

# Site Report and Management Plan

East Hill Farm Site, Corvallis OR



*Camp White at Table Rocks. Image Credit: BLM Oregon*

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## Chapter 1: General Property Information

This chapter details general property information including acreage, ownership, zoning, existing infrastructure, and site history. It includes a general overview of the project and the purpose of the site report. Also included in this chapter is a map showing the site boundaries in relation to the surrounding area, as well as a more specific map showing features on the site itself via arial imagery.

# Introduction

The purpose of this report is to create a management plan for the site that is both sustainable and uses the site to maximum extent. This report will explore the feasibility of developing the site for recreation by proposing an expansion of existing trails in order to connect recreation areas both on and off the site. The report will also explore the feasibility of developing a new parking lot at the southern end of the site, as well as an accompanying picnic area. Additional management goals of developing the site for Oregon State University research and community education are taken into account and several ideas for implementing those goals are included in the report.

## General Information

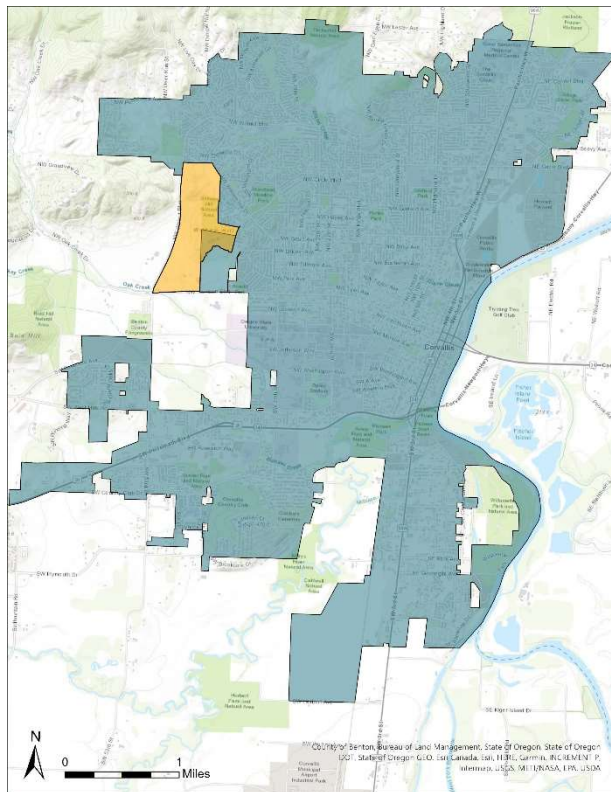


Figure 1: Site location with respect to Corvallis city boundaries.

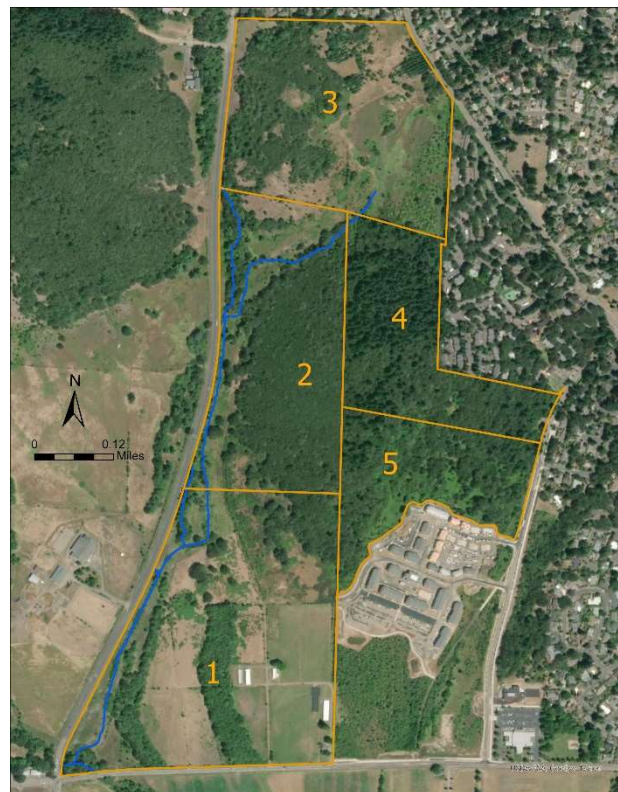


Figure 2: Map of site showing individual taxlots and aerial imagery. Blue lines indicate locations of Lamprey and Oak Creeks and smaller tributaries.

The entire site is composed of four taxlots, however some unofficial trails lead onto Taxlot 5, pictured on Figure 2 in the lower righthand corner. For the purposes of this report, this taxlot will be included in all following maps to provide a clear view of local activity in and around the site, even though the site is not part of the management area. The following table shows information about each individual taxlot on the site, as well as relevant totals. Please note that the acreage information displayed in the table is total acreage. Taxlots 1, 2, and 3 each extend beyond the borders of the site. In order to keep market value accurate, the entirety of each taxlot was included in the table. The total acreage contained within the site is listed under “Adjusted Total” in Figure 3. Market value for the adjusted acreage was not assessed.

Project Taxlot Number	Taxlot Number	Current Ownership	Acreage	Total Real Market Value
1	115330000300	OSU State Board Higher ED	63.69	\$13,656,410
2	115280001100	Oregon State	150	\$1,000,510
3	115280002000	OSU	82.62	\$679,500
4	115280002200	City of Corvallis	35	\$574,260
5	11533A000400	Circle Drive Corvallis LLC	29.92	\$2,393,600
<b>Total:</b>			361.23	\$18,304,280
<b>Adjusted Total:</b>			269.14	-

Figure 3: Table showing information about taxlots that are contained within the site.

Taxlots 1-3 are zoned as a Public Zone (P) (Benton County, n.d. a). Acceptable uses include farm or forest use, public school (including university and associated research facilities), public park or fairgrounds, and caretaker dwellings (Benton County, n.d. c). Taxlot 4 is zoned as Urban Residential (UR-5) (City of Corvallis, n.d. b). Acceptable uses include farm or forest use and natural areas (Benton County, n.d. c). Taxlot 5 is zoned as Conservation – Open Space (C-OS) (City of Corvallis, n.d. b). Acceptable uses include preservation and restoration of natural resources and significant vegetation, trails, and parking areas (Benton County, n.d. c).

