

SPRING ROAD PROPERTY

Management plans for remnant prairie & riparian area

This plan has been developed by Margaret Milligan for the course LA 5576 Ecological Restoration Project Planning and Management, taught by Dan Shaw, fall semester 2024 UMN Landscape Architecture Department.



Spring Road

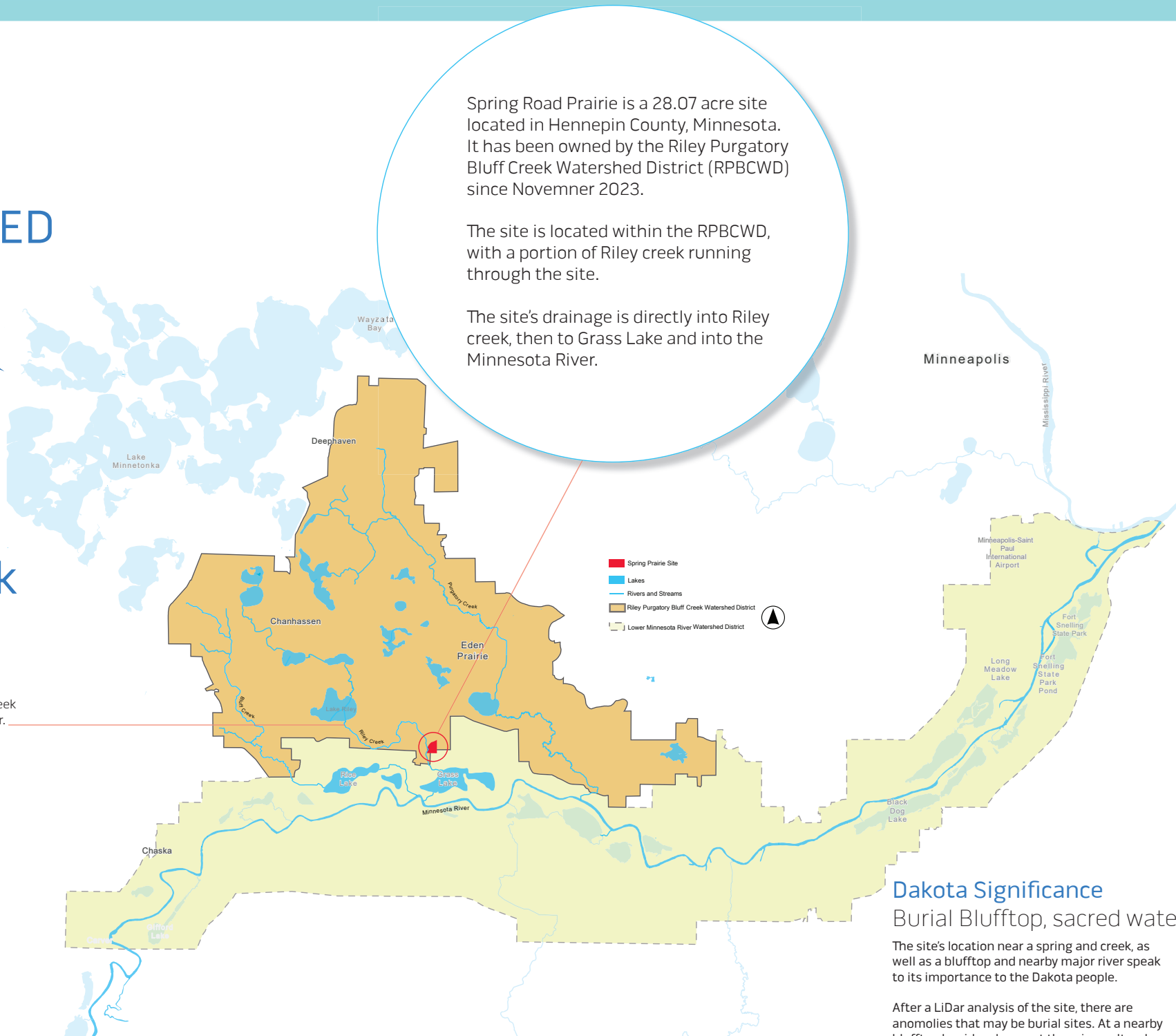
Site Context

WATERSHED



Riley Creek Corridor

The RPBC Watershed's acquisition of the Spring Road Prairie completes a contiguous corridor following Riley Creek from Lake Riley to the Minnesota River.



Spring Road Prairie is a 28.07 acre site located in Hennepin County, Minnesota. It has been owned by the Riley Purgatory Bluff Creek Watershed District (RPBCWD) since November 2023.

The site is located within the RPBCWD, with a portion of Riley creek running through the site.

