Solid Waste Management Facility Siting Study

Solid Waste Advisory Committee (SWAC) Meeting

April 18, 2023




Agenda

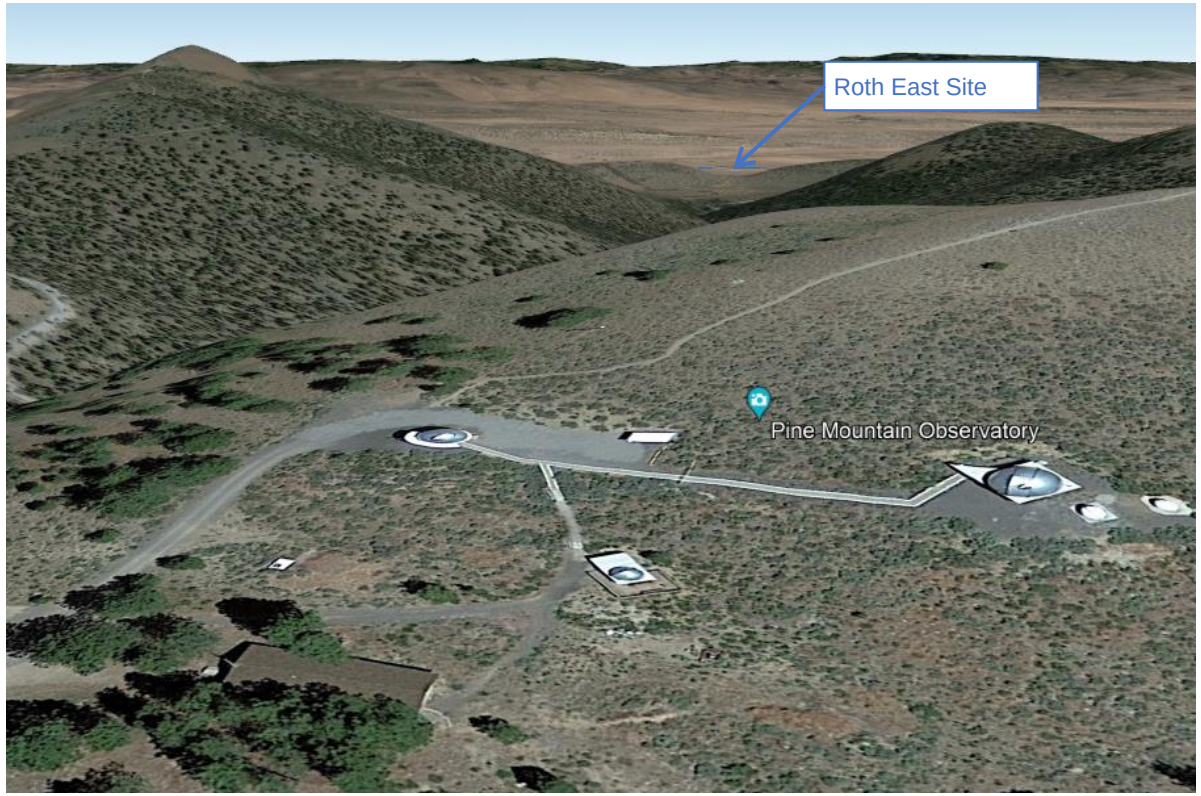
1. Welcome
2. Review/ Approve March Meeting Minutes
3. Public Comment
4. Pine Mountain Observatory – Meeting with University of Oregon
5. Bureau of Land Management (BLM) Site Acquisition Update
6. Focused Site Screening Results
7. Site visit feedback from SWAC members
8. Sites to advance to Phase 2 Screening (Site Due Diligence)
9. Communications Update
10. Adjourn

Public Comments

3 minutes per person
Based on number of people wishing to comment

Written comments can also be sent to:
managethefuture@deschutescounty.gov

Pine Mountain Observatory Update



- Over 4.5 miles between Pine Mountain Observatory and either Roth site
- The Observatory is positioned on the SW side of Pine Mountain and is shielded from both sites by the natural topography
- Mitigation concepts for Pine Mountain areas of concern:

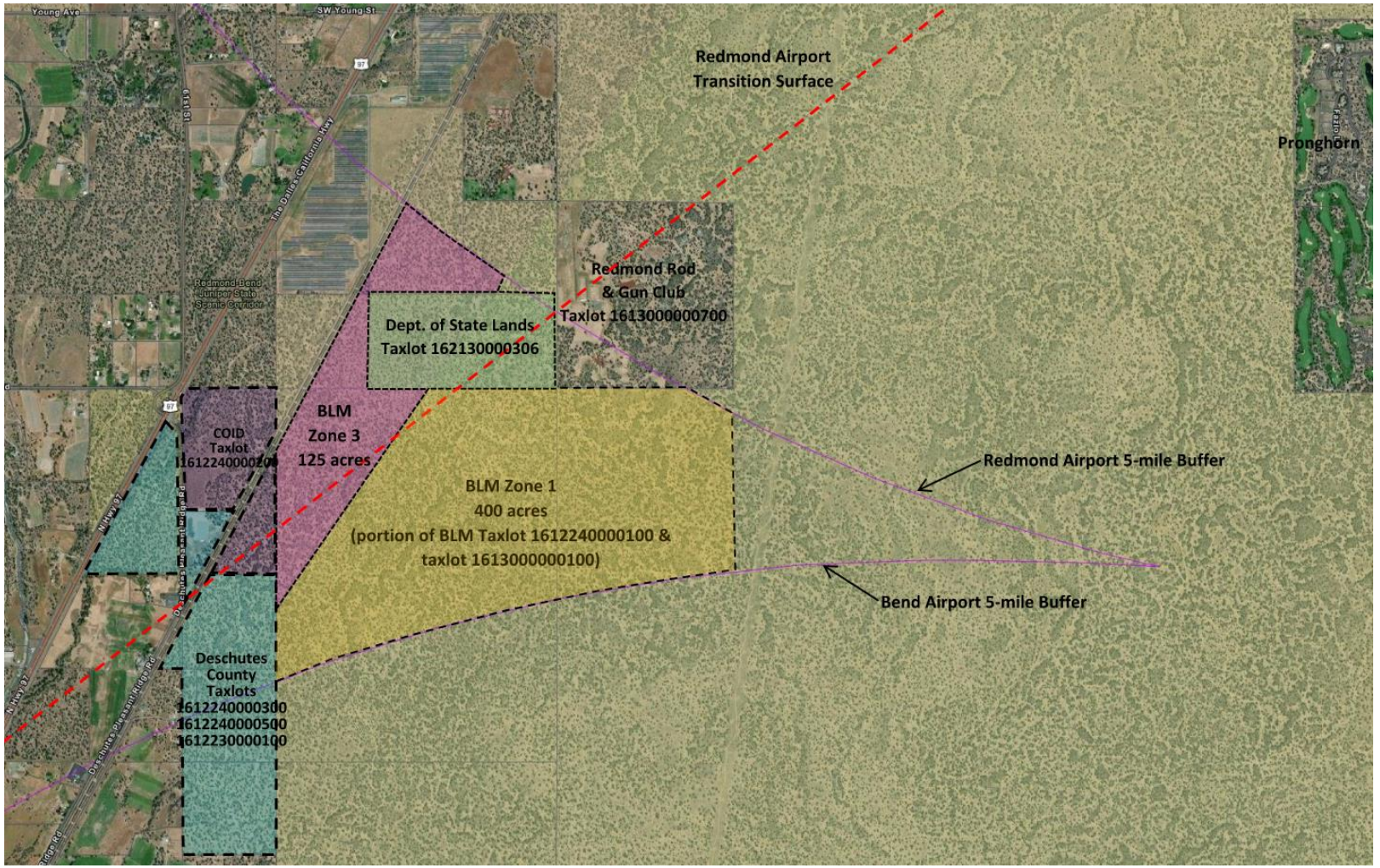
  1) mitigate light pollution with “dark sky” lighting approaches

  2) reduce dust emissions with BMPs such as paved roads and application of dust suppressants

  3) monitor the effects of landfill heat emissions on the clarity of the night sky and mitigate adverse effects

