

**Memorandum**

To	Rowan Percheron LLC
From	ERM
Date	May 7, 2023
Reference	Percheron Data Center Project, Morrow County, Oregon
Subject	Alternatives Analysis to Support Goal Exceptions Request

INTRODUCTION

Goal 2, Part II(c) requires that an applicant demonstrate that “areas that do not require a new exception cannot reasonably accommodate the use.” The elements of the required alternatives analysis are set out in Oregon Administrative Rules (OAR) 660-004-0020(2)(b)(A)-(C).¹ Rowan Percheron, LLC (Applicant) performed an alternatives analysis with a study area that included the entire area of Umatilla and Morrow Counties, a region that has seen recent growth in significant cloud infrastructure presence. Applicant first identified siting criteria for the minimum requirements necessary for a site to reasonably accommodate the proposed Percheron Data Center (data center or Project). Applicant then applied the siting criteria to land within Umatilla and Morrow Counties to identify sites that could reasonably accommodate the proposed data center without requiring a new goal exception. The results of the analysis show that there are no available sites in Umatilla or Morrow Counties that meet the Project’s defined siting criteria and would not require a new goal exception.

SUMMARY OF APPLICANT’S SITING CRITERIA

Applicant identified eight siting criteria for selecting a viable site for the proposed data center. These siting criteria account for locational, infrastructural, and physical parameters, as well as economic factors affecting the viability of a potential project. These criteria reflect the relevant factors, including economic, for determining that the proposed data center cannot be reasonably accommodated in other areas.²

The eight siting criteria are listed below. No one siting criteria is determinative in site selection; each factor into whether a potential site is reasonable to accommodate the proposed data center.

1. Access to Electrical Infrastructure and Power Availability
2. Water Supply and Discharge

¹ Note that OAR 660-014-0040 also requires than an applicant consider alternatives to satisfy Goal 2, Part II(c), showing that “the proposed urban development cannot be reasonably accommodated in or through expansion of existing [UBG] boundaries or by intensification of development in existing rural communities.” Applicant maintains that alternatives analysis for purposes of OAR 660-014-0040(2)(a) requires the same analysis as OAR 660-004-0020(2)(b)(A)-(B). Therefore, for purposes of this application, Applicant relies on the proposed findings under OAR 660-004-0020(2)(b)(A)-(C) to meet both alternatives analysis requirement in Goal 2, Part II(c).

² See OAR 660-004-0020(2)(b)(B).

3. Land Characteristics
4. Environmentally Sensitive Resources and Protected Areas
5. Road Access
6. Fiber Network Connectivity
7. Land Use and Zoning
8. Financial Feasibility

DESCRIPTION OF APPLICANT'S SITING CRITERIA

1. **Access to Electrical Infrastructure and Power Availability.** The proposed data center requires considerable electrical power and power reliability. Key siting considerations related to power delivery include:
 - a. Proximity to existing infrastructure to minimize impacts and reduce project costs. Only lands directly adjacent or with clear access (e.g., via a transmission easement) to an existing electrical infrastructure (e.g., substation or high-voltage transmission line) were assessed as reasonable alternatives.
 - b. A viable site required electrical infrastructure (i.e., transmission lines and a substation) with available load capacity of at least 200 megawatts (MW).
 - c. Power needed to be available and delivered at high voltages (138 kilovolt [kV] or higher) due to the power use of the proposed data center and electrical pricing.
 - d. Power needed to be available and delivered to a site within 24–36 months of the initial load interconnection application.
 - e. System upgrades to provide the requested power load needed to be economically feasible for the Project.
2. **Water Supply and Discharge.** The proposed data center requires water supply and sufficient land to manage industrial wastewater onsite or have access to a municipal sanitary system. Applicant considered sites that could be served by private infrastructure, as well as municipal infrastructure. Key siting considerations related to water supply and discharge include:
 - a. Either location within the service territory of a municipal utility with sufficient capacity to service the needs of the Project or the potential for financially feasible upgrades to service the Project.
 - b. Alternatively, feasibility for private onsite wells and wastewater treatment facilities to be permitted and constructed.
3. **Land Characteristics.** The proposed data center requires a particular parcel size and topography. Key siting considerations related to land include:
 - a. A site with a minimum of 200 contiguous acres (about 0.5 to 1.0 acre per MW is required in order to accommodate the proposed Project's infrastructure).
 - b. A vacant undeveloped site.
 - c. Sites could include more than one parcel as long as contiguous.
 - d. Topography needed to be less than 15 percent slope to minimize grading.

4. **Environmentally Sensitive Resources and Protected Areas.** Applicant seeks to avoid sensitive biological, water, and cultural resources, as well as areas that are potentially contaminated or under legal protection or conservation. Key siting considerations related to environmentally sensitive resources and protected areas include:
 - a. A site must have approximately 200 acres that are unconstrained by sensitive resources. Avoiding sensitive reasons minimizes adverse environmental impacts and streamlines permitting.
 - b. A site must be permittable within 1 year or less to meet the Applicant's commercial operation date.
 - c. Contaminated sites with potential remediation liabilities may be viable in some circumstances, but are generally less desirable for Project siting.
5. **Road Access.** Applicant requires that a site be located within 100 feet or less of public right-of-way access to allow for direct or near direct access to the site and avoid construction of new access roads.
6. **Fiber Network Connectivity.** The proposed data center requires reasonable access to multiple long-haul fiber lines with available capacity to service the data center's communication needs. Key siting considerations for fiber network connectivity include:
 - a. Fiber network with an available capacity must be available regionally.
 - b. Fiber network connectivity to the site must be feasible via easements.
 - c. Fiber network providers must be willing and able to meet the Project's needs within 12 months of the service request.
7. **Land Use and Zoning.** Applicant requires that the proposed data center be located on land zoned for data center use, as a permitted or conditional use or that there be a viable pathway for rezoning a site.
8. **Financial Feasibility.** While not determinative, Applicant requires that costs for land, energy, water, fiber easements, grading, and environmental mitigation be aligned with the financial feasibility goals for the Project.