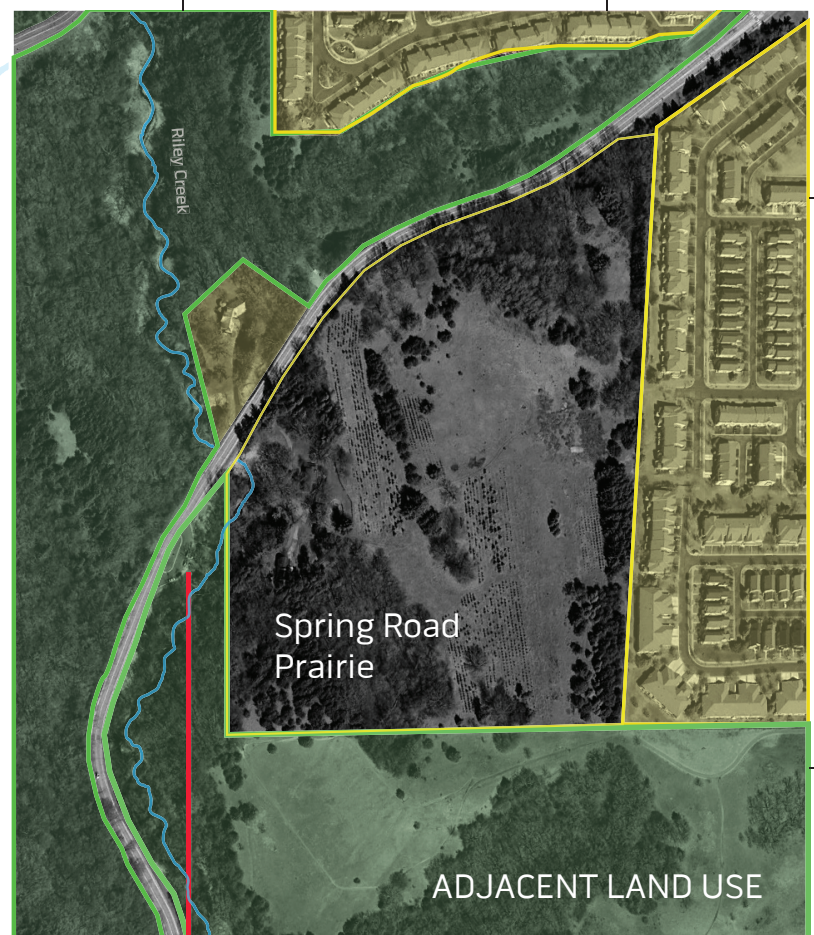
The site's drainage is directly into Riley creek, then to Grass Lake and into the Minnesota River.



Riley Creek Natural Preserve (City of Eden Prairie)



Housing Development (Private Single Family Residences)



Housing Development (Private Single Family Residences)



Prairie Bluff Conservation Area 60 acres (City of Eden Prairie)

Dakota Significance

Burial Blufftop, sacred water

The site's location near a spring and creek, as well as a blufftop and nearby major river speak to its importance to the Dakota people.

After a LiDar analysis of the site, there are anomalies that may be burial sites. At a nearby blufftop houdevelopment there is a cultural easement for burial grounds.

SITE HISTORY

Before it was purchased by the RPBC Watershed District in 2023 this site was a private residence and an ornamental evergreen tree farm since the 1990's, with around 14 (of 28 acres) in tree production.

Prior to the tree farm the site history is unclear, however historic aerial imagery shows that it was potentially farmed, hayed or grazed since the 1920