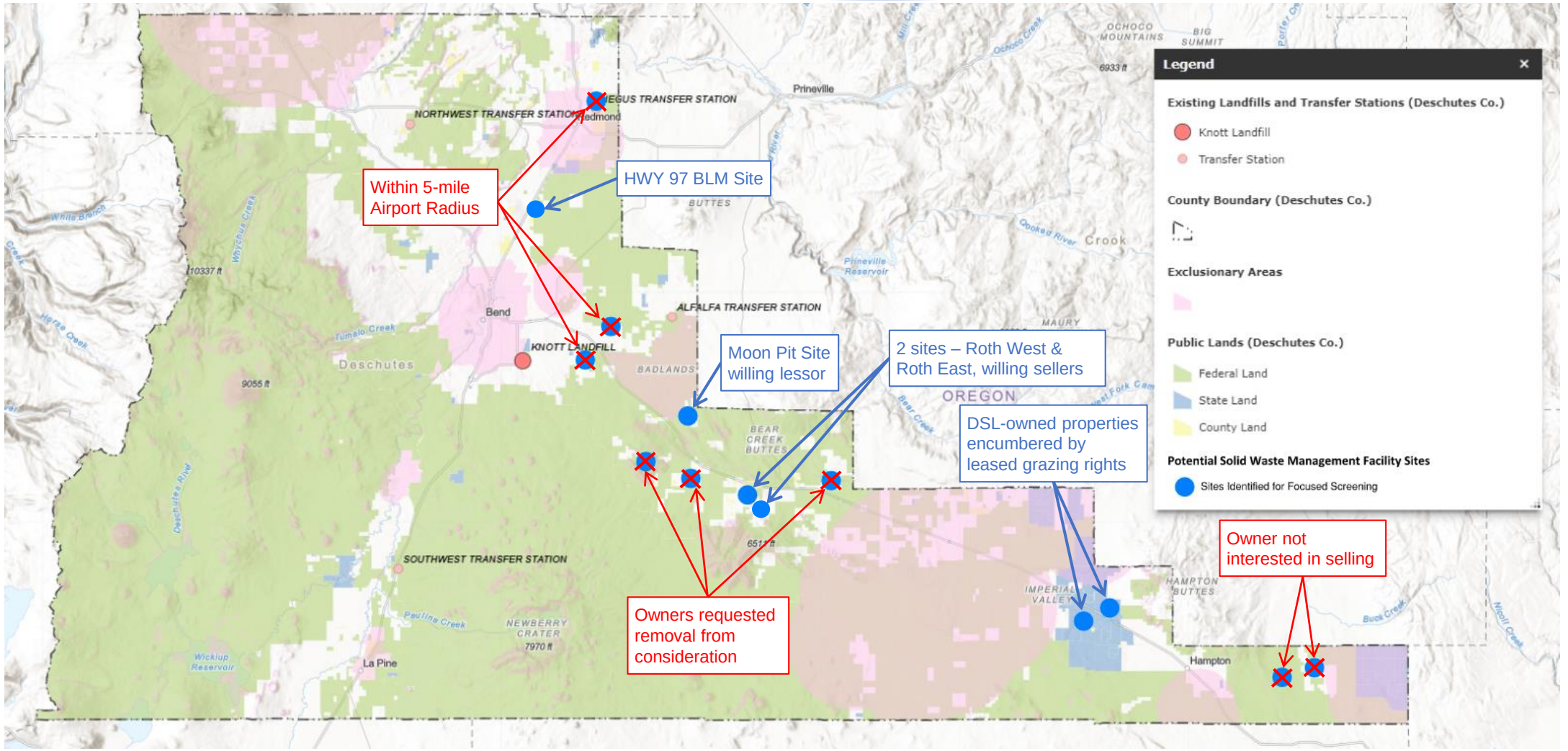
- University of Oregon, Pine Mountain Observatory, and Deschutes County would collaborate to minimize impacts if a Roth Site is chosen

Bureau of Landfill Management (BLM) Site Update

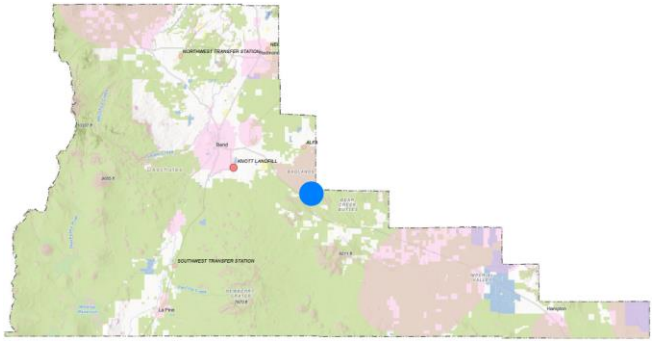


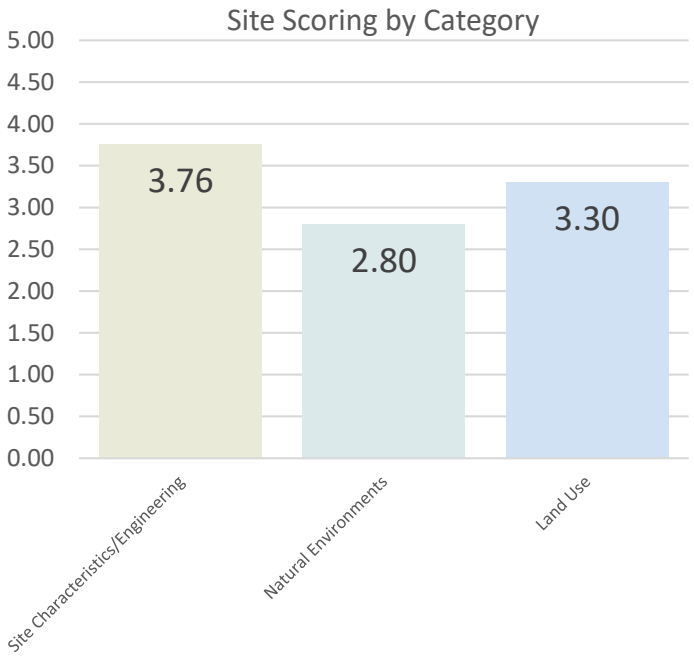
Focused Site Screening Results

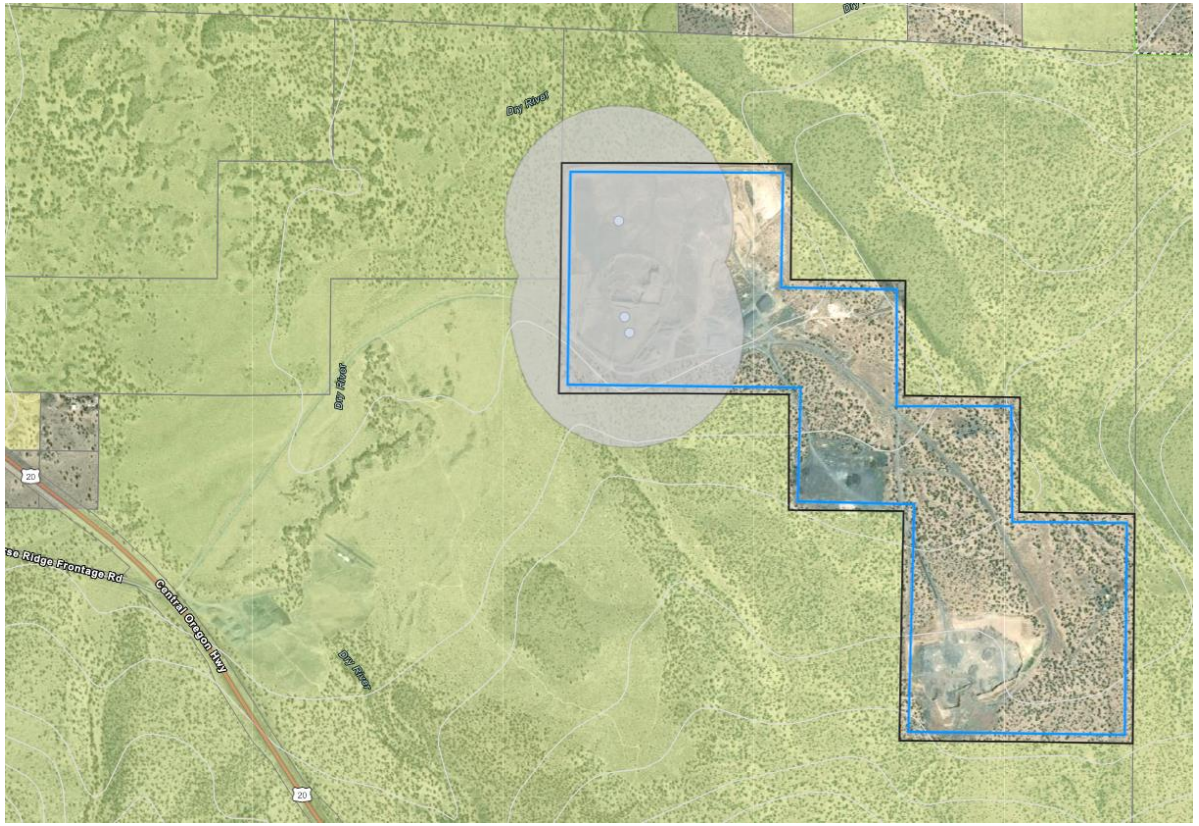
Focused Screening Updates



Moon Pit Site (191400-200)



