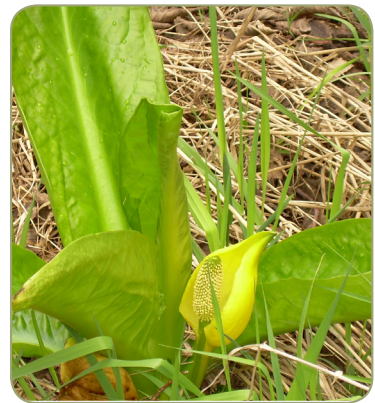


## SITE CONSERVATION PLAN

# Council Creek Natural Area



February 2014



**Metro** | *Making a great place*

Clean air and clean water do not stop at city limits or county lines. Neither does the need for jobs, a thriving economy, and sustainable transportation and living choices for people and businesses in the region. Voters have asked Metro to help with the challenges and opportunities that affect the 25 cities and three counties in the Portland metropolitan area.

A regional approach simply makes sense when it comes to providing services, operating venues and making decisions about how the region grows. Metro works with communities to support a resilient economy, keep nature close by and respond to a changing climate. Together, we're making a great place, now and for generations to come.

Stay in touch with news, stories and things to do.

[www.oregonmetro.gov/connect](http://www.oregonmetro.gov/connect)

**Metro Council President**

Tom Hughes

**Metro Council**

Shirley Craddick, District 1

Carlotta Collette, District 2

Craig Dirksen, District 3

Kathryn Harrington, District 4

Sam Chase, District 5

Bob Stacey, District 6

**Auditor**

Suzanne Flynn

**MAKING A  
GREAT  
PLACE**



**Metro**

## TABLE OF CONTENTS

Introduction .....	1
Planning area .....	1
Existing planning documents .....	2
Site description .....	2
Recent management history.....	2
Natural resources of special interest .....	3
Conservation targets.....	3
Current and desired future condition of conservation targets .....	3
Access considerations .....	8
Threats and their sources for the next 10 years .....	10
Natural resource strategies .....	11
Specific actions and funding requirements .....	12
Monitoring plan .....	13
Partners.....	14

### Maps

Map 1 – Planning area

Map 2 – Site map

Map 3 – Soils, topography and hydrological features

Map 4 – Current cover

Map 5 – Conservation targets

Map 6 – Access and recreation



## INTRODUCTION

Council Creek is comprised of six parcels that total nearly 40 acres. All of them border or straddle Council Creek, and they mark the edge of the urban growth boundary in Cornelius. Agricultural land is to the north and the city of Cornelius lies to the south. The Metro holdings provide an important buffer between agriculture and urbanization. Council Creek is part of the Dairy and McKay Creeks Confluence target area. Parcels comprising East Council Creek were purchased with funds from the 1995 Metro bond measure and West Council Creek was funded by the 2006 Metro measure.

## PLANNING AREA

This site conservation plan includes Metro-owned property and considers adjacent parcels that contain important habitat features or would connect Metro ownership. Relevant habitat features include suitable native turtle nesting habitat and Council Creek.

### KEY STAFF

Elaine Stewart, scientist

Nathaniel Marquiss, technician

Mel Huie and Lake McTighe, planners

Tom Heinicke, negotiator

### KEY PRIVATE LANDOWNERS

Jeff Morriss and Janina Darling 1320 NW Susbauer Rd, Cornelius	Potential turtle nesting habitat. Donated property and funds during 1996 bond measure acquisitions. Remaining property could provide access to Metro holdings on north side of creek.
Virgil Hockett and Beth Zetter 1260 NW Susbauer Rd, Cornelius	Hold easement to NW corner of East Council Creek.
David and Tina True 1325 NW Hobbs Rd, Cornelius	Property includes part of creek and could provide access to Metro holdings on north side of creek.
John and Debra Severdia 1010 NW Hobbs Rd, Cornelius	Property includes part of creek immediately east of Hobbs Road.
Council Creek Estates HOA Unknown	Two parcels include Council Creek and a tributary to the south of the creek, and a bioswale that drains to the creek.
Patricia Decker 33589 SW Laurel Rd, Hillsboro	Parcel on east side of Susbauer includes Council Creek and most of the tributary originating on the HOA land. Also includes higher land that will probably be sought for a trail.
Harvey Family Trust 21250 SW TV Hwy, Aloha	Parcel on west side of Susbauer includes Council Creek and land sought for trail head and alignment. Would connect West Council Creek and East Council Creek sites.
Dale and Ilah Erickson 234 NE Shannon St, Hillsboro	Own rental property to the west of West Council Creek, through which we access that parcel.
The Haney family 16720 SW Foxtail, Hillsboro	Own farmland to the north of West Council Creek, and could be access route to that parcel.

## EXISTING PLANNING DOCUMENTS

A target area assessment for Dairy-McKay Creeks (including Council Creek) can be found here: M:\suscntr\Natural Areas and Parks\Regional Properties\Dairy and McKay Creek Confluence TA\Planning\Target Area Assessment

## SITE DESCRIPTION

East and West Council Creek are dominated by emergent wetlands and a mosaic of shrub wetland and riparian forest. The emergent wetlands, through which the creek flows, are degraded and dominated by reed canarygrass. The riparian forest is generally in good condition and includes mature Western redcedar and Douglas-fir. Metro planted an upland patch on the edge of Council Creek Estates with a mix of trees including ponderosa pine and shrubs. Metro planted a mixed conifer forest adjacent to Hobbs Road in a former field. The seller of the latter parcel retains a life estate, which allows occupancy and use for the seller's lifespan. This is shown as "developed" in Map 4.

## ACCESS FOR MANAGEMENT

Access to Council Creek limits management, with the exception of the Hobbs Road life estate parcel. A narrow and overgrown entry to East Council Creek on the north side of the creek off Susbauer Road is part of an easement to the property owner to the north (Hockett/Zetter) and contains their septic drainfield and some landscaping and a secondary driveway. Metro has rights to use that entry to access Metro property but may not pre-empt or conflict with the easement holder's rights. Metro has an easement to use the Morriss/Darling driveway to access the north side of East Council Creek, but the landscaping and small driveway do not allow parking or driving through to the Metro property. All other parcels are accessed via private property, whether the Council Creek Estates Homeowners' Association or the Erickson's rental on Speisschart Road. Metro has a revocable license to park on the Haney property east of Speisschart Road to access West Council Creek.

## SOILS

Several soil types are present at Council Creek. The most common soils are Cove silty clay loam (a hydric soil indicative of wetlands) and Xerochrepts and Haploxerolls (well-drained soils on rocky escarpments). These soils reflect the stream and emergent wetlands associated with Council Creek and the steep slopes rising abruptly from the stream channel to the surrounding landscape.

## RECENT MANAGEMENT HISTORY

During the last 5 years, Metro treated ivy on the south side of the creek at East Council Creek. About 10 years ago, a Boy Scout troop planted the field immediately east of Hobbs Road. West Council Creek, the most recent acquisition, is nearing the end of the stabilization phase. Plant establishment into the existing canarygrass is of mixed success and interplanting will occur in early 2014.