HISTORIC AERIAL IMAGERY

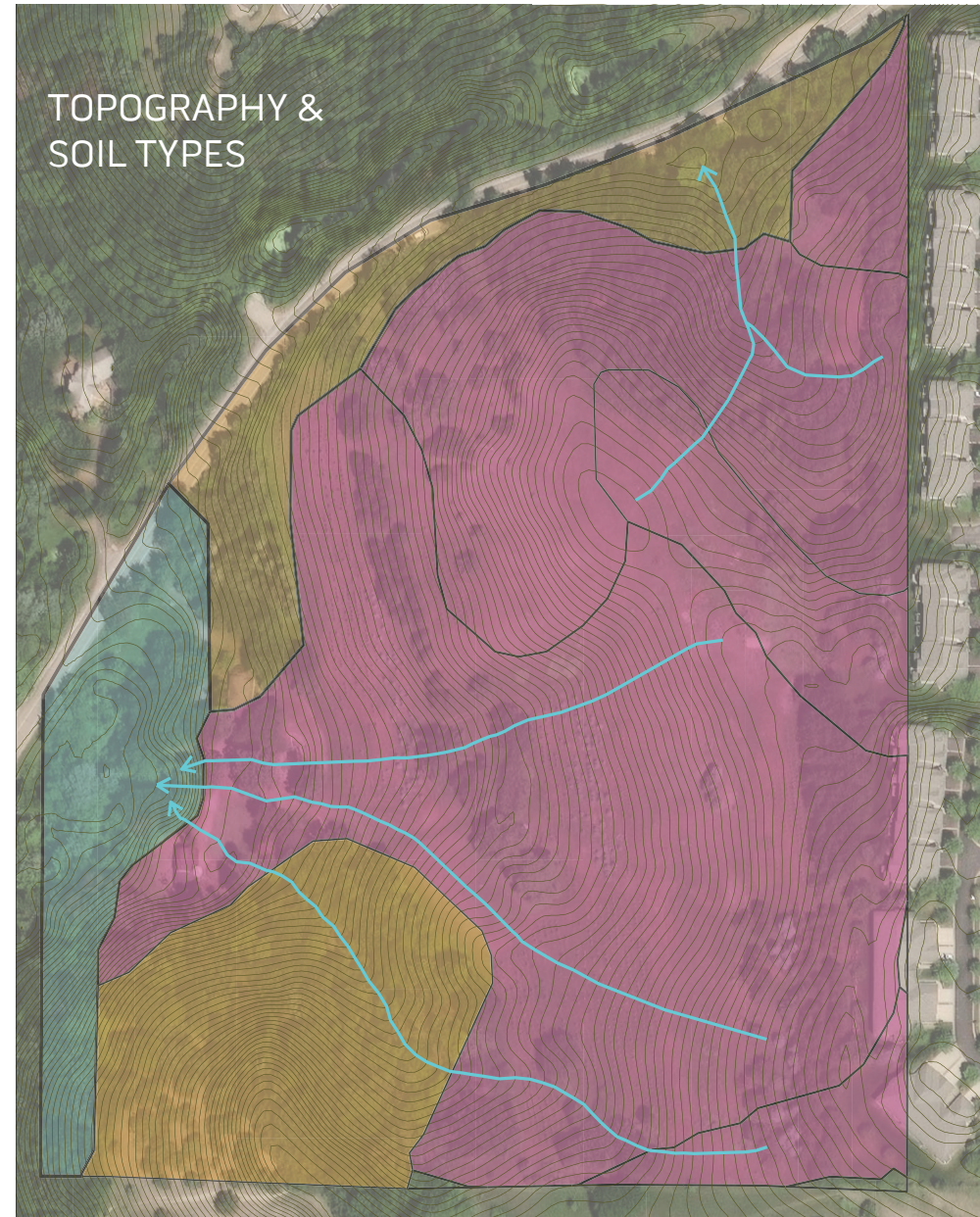


Fredrick-Miller Spring (City of Eden Prairie)

The Fredrick-Miller public spring is located within the Prairie Bluff Conservation Area, and adjacent to the Spring Road Prairie site. It is a free, popular and long standing source of spring water that serves thousands of people annually.

Spring Road

Topography, Soils, Ecological Sites & Native Plant Communities



MALARDI-HAWICK COMPLEX
(1-35% SLOPE)

TYPICAL PROFILE

0 to 10": sandy loam
10 to 15": sandy loam
15 to 29": loamy coarse sand
29 to 80": gravelly sand

SANDY UPLAND SAVANNAS

UPs14 southern dry savanna



SANDY UPLAND PRAIRIES

UPs13 southern dry prairie



HAWICK LOAMY SAND
(20-40% SLOPE)

TYPICAL PROFILE

0 to 8": loamy sand
8 to 16": gravelly loamy coarse sand
16 to 79": gravelly coarse sand

SUCKERCREEK FINE SANDY LOAM, OCCASIONALLY FLOODED
(0-2% SLOPE)

TYPICAL PROFILE

0 to 12": fine sandy loam
12 to 80": fine sandy loam

WET FLOODPLAINS

FFs68 southern floodplain forest



LOAMY FLOODPLAINS

FFs59 southern terrace forest



- Variety of conditions found typical of bluffs and floodplains
- Steeply sloped, rising in elevation as you travel east
- Highest elevations on eastern edge
- Lowest elevations west/southwest portion
- Soil is generally sandy loam to loamy sand