## Existing Infrastructure

There are several structures present on the site. Taxlot 1 contains several barns and one residential structure related to ongoing turkey research by Oregon State University (OSU). Taxlot 2 contains a dilapidated barn – presumably remnants of previous agricultural activity on the site. Taxlot 3 contains a small OSU research station and another old barn, though the barn in Taxlot 3 is in much better condition than the barn in Taxlot 2. Taxlot 4 is the site of Witham Hill Natural Area and contains a small parking lot and trail system. Throughout the site are old roads and fences, some of which are still in use, particularly in Taxlot 1 where OSU maintains active pasture. Remnants of old dams are present along Lamprey Creek and various irrigation canals on the southern end of the site. There are also utilities present on the site. A series of transmission towers run through the site, crossing from Taxlot 2 to Taxlot 3. Other utility infrastructure is present at the small research site in Taxlot 3, as well as at the research barns and residential building in Taxlot 1. A detailed map showing various features on the site is included in Chapter 3.

## Site History

The site has historically been used as farmland and has not been developed for large scale residential housing. In 1982 OSU acquired their parcels, first planning a subdivision and later settling on its current use as a turkey research facility. According to those knowledgeable about the site, Witham Hill Natural Area was acquired by the City of Corvallis in 2001 and was developed as a trail center and recreation

area. Prior to that it was a private vacant lot used by children and families in the area for tree houses and other activities. Prior to white settlement in the area, several groups of indigenous people lived in the area, including the Kalapuya, Tsankupi, Chemapho, and Chepenefa peoples (Oregon State University, 2021). It is important to acknowledge that every piece of land in the United States was used and occupied by indigenous communities for thousands of years and that most have been forcibly removed and their land taken to build parks, houses, businesses, towns, schools, and universities.

## Chapter 2: Ecological and Physical Setting

This chapter details the ecological and physical setting of the site including soils, vegetation, hydrological features, and existing infrastructure on the site. Also included is a brief summary of the hazards present and a strengths, weaknesses, opportunities, and threats (SWOT) analysis of various characteristics of the site.

### Topography and Soils

The topography of the site is mostly flat with hills located in Taxlots 3 and 4. The majority of terrain on hills ranges between 10 and 25% slope. Terrain on flat areas ranges from 0-5% slope. The major soils on site are Barshaw clay, Dixonville-Gellatly complex, and Dixonville-Gellatly-Witham complex (United States Department of Agriculture, n.d.). Barshaw clay is a deep, poorly drained basalt derived alluvial clay found mostly on slopes ranging from 0-3% (United States Department of Agriculture, n.d.). Dixonville is a well-drained soil found mostly on slopes ranging from 12-30%. It is composed of silty clay and loam giving way to clay at a depth of about 12-21 inches (United States Department of Agriculture, n.d.). Gellatly is a well drain soil composed mostly of deep, silty clay loam found on slopes ranging from 12-30% (United States Department of Agriculture, n.d.). Witham is a somewhat poorly drained soil that is found on slopes ranging from 2-12%. The soil is composed of a thin layer of silty clay loam, giving way to clay at a depth of 4-12 inches (United States Department of Agriculture, n.d.).

The figure at right shows the site's suitability for recreational paths and trails based on soil type according to the United States Department of Agriculture's (USDA) Web Soil Survey. The yellow areas are composed primarily of Dixonville-Gellatly complex and Dixonville-Gellatly-Witham complex and are rated as "somewhat limited" in their ability to support trails. The red areas are composed primarily of Barshaw clay and are rated as "very limited" in their ability to support trails.

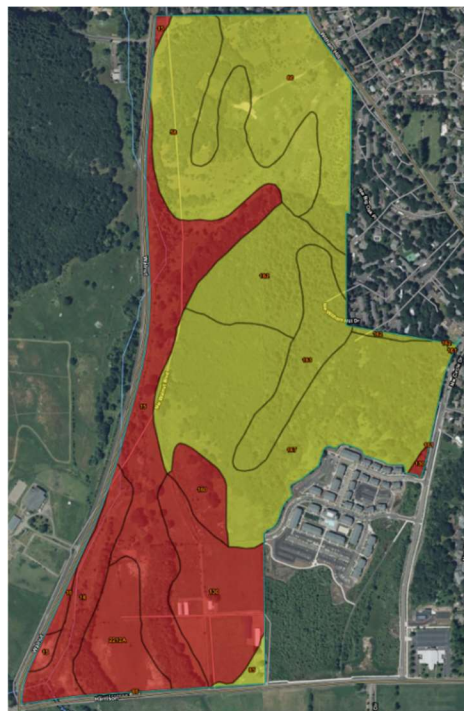


Figure 4: Map showing soil suitability for supporting trails.

## Hydrology

The site contains numerous wetland areas and streams. There are two main streams on site, shown in Figure 5 as dark blue lines. Lamprey Creek runs north to south down the west side of the site and Oak Creek, which enters and quickly exits the site in the lower southwest corner. Wetland areas are found on most flat or gently sloping terrain on site. Wetlands are shown in a light blue color in Figure 5. There are also numerous beaver dams on site, shown on Figure 5 as dark blue dots. There are few hydric soils on site, found mostly in the gently sloping areas near wetlands (United States Department of Agriculture, n.d.).