### Metro property stewardship classification (acres)

	0 PRE-INITIATION	1 INITIATION	2 ESTABLISHMENT	3 CONSOLIDATION	4 MAINTENANCE
<b>Emergent Wetland</b>					
When we bought the property	16.5	0	0	0	0
Present Condition	16.5	0	0	0	0
<b>Shrub Wetland</b>					
When we bought the property	5.5	0	0	0	0
Present Condition	4.0	1.5	0	0	0
<b>Riparian Forest</b>					
When we bought the property	2.0	0	0	0	10.5
Present Condition	0	0	2.0	0	10.5
<b>Upland Forest</b>					
When we bought the property	4	0	0	0	0
Present Condition	0	0	0	4	0

## NATURAL RESOURCES OF SPECIAL INTEREST

Native turtles have been observed at Council Creek East and/or West for many years and most recently in 2013. Although formal surveys have not been done, at least some of these turtles are believed to have been Western pond turtles – one of the 10 most at-risk amphibians and reptiles in the United States (Center for Biological Diversity, September 2013). Habitat loss is the primary cause of decline across Washington, Oregon and California. Council Creek is one of only two Metro sites where pond turtles are likely to occur (the other is in the Clackamas River basin).

## CONSERVATION TARGETS

There are five conservation targets for Council Creek: emergent wetland, shrub wetland, riparian forest, upland closed forest and native turtles.

## CURRENT AND DESIRED FUTURE CONDITION OF CONSERVATION TARGETS

### Non-technical status and DFC of targets

TARGET	CURRENT CONDITION	DESIRED FUTURE CONDITION
Emergent wetland	Poor condition due to dominance by reed canarygrass.	Will remain poor unless hydrology can be controlled to allow treatment and plantings.
Shrub wetland	Mixed condition but some rehabilitation is under way.	Could be in good condition with plant installation and maintenance.
Riparian forest	Mixed condition, generally good but damage from vandalism in some areas.	Good condition with healthy mix of species and sizes of trees and shrubs.
Upland forest	Developing in two areas where plantings were done several years ago.	These areas should fill in nicely and provide connectivity and increased patch size for riparian forest.
Native turtles	At risk of extirpation. They continue to be seen every few years but have lost many essential habitat components.	Council Creek can provide all elements needed by turtles, but not without additional holdings. This can be an important link for recovery on a regional scale by providing a stepping stone to other groups and habitats.





Key ecological attributes for emergent wetlands – Council Creek

CATEGORY	KEA	INDICATOR	----- INDICATOR RATING -----				CURRENT RATING	DFC* FOR THIS SCP	LONG TERM DFC	COMMENTS
			POOR	FAIR	GOOD	VERY GOOD				
Condition	Buffer condition	Condition within 50 m (164 ft) of emergent wetland perimeter	>50% cover of non-native plants, barren ground, highly compacted or otherwise disrupted soils	25-50% cover of non-native plants, moderate or extensive soil disruption	75-95% cover of native vegetation, low (5-25%) cover of non-native plants, intact or moderately disrupted soils	>95% cover native vegetation	P	F	G	
Condition	Native wetland plant cover in emergent area	Dominance of native herbaceous plants characteristic of the region’s wetlands	<25% cover of vegetated areas	25-50% cover of vegetated areas	50-75% cover of vegetated areas	>75% cover of vegetated areas	P	P	P	Inability to control hydrology compromises this KEA.
Condition	Hydrology	Hydroperiod	Both the filling/inundation and drawdown/drying of the site deviate from natural conditions (either increased or decreased magnitude and/or duration)	Site’s filling or inundation patterns are characterized by natural conditions, but thereafter are subject to more rapid/extreme drawdown or drying compared to more natural wetlands OR Patterns are of substantially lower magnitude or duration than under natural conditions, but thereafter site is subject to natural drawdown or drying	The filling or inundation patterns in the site are of greater magnitude (and greater or lesser duration than would be expected under natural conditions, but thereafter, the site is subject to natural drawdown or drying	Hydroperiod of the site is characterized by natural patterns of filling or inundation and drying or drawdown	P	P	P	Creek is flashy due to extensive impervious surface in surrounding watershed. Summer flows are maintained artificially by irrigation on agriculture land and lawn care on residential land.
Landscape context	Biological connectivity	Degree of connectedness to nearby natural habitat patches appropriate for species of conservation interest	Wetland is isolated from other habitat areas.	Wetland is connected by 1 or 2 corridors that are viable for species of interest	Wetland is connected by 3 or more corridors that are viable for species of interest	Wetland adjacent to habitat that facilitates relatively free movement to other nearby patches, without intervening roads or paved/heavy use trails	F	F	F	Connection to Dairy Creek via mainstem Council Creek.
Landscape context	Edge condition	% of edge bordered by natural habitats and/or managed for conservation	Patch surrounded by non-natural habitats (0-25% natural habitat)	25%+ of patch bordered by natural habitats	50-75% of patch bordered by natural habitats or managed for conservation	75-100% of patch bordered by natural habitats or managed for conservation	VG	VG	VG	Nearly surrounded by Metro ownership managed for conservation.

\*Desired future condition



Key ecological attributes for shrub wetlands – Council Creek

CATEGORY	KEA	INDICATOR	----- INDICATOR RATING -----				CURRENT RATING	DFC* FOR THIS SCP	LONG TERM DFC	COMMENTS
			POOR	FAIR	GOOD	VERY GOOD				
Size	Extent of scrub-shrub wetland area	Hectares or acres of scrub-shrub wetland		Reduced due to habitat conversion	Maintained at current size		F	G	G	Habitat conversion here is due to invasive canarygrass and is largely reversible.
Condition	Native shrub richness	Number of native shrub species per acre	<2 species	3-4 species	4-5 species	>6 species	Unknown	G	VG	Plantings done in some areas, but not all.
Condition	Vegetative structure: shrub layer	Percent native shrub canopy cover	<30% cover or >80% cover	30-50% cover	50-70% cover	70-80% cover	F	G	VG	As plantings are completed and begin to mature, the canopy will close.

\*Desired future condition

Key ecological attributes for riparian forest (streams or rivers) – Council Creek

CATEGORY	KEA	INDICATOR	----- INDICATOR RATING -----				CURRENT RATING	DFC* FOR THIS SCP	LONG TERM DFC	COMMENTS
			POOR	FAIR	GOOD	VERY GOOD				
Size	Riparian forest width	Average width of riparian forest	<15 m (50 ft) each side of stream	15-30 m (50-100 ft) each side of stream	30-61 m (100-200 ft) each side of stream	>61 m (200 ft) each side of stream	F	F	F	Constrained by area available, need to avoid loss of area.
Condition	Vegetative structure: tree layer	% native tree canopy cover	<20% cover	20-30% cover	30-40% cover	40% or more	VG	VG	VG	Includes some very nice specimens of Western redcedar and Douglas-fir.
Condition	Native tree and shrub richness	# native tree and shrub species per 0.4 ha (1 ac)	<5 species	5-10 species	10-15 species	>15 species	Unknown	VG	VG	

\*Desired future condition

Key ecological attributes for upland forest – Council Creek

CATEGORY	KEA	INDICATOR	----- INDICATOR RATING -----				CURRENT STATUS	DFC* FOR THIS SCP	LONG TERM DFC	COMMENTS
			POOR	FAIR	GOOD	VERY GOOD				
Size	Forested habitat patch size	Patch size (includes native shrub patches or natural clearings)	< 12 ha (30 ac)	12-40 ha (30-100 ac)	40-61 ha (100-150 ac)	>61 ha (150 ac)	P	P	P	Constrained by area available, need to avoid loss of area.
Condition	Native tree and shrub richness	Number of native tree and shrub species per acre	<5 species per 0.4 ha (1 ac)	5-8 species 0.4 ha (1 ac)	8-12 species per 0.4 ha (1 ac)	>12 species per 0.4 ha (1 ac)	Unknown	VG	VG	
Condition	Vegetative structure: native tree and shrub layer	% native tree and shrub canopy cover (combined)	<25% cover	25-50% cover	50-75% cover	>75% cover	Unknown	G	VG	
Landscape context	Edge condition	% of edge bordered by natural habitats and/or managed for conservation	Patch surrounded by non-natural habitats (0-25% natural habitat)	25%+ of patch bordered by natural habitats	50-75% of patch bordered by natural habitats or managed for conservation	75-100% of patch bordered by natural habitats or managed for conservation	F	F	F	This KEA is constrained by established surrounding land uses.

