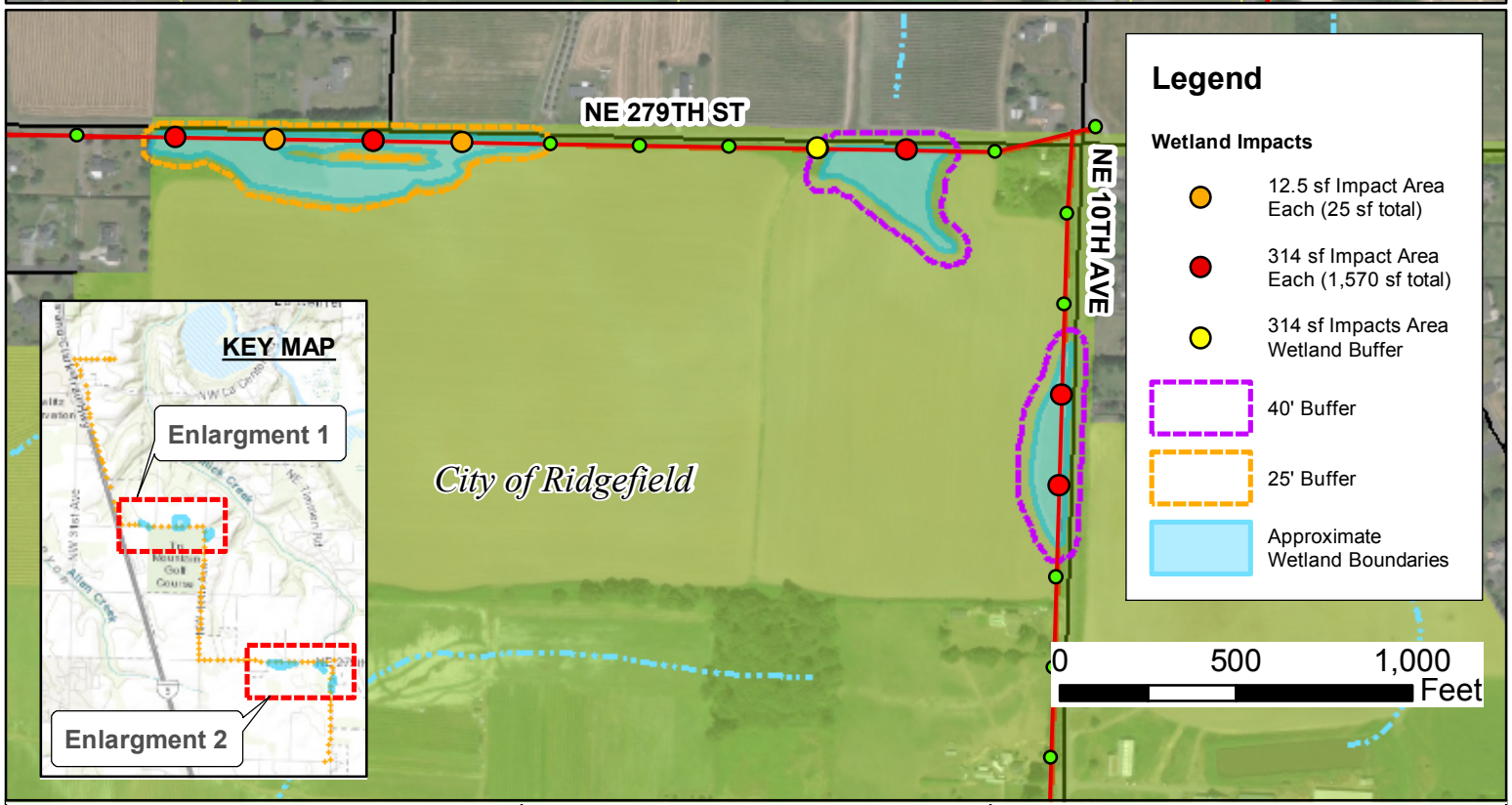

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PURPOSE: MITIGATION BANK USE PLAN

