

State of Oregon
Department of Environmental Quality

Memorandum

Date: September 19, 2025

To: FILE

Through: Ann Farris and Bryn Thoms

From: Allen Clements
Eastern Region

Subject: Union Pacific Railroad Klamath Falls Yard, ECSI #0297; Staff Memorandum in support of a Conditional No Further Action determination

This Staff Memorandum (memo) presents the basis for the Oregon Department of Environmental Quality's (DEQ's) recommended Conditional No Further Action determination for the Union Pacific Railroad Klamath Falls Yard, in Klamath Falls, Oregon (Figure 1). As discussed in this memo, contaminant concentrations in soil and groundwater at the site are predominantly below acceptable risk levels. Any remaining residual risk, under select exposure scenarios, is adequately managed through institutional controls.

The proposed Conditional No Further Action determination meets the requirements of Oregon Administrative Rules Chapter 340 Division 122, Sections 010 to 0140, and ORS 465.200 through 465.455.

The proposal is based on information documented in the administrative record for this site. A copy of the administrative record index is presented at the end of this memo.

1. BACKGROUND

Site location and setting.

The Union Pacific Railroad (UPRR) Klamath Falls Yard site is located on fifty-five (55) acres at 1585 Oak Avenue in Klamath Falls, Oregon, and is bordered on the north by Main Street, on the west by Spring Street, and on the east by both Adams Street and El Dorado Avenue [Figure 1]. Based on the United States Geological Survey Coordinate System, the site is in Section 33, Township 38 South, Range 9 East of Klamath County and is identified in Klamath County Tax Map 38 09 33 Index. The site latitude is 42° 13' 32.90" N and site longitude is 121° 46' 19.90" W. The site is an active rail yard in an area with extant industrial and commercial uses. Zoning is industrial, including approximately one 1,600 square foot area in the eastern property boundary which is zoned light industrial. UPRR intends to continue to use the site as an active rail yard for the foreseeable future and the City of Klamath Falls Master Plan indicates that this site and proximate adjacent property will remain industrially zoned. Remaining significant structures and features at the site include a signal building, car shed, freight station, former roundhouse,

turntable and sand house, and a 1.1-acre asphalt cap over the former evaporation pond area [Figure 2]. There are some limited residences located adjacent to the northeastern property boundary, at approximately Orchard Avenue and to the north, with the nearest residence within the Locality-of-Facility (LOF) as defined in the 2006 Record of Decision (ROD) [Figure 3]. Geographically, the facility is located within City of Klamath Falls urban area limits, approximately 1,500 feet northeast of Lake Ewauna and the Klamath River.

Physical setting.

The approximate ground elevation of the site is 4,090 feet above mean sea level (MSL). The nearest surface water body is a canal located approximately 800 feet northeast of the site. The topography of the site is relatively flat, with a ground elevation difference of approximately 8 feet from the north to the south end of the site.

The site is located in the Basin-Range geographic province of Oregon. The Upper and Lower Klamath Lake Valleys are situated in down-dropped tectonic blocks that were formed by steeply dipping, north-south trending normal faults. Both sides of each valley are bounded by the uplifted tectonic blocks. The lithology is primarily of volcanic origin.

The site geology consists of Quaternary alluvial, fluvial terrace and lacustrine deposits in the upper 15 feet. The lithology of the upper 15 feet consists of gravelly clay overlying silty and sandy clay. Lithologic logs from deep water supply wells located near the site indicate that the depth to bedrock could be in the range of 25 to 50 feet below ground surface.

Impacted site groundwater is relatively shallow (approximately 6 feet below ground surface) with a southeast flow vector at a generalized gradient of 0.003 foot/foot. Static groundwater levels have historically fluctuated to a maximum in excess of 10 feet.

Site history.

The former Southern Pacific Transportation Company (SPTCo) began using the site for rail service activities in 1909. Between 1913 and 1923, during World War I and the years immediately following the war, the federal government operated the site. After the 6th Street overpass was built in 1926, SPTCo expanded the site parallel to the main line. During this period, construction of the roundhouse was completed. Operations that began during this period included: train construction, freight loading and unloading, minor locomotive maintenance, railcar repair, and locomotive fueling. Diesel locomotives (replacing the steam-operated locomotives) were introduced in 1947, and by 1954 almost all of the locomotives used were diesel powered.

Many structures associated with past locomotive maintenance and fueling have been demolished. The site is currently used for limited locomotive and component replacement.

2. BENEFICIAL LAND AND WATER USE DETERMINATIONS

Land use.

The site is an active rail yard in an area with existing industrial and commercial uses. Zoning is industrial, including approximately one 1,600 square foot area in the eastern property boundary which is zoned light industrial [Figure 4], and the City of Klamath Falls Master Plan indicates that this site and proximate adjacent property will remain industrially zoned. UPRR intends to continue to use the site as an active rail yard for the foreseeable future.

Groundwater use.

Groundwater within the LOF [Figure 3] is not currently, nor anticipated to be, used for domestic purposes. Additionally, the shallow groundwater was not considered a source of drinking water for at least 0.5 mile downgradient of the site and a review of well records show that no new water supply wells have been installed in the area within 0.5 mile downgradient of the site since the signing of the ROD in 2006 (Jacobs 2021).

Surface water use.

No surface water bodies are located within the LOF since the evaporation pond was decommissioned in 1997, and no environmental releases of hazardous substances from site sources to surface water bodies have been documented. As the site is predominantly unpaved, stormwater at the site primarily infiltrates directly to the subsurface, with some intermittent surface flow into the surrounding City stormwater system during periods of high precipitation.

The eastern side of the asphalt cap over the former evaporation pond area [Figure 3] contains a grassy bioswale depression which was designed to contain stormwater runoff from the cap and allow it to infiltrate into the subsurface. The bioswale was sized sufficiently to hold water from a 100-year storm event or a combined 10-year storm event with 1 foot of snowmelt.

Two surface water bodies are present within ½ mile of the site. A canal is located approximately 800 feet northeast of the site at a higher elevation than the site. The elevation of the canal is approximately 4,120 feet MSL and the elevation of the site is approximately 4,090 feet MSL. The other surface water body is Lake Ewauna, which is located approximately 1,500 feet southwest of the site at a lower elevation than the site.

3. INVESTIGATION AND CLEANUP WORK

In 1992, a soil excavation of at least 90 cubic yards of hazardous waste related to sandblasting and painting was conducted by SPTCo while reconditioning one 85,000-gallon and one 220,000-gallon above-ground storage tank, and the material was disposed of offsite. In 1995, URS Consultants, Inc., was contracted by EPA to conduct a Preliminary Assessment (PA) of the site under the authority of the Comprehensive Environmental Response, Compensation, and Liability

Act (CERCLA). The purpose of the PA was to collect sufficient data to determine if the site should be included on the National Priority List (NPL), and to document potential threats to public health or the environment posed by the site. The results of the assessment indicated that the site should not be placed on the NPL, but that additional investigation was necessary.

In 1997, SPTCo requested DEQ oversight of its investigation, and executed a Letter of Intent with DEQ. DEQ determined that a remedial investigation (RI) was needed to determine if a “release” or “threat of release” to the environment existed, as defined under Oregon Administrative Rule (OAR) 465.200. On December 1, 1997, UPRR entered into a Voluntary Cleanup Agreement (No. WMCVC-ER-97-13) with DEQ and developed the RI Workplan (ERM 1998). The RI was completed in three phases between 1998 and 2002 (ERM 1999a, 1999b, 2002) and consisted of collecting surface and subsurface soil samples and groundwater samples. A total of 19 groundwater monitoring wells and 4 piezometers were installed at the site. The soil and groundwater samples were analyzed for volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), total petroleum hydrocarbons (TPH), and metals. The RI investigations identified two light nonaqueous phase liquid (LNAPL) plumes at the site that were most likely the result of various fueling spills over the years (Figure 5).