ALTERNATIVES ANALYSIS METHODOLOGY

Applicant evaluated sites within Umatilla and Morrow Counties between 2020 and early 2021. The process involved many months of interactions and inquiries with local utilities, landowners, and other stakeholders to assess viability against the siting criteria.

Applicant first evaluated the possibility of siting the Project on non-resource lands within the Urban Growth Boundaries (UGBs) of Umatilla and Morrow Counties. Applicant then evaluated the possibility of siting the Project outside the UGB, but within zones where a data center may be allowed, specifically Rural Light Industrial Zone (RLIZ), Limited Rural Light Industrial Zone (LRLIZ), and Heavy Industrial (HI) for Umatilla County and General Industrial (MG), Port Industrial Zone (PI) and Airport Light Industrial Zone (ALI) for Morrow County. Based on this review, no reasonable alternative sites were identified in either the UGB areas or zones allowing a data center. The identified sites did not meet the siting criteria with the main constraints being lands already

developed with another use, availability of existing transmission infrastructure and capacity, topography, and land availability (e.g., willing landowner). Table 1 details the analysis of the siting criteria, describes why these sites failed to satisfy the siting criteria, and therefore, were not reasonable alternatives.

Applicant next assessed other non-resource lands in Umatilla and Morrow Counties that may have required a zone change, but would not require a goal exception. As described further in Table 1, there were available sites that met some of the siting criteria, but ultimately, none of the identified sites were reasonable alternatives because they failed to satisfy the siting criteria, with the main constraints being availability of transmission capacity and land characteristics.

Lastly, Applicant evaluated Exclusive Farm Use (EFU)-zoned sites against the siting criteria that would require a goal exception. Of these sites, the main constraints were land characteristics, sensitive resources, and financial feasibility, with the exception of the Project Parcel that met all siting criteria except for being zoned to allow a data center and requiring an exception.

RESULTS OF ALTERNATIVES ANALYSIS

Applying the siting criteria and methodology described above, Applicant considered over 10 sites for the proposed data center. Applicant selected the Project Parcel for the proposed data center because it met all the siting criteria except for Criteria 7, Land Use and Zoning. The key siting considerations for Applicant in selecting the Project Parcel is its proximity to existing transmission infrastructure at the Portland General Electric (PGE) Carty Generating Station and Reservoir (Carty site); the existing high-voltage transmission line right-of-way adjacent to the Project Parcel along Tower Road that provides direct access to the existing transmission infrastructure at the Carty site; the ability of the electrical service provider to provide the required power for the Project; and the lack of sensitive resources within a large portion of the Project Parcel, including unproductive, unfarmed land. In addition, the Project Parcel has existing public access, its relatively flat to minimize grading and ground disturbance, and is of adequate size to manage all stormwater and industrial wastewater management onsite.