\*Desired future condition



Key ecological attributes for native turtles – Council Creek

CATEGORY	KEA	INDICATOR	----- INDICATOR RATING -----				CURRENT STATUS	DFC* FOR THIS SCP	LONG TERM DFC	COMMENTS
			POOR	FAIR	GOOD	VERY GOOD				
Condition	Nest habitat availability	Number of suitable nesting areas within 46 m (150 ft) of water; at least 1.3 ha (0.5 ac) in size	Suitable nesting areas lacking	<5 suitable nesting areas	6-10 suitable nesting areas	> 10 suitable nesting areas within 46 m (150 ft) of water; at least 5 of them >1.3 ha (0.5 ac) in size	F	F	F	Surrounding land use constrains this KEA.
Condition	Nest habitat distribution	Distribution of suitable nesting areas within 150 feet of water	Suitable nesting areas lacking	Suitable nesting areas limited to 1-2 locations	Suitable nesting areas limited to 3-4 locations	≥5 suitable nesting areas distributed around site	F	G	G	
Condition	Basking site availability	Number of basking sites	Suitable basking sites lacking	Few basking sites available	Sufficient basking sites available	Ample basking sites available at each location where >20 turtles known to occur	G	G	G	
Condition (pond turtle only)	Upland forest	Presence of and access to upland forest	Upland forest absent or lacking duff	Upland forest with duff nearby, but requires traversing anthropogenic obstacles		Easily accessible upland forest with thick duff layer	VG	VG	VG	
Landscape context	Nest site connectivity to open water	Access to nest sites	Access to suitable nesting sites blocked	Access to most nesting sites requires traversing man-made obstacles such as culverts	Access to most nesting sites does not require traversing man-made obstacles	Access to suitable nesting sites unobstructed	G	G	G	
Landscape context	Dispersal corridors – connectivity to suitable habitat	Availability and access to off-site suitable habitat	Isolated: suitable habitat lacking beyond site or access blocked	Limited suitable habitat beyond site or access often requires crossing roads, developed areas, etc.	Ample suitable habitat beyond site but access requires crossing roads, developed areas, etc.	Ample suitable habitat beyond site and aquatic connectivity present	VG	VG	VG	

\*Desired future condition



Summary of Council Creek’s threats: yellow and orange colors indicate high and very high overall threat ranks, respectively

CONSERVATION TARGET	STRESS (DEGRADED KEA)	SEVERITY	SCOPE	OVERALL STRESS RANK	SOURCE (THREAT)	CONTRIBUTION	IRREVERSIBILITY	OVERALL SOURCE RANK	OVERALL THREAT RANK	COMMENTS
Emergent wetland	Poor buffer condition	Medium	Medium	Low	Invasive plants	High	Medium	Medium	Low	Primarily surrounded by Metro land that is under restoration.
Emergent wetland	Lack of native emergent plant cover	Very High	Very High	Very High	Invasive plants	Very High	High	Very High	Very High	Reed canarygrass dominates all emergent wetland areas.
Emergent wetland	Altered hydrology	High	Very high	High	Development / land conversion	Very High	Very High	Very High	High	Flashy during storms and excess summer flows from development.
Emergent wetland	Increased isolation/reduced connectivity	Low	Low	Low	Development / land conversion	Very High	Very High	Very High	Low	Council Creek flows through the site but flanked by development.
Shrub wetland	Reduced extent of scrub-shrub wetland area	Very High	Very High	Very High	Invasive plants	Very High	Medium	High	Very High	Reed canarygrass dominates much of this elevation zone.
Shrub wetland	Low native shrub richness	Medium	High	Medium	Invasive plants	Very High	Medium	Very High	Medium	
Shrub wetland	Loss of structural complexity	Medium	High	Medium	Invasive plants	Very High	Medium	High	Medium	
Riparian forest	Narrow riparian forest width	High	High	High	Development / land conversion	Very High	Very High	Very High	High	Little room to increase width.
Riparian forest	Reduced native tree and shrub richness	Low	Low	Low	Inappropriate human use	High	Medium	Medium	Low	
Upland forest	Reduced patch size	Very High	Very High	Very High	Development / land conversion	Very High	Very High	Very High	Very High	Few/no options to remedy this.
Upland forest	Low native tree and shrub richness	Low	Low	Low	Development/land conversion	Very High	Low	High	Low	
Upland forest	Loss of structural complexity	Low	High	Low	Development/land conversion	Very High	Low	High	Low	
Upland forest	Loss of surrounding native habitat	High	High	High	Development / land conversion	Very High	Very High	Very High	High	Residential housing flanks forest.
Native turtles	Nest habitat availability	High	High	High	Development / land conversion	Very High	Very High	Very High	High	Most upland areas are unsuitable.
Native turtles	Nest habitat distribution	Very High	Very High	Very High	Development / land conversion	Very High	Very High	Very High	Very High	Available sites are concentrated along roads and flower beds.
Native turtles	Basking site availability	Medium	Medium	Medium	Buffer condition	Very high	Medium	High	Medium	





## ACCESS CONSIDERATIONS

Metro staff conducted an internal process to consider an appropriate level of access for each of the natural areas. That process looked at determining, strictly from a working staff level, what would be an appropriate level of access (Habitat Preserve, Natural Area-Low Access, Natural Area-High access, or Nature Park) to Metro natural area properties. The access designation offered here is a starting point with the understanding that judgment will always be needed on a case-by-case basis, and indicates that some part of that site can accept people at the stated level. It does not suggest that the entire site should have that level of access. Access level definitions can be found here: M:\suscntr\Natural Areas and Parks\Teams\Target Area teams\Conservation & Stewardship Planning\definitions for Metro property access inventory.

The current designated site access level differs between East Council Creek (Natural Area – Low Access) and West Council Creek (Habitat Preserve). These are defined as follows:

***East Council Creek: Natural Area (Low Access)*** – Current access by neighbors or local residents is permitted but not encouraged. Low access sites do not have formalized parking and interpretive or wayfinding signage. Trails on these sites are informal or demand in nature and are not built or maintained actively. Demand trails that travel through sensitive areas are actively decommissioned. Basic rule signage is posted at the property gate or primary entrance. These sites are visited monthly or bi-monthly by Metro staff to inspect for unauthorized use and to conduct maintenance.

***West Council Creek: Habitat Preserve*** – Access to these sites that contain very sensitive or rare habitat is actively discouraged. Signs, if they exist, indicate that access is not permitted. Demand trails are actively decommissioned as they are discovered. Entrances to these sites may intentionally be maintained so that it is not obvious that they lead to a Metro natural area.