Interim remedial actions implemented at the site prior to the signing of the ROD included the decommissioning of several underground storage tanks (USTs) and excavation and disposal of associated contaminated soils in 1999. Additionally, in 2004, a 120,000-gallon Bunker C heating oil UST, two abandoned oil-water separators, and associated wastes were removed and disposed offsite (Jacobs 2021b).

The ROD for the site was signed on April 21, 2006 (DEQ 2006). The ROD divided the site into affected media including soil, LNAPL, and groundwater. The remedial actions identified for each type of media were as follows:

- Soil: Excavation of hot spots in soil (diesel pump house and fuel unloading area) and soil with unacceptable risk (former evaporation pond area), construction of an asphalt cap in the former evaporation pond area, and deed restrictions
- LNAPL: Enhanced LNAPL extraction at select wells
- Groundwater: Deed restrictions and long-term monitoring

On December 20, 2006, UPRR entered into Consent Order No. LQVC-ER-06-07 with ODEQ for remedial design and remedial action activities. A deed restriction, consisting of an Easement and Equitable Servitudes (EES), was recorded with Klamath County in July 2007 which included a Scope of Work and a Site Monitoring and Maintenance Plan as attachments.

A Remedial Action Work Plan was prepared for the site in 2007 (CH2M HILL 2007a, 2007b). A Long-Term Monitoring, Maintenance, and Contingency Plan, was developed for the site in 2008 (CH2M HILL 2008a, 2008b) and included the following primary activities to be conducted after the remedial action:

- Annual visual inspection of the cap

- Enhanced LNAPL extraction in 3 groundwater monitoring wells (KFMW-09, KFMW-13, and KFP-02)
- Annual groundwater monitoring at 11 groundwater monitoring wells (KFMW-01, KFMW-03, KFMW-04, KFMW-08, KFMW-09, KFMW-11, KFMW-12, KFMW-13, KFMW-14, KFMW-16, and KFP-02).

The remedial action for the site was completed in December 2008 (CH2M HILL 2009b), which consisted of the following activities:

- Abandonment of 12 groundwater monitoring wells that were installed during the RI and were no longer being monitored (KFMW-02, KFMW-05, KFMW-06, KFMW-07, KFMW-10, KFMW-15, KFMW-17, KFMW-18, KFMW-19, KFP-01, KFP-03, and KFP-04).
- Excavation and disposal of approximately 19 tons of soil from the former diesel pump house and fuel unloading area, including the identified soil hot spot
- Excavation and disposal of approximately 1,344 tons of soil from the former evaporation pond area including soil with unacceptable risk
- Construction of an asphalt cap over the former evaporation pond area
- Addition of a bioswale to the cap design to utilize best management practices (BMPs) to handle stormwater runoff from the cap
- Installation of a fence around the asphalt cap to limit access and reduce wear and tear on the cap

Nature and extent of contamination.

Prior to the remedial action, the ROD identified several contaminants of concern (COCs) exceeding cleanup goals for the site, including the following:

- Soil
 - Metals (arsenic and lead within the surface soils (upper 3 feet) and subsurface soils of a 48,000 square foot area in the former evaporation pond area)
 - Carcinogenic polycyclic aromatic hydrocarbons (cPAHs) (benzo(a)anthracene, benzo(a)pyrene, and naphthalene within the surface soils of a 100 square foot area in the former diesel pumphouse and fuel unloading areas)
- Groundwater
 - Total petroleum hydrocarbons as diesel (TPH-d)
- LNAPL

Activities completed since the Remedial Action.

Since completion of the remedial action, three 5-Year ROD Reviews have been submitted for the site (CH2M HILL 2011a, CH2M HILL 2017a, Jacobs 2021b). As summarized in the third 5-Year ROD Review, multiple lines of evidence over the years have led to DEQ approval of several reductions in the scope of required annual monitoring activities, including the following:

- Enhanced LNAPL extraction was reduced from three wells to one well, and the monitoring frequency was reduced from quarterly to annual in 2009.
- Enhanced LNAPL extraction was discontinued in 2012.
- Groundwater monitoring was discontinued in 2017, after data indicated no significant changes in dissolved phase concentrations or LNAPL recovery since the remedial action, and all remaining wells except one (KFMW-09) were abandoned.
- LNAPL monitoring at KFMW-09 was discontinued in 2022, and the well was abandoned in 2023.

Over 15 years of LNAPL monitoring demonstrated that the approximate extent of LNAPL was stable or receding and contained within the property boundaries. Figure 5 shows the approximate extent of residual LNAPL at the site that is present near the surface of the water table, which varies between approximately 5 and 10 feet below ground surface. As of 2022, all remaining operations and maintenance (O&M) activities at the site were predicated solely on the remaining soil contamination within the Former Evaporation Pond Area and the associated engineering controls. These remaining O&M activities consisted of an annual inspection of the asphalt cap and any associated maintenance and repairs of the cap. Any residual risks resulting from other media, such as groundwater, LNAPL, soil vapor, and soil outside of the Former Evaporation Pond Area, had been addressed by one or more of the following:

- The 2008 remedial action.
- Over 15 years of monitoring and natural attenuation.
- Institutional controls in the EES and associated deed restriction.

4. RESIDUAL RISK EVALUATION

In 2023, a residual risk evaluation was conducted to re-evaluate the nature and extent of the residual risk in the Former Evaporation Pond Area beneath the cap and, if necessary, consider potential remedial actions to mitigate any remaining unacceptable risk (Jacobs 2023a). Furthermore, the residual risk evaluation was based upon DEQ risk-based screening levels (RBCs) and DEQ risk assessment guidance that had been updated since the time of the ROD and remedial action (DEQ 2018a, DEQ 2010). The residual risk evaluation concluded that the soil beneath the asphalt cap does not pose an unacceptable risk to the occupational workers at the site based on the current guidance and RBCs. Therefore, the asphalt cap is not required as an engineering control to protect the rail yard workers. In a memo to file on December 28, 2023 (DEQ 2023), DEQ concurred with this conclusion and that inspection and maintenance of the cap were no longer required. The overall results of the residual risk assessment and subsequent recommendations are provided below.

Conceptual site model.

To evaluate human exposure to residual chemical contamination requires an assessment of the type and extent of that exposure. This is based on current and reasonably likely future site use. DEQ publishes RBCs for contaminants commonly encountered, for different types of exposure

scenarios. These RBCs are conservative estimates of protective levels of contaminants in soil, groundwater and air. Table 1 shows potential exposure pathways and receptors for this site. Note that the table only considers soil in the Former Evaporation Pond Area since the associated risks from all other media and areas of the site have been addressed as noted at the end of Section 3. Based on this, applicable RBCs were identified and used for risk screening.

Table 1. Identification of applicable RBCs, based on pertinent pathways and receptors

Pathway	Receptor	Applicable RBC?	Basis for selection/exclusion
SOIL (Former Evaporation Pond Area)			
Ingestion, dermal contact, and inhalation	Residential	No	See Note 1.
	Urban residential	No	
	Occupational	Yes	
	Construction worker	Yes	
	Excavation worker	Yes	

Notes:

1. The Former Evaporation Pond Area is not adjacent to any residential areas and the site serves an important role in UPRR operations in the Pacific Northwest and is expected to remain an active rail yard with restricted access for the foreseeable future. No changes to property use are anticipated.

Contaminant concentrations.