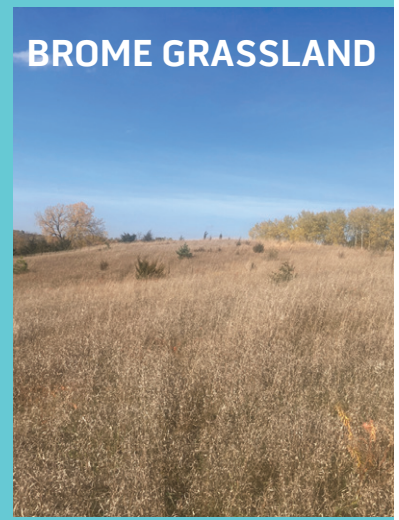
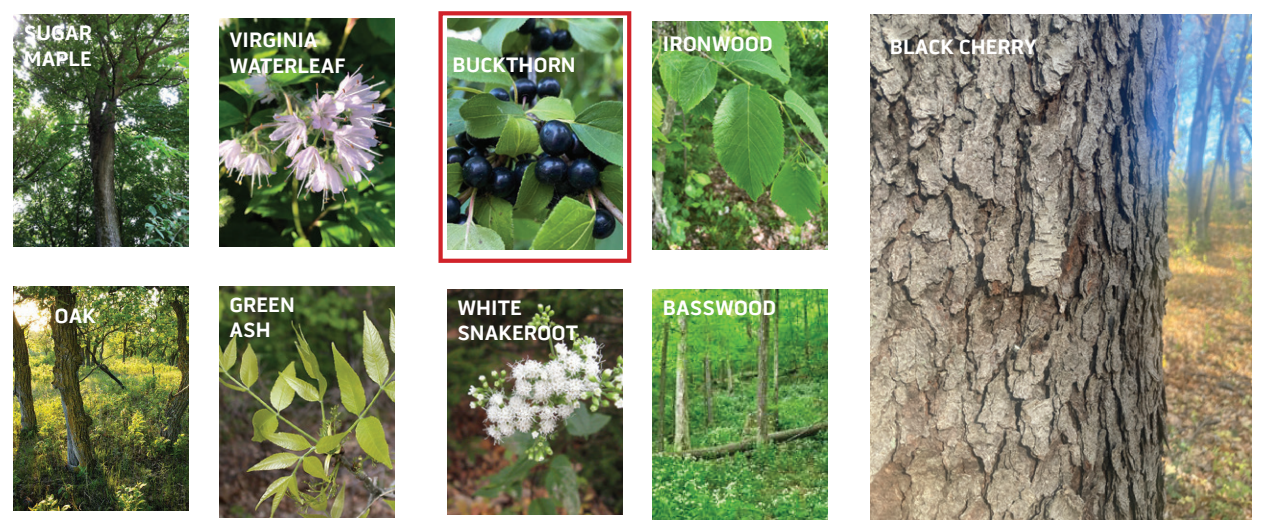
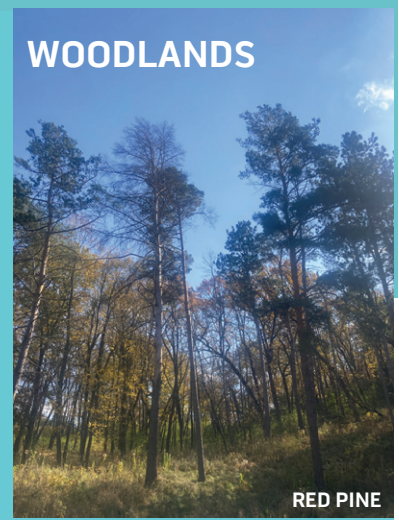
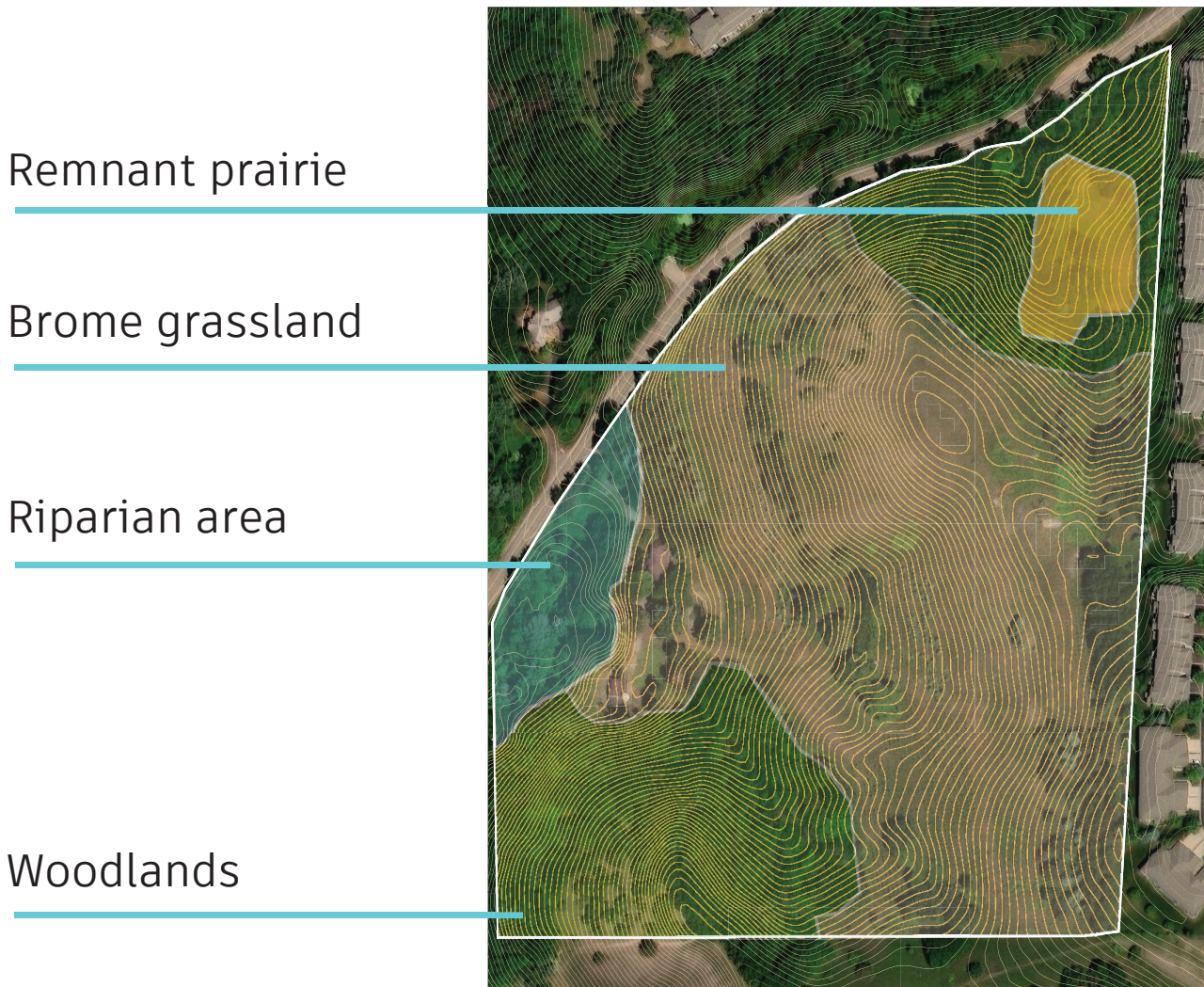
Spring Road Plants

HISTORIC VEGETATION: Oak Openings & Barrens

(The Natural Vegetation of Minnesota at the Time of the Public Land Survey: 1847-1907)

The site can be distinguished into 4 major land and vegetation areas.