TABLE

Table 1 Alternatives Analysis

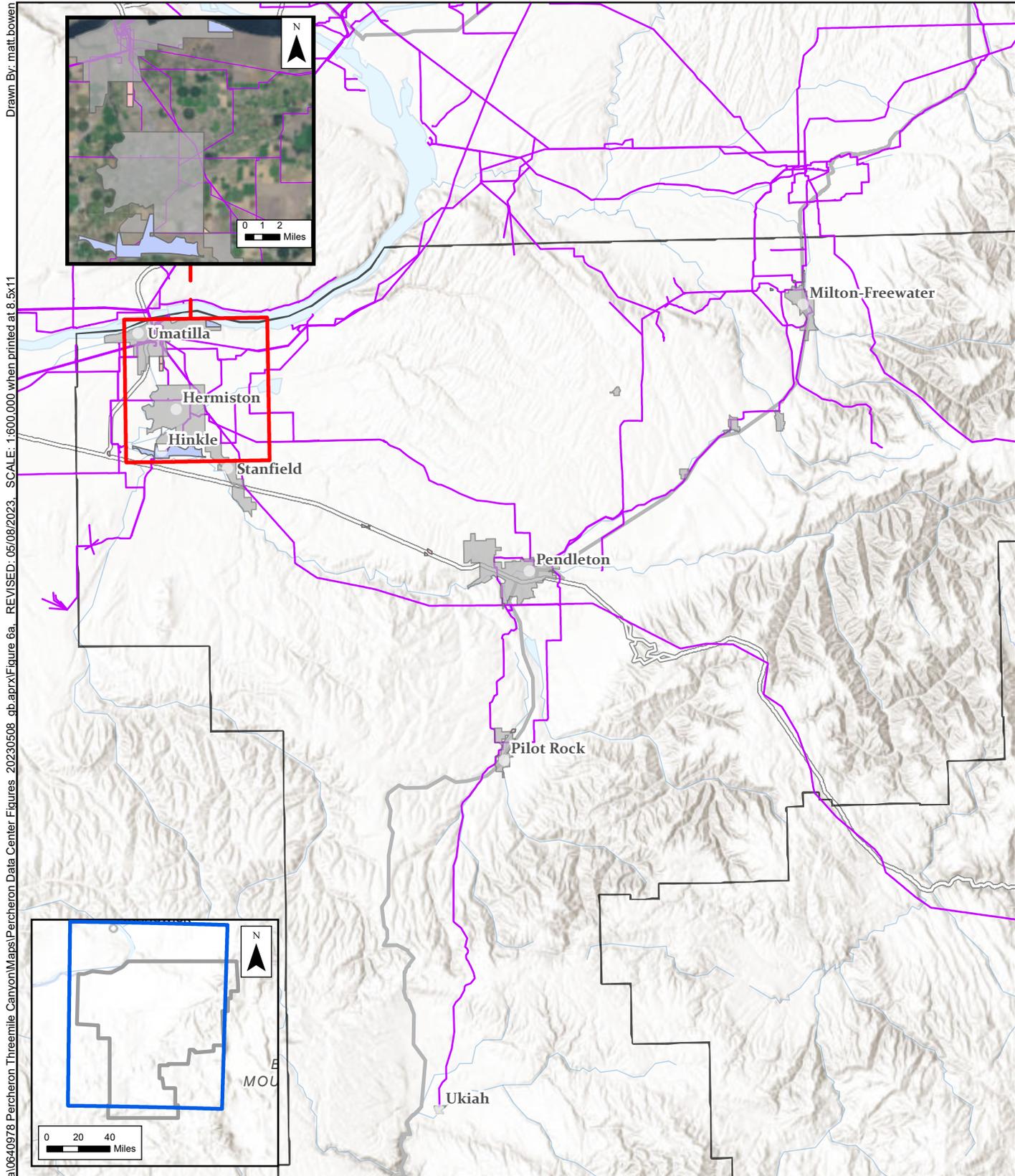
Alternatives Sites Considered	Distance from Selected Site (miles)	Jurisdiction	Zoning	Within or Distance to UGB	Zoning of Adjacent Lands	Criteria Assessment	Conclusion
Overarching Assessment: Umatilla County UGBs	25-30	Umatilla County	Various	Within	Various	As shown on Figure 1a, UGBs within Umatilla County are either already occupied or lack suitable electrical infrastructure. Specifically, Hermiston and Hinkle are already saturated with developments, whereas Stanfield lacks available transmission capacity and Pendleton is too far to be a commercially viable (e.g., no market) fiber network.	Criteria 1, 3, and 6 not met
Overarching Assessment: Umatilla County RLIZ, LRLIZ, HI Zones	25	Umatilla County	RLIZ, LRLIZ, HI	0-1 miles	Various	Figure 1a shows the limited areas that fall within the zones that allow data centers to be permitted outright. All of these zoned areas are already occupied with existing infrastructure.	Criteria 3 not met
Overarching Assessment: Umatilla County Non-resource Lands	20+	Umatilla County	Various	Various	Various	Areas outside of the UGBs and permitted zones, but not requiring a Goal 3 exception, were analyzed and deemed not to have available electrical infrastructure or meet the landowner and land requirements of Criteria 4.	Criteria 1 and 3 not met
Overarching Assessment: Morrow County UGBs	12 -20+	Morrow County	Various	Within	Various	As shown on Figure 1b, UGBs to the north within Boardman and Irrigon, Oregon, are already occupied. UGBs to the south do not meet requirements related to available transmission capacity and topography.	Criteria 1 and 3 not met
Overarching Assessment: Morrow County MG, PI, ALI Zones	0.27 - 20	Morrow County	MG, PI, ALI	0 – 20 miles	Various	No undeveloped, vacant land available that meets the size requirements of Criteria 3. See relevant zones on Figure 1b.	Criteria 3 not met
Overarching Assessment: Morrow County Non-resource Lands	5+	Morrow County	Various	Various	Various	Areas outside of the UGBs and permitted zones, but not requiring a Goal 3 exception, were analyzed and deemed not to have available electrical infrastructure or meet the landowner and land requirements of Criteria 4.	Criteria 1 and 3 not met
Alternative 1a: Carty Generating Station	0.24	Morrow County	MG	12 miles	MG	Land already occupied by a generating station.	Criteria 3 not met
Alternative 1b: Carty Open Space/BCA	0.40	Morrow County	EFU	10 miles	EFU, MG	Landowner not interested in selling or leasing property and partially within the BCA or slated for future 50-megawatt solar development.	Criteria 3 not met
Alternative 2: Umatilla Army Depot	20	Umatilla County	UDM, DI-U	3 miles	EFU, LI	No available power capacity within criteria distance. Also, concern with prior uses and potential contamination.	Criteria 1 and 3 not met
Alternative 3: Pedro Land Company	28	Umatilla County	EFU-40	3 miles	LI	Site was previously under control with landowner in 2020/2021, though power analysis determined that interconnection would be too costly and not arrive within the Project's schedule. Also zoned agriculture.	Criteria 1 and 8 not met
Alternative 4: JR Simplot Property	28	Umatilla County, Hinkle area	HI, EFU	Directly adjacent	DI-U, EFU, LI	Adjacent to the Calpine Power Facility in Hinkle, and it was assumed power would be available. However, the owner was not interested in selling or leasing the parcels. There were also substantial wetlands and floodplains encumbering the site.	Criteria 3 and 4 not met
Proposed Sites: Selected Alternative	0	Morrow County	EFU	12 miles	EFU, MG, SAI	Adjacent to electrical infrastructure that meets all elements of Criteria 1 and 2. Threemile Canyon Farms is willing to sell land. Land was never farmed, grazed, or irrigated. Outside of the BCA and able to meet sizing criteria, while avoiding wetlands and floodplain. Existing fiber back haul accessible from site. Access to site through Tower Road. Parcel zoned EFU though surrounded by MG and SAI uses, including the Carty Generating Station.	Meets all siting criteria except for 7 (the subject of this application)