Table 2 presents a summary of the soil data beneath the cap and the resulting exposure point concentrations (EPCs) of the COCs within the Former Evaporation Pond Area. The EPCs shown represent the 90 percent upper confidence limit (UCL) of the data set for each COC. Additional details regarding individual sample locations and concentrations can be found in the Residual Risk Evaluation report (Jacobs 2023a).

**Table 2. Exposure point concentration summary (90 percent upper confidence limit),
Former Evaporation Pond Area**

Chemical	No. of detects	No. of samples	EPC (mg/kg)	EPC Basis
SOIL (0 to 3 feet bgs)				
Arsenic	35	35	6.7	90% Student's-t UCL
Lead	33	33	492	90% Student's-t UCL
BaP equiv	28	34	2.6	90% KM (t) UCL
Diesel	25	30	6,247	90% KM (t) UCL
Lubricant Oil	26	26	7,586	90% Student's-t UCL
SOIL (0 to 10 feet bgs)				
Arsenic	101	101	9	90% KM (t) UCL
Lead	91	93	272	90% KM (t) UCL

Chemical	No. of detects	No. of samples	EPC (mg/kg)	EPC Basis
BaP equiv	58	103	1.2	90% KM (t) UCL
Diesel	59	92	4,484	90% KM (t) UCL
Lubricant Oil	57	80	7,163	90% KM (t) UCL

Notes:

1. EPCs calculated using (USEPA 2022).
2. Abbreviations:
BaP equiv = benzo(a)pyrene equivalents
bgs = below ground surface
EPC = exposure point concentration
KM = Kaplan-Meier
mg/kg = milligram(s) per kilogram
UCL = upper confidence limit

Human health risk.

Table 3 presents a comparison of the EPCs (from Table 2) to the respective RBCs for the soil data beneath the cap and the resulting cancer risk and hazard quotient within the Former Evaporation Pond Area. As shown in Table 3, the results of the residual risk evaluation calculation found no unacceptable risk for the depth intervals 0 to 3 feet bgs and 0 to 10 feet bgs. The EPCs for both depth intervals were less than or equal to ($\leq$) each of the following criteria:

- Arsenic $\leq$ regional background
- Lead $\leq$ 800 mg/kg (RBSL)
- Total cancer risk $\leq$ 1E-05 (target risk level)
- Total hazard quotient (that is, hazard index) $\leq$ 1 (target hazard index)

Table 3. Risk summary, Former Evaporation Pond Area

		Occupational			Construction Worker			Excavation Worker			
Chemical	EPC (mg/kg)	Cancer Risk	Hazard Quotient	RBSL ¹ (mg/kg)	Cancer Risk	Hazard Quotient	RBSL ¹ (mg/kg)	Cancer Risk	Hazard Quotient	RBSL ¹ (mg/kg)	Notes
SOIL (0 to 3 feet bgs)											
Arsenic	6.7	< bg	NA	1.9	< bg	NA	15	< bg	NA	420	2, 3
Lead	492	NA	NA	800	NA	NA	800	NA	NA	800	4
BaP equiv	2.6	1.2E-06	NA	2.1	1.5E-07	NA	17	5.3E-09	NA	490	5
Diesel	6,247	NA	0.45	14,000	NA	1.4	4,600	NA	NA	NA	
Lubricant Oil	7,586	NA	0.21	36,000	NA	0.7	11,000	NA	NA	NA	6
Total		1.E-06	0.7		2.E-07	2		5.E-09	NA		
SOIL (0 to 10 feet bgs)											
Arsenic	9	< bg	NA	1.9	< bg	NA	15	< bg	NA	420	2, 3
Lead	272	NA	NA	800	NA	NA	800	NA	NA	800	4
BaP equiv	1.2	5.5E-07	NA	2.1	7.1E-08	NA	17	2.4E-09	NA	490	5
Diesel	4,484	NA	0.32	14,000	NA	1.0	4,600	NA	NA	NA	
Lubricant Oil	7,163	NA	0.2	36,000	NA	0.7	11,000	NA	NA	NA	6
Total		5.E-07	0.5		7.E-08	2		2.E-09	NA		

Notes:

1. (ODEQ 2018b).
2. (ODEQ 2018c).
3. Below Basin and Range background = 12 mg/kg
4. Less than lead RBSL
5. Non-detects set to 0 in BaP equiv calculation
6. Based on mineral/insulating oil RBSL

7. Abbreviations:

bg = background
bgs = beneath ground surface
BaP equiv = benzo(a)pyrene equivalents
EPC = exposure point concentration
mg/kg = milligram(s) per kilogram
NA = not applicable
RBSL = risk-based screening level

Ecological risk.

A Level 1 Ecological Risk Assessment (ERA) was completed and submitted to DEQ in 2005 (Kennedy Jenks 2005). The Level 1 ERA included a site visit and historical research and concluded that no ecologically important species or habitats were present within the site. The site is located within an urban-residential part of downtown Klamath Falls, Oregon. The site is currently an active railyard and will continue to be for the foreseeable future. There are no surface water features or wetlands within the LOF. The ROD concurred with the conclusions of the Level 1 ERA and stipulated that no further work was required in order to assess the potential for adverse ecological effects to terrestrial ecological receptors at the site.

5. RECOMMENDATION

Based on the risk evaluation summarized in Section 4 and the 2023 Residual Risk Evaluation report (Jacobs 2023a), DEQ concurs that the soil beneath the asphalt cap does not pose an unacceptable risk to the occupational workers at the site (DEQ 2023). Therefore, the asphalt cap is not required as an engineering control to protect the rail yard workers. The site serves an important role in UPRR operations in the Pacific Northwest and is expected to remain an active rail yard for the foreseeable future. Since there are no residential properties adjacent to the capped area, and no changes to property use are anticipated, residential exposure to the soil in Former Evaporation Pond Area is not applicable.

The cap is no longer required to protect the site workers, and ongoing inspection and maintenance of the cap is not needed. The whole cap, or portions of the cap, can be removed or retained based on the operating needs of the rail yard. However, a Contaminated Media Management Plan (CMMP) is needed for the Former Evaporation Pond Area of the site to protect construction and excavation workers should future onsite activities require disturbance of the soil in that area. The existing EES for the site should be replaced with a new EES with the general prohibition for excavation of soils in the Former Evaporation Pond Area removed in lieu of a CMMP. The revised EES will retain the current site restrictions on the general prohibition of groundwater use.

It is DEQ's conclusion that UPRR has satisfactorily completed the remedial design and remedial action at the Union Pacific Railroad Klamath Falls Yard as required under the Consent Order. As such, a Conditional No Further Action determination is recommended for this site and ODEQ is planning to issue a Certification of Completion related to the Consent Order. The Certification of Completion should be recorded in DEQ's ECSI database (ECSI # 0297).

6. ADMINISTRATIVE RECORD

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Jacobs. 2023b. 2023 Annual Report, Klamath Falls, OR – Active SP Yard. June 19.