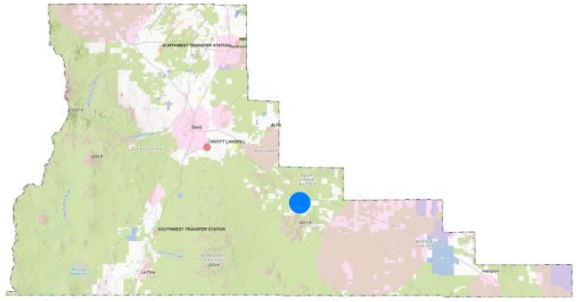


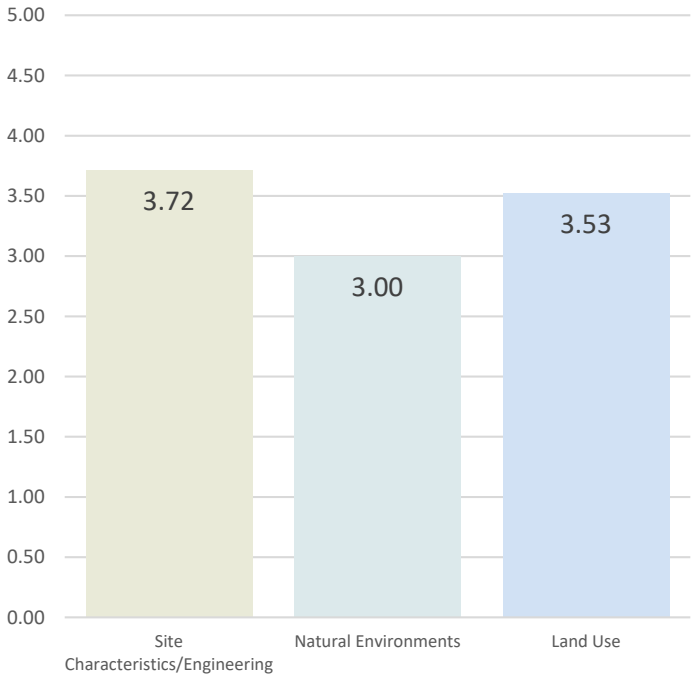


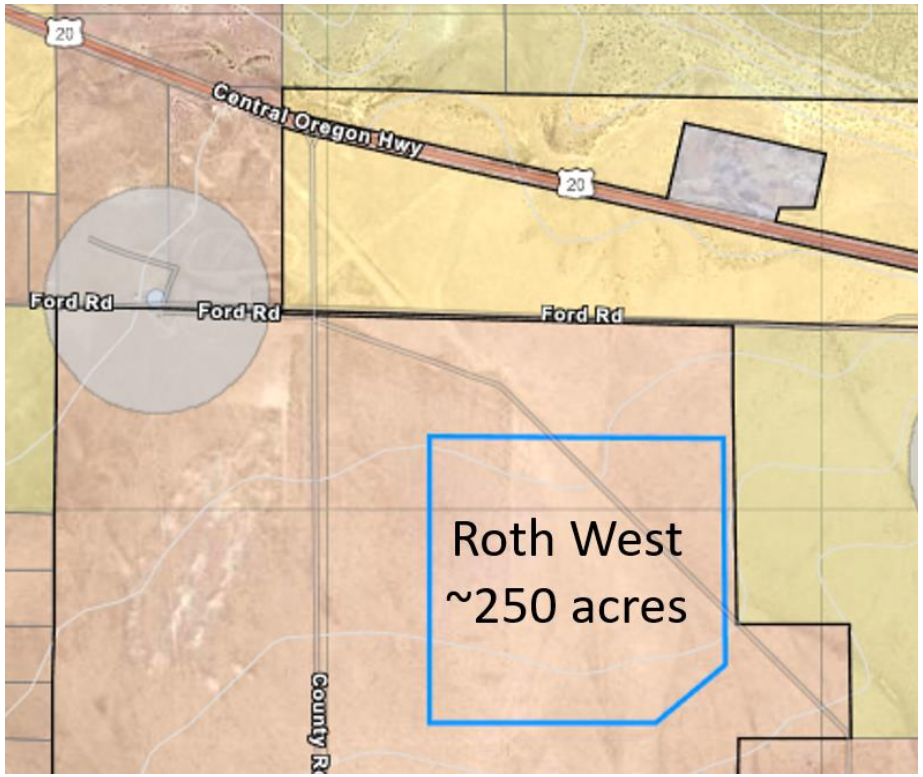
Considerations:

- Existing surface mine site
- Onsite industrial wells
- Paved Rd from Highway 20
- Deep groundwater ~1000’ BGS
- Owner willing to lease land for SWMF operations
- 0 residences within 1 mile
- 1 residence within 2 miles
- Potential for landfill cells to be excavated by gravel mining operations
- Reclamation by landfill
- Environmental and cultural resources and related impacts already studied and monitored
- Adjacent to Badlands Wilderness Area & trailhead
- Established prior to designation of Badlands Wilderness Area
- Not visible from Highway 20
- 20 miles from waste centroid

Roth West Site (201500-300)



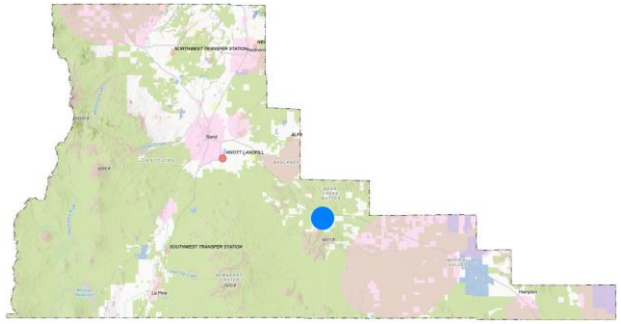


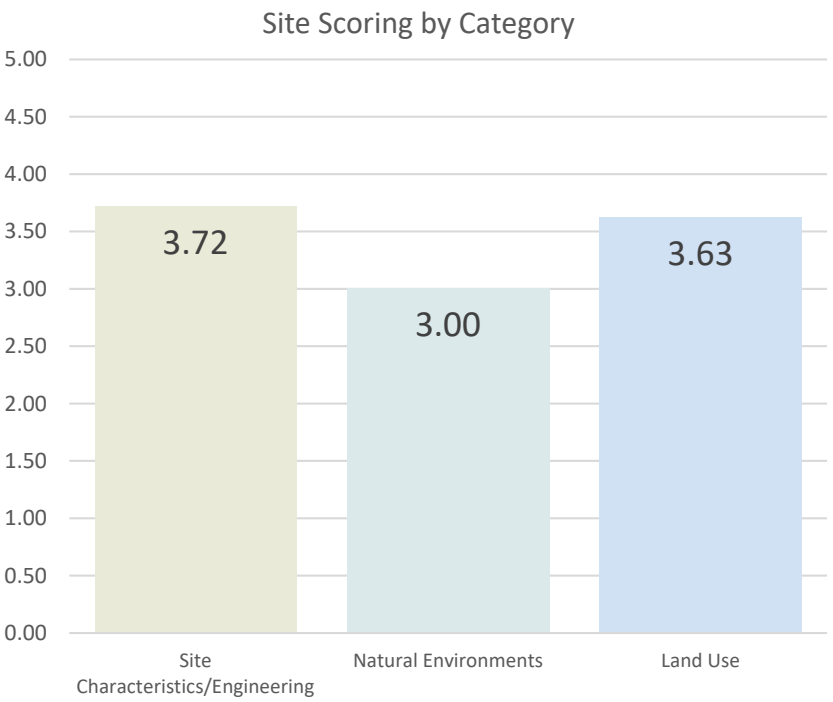


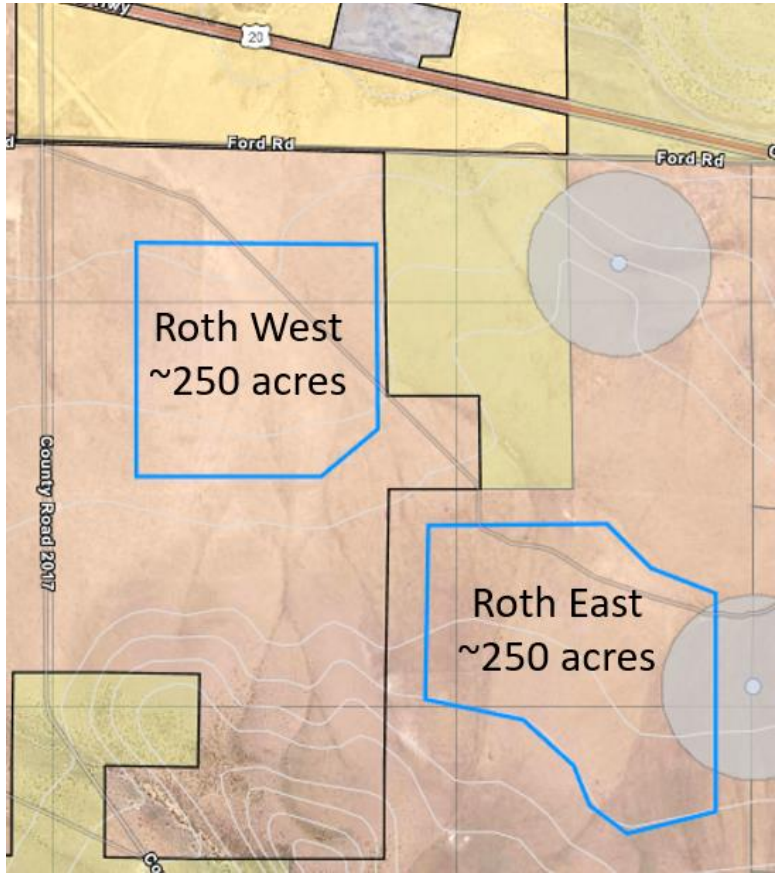
Considerations:

- Parcel area: 1,783 acres
- Owner is interested in selling
- Within Millican Valley / Plateau
- Within Low Density Sage Grouse Habitat Area
- Variety of recreational uses in broad vicinity
- Millican airstrip decommissioned in 1992 by County at request of State
- 3 residences within 1 mile
- 26 residences within 2 miles
- Highly visible from Hwy 20 and Pine Mountain Road
- 28 miles from waste centroid

Roth East Site (201500-301)



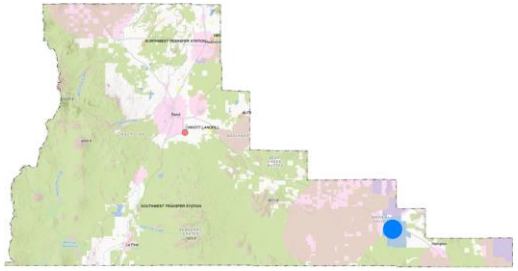


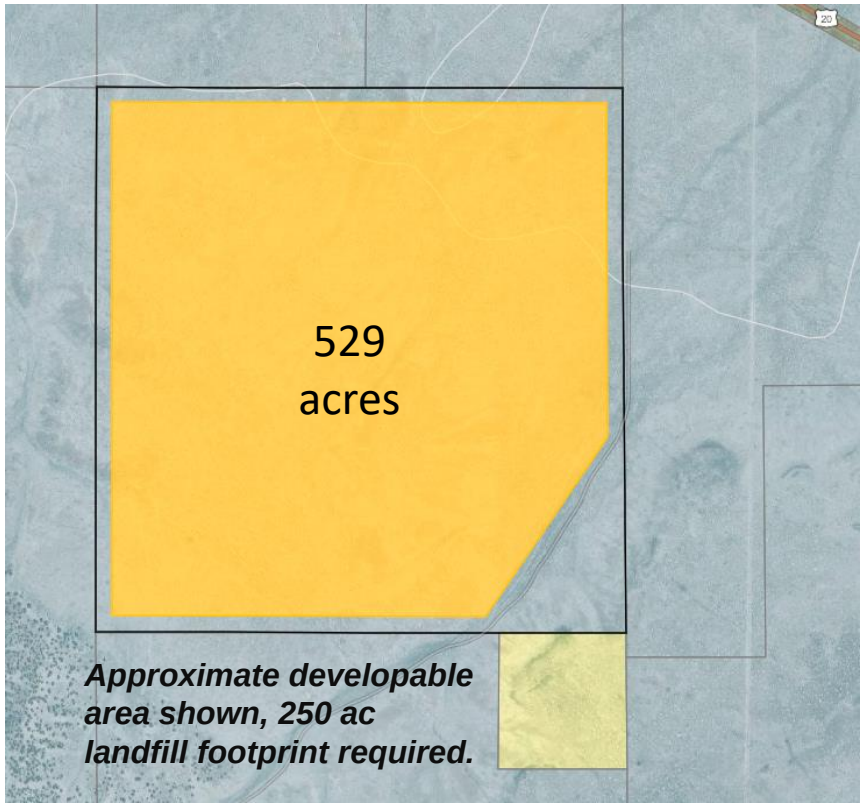


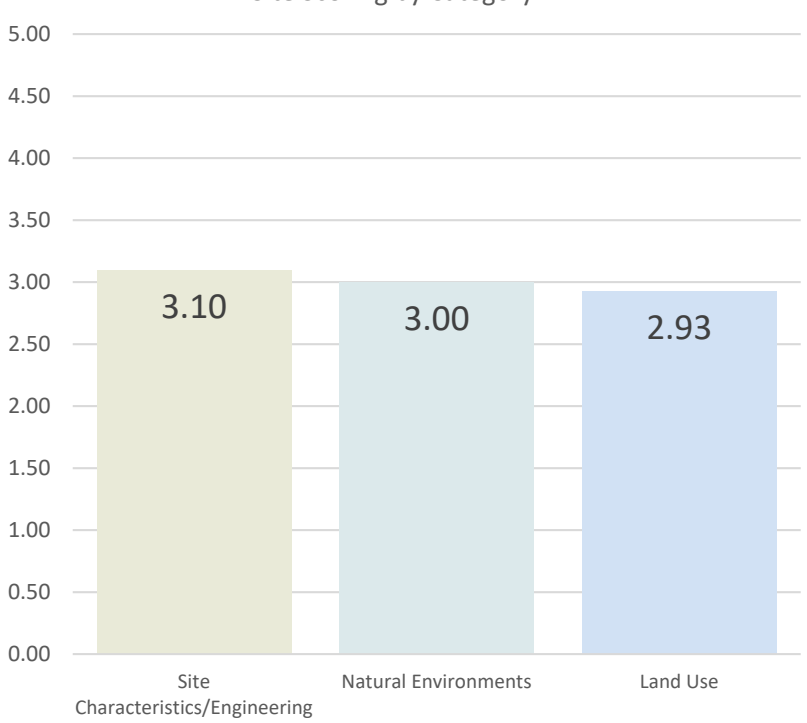
Considerations:

- Parcel area: 1,706 acres
- Owner is interested in selling
- Within Millican Valley / Plateau
- Within Low Density Sage Grouse Habitat Area
- Variety of recreational uses in broad vicinity
- 2 residences within 1 mile
- 8 residences within 2 miles
- Less visual impacts from Pine Mountain Rd and Hwy 20 (compared to Roth West) due to distance and topographic screening in some directions.
- 29 miles from waste centroid

DSL South Site (211900)



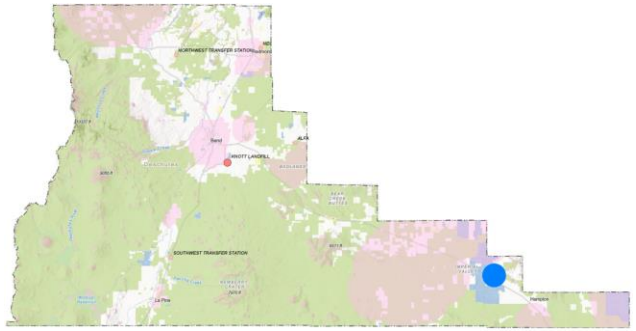


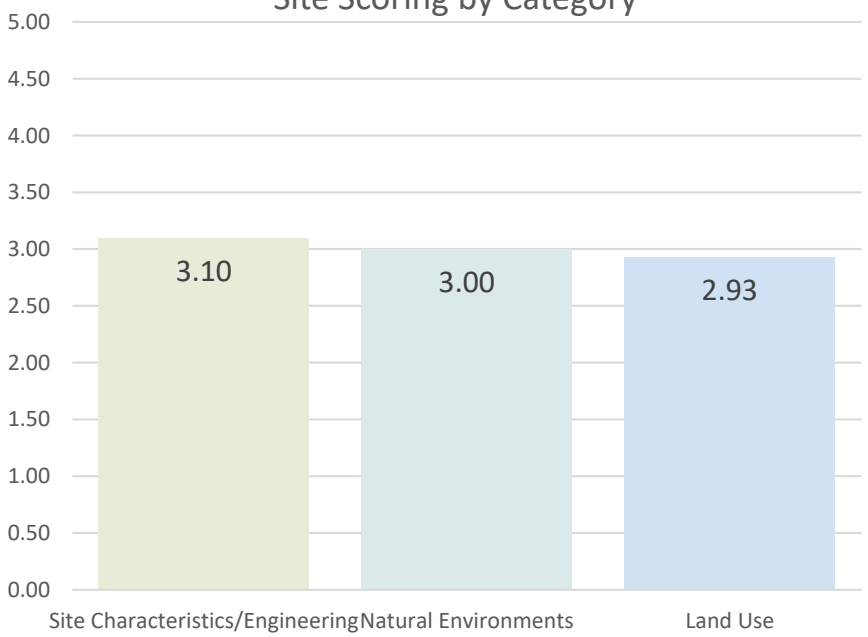


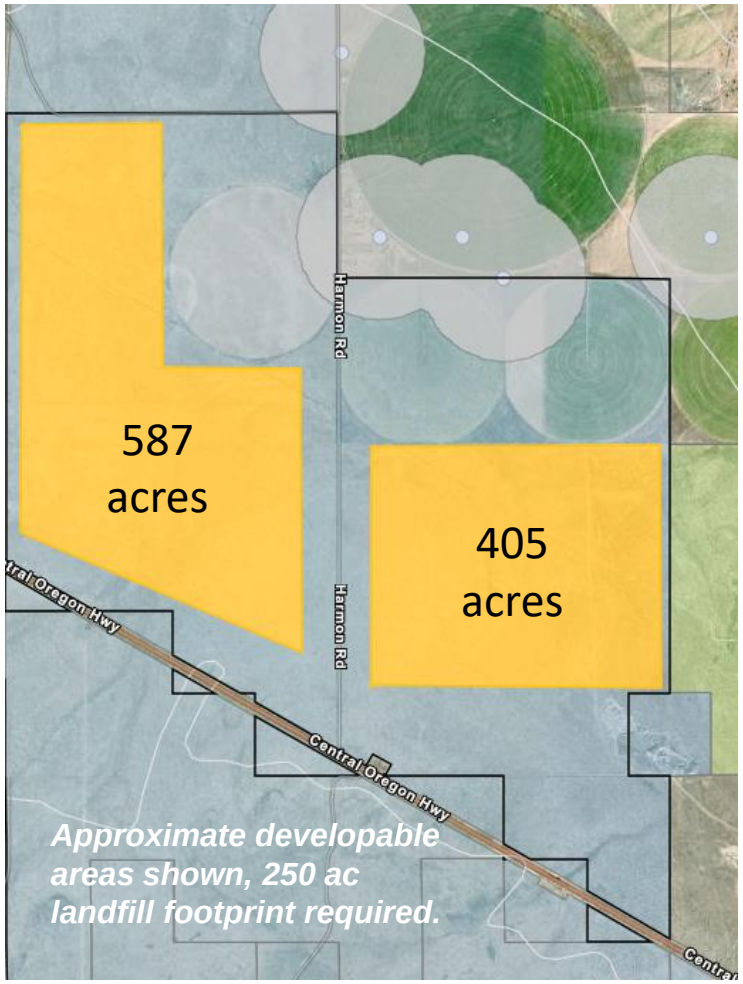
Considerations:

- Acquisition Potential is challenging due to ownership by Division of State Lands (DSL)
- Property encumbered by existing grazing land leases and Sage Grouse Candidate Conservation Agreement w/ Assurances with USF&W
- Property area is 625 acres
- Access easement required for truck access from Hwy 20
- 0 residences within 1 mile
- 1 residence within 2 miles
- No known existing wells or water rights onsite
- Powerline along Highway 20
- 52-56 miles from waste centroid

DSL North Site (212000)



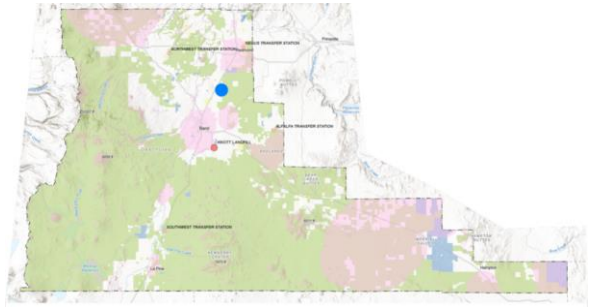


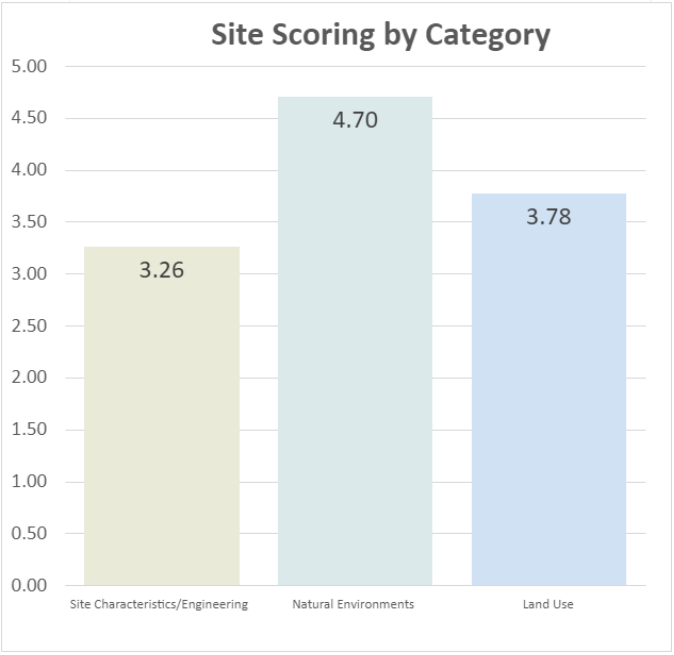


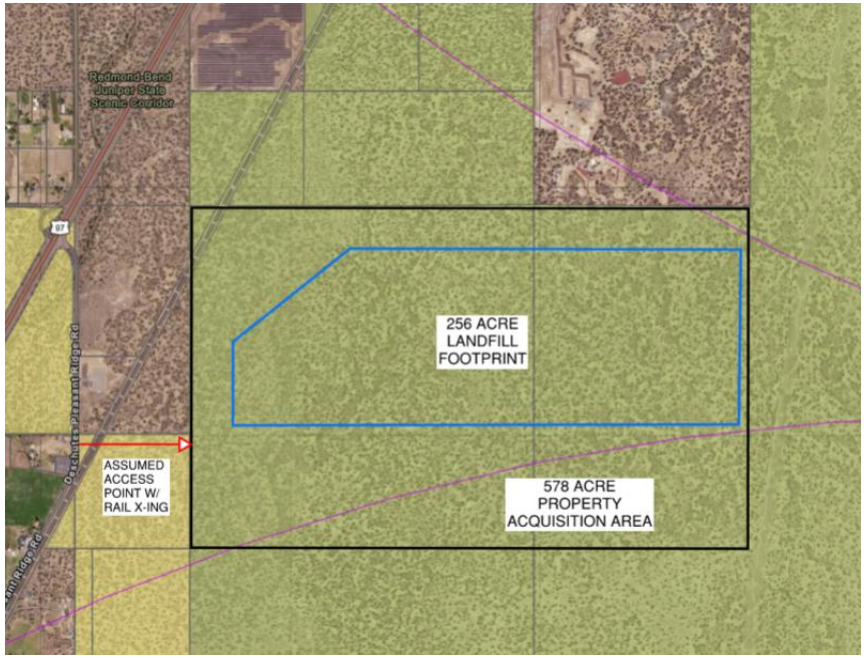
Considerations:

- Acquisition Potential is challenging due to ownership by Division of State Lands (DSL)
- Property encumbered by existing grazing land leases and Sage Grouse Candidate Conservation Agreement w/ Assurances with USF&W
- Property area is 2117 acres, with multiple options for potential disposal site
- Existing access via Hwy 20 and gravel road
- 2 residences within 1 mile
- 3 residences within 2 miles
- Existing wells and residences nearby
- Adjacent to alfalfa farming
- No known wells or water rights onsite
- No nearby power infrastructure
- 52-56 miles from waste centroid

HWY 97 BLM Site (161244)







Considerations:

- Acquisition Potential is challenging due to ownership by Bureau of Land Management (BLM)
- Property area is 578 acres, with 256-acre footprint possible
- Access via Deschutes Pleasant ridge Rd crosses railroad tracks
- 72 residences within 1 mile
- 895 residences within 2 miles
- Existing wells and residences nearby
- Adjacent to solar farm and Redmond Rod and Gun Club
- No known wells or water rights onsite
- Power infrastructure to South and West near site periphery
- 11 miles from waste centroid

Focused Site Scoring Results

	SITE ID:	191400-200	201500-300	201500-301	211900	212000	161244
	NAME:	MOON PIT	ROTH WEST	ROTH EAST	DSL SOUTH	DSL NORTH	HWY 97 BLM
Site Characteristics/Engineering	**35%**	**3.76**	**3.72**	**3.72**	**3.10**	**3.08**	**3.26**
Site Availability/Acquisition Potential	**35%**	**3.40**	**4.20**	**4.20**	**3.40**	**3.40**	**3.80**
Ownership	40%	*3*	*3*	*3*	*1*	*1*	*2*
Number of Parcels	20%	*5*	*5*	*5*	*5*	*5*	*5*
Total Site Acreage	40%	*3*	*5*	*5*	*5*	*5*	*5*
Geotechnical Location Factors	**10%**	**2.10**	**2.60**	**2.60**	**3.60**	**3.60**	**3.70**
Fault Hazards	*25%*	*3*	*3*	*3*	*5*	*5*	*5*
Seismic Impact Zones/Hazards	*30%*	*3*	*3*	*3*	*3*	*3*	*5*
Unstable Areas – Mass Movement	*25%*	*1*	*3*	*3*	*5*	*5*	*3*
Unstable Areas – Poor Foundation	*20%*	*1*	*1*	*1*	*1*	*1*	*1*
Floodplains	**5%**	**3.00**	**3.00**	**3.00**	**5.00**	**5.00**	**5.00**
Groundwater Protection/Hydrogeology	**20%**	**5.00**	**3.90**	**3.90**	**3.40**	**2.20**	**2.70**
Depth to Groundwater	*25%*	*5*	*3*	*3*	*1*	*1*	*3*
Proximity to Drinking Water Wells	*30%*	*5*	*3*	*3*	*5*	*1*	*1*
Proximity to Wellhead Protection Areas	*15%*	*5*	*5*	*5*	*5*	*5*	*5*
Site Hydrogeologic Framework	*30%*	*5*	*5*	*5*	*3*	*3*	*3*
Development	***15%***	**5.00**	**5.00**	**5.00**	**2.65**	**4.15**	**1.25**
Soils	*45%*	*5*	*5*	*5*	*3*	*5*	*1*
Topography	*30%*	*5*	*5*	*5*	*1*	*3*	*1*
Capacity/Site Configuration	*25%*	*5*	*5*	*5*	*4*	*4*	*2*
Operation	**15%**	**3.05**	**2.05**	**2.05**	**1.45**	**1.45**	**3.85**
Haul Distance to Waste Centroid	*60%*	*2*	*2*	*2*	*1*	*1*	*5*
Annual Precipitation	*15%*	*4*	*4*	*4*	*4*	*4*	*4*
Onsite Water Supply and Management	*25%*	*5*	*1*	*1*	*1*	*1*	*1*