## CURRENT ACCESS AND EXISTING CONDITIONS

There is no formal public access at Council Creek. Current access within the site consists of numerous informal demand trails from the local neighborhood. These are causing issues with habitat damage and erosion, particularly on steeply sloped areas. It appears that children frequent the site, leaving blankets, bottles and trash just a few feet away from the water. A tree house and a couple of forts are in the natural area. Visitors from the neighborhood access the site from a 6-foot asphalt homeowners' association trail just south of the site, and from the east, just south of a bridge over the creek at Hobbs Road, where a demand trail is evident.

## FUTURE ACCESS

East Council Creek is designated as low level (demand) access and West Council Creek, as a dedicated preserve, permits no unauthorized access. Although Metro's holdings on the south side of Council Creek are limited to floodplain, riparian and fairly steeply sloped habitats, there is great interest by local partners in linking a "spur trail" (most likely soft surface, pedestrian-only path) through the natural area to the future Council Creek Regional Trail and with an existing local asphalt trail. The natural area is part of the regional trail planning area, for which early trail design and location studies have recently begun. Theoretically, current problems with vandalism may be reduced with development of a dedicated path and increased access and visibility. Future

discussions will need to include designated access levels and potential damage to the riparian area, habitat and wildlife due to increased use from connectivity with the regional trail.

### **INTEGRATING ACCESS AND NATURAL RESOURCE CONSIDERATIONS**

- Work with partners and neighbors to avoid and minimize impacts of public trails.
- Clean trash and debris associated with demand trails from the site.
- Remove the tree house and forts from the natural area.
- Signage
  - Ensure standard low-access signage is present at East Council Creek entry point.
  - Consider installing no-entry signage at the Hobbs Creek entry point, and elsewhere in the West Council Creek area as appropriate.
- Existing trails
  - All demand trails currently go through sensitive habitat areas. Work with natural resource technicians to GPS existing trails and provide to scientist and planner for more detailed recommendations.
  - Remove any demand trails in West Council Creek (the preserve) except for staff access, and appropriately address unauthorized access points.
  - Strategically decommission inappropriate demand trails in East Council Creek.
  - Consider reducing the options to one primary trail meandering through the site, with signage asking visitors to use this trail and explaining why. Also consider leaving one or more viewpoints along this trail.
  - Existing demand trails are creating erosion, runoff and damage in the riparian area; any trail work should avoid creating more damage. Work as needed with appropriate partners, such as Clean Water Services, to minimize existing trail impacts.
  - Stormwater runoff from various open pipes from the subdivision just south and uphill of the natural area has also caused erosion. Work with Clean Water Services and the neighborhood homeowners' association to fix these drainage problems.
- Potential future trails
  - If a decision is made to increase public access to the site in the future, use soft surface pedestrian paths and consider bike racks so people can lock up bikes. ADA access is uncertain and would require further study.
  - Consider trail interactions with potential wildlife corridors. Trails disturb wildlife, but can occasionally offer ways to improve wildlife connectivity by removing barriers to movement. Similarly, opportunities for removing fish barriers may arise.
  - If a decision is made to do anything aside from decommissioning demand trails, planners need to interact with the scientist regarding native turtle issues (see below).

- Communication and outreach for potential future trail
  - Coordinate closely with City of Cornelius staff, and other partners as appropriate.
  - Potentially include outreach on replacing demand trails in Council Creek Regional Trail Master Planning process.
  - Consider working with local neighbors and their children about how to care for their natural area (e.g., impacts of demand trails, trash and wildlife disturbance).
  - Communicate with the homeowners' association, which owns the asphalt trail just south of the natural area, for possible connections to a future trail.
  - Consider diversity outreach and potential alternative language signage. Coordinate with the City of Cornelius staff.

## THREATS AND THEIR SOURCES FOR THE NEXT 10 YEARS

### CLIMATE CHANGE CONSIDERATIONS

In coming decades, climate change is expected to increase summer temperatures and the severity of winter storms, as well as reduce precipitation in summer. In a small area such as Council Creek, where surrounding development and invasive plants have already had great impacts on the health of Metro's land, it is difficult to know whether climate change could make the situation much worse for most of the conservation targets.

1. Direct effects that may occur
  - a. Increased summer temperatures
  - b. Increased severity of winter rain events
  - c. Decreased water availability in summer – however, the summer flows are artificially maintained by runoff from lawn watering and other residential practices. The future summer flow and its deviation from historic conditions are not known.
2. Indirect effects that may occur
  - a. Altered sex ratio of native turtles due to warmer nest temperatures
  - b. Range shifts by undesirable plants increasing competition
  - c. Disease introductions and/or increased vulnerability to disease
  - d. Loss of synchronicity of plant reproduction and pollinators
  - e. Loss of synchronicity of resident and migratory animals and food sources (e.g., insect hatches)

Council Creek may provide a corridor and habitat for organisms that must shift their ranges in response to climate change. As a relatively small creek system it is unlikely to be an important corridor but it may be a valuable refuge in the short term for organisms on the move.

Altered sex ratios in native turtles are a real possibility. Researchers are investigating, to the extent possible, the effects of various changes in temperature regimes. Sex determination in turtles, like

many reptiles, is determined by nest temperature. Warmer temperatures may cause more embryos to become female. The importance of this phenomenon in our region is unknown.

#### Threats and actions for KEAs of important targets affected by climate change

TARGET	KEA	THREAT	ACTION	NOTES
Emergent wetland	Altered hydrology	Increased severity and flashiness of flows in storm events	Retain and increase channel complexity	Work to avoid reduced floodplain area too
Emergent and shrub wetlands	Altered hydrology	More rapid summer drying	Watch and adapt as necessary	May be offset by watering and other practices by surrounding neighbors
Native turtles	Nest habitat suitability	Increased temperatures during embryogenesis may alter sex ratio of hatchling cohorts	Watch literature and best practices as they develop	

## NATURAL RESOURCE STRATEGIES

### HIGH-PRIORITY STRATEGIES

- Work with partners to avoid and minimize impacts of public trails.
- Support native turtles at Council Creek:
  - Seek protection for nearby sites with suitable nesting habitat that is not available on Metro's ownership.
  - Allow access only on the south side of the creek. The north side of the creek is more valuable to turtles than the south side because it is more remote and has better exposure for basking.
  - Avoid human disturbance.
  - Improve basking habitat.
  - Retain intact riparian forest with duff for aestivating and hibernating.
- Retain native vegetation in existing riparian and upland forests
- Improve the health of the shrub wetland habitat by controlling invasive reed canarygrass and installing native shrubs

### MEDIUM-PRIORITY STRATEGIES

- Work with partners (e.g., Tualatin SWCD, Clean Water Services) to increase riparian forest width and improve its condition along Council Creek.

### LOWER-PRIORITY STRATEGIES

- Seek opportunities to address altered hydrology and invasive plants in the emergent zone. Our lack of ability to control hydrology, coupled with upstream sources of reed canarygrass, make these KEAs out of our control.