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7. ATTACHMENTS

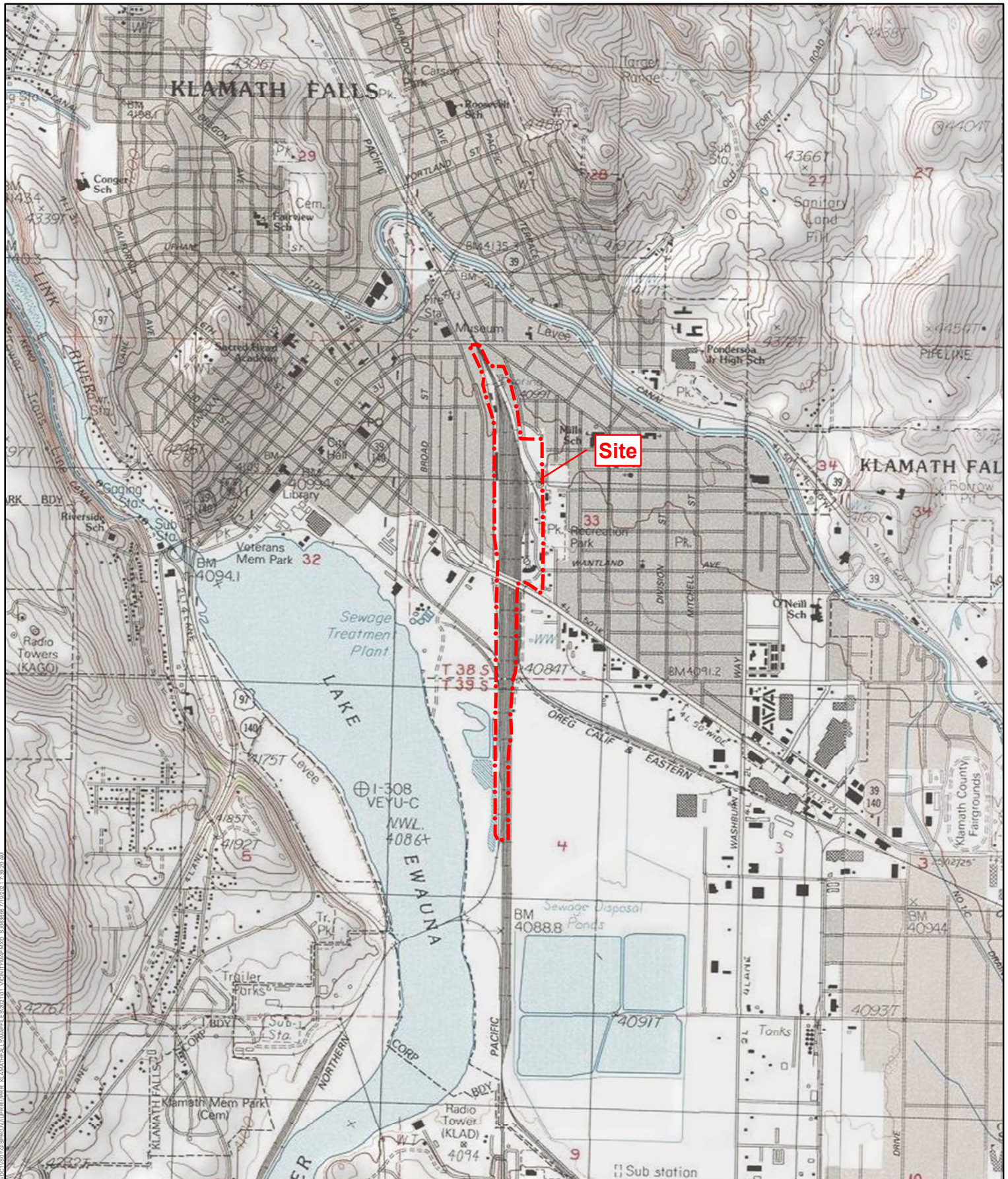
Figure 1: Vicinity Map

Figure 2: Current Site Configuration

Figure 3: Locality-of-Facility

Figure 4: Zoning Map

Figure 5: Approximate Extent of Residual Light Nonaqueous Phase Liquid



LEGEND

 Yard Boundary

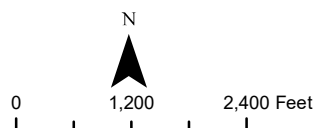


FIGURE 1
Vicinity Map
 Union Pacific Railroad Company
 Klamath Falls Yard, Klamath Falls, Oregon

Jacobs

\\DC1V501\GIS\PROJECTS\UPRR\Klamath Falls\SWAPFILES\202503 UPRR K Falls CURRENT SITE.MXD GGEE 1/28/2025 12:40:46 PM



LEGEND

- Asphalt Cap
- Yard Boundary

Notes:
Imagery Source: ESRI World Imagery

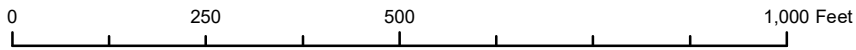
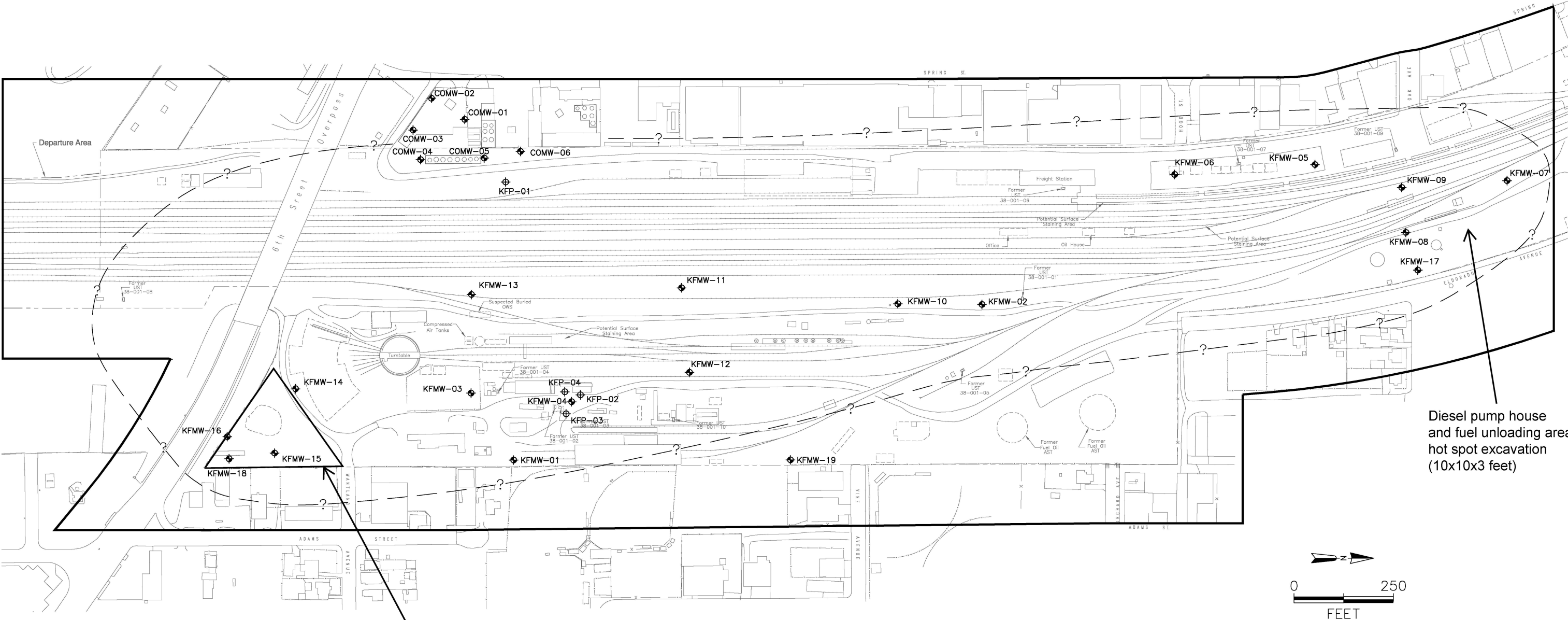
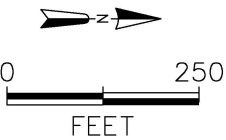


FIGURE 2
Current Site Configuration
Union Pacific Railroad Company
Klamath Falls Yard, Klamath Falls, Oregon