FIGURE 5. Wetland Impacts

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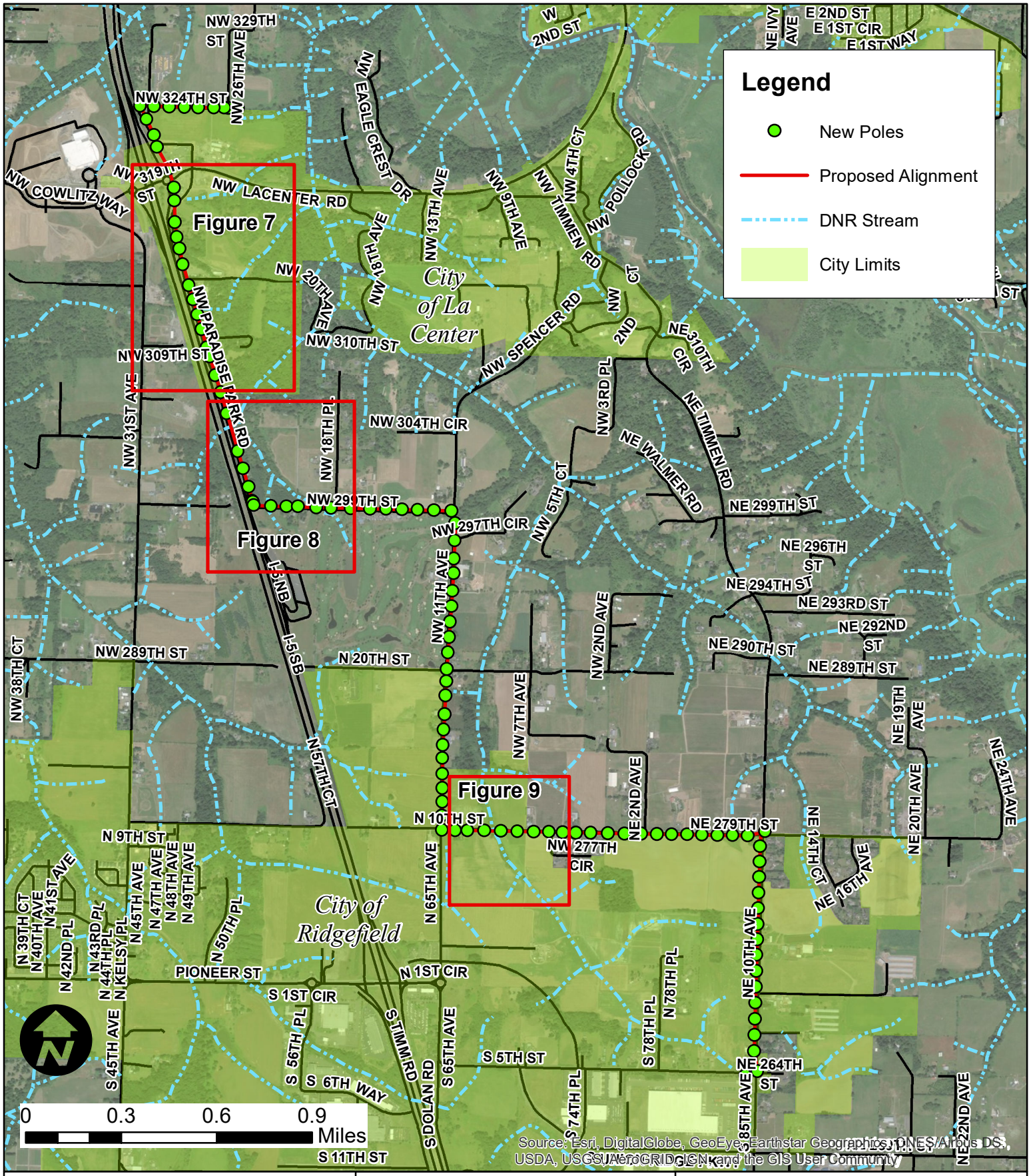

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PURPOSE: MITIGATION BANK USE PLAN