- Low lying creek wetland (western)
- Woodlands (south western & north)
- Sloped brome dominated grassland (most of site)
- Remnant prairie (north eastern)



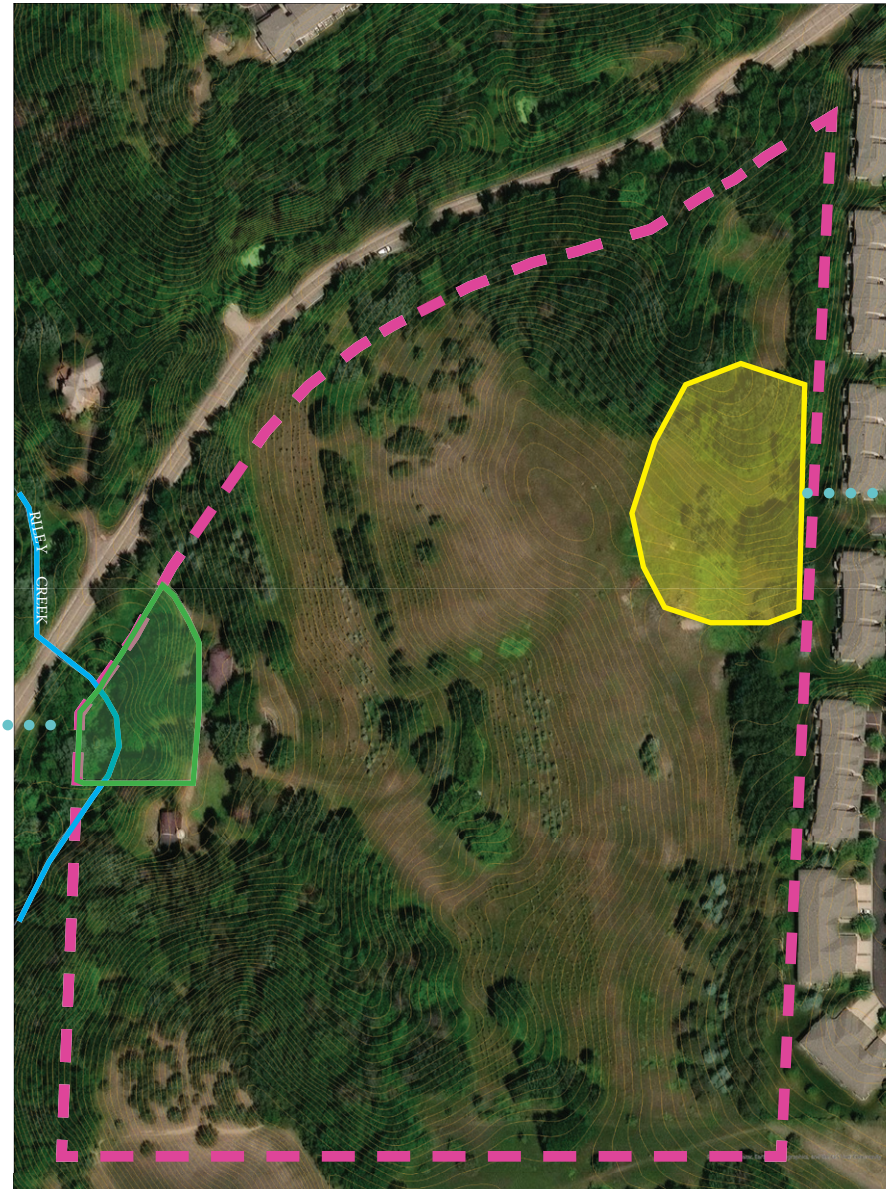
Spring Road

Focus Areas

0.7 acre riparian area



- Includes Riley creek
- Public facing & visible
- Opportunities for water quality improvement through biodiverse vegetation restoration



* At the time of the Public Land Survey (1847-1908), Minnesota had 18 million acres of prairie.
Today only a little over 1 percent of native prairie remains.

1.5 acre remnant prairie



- Rare plant species
- High quality habitat
- Opportunities for seed collection to reseed / replant other portions of the property