Notes:

- Airport Light Industrial Zone (ALI)*
- Boardman Conservation Area (BCA)*
- Depot Industrial (DI-U)*
- Heavy Industrial (HI)*
- Exclusive Farm Use (EFU)*
- General Industrial (MG)*
- Light Industrial (LI)*
- Limited Rural Light Industrial Zone (LRLIZ)*
- Port Industrial Zone (PI)*
- Rural Light Industrial Zone (RLIZ)*
- Military (UDM)*
- Urban Growth Boundaries (UGBs)*

FIGURES

M:\US\Projects\P-R\Rowan Green Data\0640978 Percheron Three Mile Canyon\Maps\Percheron Data Center Figures_20230508_gb.aprx\Figure 6a_REVISED_05/08/2023_SCALE:1:600,000 when printed at 8.5x11



-  Existing Transmission Infrastructure
-  Umatilla County Boundary
-  Urban Growth Boundary
- Zoning**
-  Rural Light Industrial Zone
-  Limited Rural Light Industrial Zone
-  Heavy Industrial

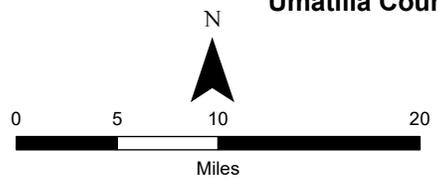
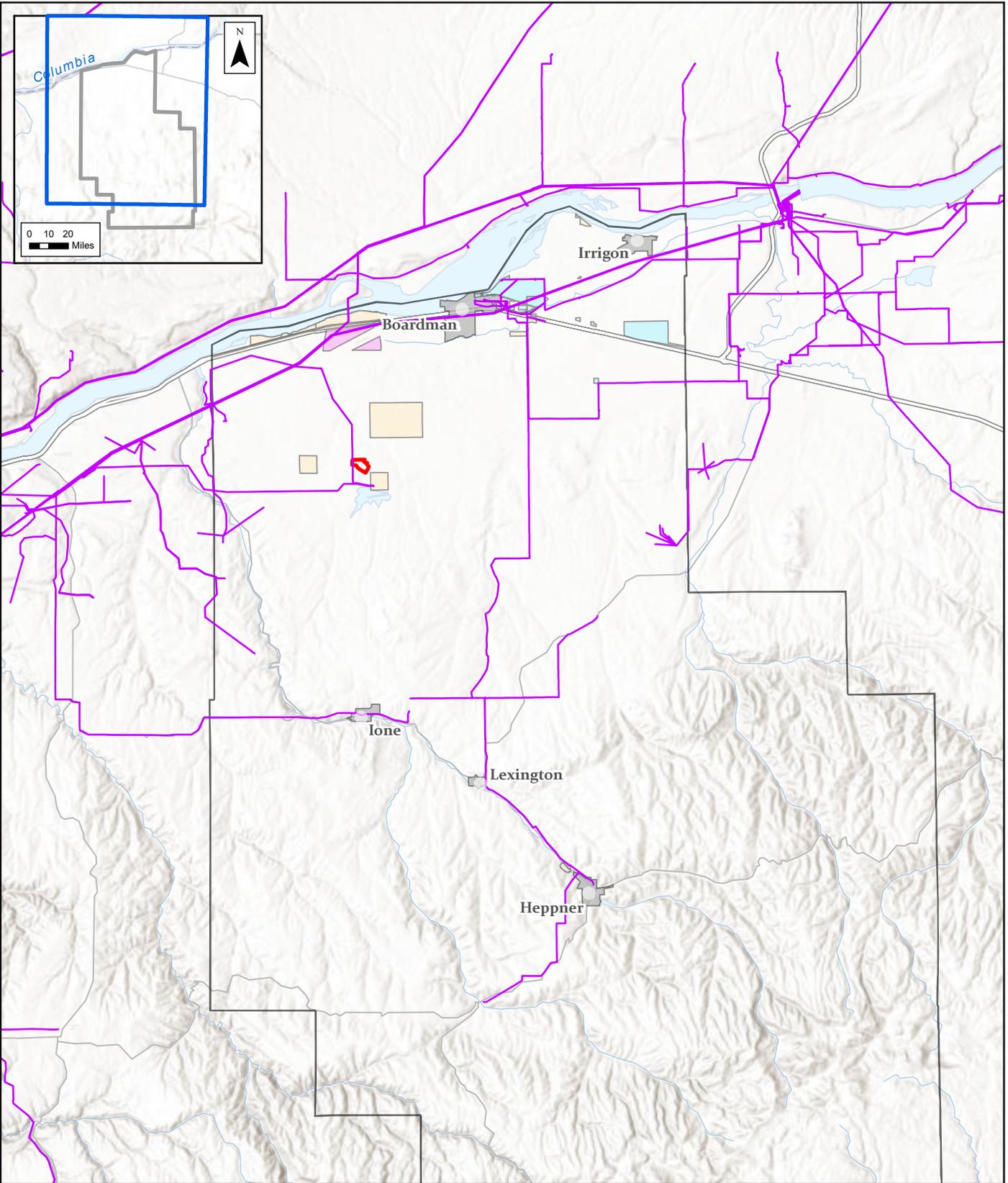