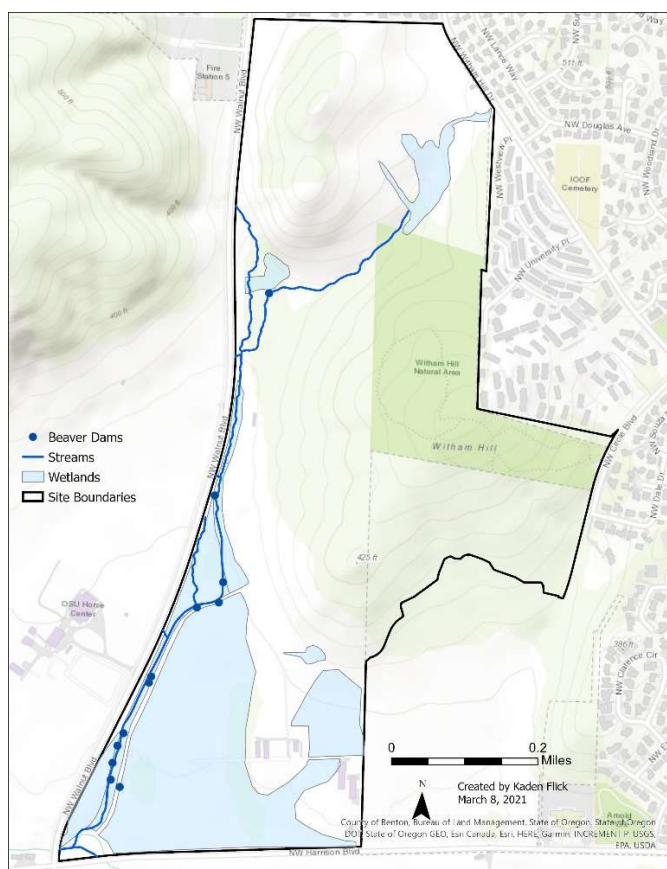


Figure 5: Map showing hydrological features on site.

## Current Land Cover and Use

There are numerous landcover types and multiple land uses on the site. Taxlot 1 is composed mostly of pasture, with wetland and riparian areas along its western edge. Taxlot 2, 4, and 5 are composed primarily of dense woodland, upland forest, and coniferous forest. Taxlot 3 is similar to Taxlot 1 on its western half, but dense woodland comprises its eastern half. There are no developed areas on site, however the site abuts dense residential areas along its north, eastern, and southeastern edges and is bounded by major roads on its remaining sides.

The site is used in a variety of ways. Taxlot 1 is currently home to an OSU turkey research facility comprised on several barns, a caretaker residence, and fenced pasture for cows and a pony. There is

another research site on Taxlot 3 which is comprised of a large crushed concrete pad and a small bunker built into the hillside. Taxlot 4 is a natural area with several developed trails and a small parking lot.

## Vegetation and Wildlife

There are numerous varieties of native and non-native vegetation on site. Historically, the site was comprised primarily of oak savannah and oak woodland, dominated by the Oregon White Oak. Currently, the site is overrun by invasive species that are outcompeting native species. Native overstory species on site include the Oregon White Oak, Oregon Ash, and Black Hawthorne. Native understory is composed of Reed Canary Grass, Slough Sedge, Fuller's Teasel, Cow Parsnip, Sword Ferns, and Oregon Grape. Poison Oak is also prevalent throughout the site. Invasive overstory is represented by Douglas fir and several different types of Hawthorne. Major invasive understory includes False Broom, Scotch Broom, Holly, and Himalayan Blackberry.

There are many animal species also present on the site. Mule Deer and coyotes frequent the site. The endangered Fender's Blue Butterfly, one the Oregon Department of Fish and Wildlife's Priority Species (ODFW) (Oregon Conservation Strategy, n.d.) also inhabits the site. Beavers are present on the site as well. There are numerous species of birds including the American Robin, Red-tailed Hawk, Scrub Jay, Steller's Jay, Northern Flickers, Great Blue Heron, and Pacific Wrens. Vesper Sparrows, Grey Squirrels, and Pacific Lamprey are other ODFW Priority Species (Oregon Conservation Strategy, n.d.) that inhabit the site. Also present in the streams are Rough-Skinned Newts and Cutthroat Trout.

The site is connected to other natural areas by pastureland to the south and west, though fences and roads create significant barriers. From speaking to residents living near the site, it is evident that deer and coyotes move between natural areas by walking along roads and through yards.

## Hazards

The major built hazards on site come in the form of dilapidated and unused infrastructure. Two barns on the site are safety hazards, and numerous unused fences and gates litter the site. The major natural hazards on the site are flooding along Lamprey and Oak Creeks and wildfire. Due to the numerous invasive species outcompeting native species, there is significant fuel for fire. Because of the site's proximity to housing and other structures, wildfire on the site has significant potential to inflict widespread destruction. Extensive Poison Oak and Himalayan Blackberry throughout are natural hazards that impede travel.

## Existing Facilities and Infrastructure

There are several structures present on the site. Taxlot 1 contains several barns and one residential structure related to ongoing turkey research by OSU. Taxlot 2 contains a dilapidated barn, presumably remnants of previous agricultural activity on the site. Taxlot 3 contains a small OSU research station and another old barn. Taxlot 4 is the site of Witham Hill Natural Area and contains a small parking lot and trail system. At the trailhead there are bike racks and a small informational sign that displays a trail map and other information useful to a visitor. Throughout are old roads and fences, some of which are still in use, particularly in Taxlot 1 where OSU maintains active pasture. Remnants of old dams are present along Lamprey Creek and various irrigation canals on the southern end of the site. Large transmission lines also run from the western edge of Taxlot 2 to the eastern edge of Taxlot 3.