FIGURE 6. Identified Streams

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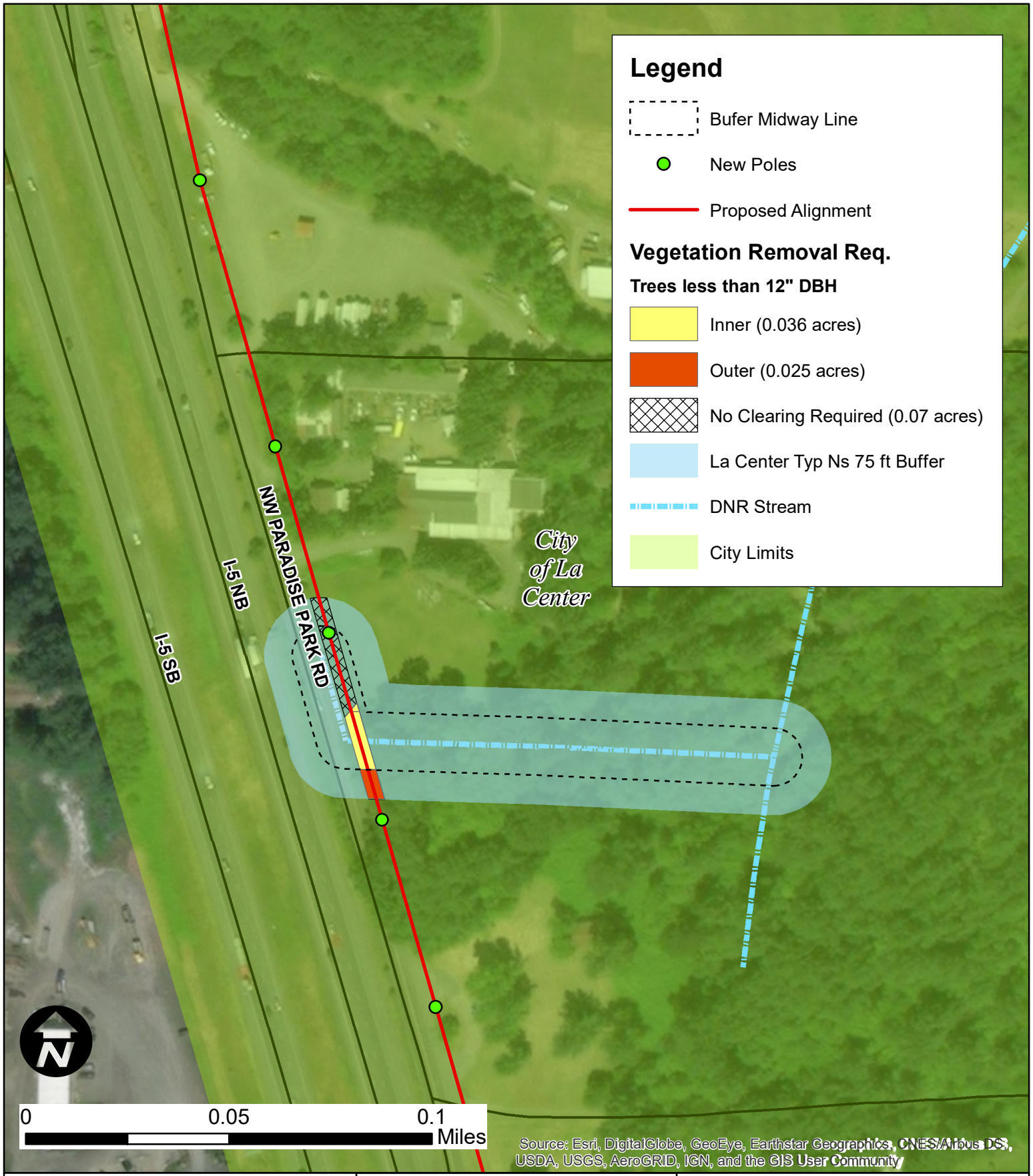

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FIGURE 7. Riparian Buffer Impacts - La Center