Spring Road

Site Considerations

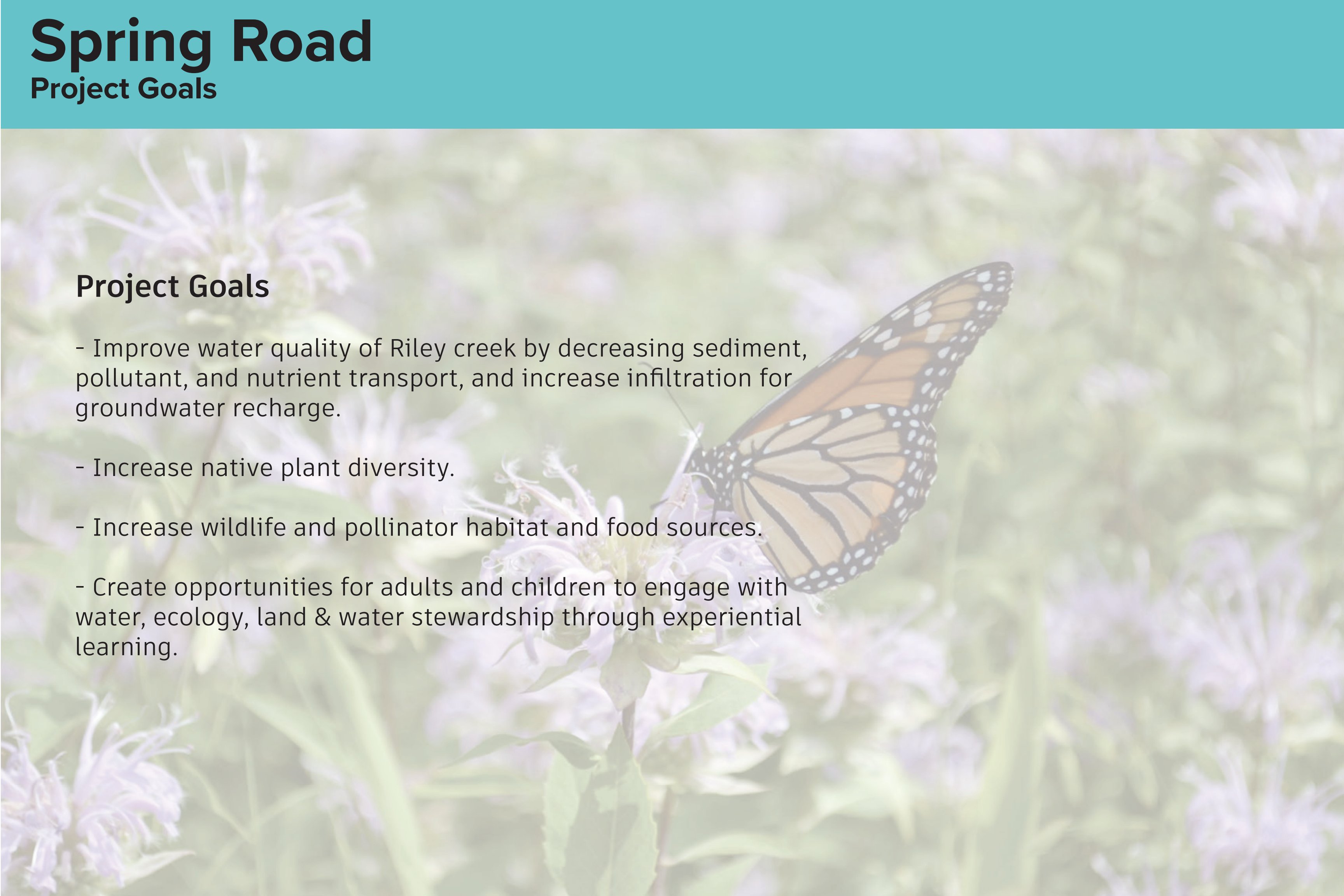
- **Woody species**
 - Encroaching on prairies and openings
 - Some create shaded dead-zone (potential erosion)
- **Fire suppression**
 - Lack of fire allows for woody species
 - Fire dependent plant species weaken
- **Sensitive area**
 - Close to popular spring, lots of development in area, public facing.
 - Historic, ecologic and cultural significance
- **Slopes**
 - Steep slopes throughout site, erosion potential, adjacent to Riley creek.



Spring Road

Project Goals

Project Goals

- Improve water quality of Riley creek by decreasing sediment, pollutant, and nutrient transport, and increase infiltration for groundwater recharge.
 - Increase native plant diversity.
 - Increase wildlife and pollinator habitat and food sources.
 - Create opportunities for adults and children to engage with water, ecology, land & water stewardship through experiential learning.
- 
- A monarch butterfly with orange and black wings is perched on a purple flower. The background is a soft-focus field of similar purple flowers and green foliage.

Spring Road

Project Benefits

The potential benefits of this project are wide ranging & will have a lasting impact on wildlife, pollinators, water quality, & the next generation of land and water stewards.

Project Benefits

- Removal of nutrients and pollutants, providing protection for water resources.
- Increased water infiltration and groundwater recharge.
- Water interception and filtration.
- Slope stability provided by root systems.
- Soil health promoted by stabilizing soils, adding organic content through root decomposition, and by supporting healthy microorganism populations.
- Food sources for a wide variety of insects that support bird populations.
- Shelter and nesting habitat for birds and other animals.
- Support of endangered species populations.
- Educational opportunities for youth and adults including water quality, land stewardship, and ecology.
- Research opportunities around native plantings and water/soil quality, habitat and non-chemical restoration techniques.