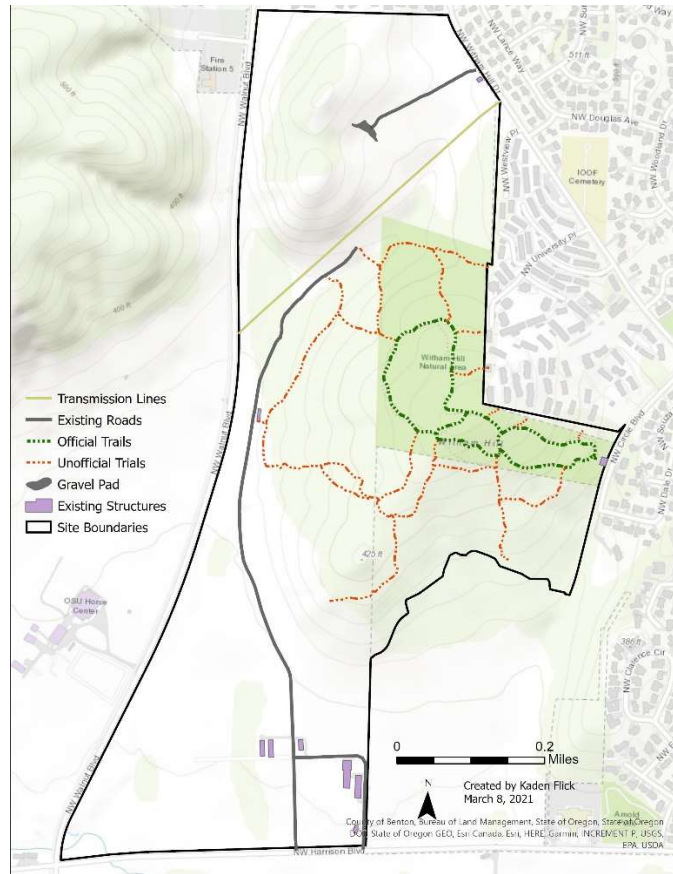


Figure 6: Map showing existing infrastructure on the site.

## SWOT Analysis

The site has many strengths and weakness. With respect to environmental characteristics, the site is relatively free of trash and other waste. With the exception of the barn in Taxlot 2, existing fencing and roads can stay in place. The barn in Taxlot 2 will need to be demolished or rebuilt before the site is opened to the general public because it is too fragile and presents a danger to the public and a liability issue for the property owners, in this case OSU. Invasive species present the next biggest threat to the site. Removal of invasive species and the restoration of natural habitats should be a priority. The site lends itself well to a variety of invasive species removal methods which should facilitate an effective cleanup.

The features of the site are also conducive to the expansion of recreation on the site. The existing roads and unofficial trails provide a ready-made base for establishing new trails. The presence of an existing trail system and the management goals set out by the landowners also sets a precedent for recreation. There are many features on the site that would create great educational opportunities as well, from riparian restoration and invasive species removal methods to general ecosystem and historical education. Large patches of Himalayan Blackberry, Poison Oak, and sensitive ecosystems near potential trails sites will require more intensive work to establish trails but are not prohibitive. Expanding access to the site is straightforward thanks to the site's location near roads and other established recreation areas.

## Chapter 3: Public Use and Community Demographics

This chapter will cover basic community demographics surrounding the site. Also included are methods to incorporate the goals of teaching, research, and outreach at the site. A discussion on inclusion and equity with respect to the proposed management goals is also included.

### Use and Community Demographics

Current primary users of the site seem to be families and individuals that are walking or running the existing trails on foot. Dogs are common on the site and cyclists seem to make an appearance as well, but not with the same frequency as other users. There are also houseless individuals living on the site, though they seem to be located primarily in Taxlot 5, effectively outside of the management zone. It can be assumed that they also are using the existing trails for travel to and from the site. Observations of the current users of the site are based on the observations of the author while collecting data and conversations with users on and around the site. Use appears to primarily take place on the established trails of Witham Hill Natural Area, but the number of unofficial trails and access points suggests that visitors are using other sections of the site too.

According to income, age, and diversity census data layers compiled by ESRI, those living near the site tend to be between the ages of 30 to 50 and make between \$65,000-120,000 as a household a year. The surrounding block groups also have a lower diversity percentage than the national average, meaning that the majority of people living around the site are white. However, Corvallis in general tends to be younger and more diverse than is reflected by those living around the site (United States Census Bureau, n.d.). Given the size of Corvallis and the proximity of the site to the dense urban areas of the city, we can assume that users of the site will more generally reflect the broader Corvallis demographic.

In order to make the site more accessible and equitable for potential users, several strategies can be used. All proposed signage will be displayed in multiple languages to reflect the many languages spoken by those living in Corvallis (United States Census Bureau, n.d.). To make the site more accessible to those with reduced mobility, proposed trails will be built on gradients consistent with those outlined in the USDA's Accessibility Guidebook (Zeller et al., 2012), including resting areas at appropriate intervals. Signage, barriers, and trail width will all be built to accommodate those in wheelchairs, also using guidelines outlined in the Accessibility Guidebook (Zeller et al., 2012).

There are also numerous opportunities for research and education on the site. The setting of the proposed trails lends itself well to a series of interpretive signs that detail information about the site and the things to be found there. Examples of topics for signage include: the importance of wetlands and wetland restoration, riparian areas and restoration, beavers and keystone species, invasive species removal, historical vegetation regimes both on and off site, and area history, including that of native peoples that have historically used the land. The number and diversity of invasive species present opportunities for research into removal and restoration of natives to the site. Existing fencing on the site could be used to contain grazing animals like cows, sheep, and goats. Proposed trails would also facilitate greater access to the site, allowing researchers to visit research sites more easily. Community outreach could take the form of a "Friends of" group that works with researchers to install and maintain research infrastructure and host cleanup days to remove invasive species.



Figure 7: Examples of interpretive trail signs. Image Credit: Stuart Macdonald (Left) and Ryan Clark (Right)

## SWOT Analysis

As stated in the previous section, the site lends itself well to creating new trails. The topography of the site, especially in the western half of Taxlot 3, will require trails to be placed in a way that allows compliance with the USDA's Accessibility Guidebook (Zeller et al., 2012). Routing paths along contours and making circuitous rather than direct routes to places will be important. In the southern section, the ground is significantly flatter, and established road grades will allow paths to be easily accessible by those with limited mobility. Existing trails on the Witham Hill Natural Area are not easily accessible. The routing and surfaces of the existing trails would need to be amended and resting areas would need to be established in order to make the trails more accessible. There is also limited existing signage on site and all text is currently only in a single language. Replacing existing signage and adding additional locations would help to make the site more accessible. Fortunately, signage is currently limited to the Witham Hill Natural Area Trailhead so re-working the signage would be easy and done at no significant cost due to the nature of the signs.