Focused Site Scoring Results

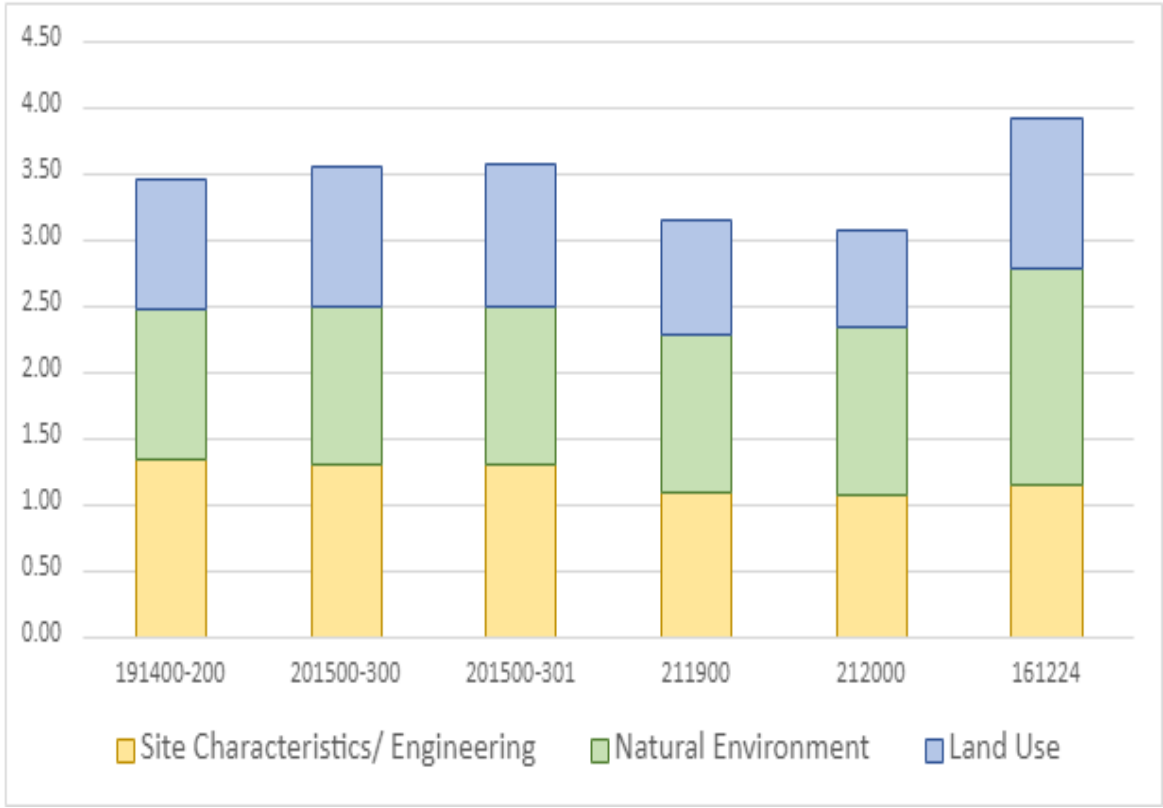
	SITE ID:	191400-200	201500-300	201500-301	211900	212000	161224
	NAME:	MOON PIT	ROTH WEST	ROTH EAST	DSL SOUTH	DSL NORTH	HWY 97 BLM
Natural Environment	**35%**	**2.80**	**3.00**	**3.00**	**3.00**	**3.20**	**4.70**
Wetlands and Waters Impacts	**10%**	**5.00**	**5.00**	**5.00**	**5.00**	**5.00**	**5.00**
Threatened and Endangered Species	**20%**	**5.00**	**5.00**	**5.00**	**5.00**	**5.00**	**5.00**
Wildlife Area Combining Zone	**10%**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**4.00**
Greater Sage-Grouse Area Combining Zone	**40%**	**1.00**	**1.00**	**1.00**	**1.00**	**2.00**	**5.00**
Sensitive Bird and Mammal Habitat Combining Zone and Migratory Birds	**20%**	**4.00**	**5.00**	**5.00**	**5.00**	**4.00**	**4.00**
Sensitive Bird and Mammal Habitat Combining Zone	*50%*	*5*	*5*	*5*	*5*	*5*	*4*
Migratory Birds, Including Bald and Golden Eagles	*50%*	*3*	*5*	*5*	*5*	*3*	*4*

Focused Site Scoring Results

	SITE ID:	191400-200	201500-300	201500-301	211900	212000	161224
	NAME:	MOON PIT	ROTH WEST	ROTH EAST	DSL SOUTH	DSL NORTH	HWY 97 BLM
Land Use	**30%**	**3.30**	**3.53**	**3.63**	**2.93**	**2.45**	**3.78**
Proximity to Airports	**15%**	**5.00**	**5.00**	**5.00**	**5.00**	**5.00**	**5.00**
Site Zoning	**20%**	**3.00**	**5.00**	**5.00**	**1.00**	**1.00**	**5.00**
Adjacent Land Use Impacts	**20%**	**3.00**	**3.50**	**3.50**	**4.00**	**2.50**	**4.50**
Existing Adjacent Use	*25%*	*1*	*1*	*1*	*1*	*1*	*5*
Planned Adjacent Use	*25%*	*1*	*5*	*5*	*5*	*5*	*5*
Distance to Nearest Residence	*25%*	*5*	*3*	*3*	*5*	*3*	*3*
Distance to Nearest Public Road	*25%*	*5*	*5*	*5*	*5*	*1*	*5*
Site Visibility/Aesthetic Impact	**10%**	**2.00**	**1.00**	**2.00**	**3.00**	**2.00**	**1.00**
Visibility Based on Topography/Vegetation	*50%*	*1*	*1*	*1*	*1*	*1*	*1*
Remoteness	*50%*	*3*	*1*	*3*	*5*	*3*	*1*
Transportation System Needs/Opportunity	**5%**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**
Haul Route Impacts	**5%**	**5.00**	**5.00**	**5.00**	**5.00**	**5.00**	**5.00**
On-Site Land Use Impacts	**25%**	**3.40**	**2.70**	**2.70**	**2.30**	**2.00**	**2.90**
Displacement	*40%*	*4*	*3*	*3*	*2*	*2*	*5*
Known Cultural Resources	*30%*	*1*	*2*	*2*	*2*	*1*	*2*
Potential for Buried Archaeological Sites	*30%*	*5*	*3*	*3*	*3*	*3*	*1*

Focused Site Scoring Results

Site ID	Site Name	Site Characteristics / Engineering 35%	Natural Environment 35%	Land Use 30%	Total Weighted Site Score:
191400-200	Moon Pit	3.76	2.80	3.30	**3.29**
201500-300	Roth West	3.72	3.00	3.53	**3.41**
201500-301	Roth East	3.72	3.00	3.63	**3.44**
211900	DSL South	3.10	3.00	2.93	**3.01**
212000	DSL North	3.08	3.20	2.45	**2.93**
161224	HWY 97 BLM	3.26	4.70	3.78	**3.92**



Comparative Cost Factor Analysis

Five major cost factors were identified, which influence the costs to develop and operate a solid waste management facility.

These cost factors include (with estimated weighting):

- Excavation (30%)
- Waste hauling (25%)
- Road infrastructure (15%)
- Power infrastructure (15%)
- Water infrastructure (15%)