## List of proposed strategies

STRATEGY	SOURCES OF STRESS ADDRESSED	FOCAL CONSERVATION TARGETS/KEAS AFFECTED	WHY IMPORTANT AND TIMING ISSUES	MEASURE(S) OF SUCCESS	RANK
Careful trail development limited to south side of creek; increase surrounding neighbors' stewardship awareness through access process	Development and land conversion, poor buffer condition, inappropriate human use	Native turtles: basking sites; riparian forest: narrow width; upland forest: small patch size	Although trail development and use threaten several targets, it can address vandalism and undesirable uses occurring now	Reduced habitat damage	H
Find and protect turtle nesting habitat	Development and land conversion	Native turtles: availability and distribution of nesting habitat	Open, sunny, upland areas are at great risk of development	Several sites protected	H
Retain and improve forest habitat on north side of creek	Development and land conversion, poor buffer condition	Riparian forest: narrow width; native turtles: basking log recruitment and upland habitat	In fairly good condition now	Continued good condition	M
Improve condition of shrub wetland	Invasive plants	Shrub wetland: extent, richness and structural complexity	Improving its condition adds to the buffer from nearby development	Established shrubs	M
Work with partners to retain and improve forest habitat in other ownership	Development and land conversion, buffer condition	Riparian forest: width and richness; upland forest: patch size, richness, structural complexity, loss of surrounding habitat	Improve forest's function as a corridor and as habitat, whether short- or long-term	Retain or increase area	M
Address hydrology and invasives in emergent zone	Invasive plants, development and land conversion	Emergent wetland: native cover, altered hydrology	Lack of control over hydrology limits what can be done	Improved native cover	L

**High:** Must do within 5 years to protect target viability.

**Medium:** Target will persist without it but will degrade over 5-10 years or require additional future management.

**Low:** Addresses a non-critical threat or one that is unlikely to threaten target viability within 10 years.

## SPECIFIC ACTIONS AND FUNDING REQUIREMENTS

### Specific actions to implement strategies

STRATEGY	TARGET	PRIORITY (HOW SOON)	SPECIFIC TASKS	ESTIMATED COST
Careful trail development limited to south side of creek	Riparian forest, native turtles	ASAP	Work with Metro staff on Council Creek Trail master plan to find the optimal solution/route/width, etc.	Science staff time: 3 days
Find and protect turtle nesting habitat	Native turtles	High – next few years	Work with negotiators and partners to locate and protect sites.	Variable
Retain and improve forest habitat on north side of creek	Riparian forest, native turtles	Medium – next 5-10 years	Periodic weed treatments, interplanting as needed.	\$5,000 over next 10 years
Improve condition of shrub wetland	Shrub wetland	High – next few years	Two years of site prep followed by bare root installation and 4 years of maintenance.	\$14,600
Work with partners to retain and improve forest habitat in other ownership	Riparian and upland forests	Medium – next 5-10 years	Contact partners, initiate discussion.	n/a
Address hydrology and invasives in emergent zone	Emergent wetland	LOW – over long term	Monitor literature and peers' work for developments that allow movement on this task	n/a

## MONITORING PLAN

Monitoring for KEAs associated with the five conservation targets is shown below. For the emergent wetland, monitoring of native plant cover and hydrology will be limited since we are generally unable to address the situation.

### Monitoring

TARGET KEA(S)	INDICATOR	METHOD	THRESHOLD FOR ACTION?	FREQUENCY AND COST
Emergent wetland – buffer condition	Condition within 50 m (164 ft) of emergent wetland perimeter	Visual inspection	Remains “P” in 5 years	Check every few years
Emergent wetland – native wetland plant cover in emergent area	Dominance of native herbaceous plants characteristic of the region’s wetlands	Visual inspection	Discovery of top-priority weed for treatment	Annual walk-through
Emergent wetland – hydrology	Hydroperiod	Visual inspection	Scouring or other damage	Annual walk-through
Emergent wetland – biological connectivity	Degree of connectedness to nearby natural habitat patches appropriate for species of conservation interest	n/a – will not change	n/a	n/a
Emergent wetland – edge condition	% of edge bordered by natural habitats and/or managed for conservation	n/a – not anticipated to change	n/a	n/a
Shrub wetland – extent of area	Hectares or acres of scrub-shrub wetland	n/a – not expected to change	n/a	n/a
Shrub wetland – native shrub richness	Number of native shrub species per acre	Visual inspection, list of plants installed	n/a – improving this KEA during life of this SCP	2-3 staff days per year for 5 years
Shrub wetland – vegetative structure	Percent native shrub canopy cover	Visual inspection	n/a – improving this KEA during life of this SCP	2-3 staff days per year for 5 years
Riparian forest – width	Average width of riparian forest	Inspect aerial photos in GIS	Drop from Fair to Poor	Negligible staff time
Riparian forest – vegetative structure	% native tree canopy cover	Visual inspection	Drop from Very Good to Good	Annual walk-through
Riparian forest – native tree and shrub richness	# native tree and shrub species per 0.4 ha (1 ac)	Visual inspection	Less than Very Good	Annual walk-through
Upland forest – patch size	Patch size (includes native shrub patches or natural clearings)	n/a – not expected to change	n/a	n/a
Upland forest – native tree and shrub richness	Number of native tree and shrub species per acre	Visual inspection	Less than Very Good	Walk through every few years
Upland forest – vegetative structure	% native tree and shrub canopy cover (combined)	Visual inspection	If plantings are failing to close canopy	Annual walk-through
Upland forest – edge condition	% of edge bordered by natural habitats and/or managed for conservation	n/a – not expected to change	n/a	n/a
Native turtles – nest habitat availability	Number of suitable nesting areas within 46 m (150 ft) of water; at least 1.3 ha (0.5 ac) in size	Visual inspection on site and GIS	Unable to locate at least 3 potential nesting sites	In first year of SCP, thereafter every few years

<b>TARGET KEA(S)</b>	<b>INDICATOR</b>	<b>METHOD</b>	<b>THRESHOLD FOR ACTION?</b>	<b>FREQUENCY AND COST</b>
Native turtles – nest habitat distribution	Distribution of suitable nesting areas within 150 feet of water	Visual inspection on site and GIS	Nesting sites all in close proximity	In first year of SCP, thereafter every few years
Native turtles – basking site availability	Number of basking sites	Visual inspection	KEA falls below Good	Annually during site visit
Native turtles – upland forest	Presence of and access to upland forest	n/a – not expected to change	n/a	n/a
Native turtles – nest site connectivity to open water	Access to nest sites	n/a – not expected to change	n/a	n/a
Native turtles – dispersal corridors	Availability and access to off-site suitable habitat	n/a – not expected to change	n/a	n/a

## PARTNERS

### CURRENT PARTNERS

- Local park/trail providers: City of Cornelius, City of Hillsboro, City of Forest Grove, Tualatin Hills Park and Recreation District (all of whom are partners on the Council Creek Regional Trail master planning project)
- Clean Water Services: buffer condition along streams