## Chapter 4: Desired Future Conditions

This chapter outlines the proposed management goals for the site. Suitability analyses are also done in order to determine the best locations to implement each of the management goals. A discussion of the datasets and analysis used for each suitability analysis is also included in this chapter.

### Site Management Goals

Below are the three proposed management goals for the site. They are related to the chosen thematic focus of expanding recreational opportunities on site while promoting the overarching management goals of teaching, research, and education.

**Management Goal Number 1:** Develop a new trail system that connects existing recreation areas to the north, south, and east while also utilizing undeveloped areas in the western edge of the site. The proposed trails would allow for an easy connection between existing trails at Witham Hill Natural Area, Martin Luther King Park, and Bald Hill Natural Area. The proposed trails would expand access to the site in order to facilitate new research opportunities and create a defined area for outdoor learning and education through signage and other means. An increased number of trails and recreational opportunities would also relieve pressure from heavily used areas nearby – like Bald Hill Natural Area to the west – and serve as an opportunity to remove invasive species as part of the trail building process.

**Management Goal Number 2:** Develop a new parking area at the southern end of the site that includes picnic benches and would serve as an access point. The proposed parking area would act as a trailhead and gathering area at the southern end of the site. A proposed small, protected crosswalk at the northern end of the site would serve as an access point close to Martin Luther King Park. The parking lot would also expand parking availability, something that is currently limited to five spaces on the eastern end of the site at Witham Hill Natural Area.

**Management Goal Number 3:** Establish a series of interpretive signs along the proposed trail system. These signs would make the trail more engaging to the potential user and also directly address the overarching management goals of teaching and education. The interpretive trail would educate the average user about topics like the importance of wetlands and wetland restoration, riparian areas and restoration, beavers and keystone species, invasive species removal, historical vegetation regimes both on and off site, and area history, including that of native peoples that have historically used the land, as mentioned in a previous section. The interpretive trail could also serve as a field trip location for local schools to educate children about the environment.

### Suitability Analysis for Management Goal 1 & 3

The suitability analysis for the trail system was the primary suitability analysis for this project. The following table defines the criteria that were used to determine the best locations to place the new trail. Because the proposed signage in Management Goal 3 follows the proposed trail system, this suitability

analysis covers both Management Goals 1 and 3. Locations for each proposed sign are included on the map detailing proposed trail locations in Chapter 5.

Criteria	Classification	Weights
Slope	4 = slope is 0-4% 3 = slope is 5-9% 2 = slope is 10-24% 1 = slope is >25%	Multiply score by: 3
Soils (Based on USDA Soil Survey suitability data)	4 = somewhat limited 1 = very limited	Multiply score by: 1
Viewsheds/POI	4 = within 10 ft. 3 = within 20 ft. 2 = within 30 ft. 1 = within 50 ft.	Multiply score by: 2
Access Points	4 = within 10 ft. 3 = within 20 ft. 2 = within 30 ft. 1 = within 50 ft.	Multiply score by: 3
Hazards/Sensitive Areas	4 = 50 ft. away 3 = 30 ft. away 2 = 20 ft. away 1 = 10 ft. away	Multiply score by: 3

*Figure 8: Table showing the suitability criteria for trail placement on the site.*

These datasets were chosen in order to place new trails in locations that are suitable for building trails. The weighting system reflects the relative importance of each element to the suitability analysis. Soils were included to determine if the make-up of the slope was appropriate for trail building, but were weighted the lowest due to the mostly uniform suitability of the soils across the site for supporting trails. Soils were also omitted from Figure 10 for this reason. Slope angle was used to determine if the slope was too great for trails, both from a recreation as well as a drainage perspective. Access points were used to route trails end to end, as well as to connect new trails to those that already exist on the site. Viewsheds, POIs, Hazards, and Sensitive Areas were included in the analysis in order to route trails near interesting areas and away from areas that would be best avoided. These datasets and classifications were used to generate the map (Figure 10) that is included at the end of this chapter.

## Suitability Analysis for Management Goal 2

The suitability analysis for Management Goal 2 was similar to that of Management Goals 1 & 3. Figure 9 shows the criteria that were used to determine suitable locations for the proposed parking lot on the site.

Criteria	Classification	Weights
Slope	4 = slope is 0-2% 1 = slope is >2%	Multiply score by: 3
Area	4 = >= 12,000 sqft. 3 = 12,000-10,000 sqft. 2 = 10,000-8,000 sqft. 1 = 8,000-6,000 sqft.	Multiply score by: 3
Access Points	4 = within 10 ft. 3 = within 20 ft. 2 = within 30 ft. 1 = within 50 ft.	Multiply score by: 3
Hazards/Sensitive Areas	4 = 50 ft. away 3 = 30 ft. away 2 = 20 ft. away 1 = 10 ft. away	Multiply score by: 3

*Figure 9: Table showing the suitability criteria for parking lot placement on the site.*

These datasets were chosen to place the new parking lot. Weights are included to demonstrate the relative importance of each criteria to each other. Slope was chosen to find areas that were flat enough for a parking lot. Area was chosen to find places that were large enough for the parking lot. A buffer around access points were chosen to place the parking lot near a road around the perimeter of the site. A buffer around hazards and sensitive areas was included to avoid placing the parking lot in an unsuitable area. With the exception of Area, which was measured manually, the criteria for placing trails and for placing a parking lot were relatively similar. Because of this, a single map (Figure 10) was created to test site suitability and included at the end of this chapter.

### Summary of Suitability Analysis

After creating the criteria for each suitability analysis, a single map was generated in order to place both trails and a parking lot. There were two places that were suitable for a parking lot. The first was on the eastern edge of Taxlot 3 and the second on the southwestern edge of Taxlot 1. Both areas scored highly based on the criteria defined in Figure 9. However, after evaluation and preliminary routing of the trails, the location on the southwestern edge of Taxlot 1 was determined to be the most suitable location for several reasons. This location allows for a parking lot near where the proposed trail ends in the southern edge of the site. It is also the furthest location from any other established parking area on the site while also meeting the slope requirements. In addition, a parking lot in this location does not necessitate a trail running near the middle of Taxlot 3, which contains a large, unattractive crushed concrete pad, which is home to an ongoing OSU research project.