Figure 6a
Umatilla County UGB and Permittable Zones
 Percheron Data Center
 Rowan Green Data, LLC
 Umatilla County, Oregon

Source: Esri - World Topographic Map; NAD 1983 2011 StatePlane Oregon North FIPS 3601 Ft Int

Drawn By: matt.bowen

M:\USJ\Projects\P-R\Rowan Green Data\0640978 Percheron Three\mle Canyon\Maps\Percheron Data Center Figures_20230508_gb.aprx\Figure 6b_REVISED_05/08/2023_SCALE: 1:500,000 when printed at 8.5x11



- Existing Transmission Infrastructure
- Project Parcel
- Morrow County Boundary
- Urban Growth Boundary
- Boardman Bombing Range
- Zoning**
- General Industrial Zone
- Port Industrial Zone
- Airport Light Industrial Zone

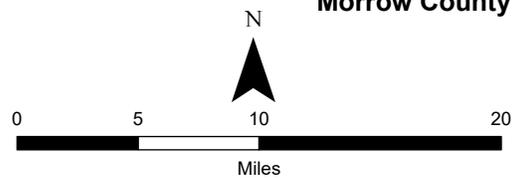
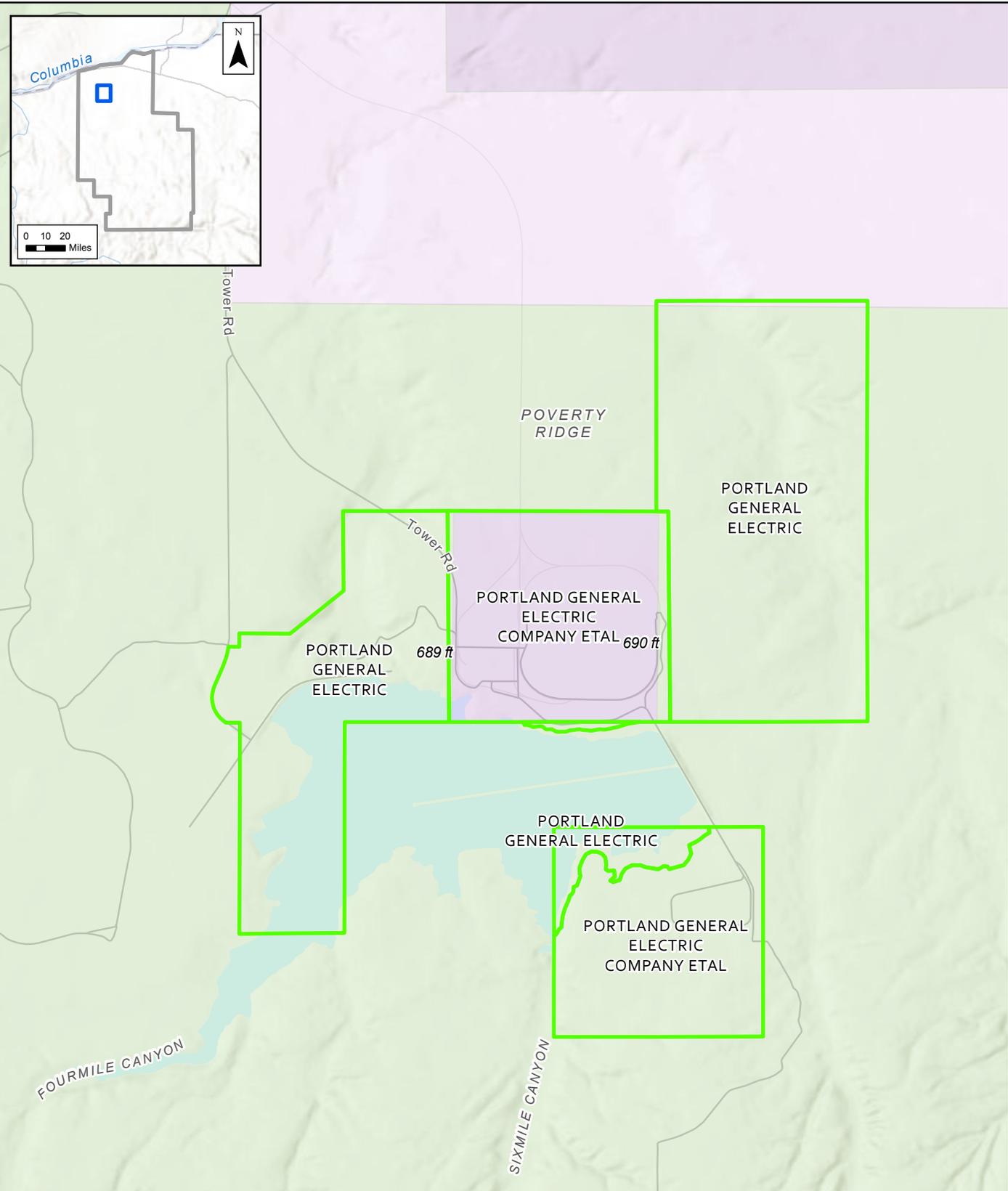


Figure 6b
Morrow County UGB and Permittable Zones
 Percheron Data Center
 Rowan Green Data, LLC
 Morrow County, Oregon