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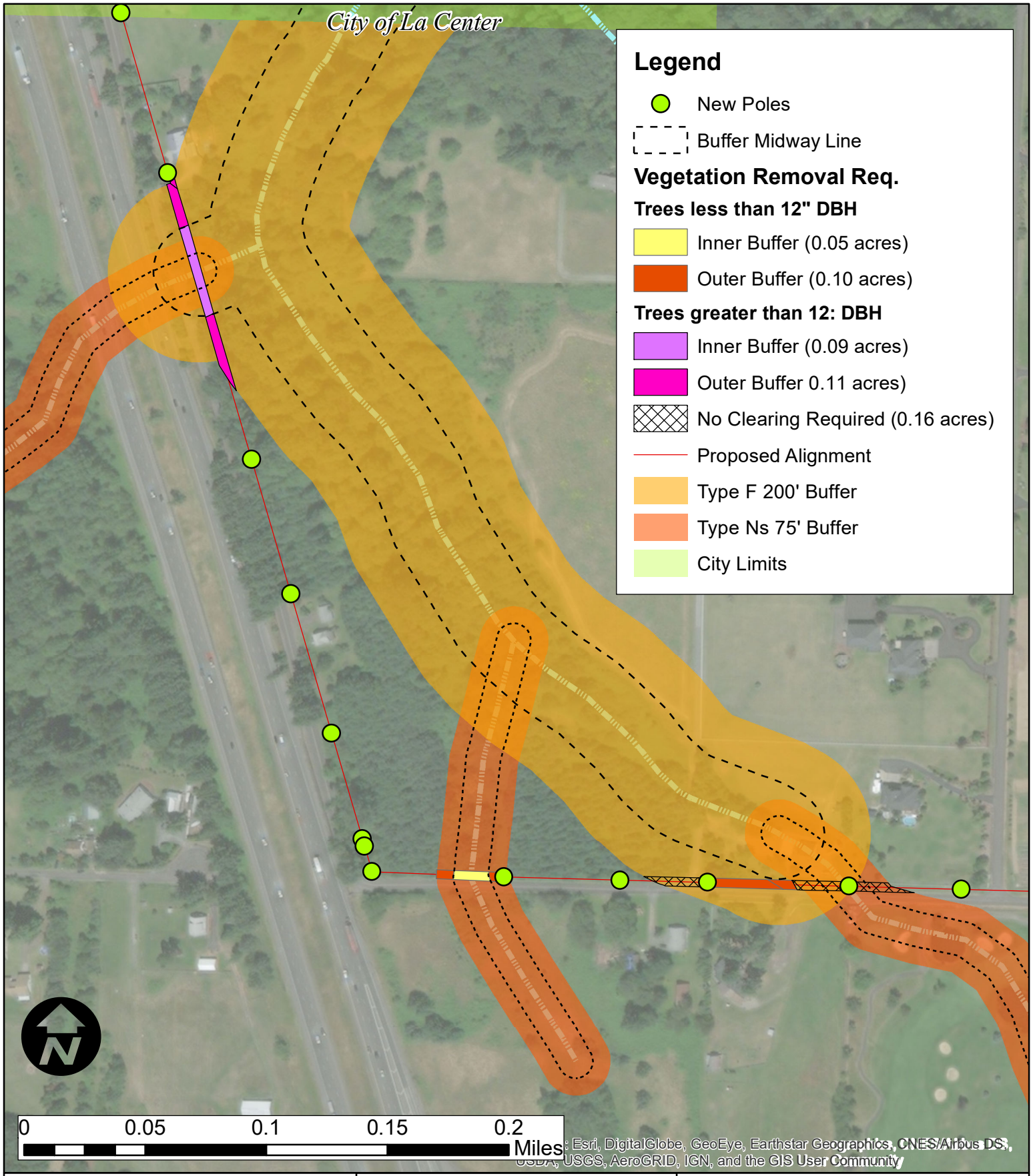

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PURPOSE: MITIGATION BANK USE PLAN

FIGURE 8. Riparian Impacts - Clark County

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PURPOSE: MITIGATION BANK USE PLAN