In Taxlots 1 and 2, it was found that using existing roads and dikes as trail surfaces satisfied the slope, viewshed, POI, and access point criteria well. Their placement does send them near hazards and sensitive areas, but mitigating those risks are straight forward. The major hazards in that part of the site

are large Himalayan Blackberry thickets and wetland areas. The Himalayan Blackberry thickets are an invasive species that needs to be removed to clear the way for a trail. Wetland areas are also in close proximity to the proposed trails, but new and existing fencing would be effective in keeping trail users out of sensitive areas. In the northern portion of the site, there were few hazard areas, so finding suitable slopes was the most important factor. In order to keep the slope of the trail at acceptable levels, it was run along the flattest areas in that portion of the site. This meant that the trail runs along the tops of the hills and along contours, slowly crossing contours as it sloped both up and down the hill. This necessitated a more circuitous north-south route but allowed the trail to hit both viewsheds and POIs in the northern portion of the site. A boardwalk section of trail starting at the old barn in Taxlot 2 and ending at the border between Taxlot 2 and 3 is recommended in order to avoid large quantities of water found flowing down the existing road during data collection and to cross Lamprey Creek as it intersects the trail. This addition is included on the conceptual design map found in Chapter 5. Existing unofficial trails can be used to connect the new proposed trails to official trails on the Witham Hill natural area.

Below is the suitability analysis map created using criteria shown in Figures 8 and 9.

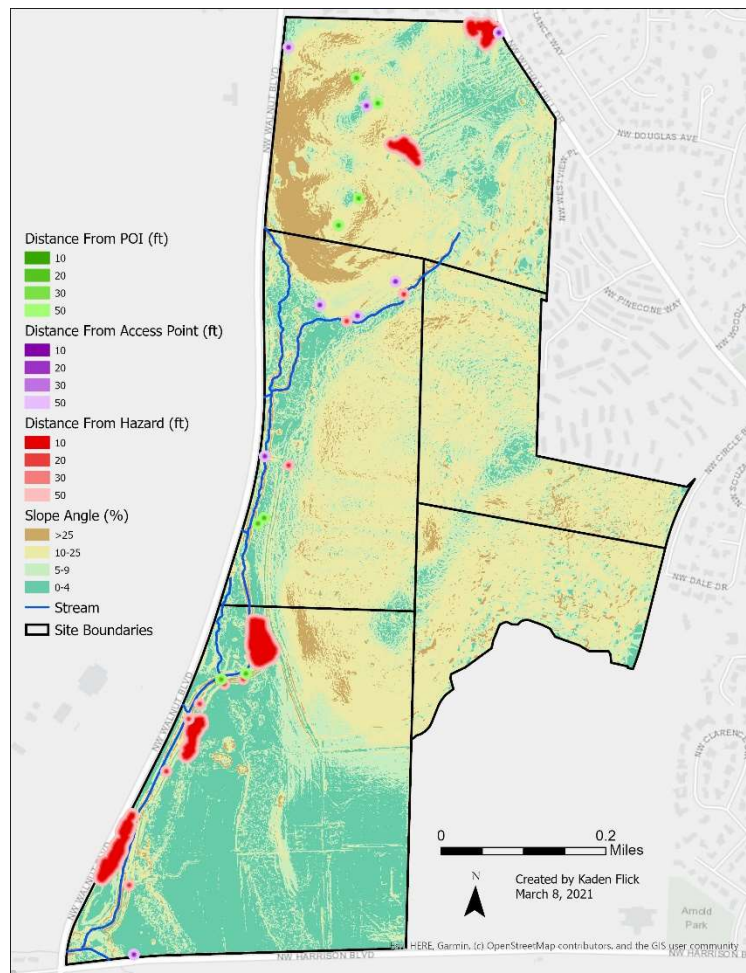


Figure 10: Suitability Analysis map.

## Chapter 5: Conceptual Design and Recommendations

This chapter includes final maps showing the conceptual design for the proposed management features, as well as a discussion about future functionality of the site as it pertains to the chosen management goals. Also included are recommendations for priorities and next steps for implementing these management goals.

### Conceptual Site Design

Below, Figure 11 shows the proposed placement of trails, benches, interpretive signs, and parking lot. Figure 12 shows a more detailed conceptual design for the proposed southern parking area, including the parking lot, picnic area, and trailhead sign.