Source: Esri - World Topographic Map; NAD 1983 2011 StatePlane Oregon North FIPS 3601 Ft Int

M:\US1\Projects\P-R\Rowan Green Data\0640978 Percheron Threemile Canyon\Maps\Percheron Data Center Figures_20230508_gb.aprx\Figure 6c_REVISED_05/08/2023_SCALE_1:60,000_when printed at 8.5x11
 Drawn By: matt.bowen



- Alternative Site 1
 - Urban Growth Boundary (Nearest - 12.7 miles)
- Zoning**
- Exclusive Farm Use
 - General Industrial
 - Space Age Industrial

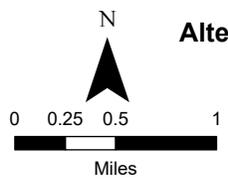
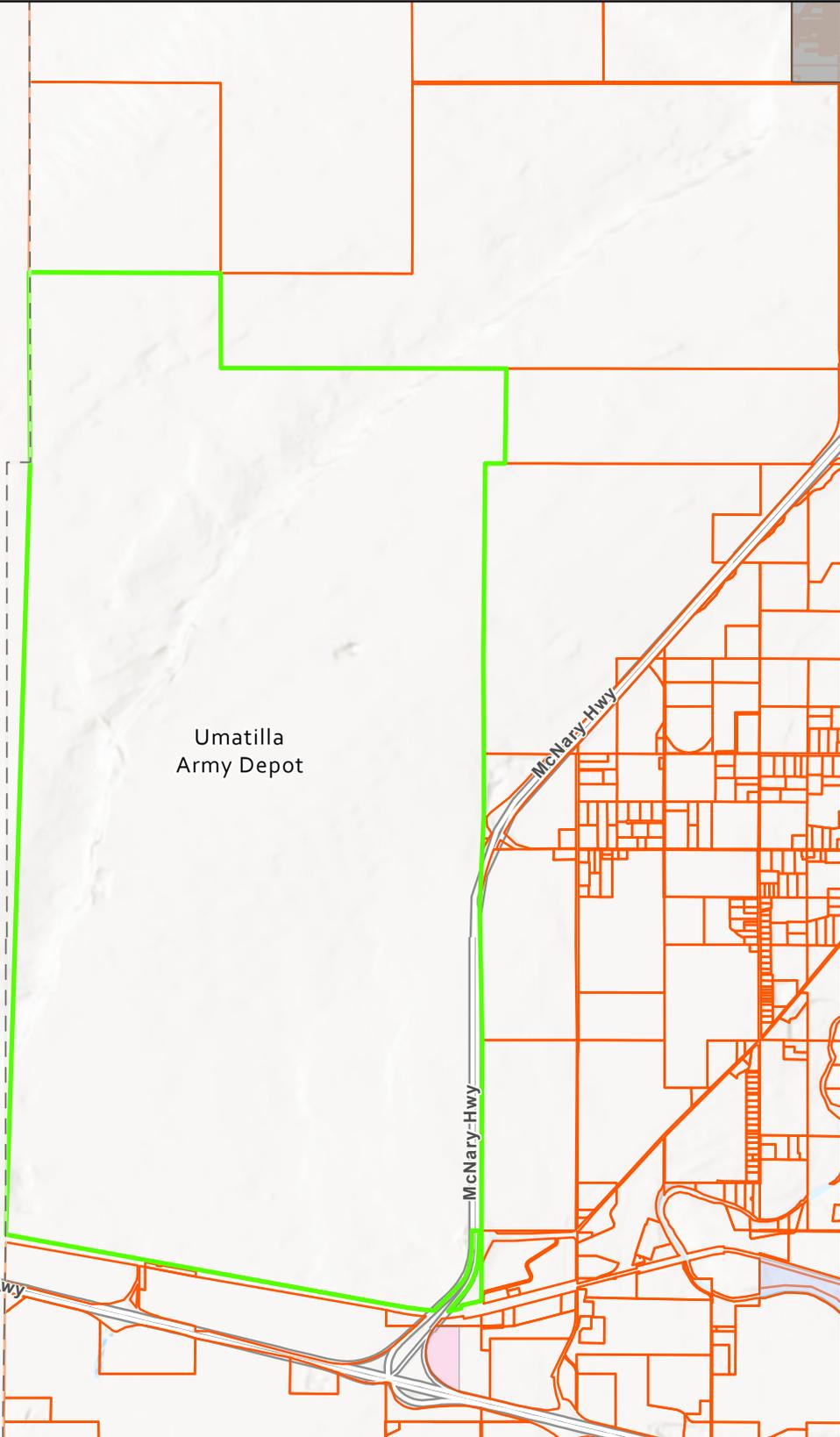
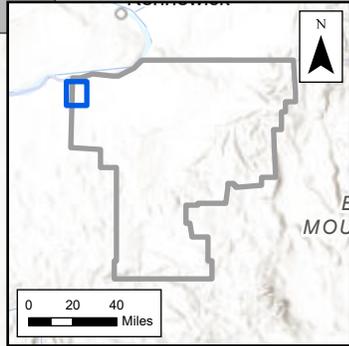


Figure 6c
Alternative Sites Considered
Alternative Site 1: Carty Generating Station
 Percheron Data Center
 Rowan Green Data, LLC
 Morrow County, Oregon