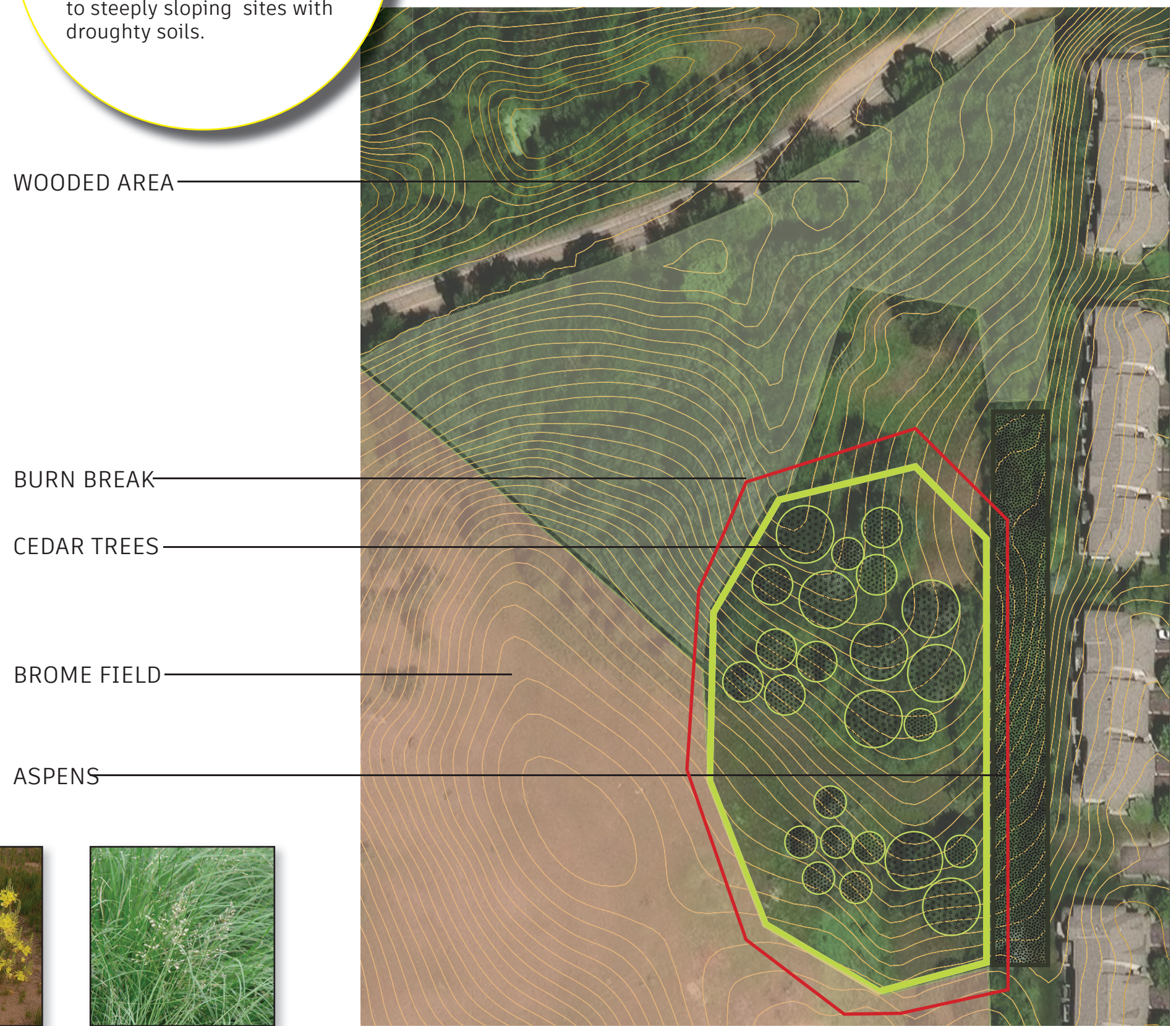
Remnant Prairie

Overview

SANDY UPLAND SAVANNA
 (UPs14 Southern Dry Savanna)

Sparsely treed communities with grass dominated herbaceous ground layers on nearly level to steeply sloping sites with droughty soils.

- The remnant prairie is a small patch (1.5 acres) in the northeastern portion of the site.
- There are a high diversity of plants in this remnant including rare and threatened species.
- This area is an important seed and habitat source, and should be managed sensitively
- Woody encroachment is the largest issue