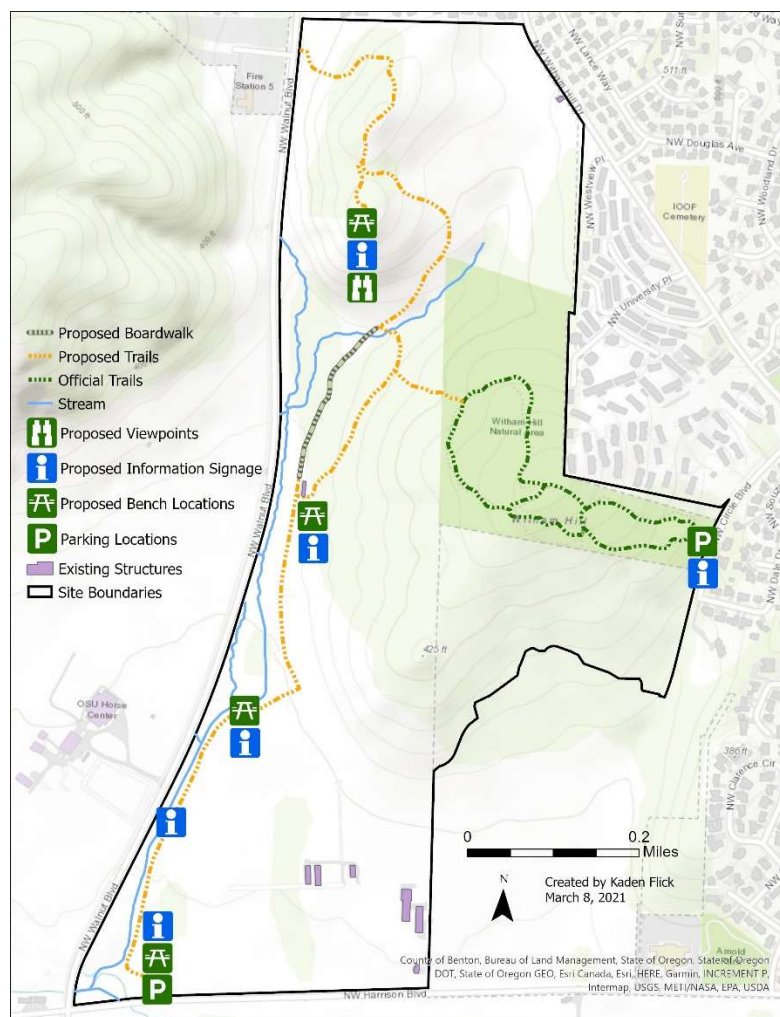
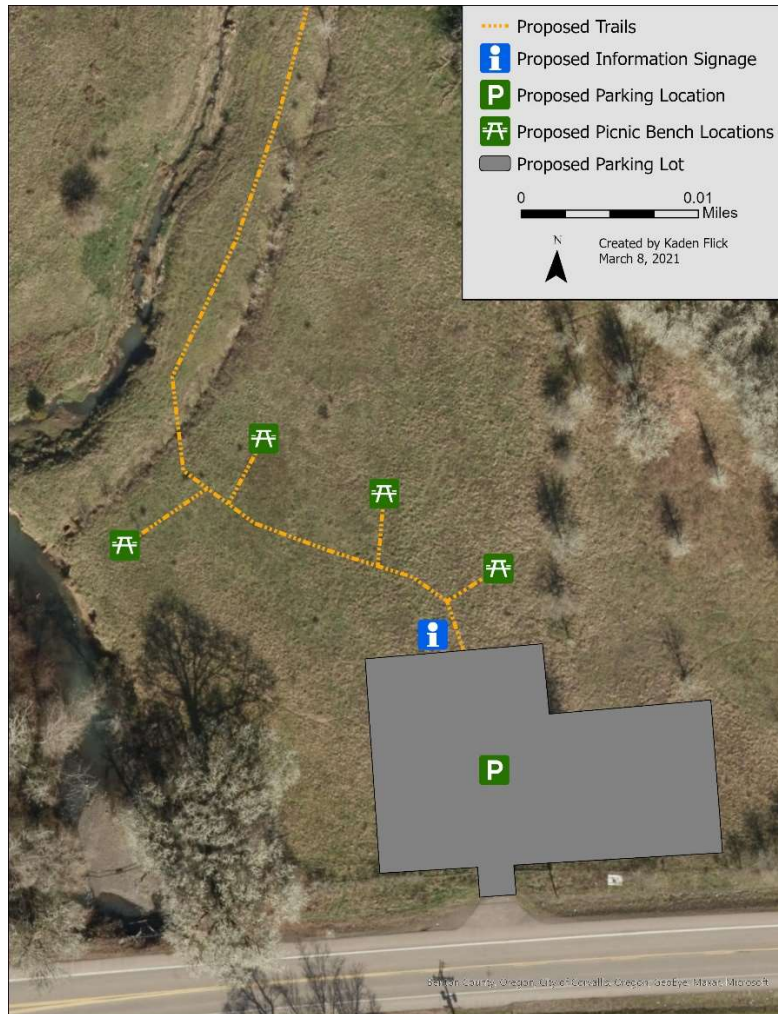


Figure 11: Conceptual map showing placement of new trails, interpretive signs, parking area, and benches.



*Figure 12: Conceptual map showing a detail view of the proposed parking lot and associated picnic area.*

Using the suitability analysis criteria and map developed in Chapter 4, the trails were placed in locations that send them near points of interest on the site and away from hazards. The location of the boardwalk discussed in Chapter 4 is also included on the map. Two new trails branching off from the existing trails system on Witham Hill Natural Area were placed using data collected by the author and follow established unofficial trails on the site. These unofficial trails meet the same criteria that were used for the remainder of the trails. Potential sign and bench locations are also included on the map. Locations for signs were chosen by their proximity to areas of interest like beaver dams, notable wetlands, and viewpoints that would be relevant to the signage at each location. Bench locations were selected based on their proximity to points of interest and distance from each other along the trail. Because the proposed trail system has yet to be laid out on the ground – particularly in the northern portion of the site – additional resting benches may be appropriate in areas with challenging terrain. In order to make the proposed trails accessible to all, trails should have a clear tread width of at least 36 inches and be free of obstacles that would make transit difficult for those in a wheelchair (Zeller et al., 2012). Trail surface should be a hard packed material that allows for easy transit. Due to the relatively unsuitable

soil for supporting trails on the site, crushed gravel is recommended (Zeller et al., 2012) to provide a stable surface that will not turn into a mud pit when wet.

Figure 12 is a detailed map of the proposed parking area. The location for the parking lot was chosen based on the criteria and methods discussed in Chapter 4. Potential locations for a network of picnic benches were also included on the map. The exact number and placement of these benches is not concrete, and likely to change. The map is intended to provide an example of what the area could look like. The parking lot area does not necessarily need to be paved. To keep the number of impervious surfaces on the site to a minimum, gravel can be used to keep the parking area free of ruts and large muddy areas.

In order to promote sustainable practices on the site, the proposed management goals are intended to be low impact and facilitate the removal of invasive species and promote the proliferation of natives, especially members of ODFWs strategy species identified in Chapter 2. By routing trails along existing roads, trails, and flat areas, minimal shaping of land and hillsides will need to be done. The placement of the proposed parking lot also does not require significant grading and infrastructure. Materials used for trail and parking lot surfaces are intended to be permeable and not create more runoff. Materials for signs, benches, and picnic tables could be sustainably sourced on site by using lumber from nuisance Douglas Firs felled during the process of re-establishing the proper oak-dominated landscapes historically found on the site.