Source: Esri - World Topographic Map; WGS 1984 Web Mercator Auxiliary Sphere

M:\USJ\Projects\PR\Rowan Green Data\0640978 Percheron Threemile Canyon\Maps\Percheron Data Center Figures_20230508_gb.aprx\Figure 6d...REVISED_05/08/2023...SCALE:1:80,000 when printed at 8.5x11
Drawn By: matt.bowen



- Alternative Site 2
- Urban Growth Boundary (Nearest - 3.1 miles)
- Zoning**
- Limited Rural Light Industrial Zone
- Heavy Industrial

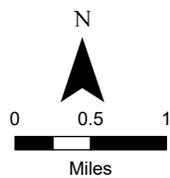
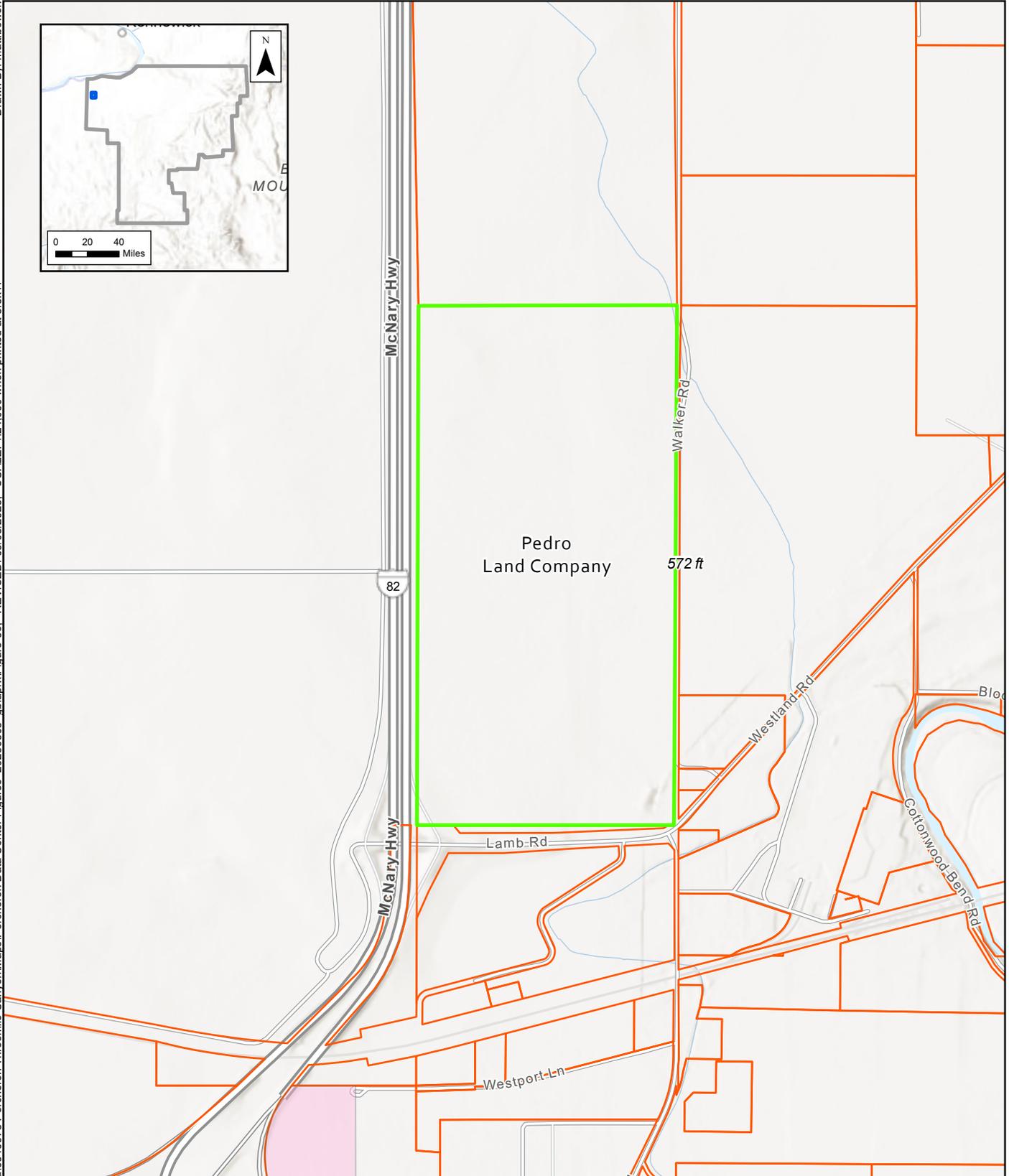
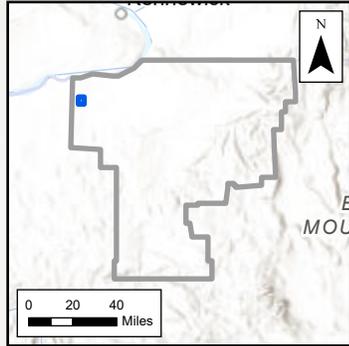


Figure 6d
Alternative Sites Considered
Alternative Site 2: Umatilla Army Depot
Percheron Data Center
Rowan Green Data, LLC
Umatilla County, Oregon

Source: Esri - World Topographic Map; WGS 1984 Web Mercator Auxiliary Sphere



- Alternative Site 3
 - Urban Growth Boundary (Nearest - 2.8 miles)
- Zoning**
- Limited Rural Light Industrial Zone