LEGEND

- KFMW-05
Monitoring Well Location
- Piezometer Location
- A & WE
Automotive and Work Equipment
- OWS
Oil-Water Separator
- Yard Boundary
- Locality of Facility
- COPC concentrations exceeding regulatory levels



Kennedy/Jenks Consultants

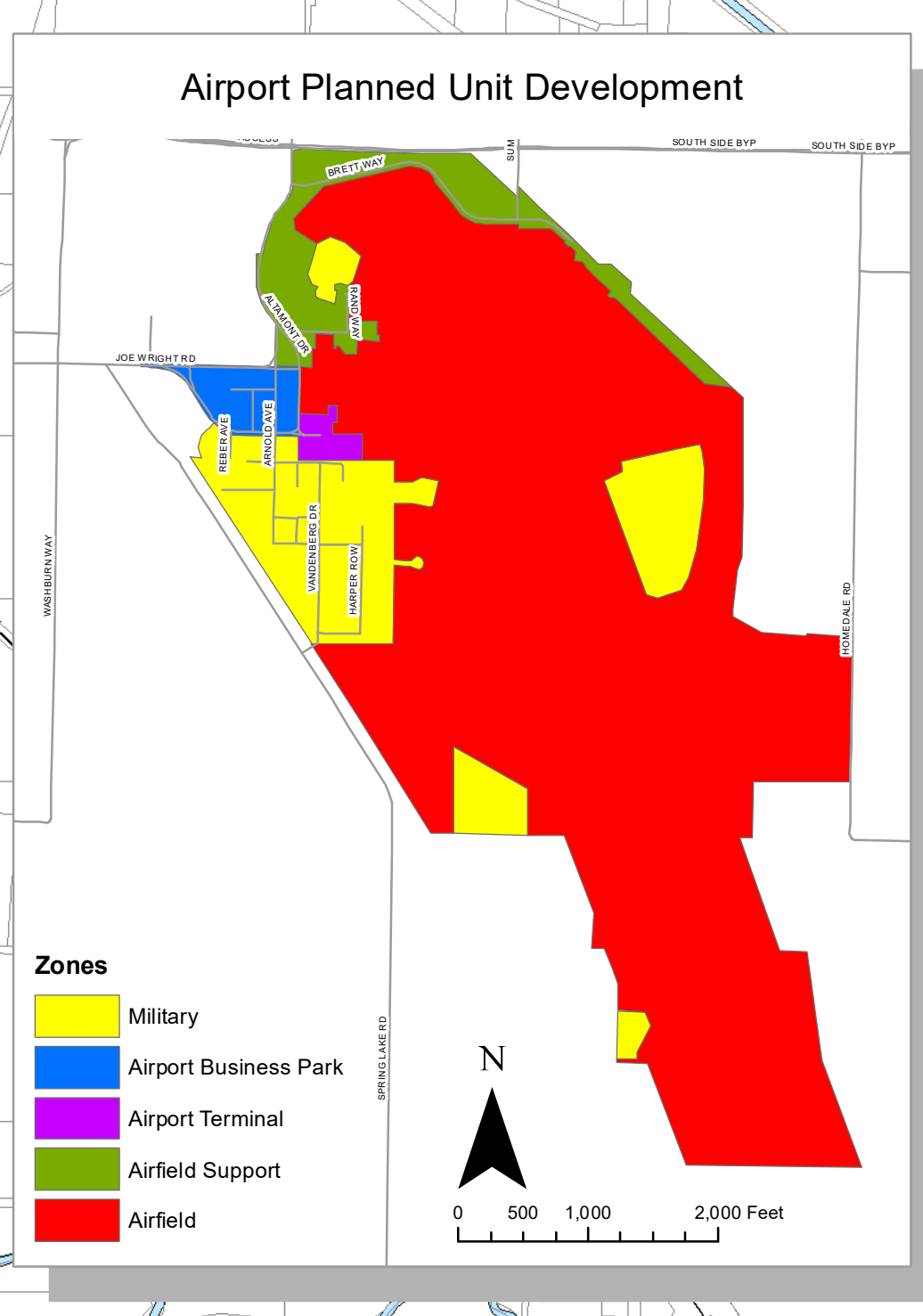
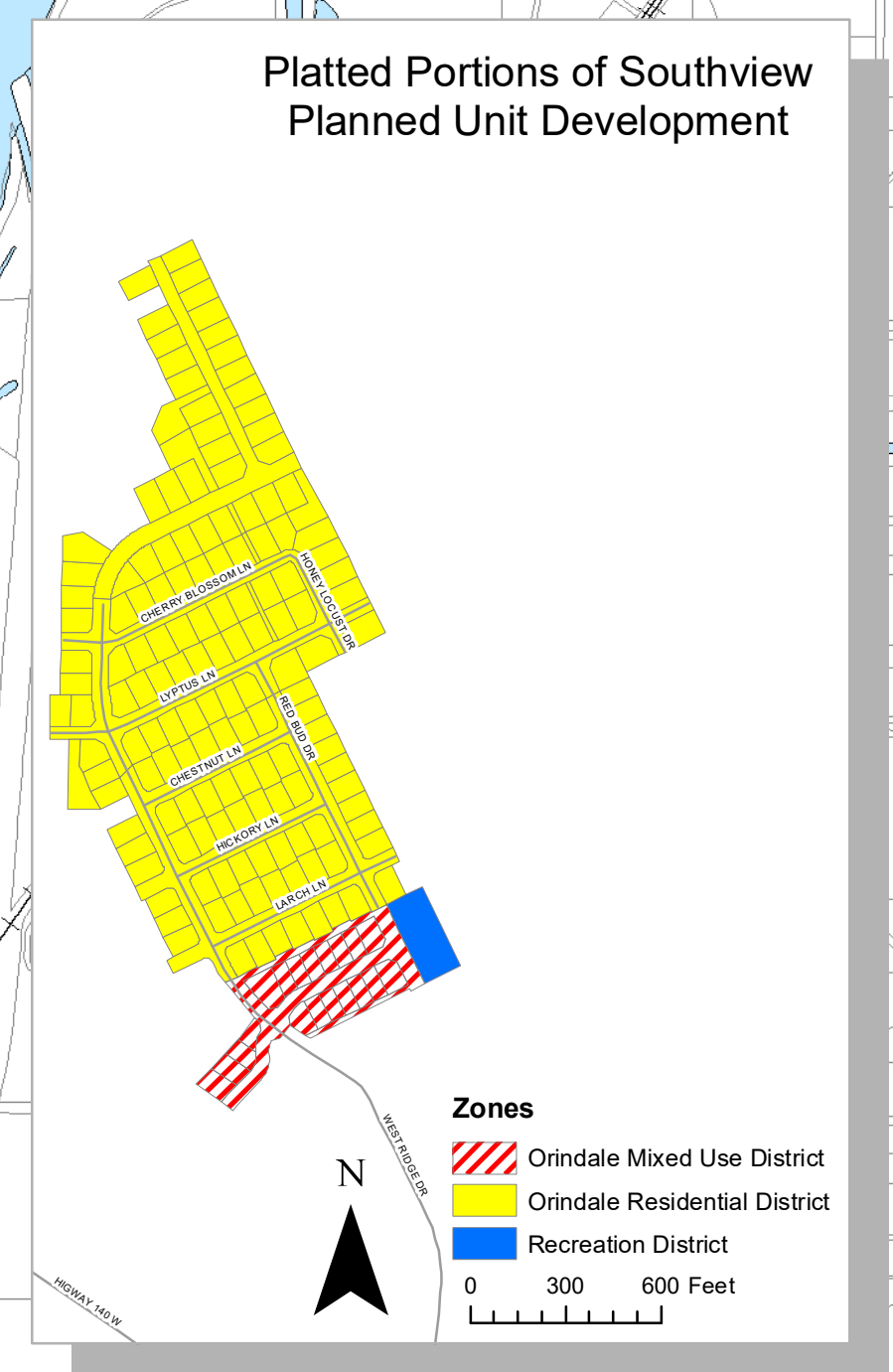
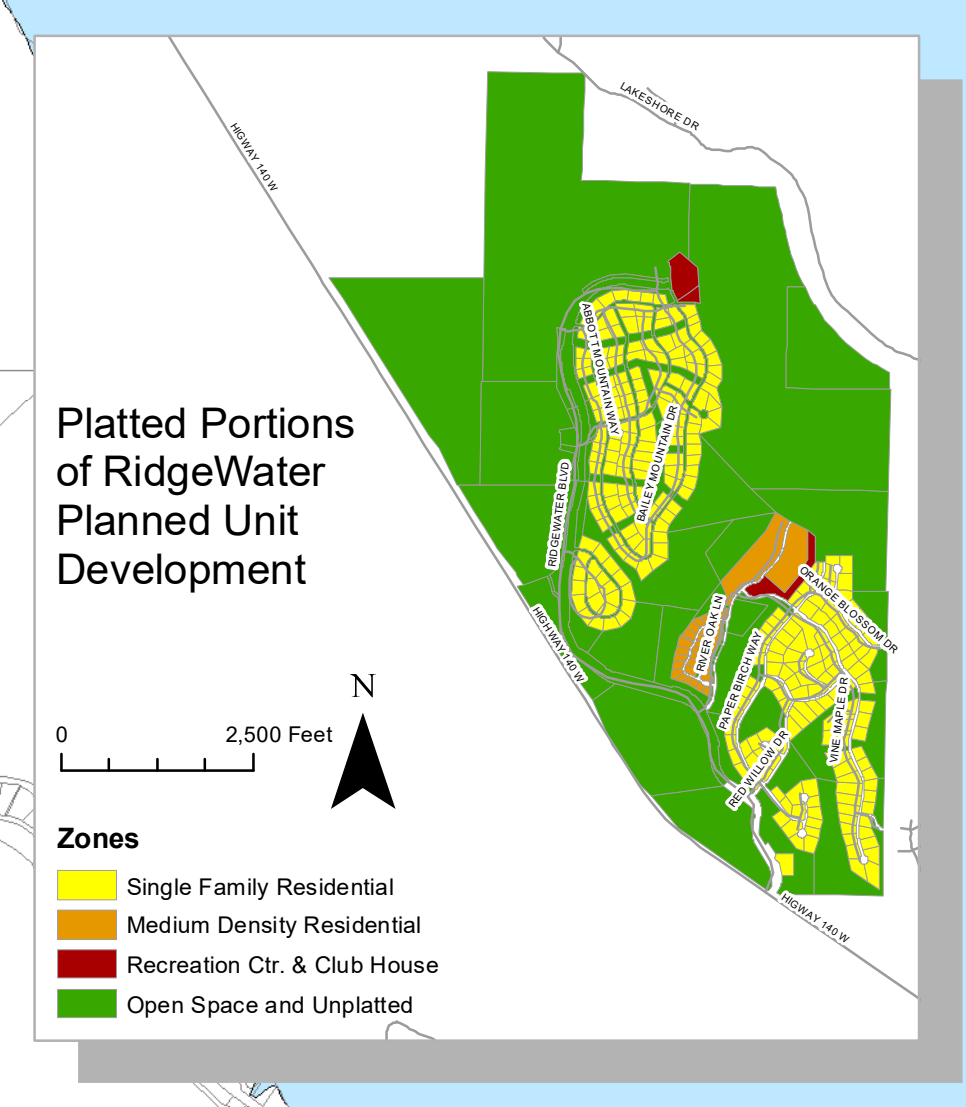