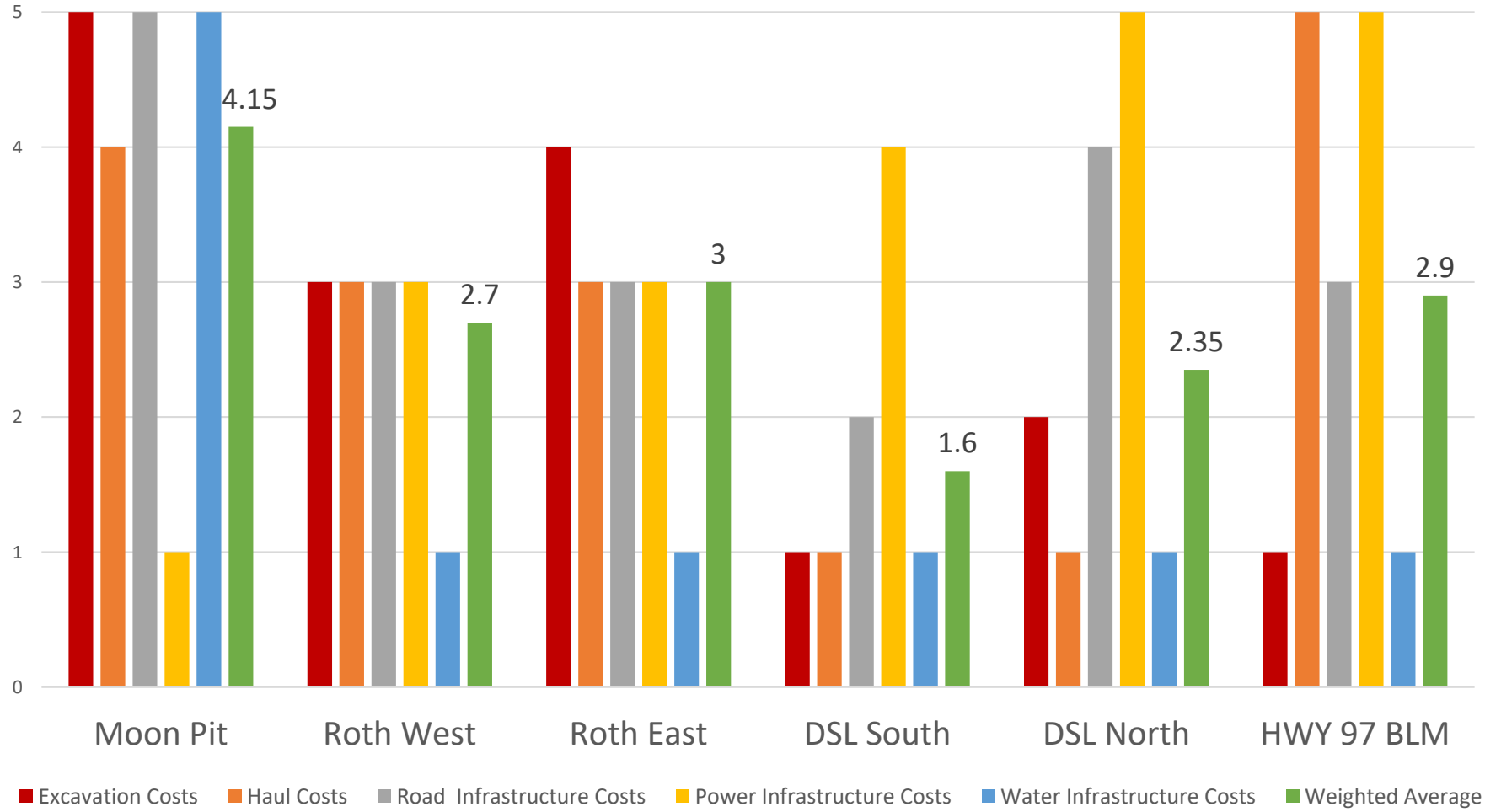
Comparative Cost Factor Analysis

Cost Factor Weighting:		30%	25%	15%	15%	15%	
Site ID	Site Name	Excavation Costs	Haul Costs	Road Infrastructure Costs	Power Infrastructure Costs	Water Infrastructure Costs	Weighted Average
191400-200	Moon Pit	5	4	5	1	5	**4.15**
201500-300	Roth West	3	3	3	3	1	**2.70**
201500-301	Roth East	4	3	3	3	1	**3.00**
211900	DSL South	1	1	2	4	1	**1.60**
212000	DSL North	2	1	4	5	1	**2.35**
161224	HWY 97 BLM	1	5	3	5	1	**2.90**

Each site was given a score of 1 to 5 with respect to each cost factor, where 1 represents the *highest* cost and 5 represents the *lowest* cost.

As a result, the sites with higher weighted total scores are anticipated to be relatively less expensive to develop and operate, while the sites with lower weighted total scores are anticipated to be relatively more expensive to develop and operate.

Comparative Cost Factor Analysis



Based on this cost factor analysis, it is estimated that SWMF development and operational costs could likely be the lowest for the Moon Pit site and highest for the DSL sites.

The SWMF development and operational costs related to the HWY 97 BLM and Roth sites are expected to fall between these two extremes, being more expensive than the Moon Pit site and less expensive than the DSL sites.

Residential Proximity Analysis

It is well understood that a new solid waste management facility could negatively impact nearby residences.

Unsurprisingly, residents and property owners near candidate sites have expressed opposition to the prospect of a new SWMF site near their homes.

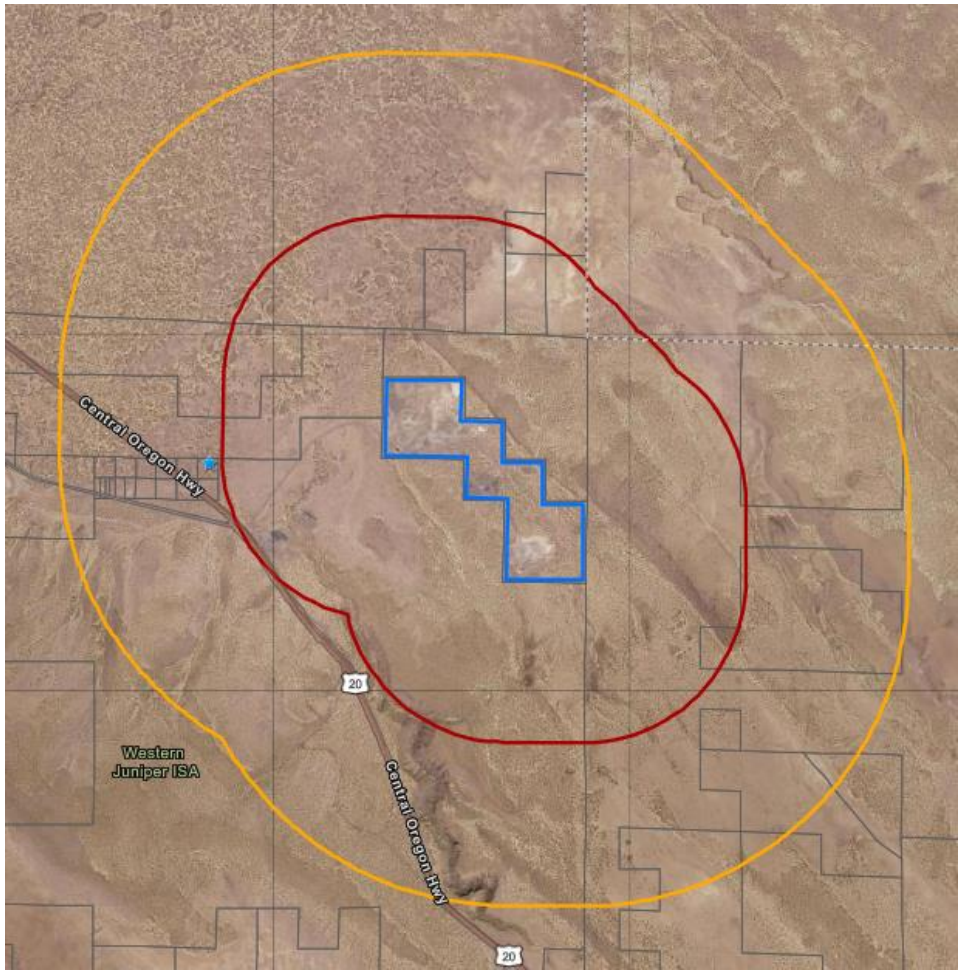
Residential Proximity Analysis

Concerns of nearby residents are generally that a new SWMF facility could have several adverse impacts within the vicinity, including:

- Haul truck traffic
- Noise
- Dust
- Air pollution
- Odors
- Litter
- Invasive species
- Groundwater contamination
- Scenic impacts
- Decreased property values

Note: Mitigating potential impacts is a key component to site development and operations.

Residential Proximity Analysis



Moon Pit Site (191400-200)

Known Residences

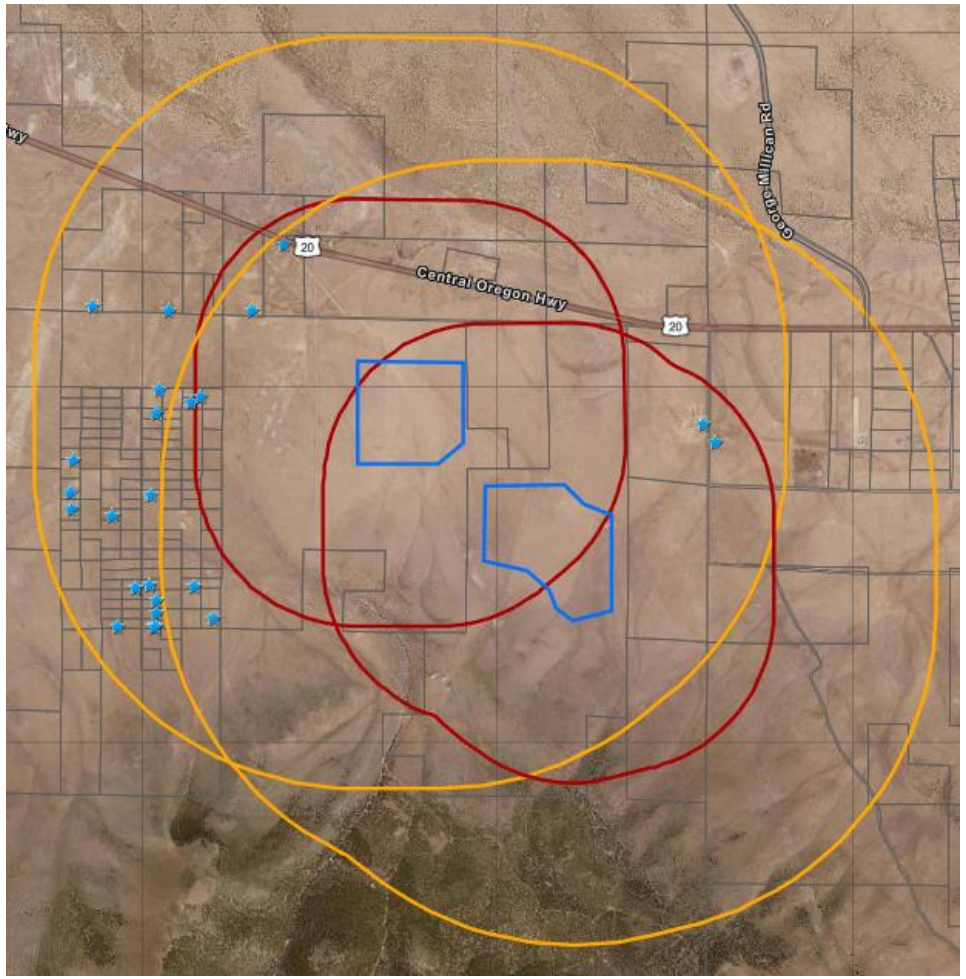
Workable Site Area (Focus Screen)