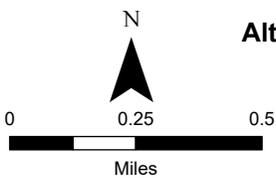
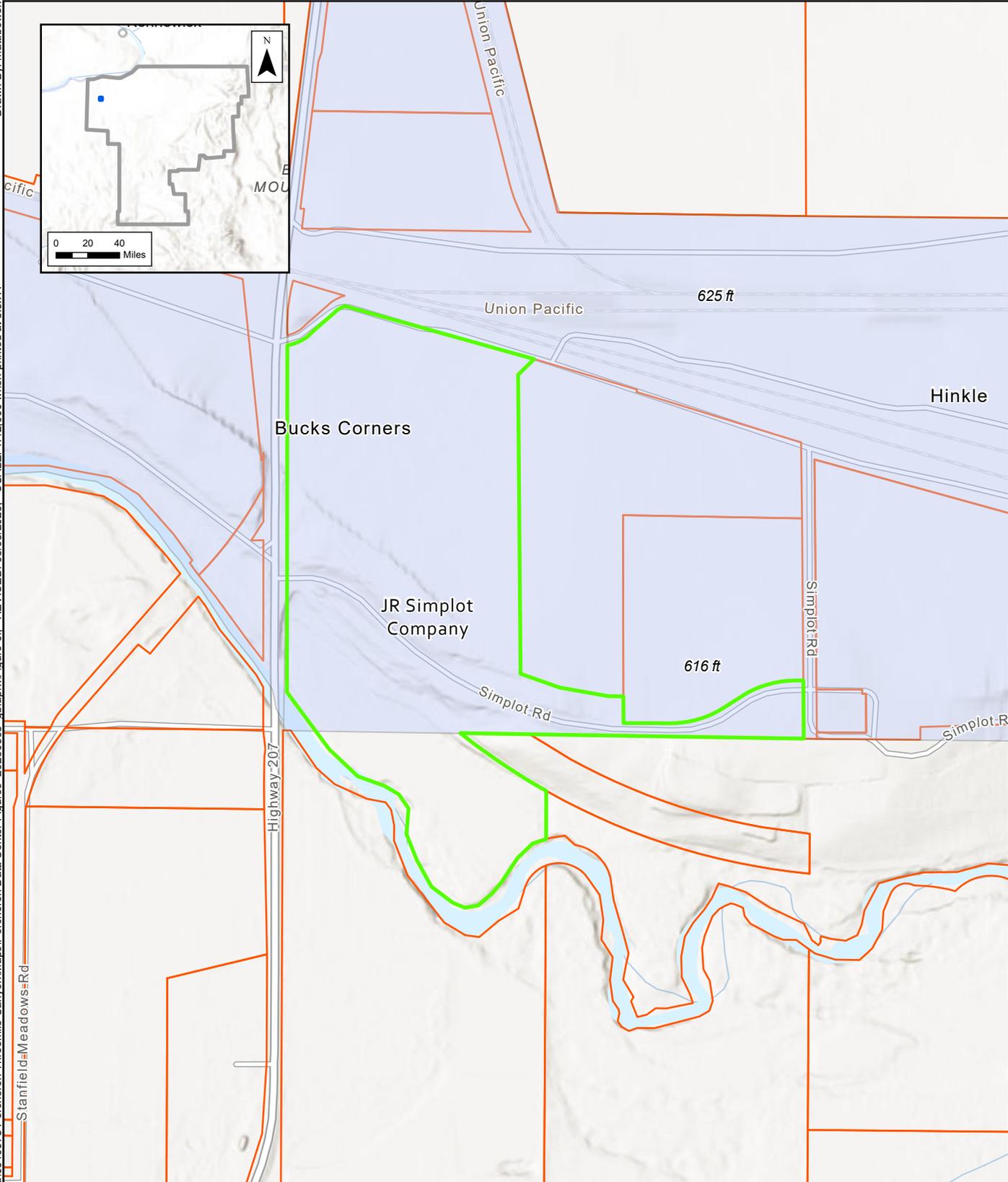
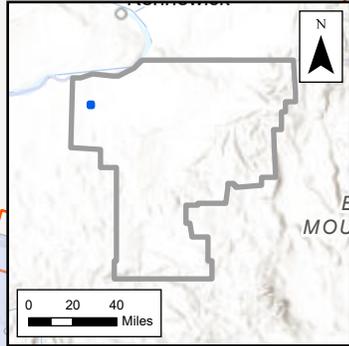


Figure 6e
Alternative Sites Considered
Alternative Site 3: Pedro Land Company
 Percheron Data Center
 Rowan Green Data, LLC
 Umatilla County, Oregon

M:\USJ\Projects\P-R\Rowan Green Data\0640978 Percheron Threemile Canyon\Maps\Percheron Data Center Figures - 20230508_db.aprx\Figure 6f. REVISED: 05/08/2023. SCALE: 1:12,000 when printed at 8.5x11

Drawn By: matt.bowen



-  Alternative Site 4
-  Urban Growth Boundary (Nearest - 0.9 miles)
- Zoning**
-  Heavy Industrial

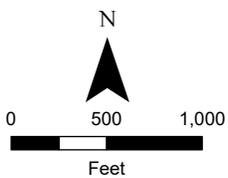


Figure 6e
Alternative Sites Considered
Alternative Site 4: JR Simplot Property
 Percheron Data Center
 Rowan Green Data, LLC
 Umatilla County, Oregon

Source: Esri - World Topographic Map; WGS 1984 Web Mercator Auxiliary Sphere