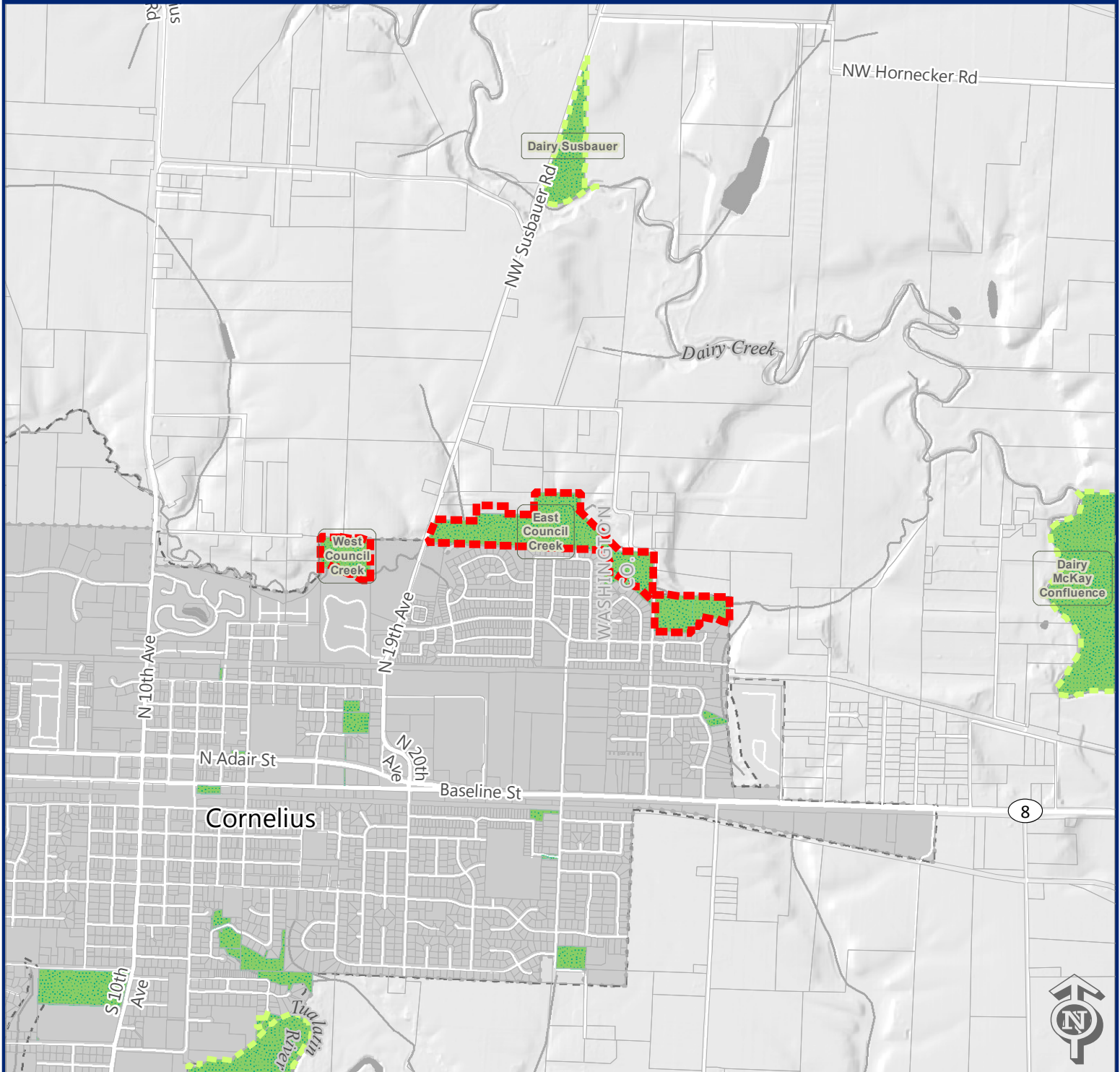
### POTENTIAL PARTNERS




- Tualatin SWCD, NRCS: buffer condition along streams in agriculture zone
- Council Creek Estates Homeowners' Association



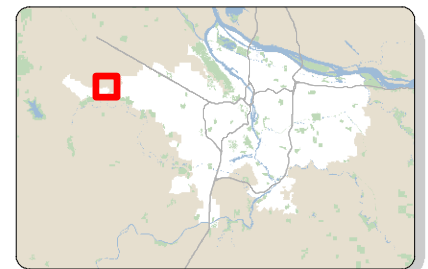


# Planning Area



-  Council Creek sites
-  Other Metro sites
-  Park and/or natural area

0 2,000 4,000 Feet







# Site Map



Council Creek sites

## Bond Measure



1995 Bond Measure



2006 Bond Measure

## NHD Flowlines



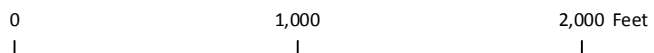
Intermittent stream



Perennial stream



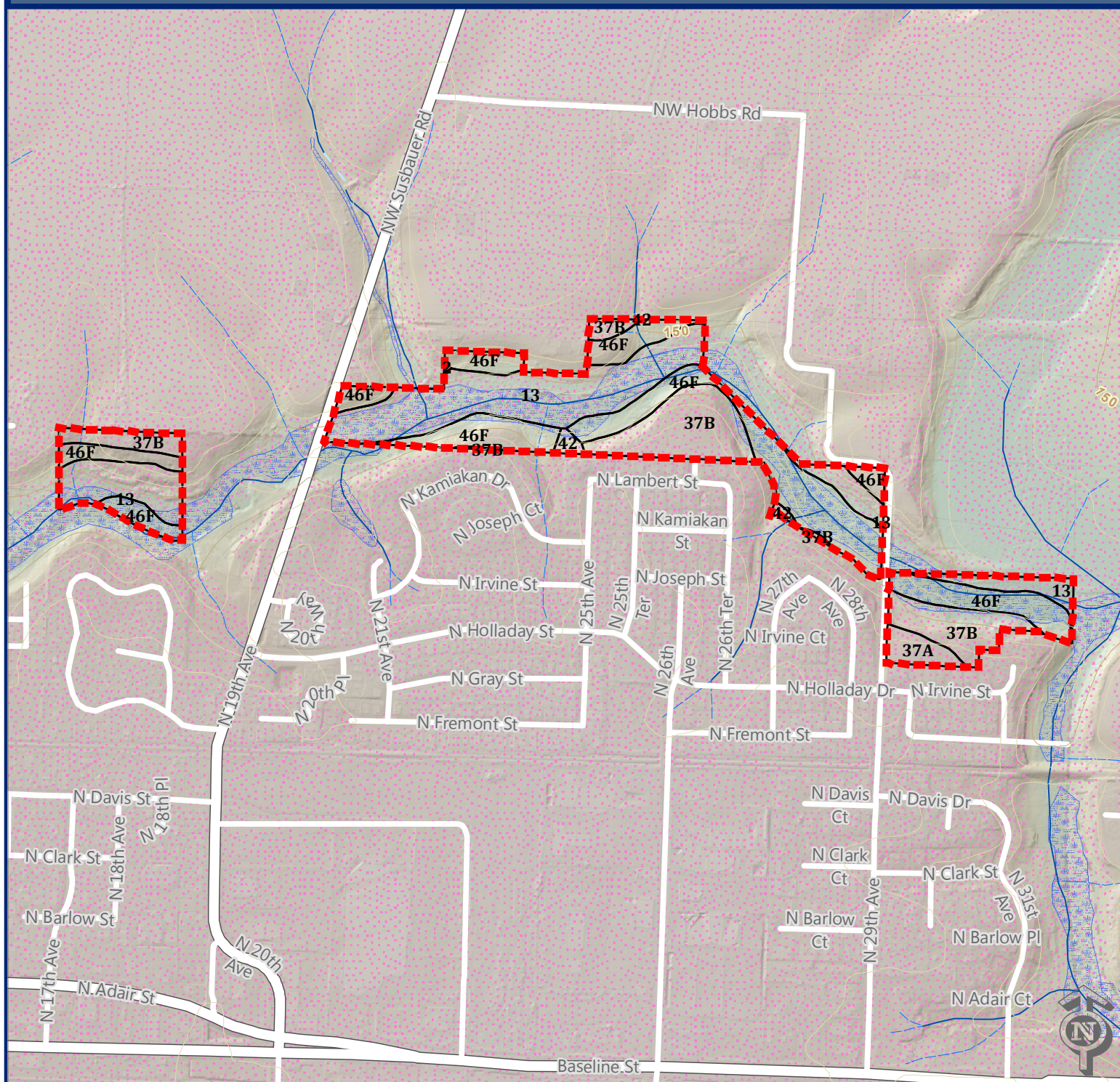
Artificial path







# Soils, Topography, and Hydrological Features



Council Creek sites



Site soils



Hydric soils



Wetlands

## NHD Flowlines

Intermittent stream

Perennial stream

Artificial path

## Soils key

- 2 Amity silt loam
- 13 Cove silty clay loam
- 37A Quatama loam, 0 to 3 percent slopes
- 37B Quatama loam, 3 to 7 percent slopes
- 42 Verboort silty clay loam
- 46F Xerochrepts and Haploxerolls, very steep