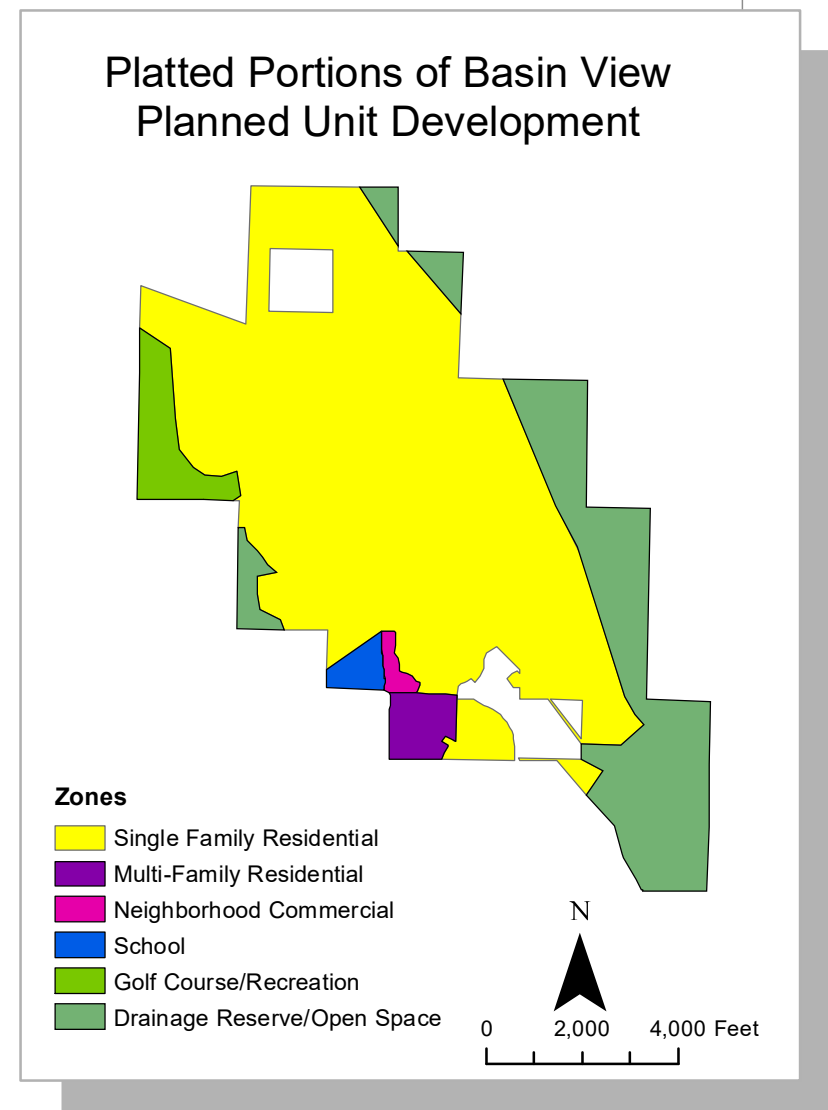
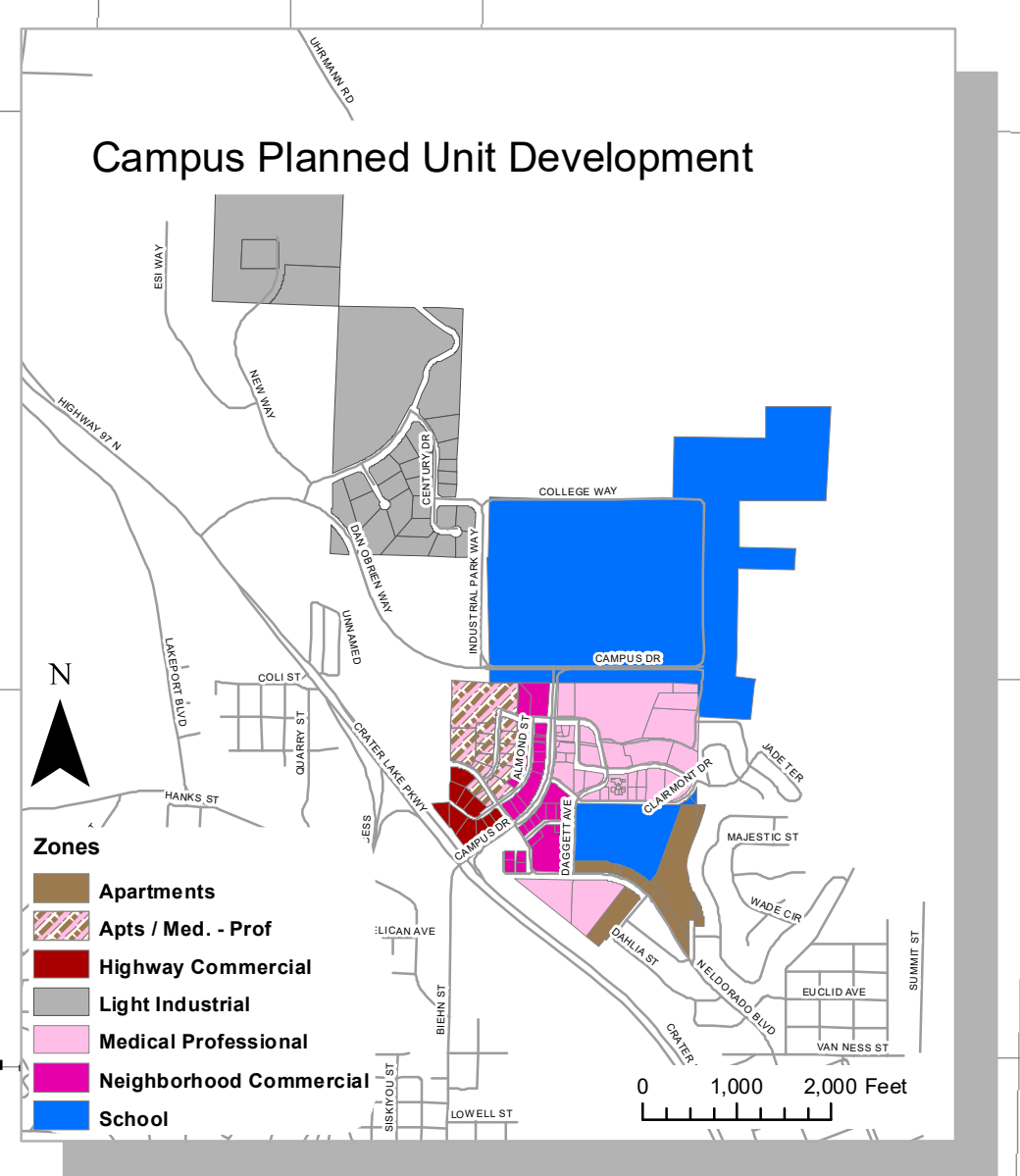
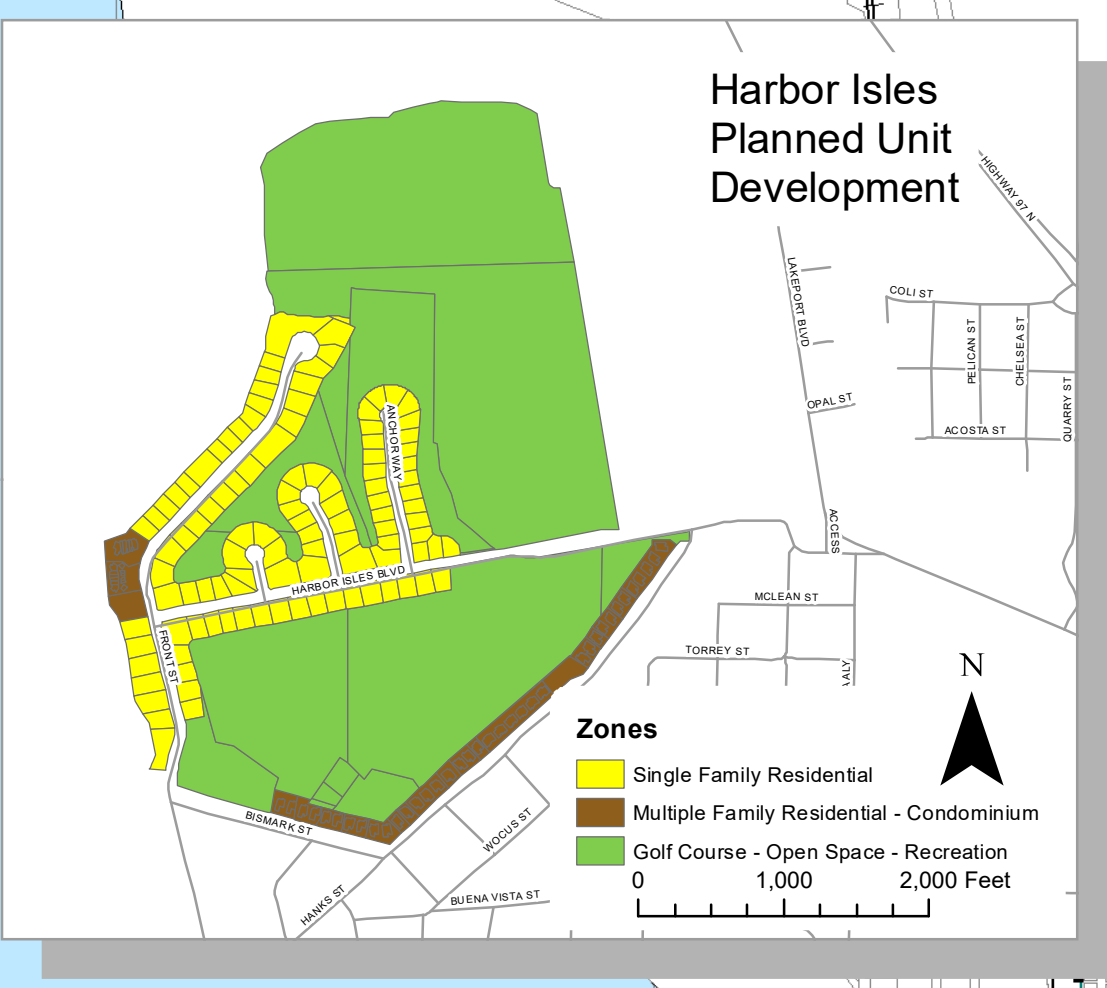
UNION PACIFIC RAILROAD COMPANY
KLAMATH FALLS YARD
KLAMATH FALLS, OREGON