Workable Site Area Distance Buffers

1 mile

2 miles

Residential Proximity Analysis



Roth West Site (201500-300)

Roth East Site (201500-300)

Known Residences

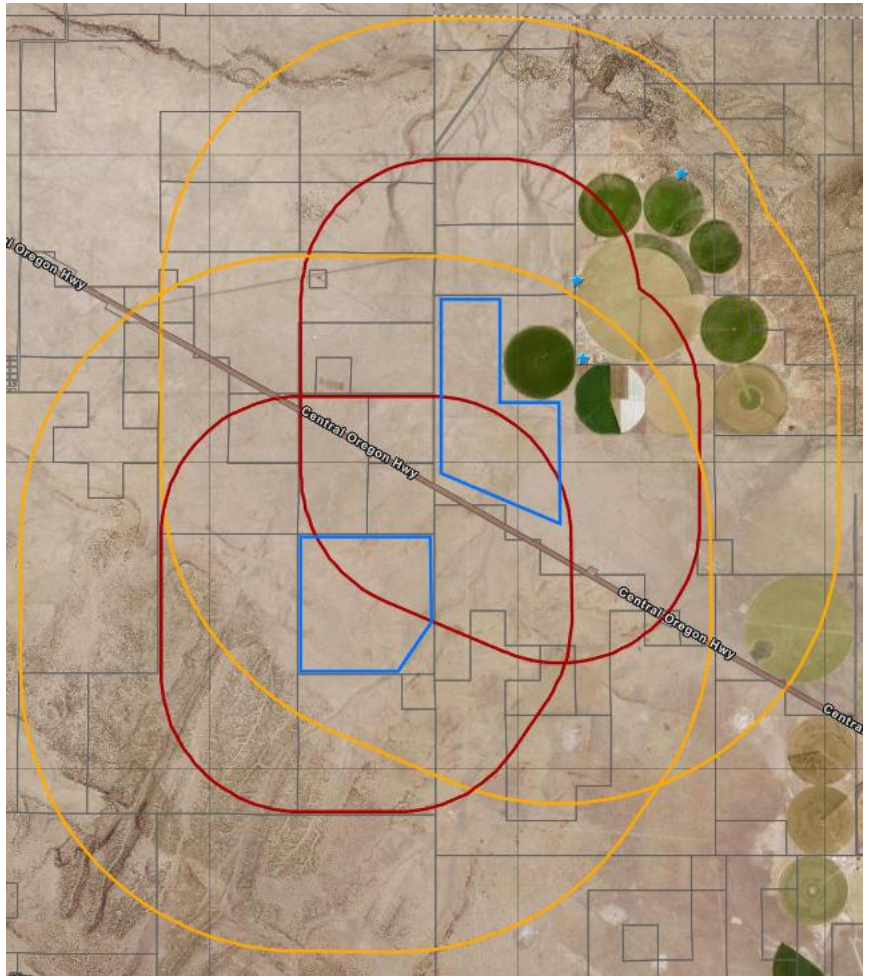
Workable Site Area (Focus Screen)

Workable Site Area Distance Buffers

1 mile

2 miles

Residential Proximity Analysis



DSL South Site (211900)

DSL North Site (212000)

Known Residences

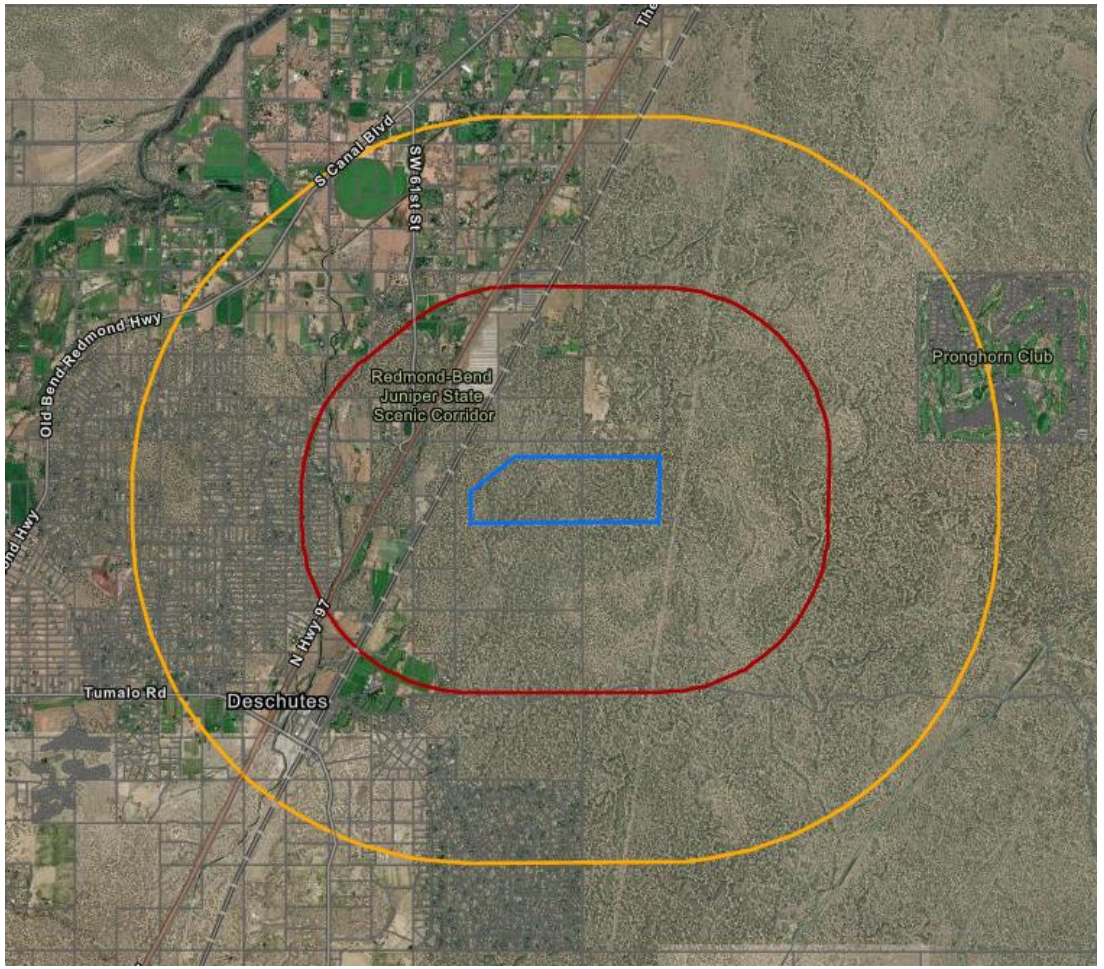
Workable Site Area (Focus Screen)

Workable Site Area Distance Buffers

1 mile

2 miles

Residential Proximity Analysis



HWY 97 BLM Site (161224)

Known Residences

(not each mapped for this site, 50+ residences within 1 mile and 300+ residences within 2 miles)

Workable Site Area (Focus Screen)

Workable Site Area Distance Buffers

1 mile

2 miles

Residential Proximity Analysis

Site ID	Site Name	Known Residences within 1 Mile	Known Residences within 2 Miles
191400-200	Moon Pit	0	1
201500-300	Roth West	3	26
201500-301	Roth East	2	8
211900	DSL South	0	1
212000	DSL North	2	3
161224	HWY 97 BLM	50+	300+

SWAC Feedback / Discussion

Roth East Site

Moon Pit Site

Communications Update

Public Outreach

- Continued communications to interested parties via email
- Project Story Map: deschutes.org/solidwasteplanning
- Upcoming open houses
- Targeted communications to nearby property owners

Roadmap to Opening in 2029

2017-2019

SWMP adopted, identified the need for a new landfill in County to support waste and enhanced recycling streams.

2022-2024

Work underway to screen and evaluate potential locations for the new facility

Spring 2024

Preferred Site Identified

Board of County Commissioners Approval Process

2024-2027

Property acquisition, multi-year process of land use permitting and facility design.

2027-2029

Construction of the new SWMF expected to take several years, depending on the site amenities and technologies.

Adjourn