0

1,000

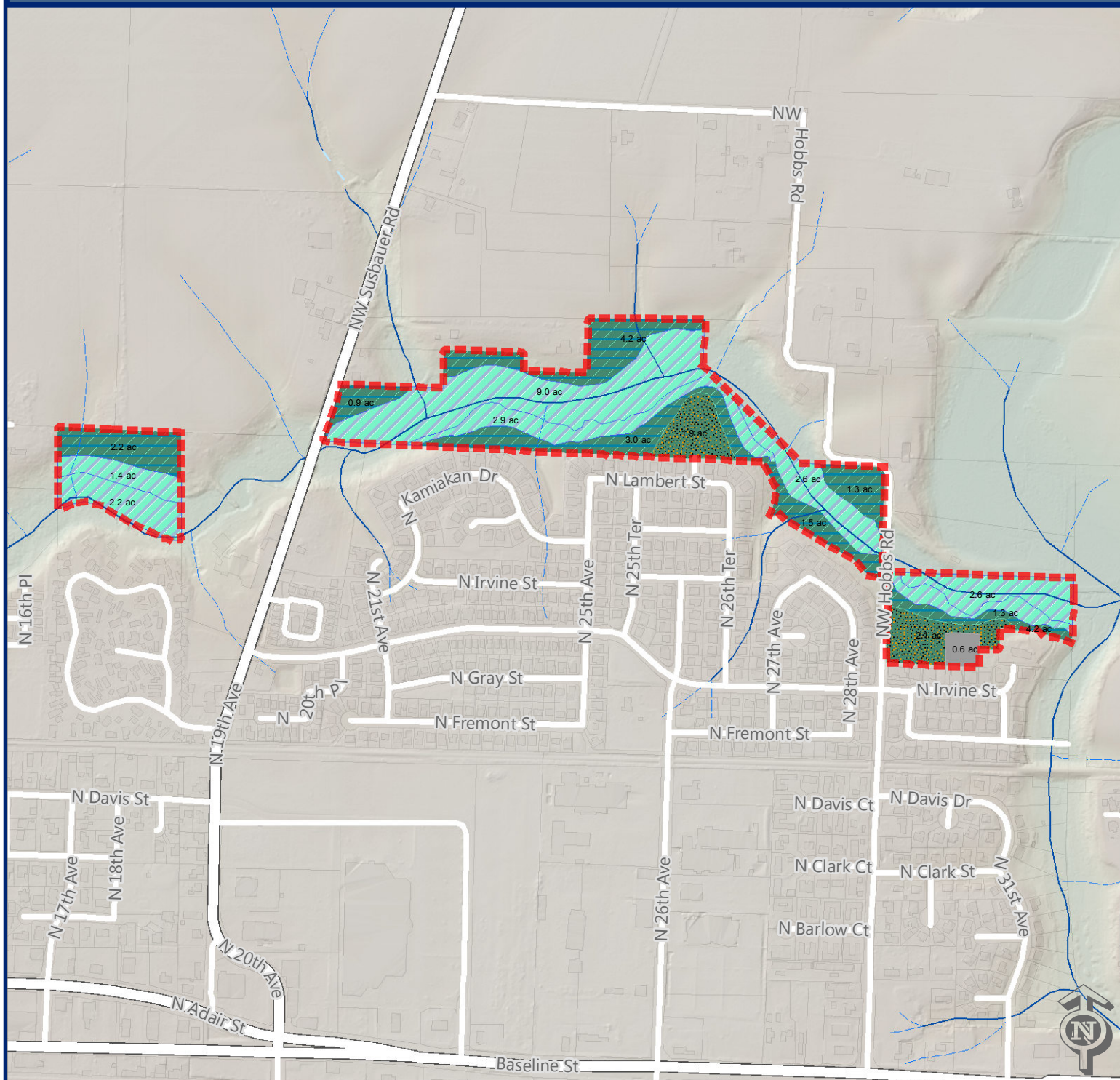
2,000 Feet











# Current Cover






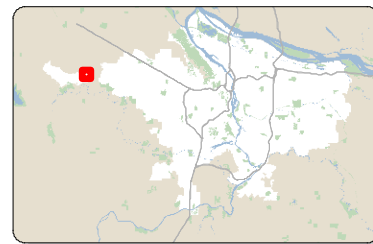
Council Creek sites

## Current cover

-  Developed - (impervious)
-  Riparian forest
-  Upland forest - mixed
-  Wetland - emergent