FIGURE 9. Riparian Buffer Impacts - Ridgefield

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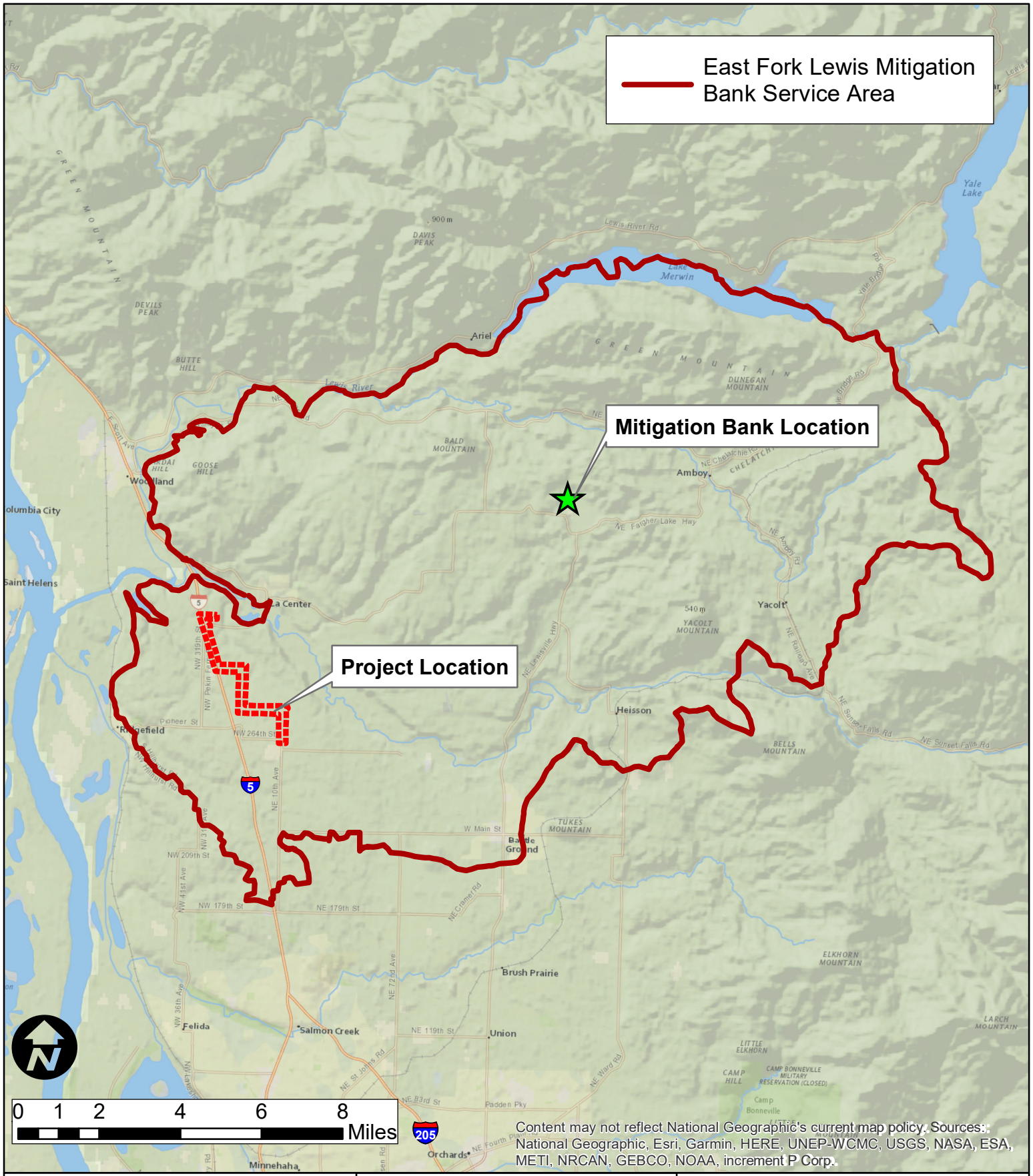

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PURPOSE: MITGATION BANK USE PLAN

FIGURE 10. Mitigation Bank Location

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