## Management Recommendations

The priority for implementing the management goals outlined in this report is to flag and finalize the layout of all new proposed trails. Once trail locations have been identified, clearing of large sections of invasive species like Himalayan Blackberry can be begin. Establishing the gravel pad for the southern parking lot would also be a priority because it creates a place for machinery to be parked when not in use that does not disturb sensitive portions of the site. Once trails and a parking area are in place, work can go in a number of directions. With increased access to the site, invasive species removal can progress at a greater rate. Because trails are established, if grazing is used to control invasives, the locations of fencing and gates can be more easily established. If additional fencing to keep users out of sensitive areas is determined to be necessary, they can also be installed at this stage. Benches would be the next logical thing to include at the site in order to make the site more accessible and enjoyable. The last portion the conceptual design to go in should be the interpretive signs. Signage does not necessarily make a site more accessible or facilitate the removal of invasive species, so is a low priority.

Because of the nature of the goals for the site, Management Goals 1 and 2 are the only ones that should be implemented together. Management Goal 3 can be implemented as time and funding allow. Related goals like the removal of invasive species and the restoration of habitat on the site are ongoing goals that can be implemented at any point as well. Other potential management goals might be improving existing trails in Witham Hill Natural area in order to make them more suitable for winter use and to make them more accessible to all users.

## References

- Benton County Oregon. (n.d.) *Assessment Property Search*. Assessment.  
[https://www.co.benton.or.us/assessment/property\\_search](https://www.co.benton.or.us/assessment/property_search)
- Benton County Oregon. (2021) *BoundariesGDB.zip* [Data set]. Benton County.  
<http://gis.co.benton.or.us/gisdata/Boundaries/>
- Benton County Oregon. (n.d.) *Development Code*. Planning.  
<https://www.co.benton.or.us/planning/page/development-code>
- Benton County Oregon. (2020) *Taxlots.zip* [Data set]. Benton County.  
<http://gis.co.benton.or.us/gisdata/Assessment/>
- Benton County Oregon. (2016). *Water.zip* [Data set]. Benton County.  
[http://gis.co.benton.or.us/gisdata/Natural\\_Features/](http://gis.co.benton.or.us/gisdata/Natural_Features/)
- Benton County Oregon. (n.d.) Zoning Map [Webmap]. Retrieved March 8, 2021 from  
<https://bentoncountygis.maps.arcgis.com/apps/webappviewer/index.html?id=e87c1dfd880543d1a5ed5041745f3d88>
- BLM Oregon (2018). *Camp White at Table Rock* [Photograph]. Wikimedia Commons.  
[https://commons.wikimedia.org/wiki/File:Camp\\_White\\_at\\_Table\\_Rocks\\_\(45898968141\).jpg](https://commons.wikimedia.org/wiki/File:Camp_White_at_Table_Rocks_(45898968141).jpg)
- City of Corvallis Oregon. (n.d.) Lookup Property Information [Webmap]. Retrieved March 8, 2021 from  
<https://www.corvallisoregon.gov/cd/page/lookup-property-information>
- City of Corvallis Oregon. (n.d.) Official Zoning Map [Webmap]. Retrieved March 8, 2021 from  
<https://www.corvallisoregon.gov/cd/page/official-zoning-map>
- DOMGAMI Lidar Viewer. (n.d.). *LDQ-44123E3.zip* [Data set] Oregon Department of Geology and Mineral Industries. <https://gis.dogami.oregon.gov/maps/lidarviewer/>
- ESRI. (2020). *2020 USA Diversity Index* [Webmap]. Retrieved March 8, 2021 from  
<https://osugisci.maps.arcgis.com/home/item.html?id=010f7ddc958d442d8c1583281cf416a5>
- ESRI. (2020). *2020 USA Median Age* [Webmap]. Retrieved March 8, 2021 from  
<https://osugisci.maps.arcgis.com/home/item.html?id=2848013f6a034e688ae76a798bb49d82>
- ESRI. (2020). *2020 USA Median Household Income* [Webmap]. Retrieved March 8, 2021 from  
<https://osugisci.maps.arcgis.com/home/item.html?id=20a60423d37c49ba9253526859ba93e1>
- Oregon Conservation Strategy. (n.d.) *Strategy Species*. Conserve.  
<https://oregonconservationstrategy.org/ocs-strategy-species/>
- Oregon State University. (2021, February 2). *Land Acknowledgements*. Libraries.  
<https://guides.library.oregonstate.edu/land-acknowledgments/oregon>
- United States Census Bureau. (n.d.) *Corvallis city, Oregon*. Explore Census Data.  
<https://data.census.gov/cedsci/profile?g=1600000US4115800>

- United States Department of Agriculture. (n.d.) Soil Map [Webmap]. Retrieved March 8, 2021 from <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>
- Winterbrook Planning, Pacific Habitat Services, Inc. (2005). *Corvallis* [Data set]. Oregon.gov. <https://www.oregon.gov/dsl/WW/Pages/Inventories.aspx>
- Zeller, J., Doyle, R., Snodgrass, K. (2012, August) *Accessibility Guidebook for Outdoor Recreation and Trails*. USDA.gov. <https://www.fs.usda.gov/sites/default/files/Accessibility-Guide-Book.pdf>
- Macdonald, S. (n.d.). Town history educational sign on Shoreline Trail; the Colony, Texas [Photograph]. American Trails. <https://www.americantrails.org/photos/sign-interpretive-history-town-jpg>
- Clark, R. (2017). [Interpretive trail sign] [Photograph]. University of California, Santa Barbara. <https://www.ccber.ucsb.edu/news-events/experiencing-ncos-%E2%80%93-trails-interpretive-signs-and-more>
- BLM Oregon (2018). *Camp White at Table Rock* [Photograph]. Wikimedia Commons. [https://commons.wikimedia.org/wiki/File:Camp\\_White\\_at\\_Table\\_Rocks\\_\(45898968141\).jpg](https://commons.wikimedia.org/wiki/File:Camp_White_at_Table_Rocks_(45898968141).jpg)