## NHD Flowlines

-  Intermittent stream
-  Perennial stream
-  Artificial path



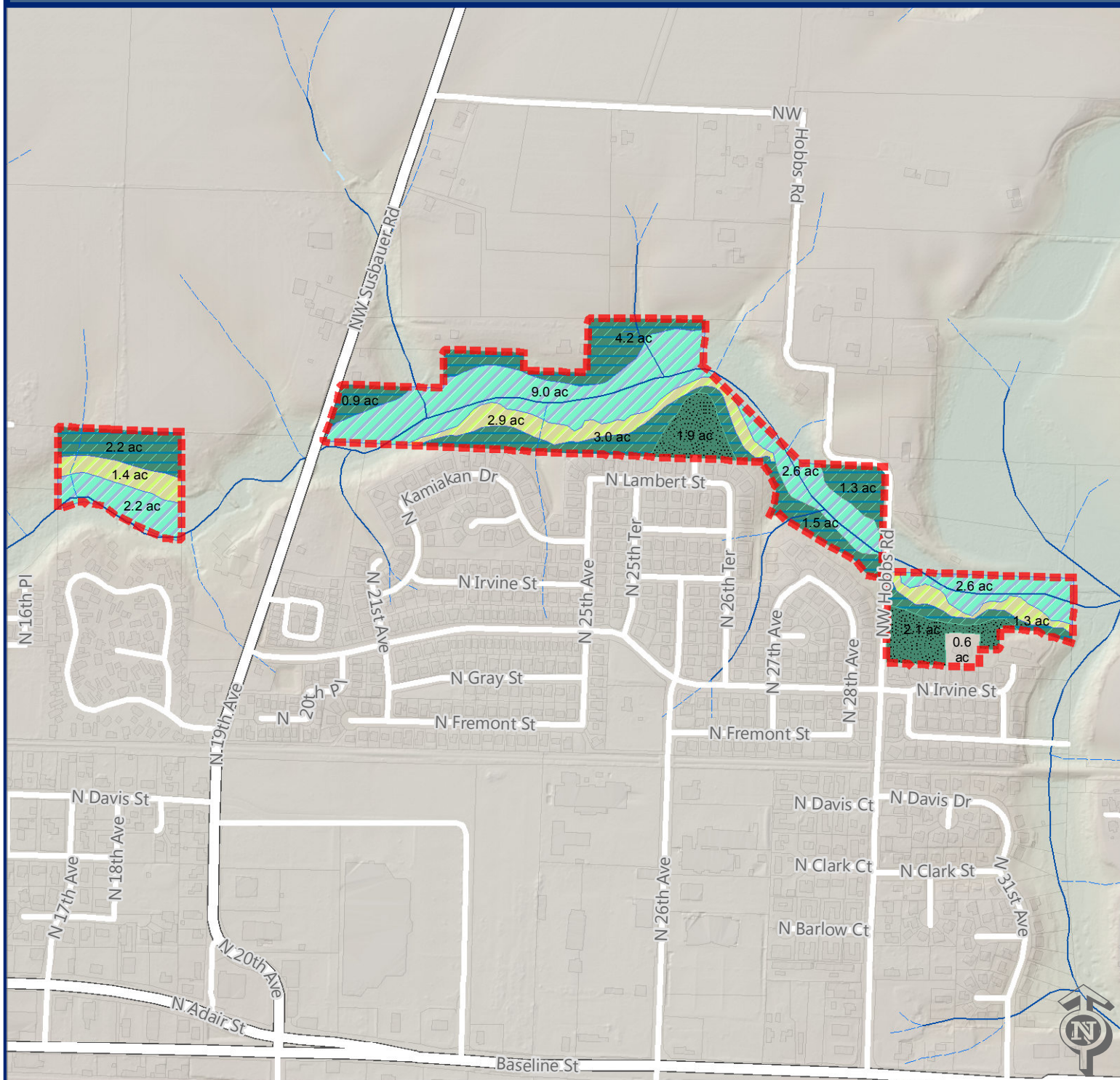
0 1,000 2,000 Feet











# Conservation Targets






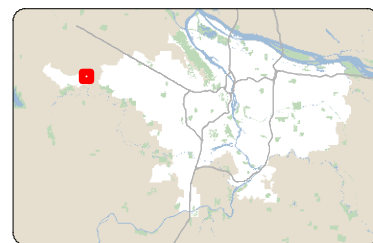
Council Creek sites

## Conservation Targets

-  Emergent wetland
-  Riparian forest
-  Shrub dominated wetland
-  Upland forest

## NHD Flowlines

-  Intermittent stream
-  Perennial stream
-  Artificial path

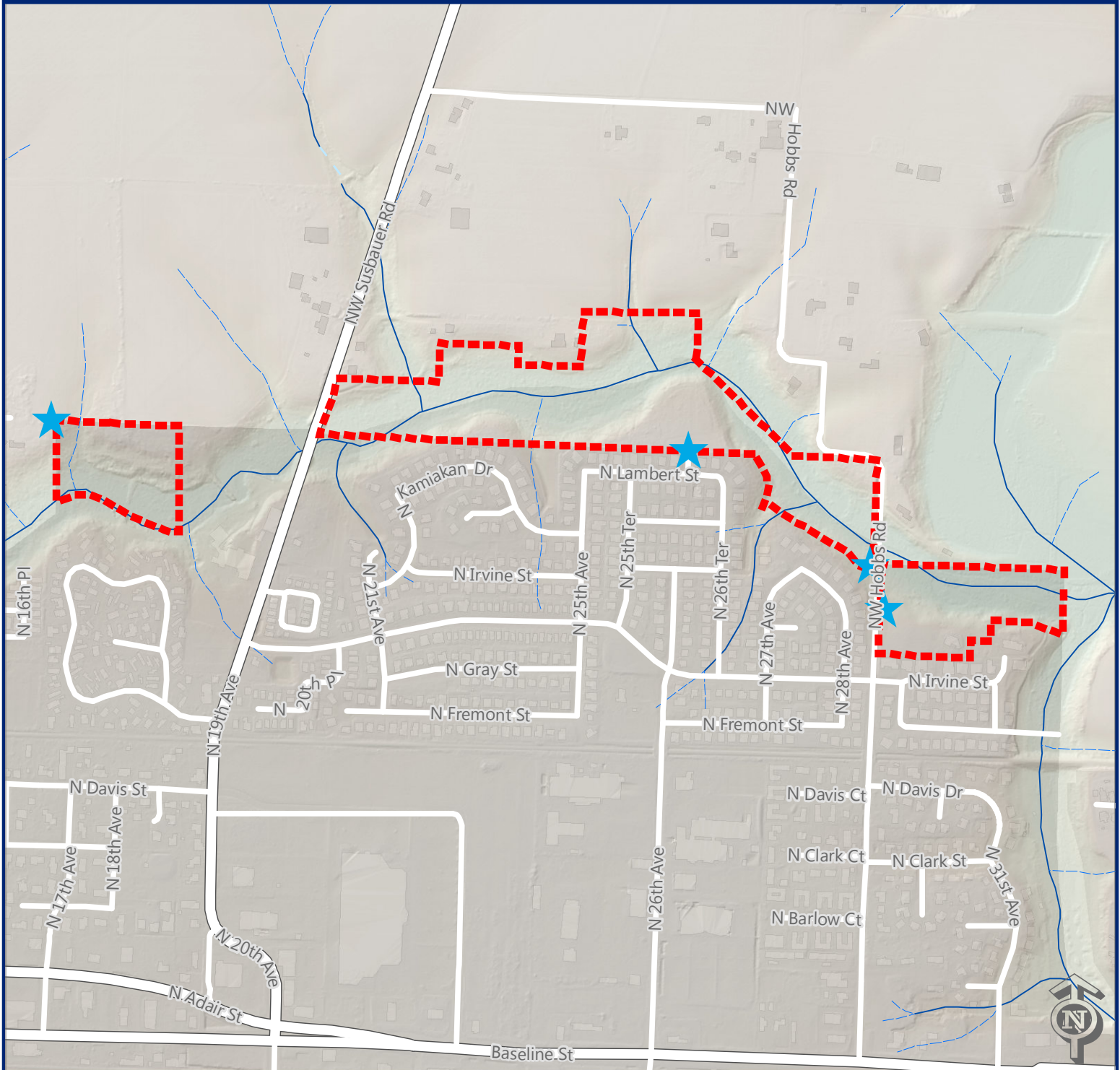


0 1,000 2,000 Feet





# Access & Recreation



Council Creek sites



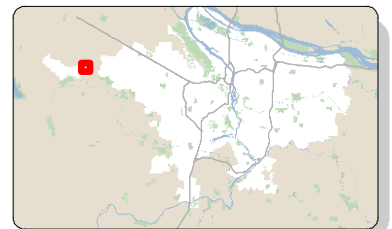
Potential access points

## NHD Flowlines

--- Intermittent stream

— Perennial stream

--- Artificial path



0 1,000 2,000 Feet





## Council Creek Natural Area

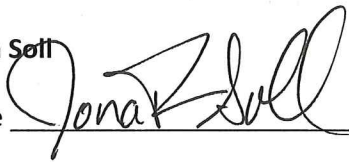
### Approvals for Site Conservation Plan

Date routed: March 4, 2014

*Please return to Lori Hennings*

**Jonathan Soil**

Signature

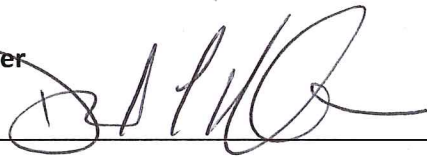


Date

3/4/14

**Dan Moeller**

Signature

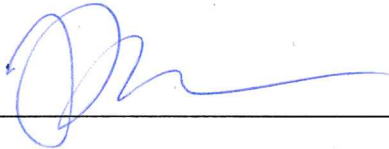


Date

3/11/14

**Mark Davison**

Signature



Date

3/24/14

**Kathleen Brennan-Hunter**

Signature



Date

4/2/14