**SITE MAP SHOWING
LOCALITY OF THE FACILITY**

K/J 022777.01/FS/...

FIGURE 3

City of Klamath Falls Zoning

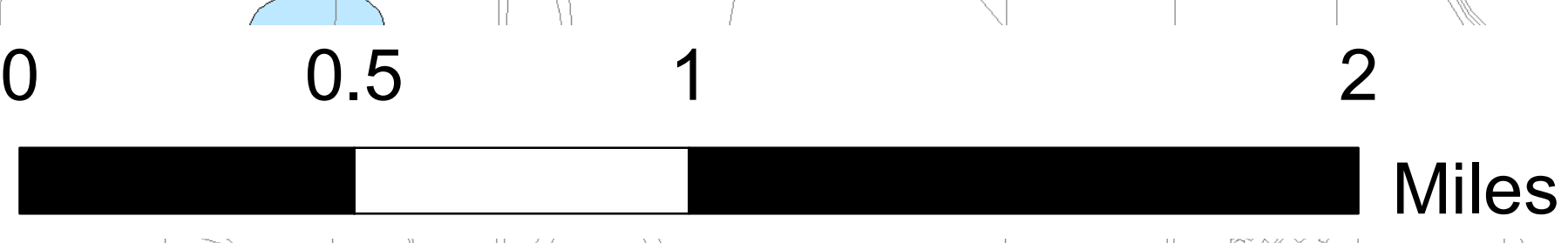
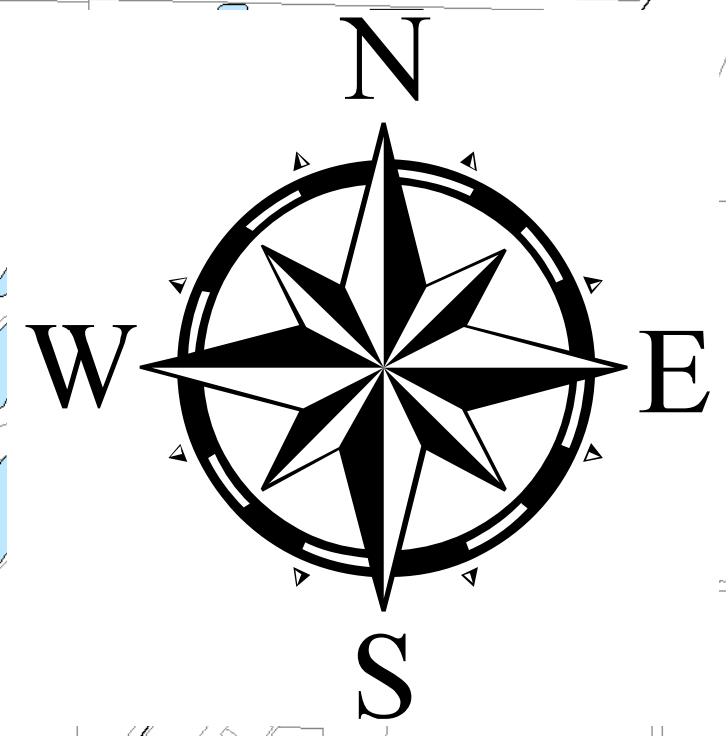


Legend

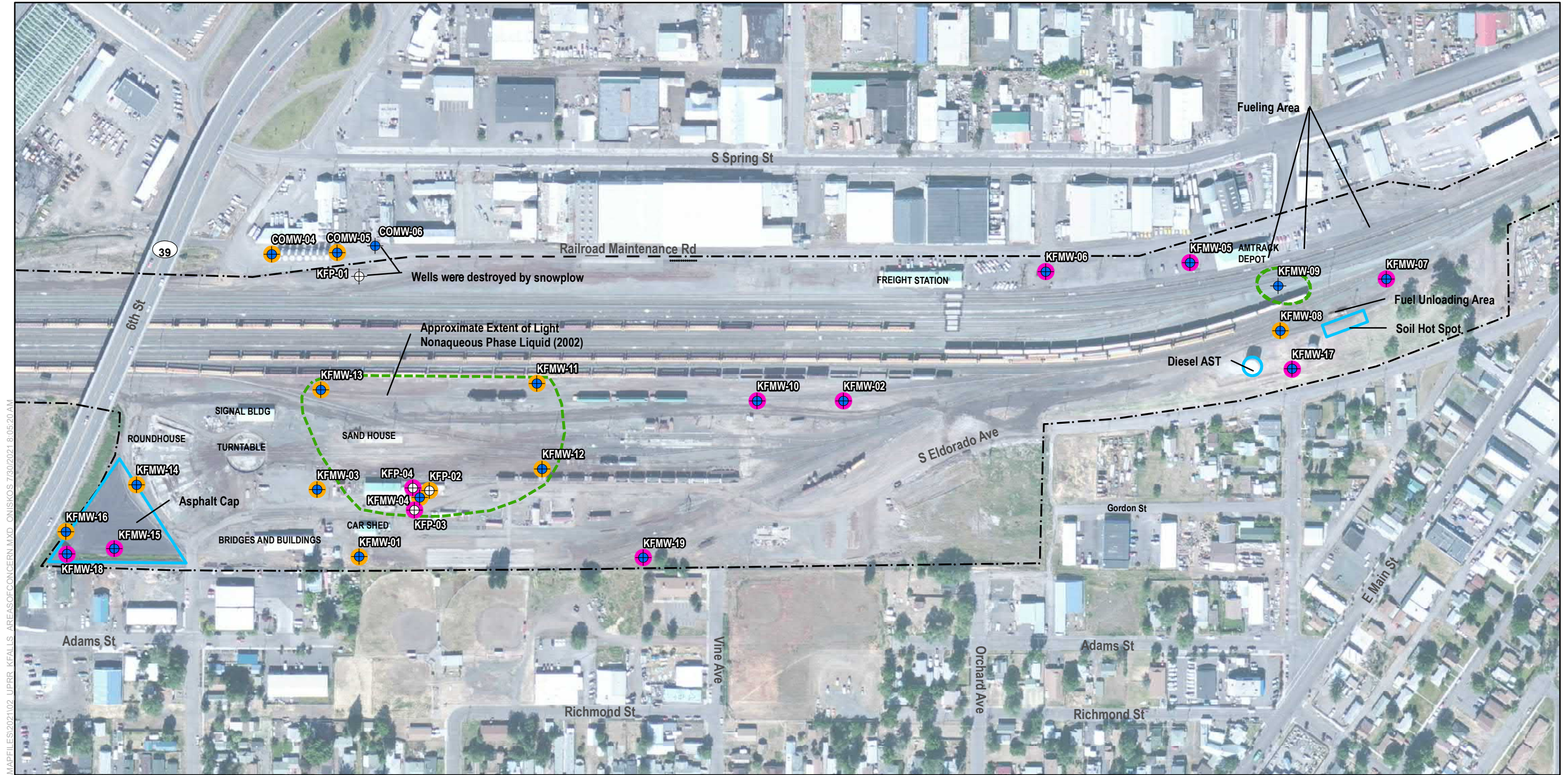
- Klamath Falls UGB
- City Limits
- Taxlots
- Downtown Business Overlay

Zoning

- Single Family Residential (SF)
- Medium Density Residential (MD)
- Apartment Residential (A)
- Neighborhood Commercial (NC)
- General Commercial (GC)
- Mixed Use (MU)
- Light Industrial (LI)
- Industrial (I)
- Public Facility (PF)
- Special Reserve (SR)
- Planned Unit Development (PUD)
- KlamathCounty_DBO_Railroad
- Railroad Property
- Bodies of Water
- State Highways



Map is a graphic representation only; accuracy is not guaranteed.
For more information contact the Development Services Division.
Revised: December 2021 by JDH



\\DC1VS01\GIS\PROJECTS\UPRR Klamath Falls\SWAPFILES\2021\02 UPRR K Falls AREA OF CONCERN.MXD ONISKOS 7/30/2021 8:05:20 AM



LEGEND

- Monitoring Well ⊕ Piezometer ● Abandoned (2008) Yard Boundary
- Abandoned (2018)

Approximate Extent of Light Nonaqueous Phase Liquid



Notes:
Imagery Source: ESRI World Imagery (Clarity).

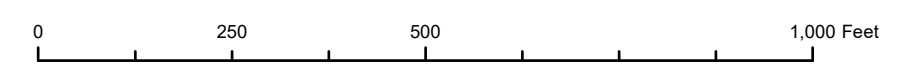


FIGURE 5
Approximate Extent of Light Nonaqueous Phase Liquid

Union Pacific Railroad Company
Klamath Falls Yard, Klamath Falls, Oregon