Kittentails



Birds Foot violet



Lead plant



Rhombic Primrose



Prairie Dropseed

Remnant Prairie

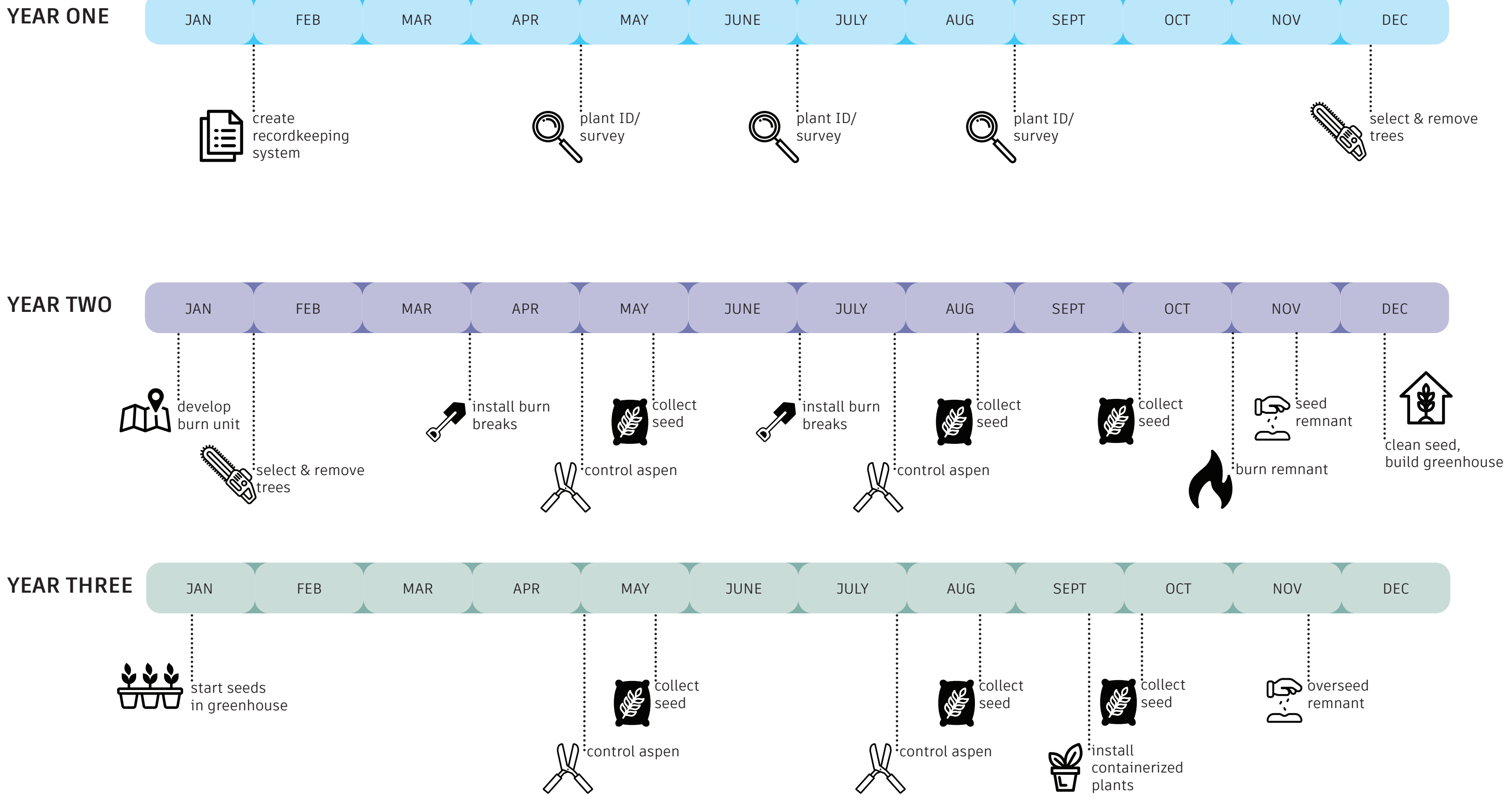
Activities

- Plant survey, remnant boundary
- Cedar tree removal (repurpose as hibernaculum)
- Aspen control
- Burning (early spring, late fall)
- Seed collection & plant propagation
- Seeding & plant install



Remnant Prairie

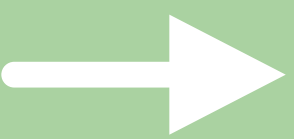
Timeline



Riparian area

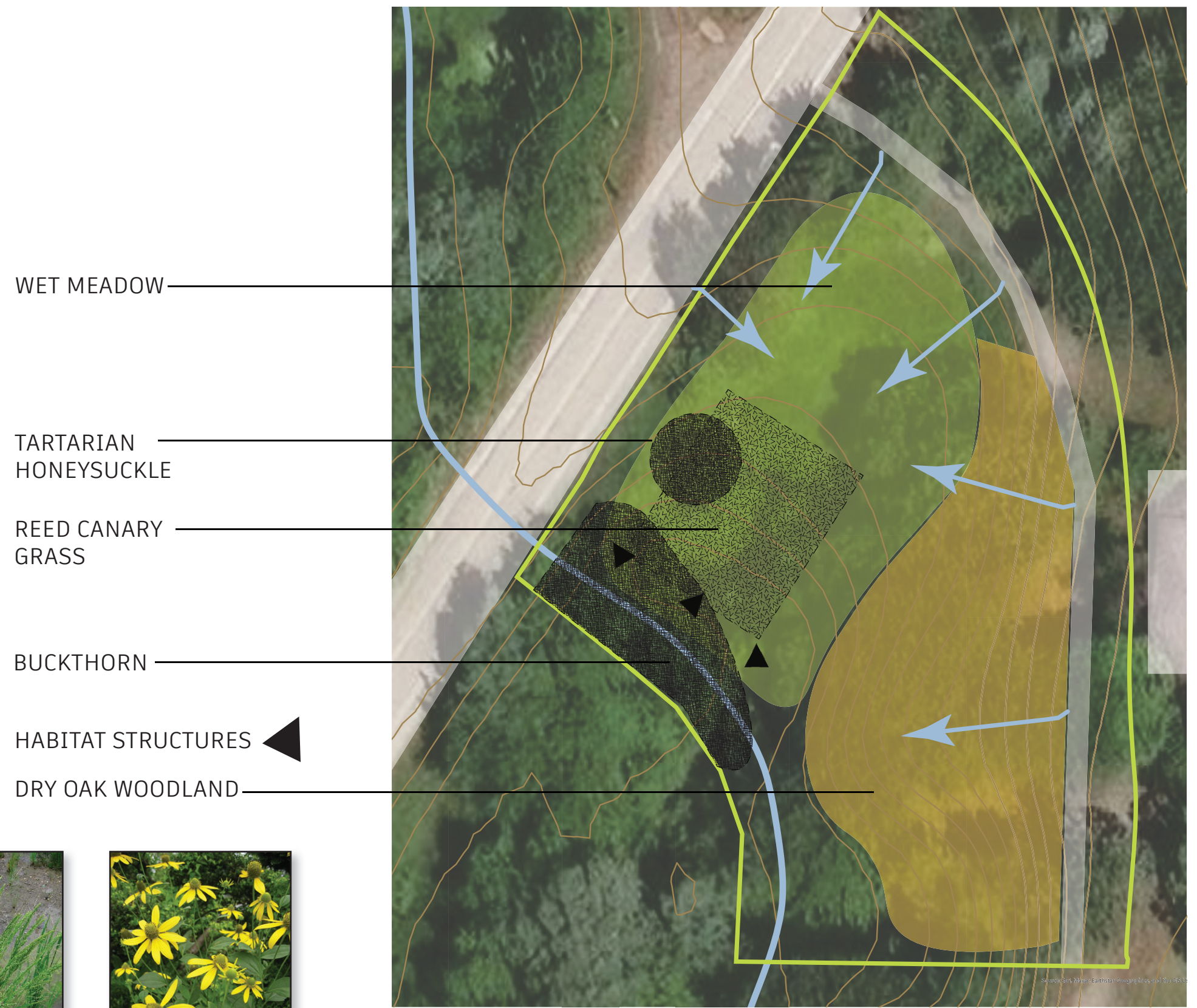
Overview

WET MEADOW
(Northern wet meadow/car WMn82)



OAK WOODLAND
(Southern Dry-Mesic Oak (Maple) Woodland - FDs37)

- The riparian area is a small patch (0.7 acres) in the western portion of the site.
- Contains the portion of Riley creek that flows through the property, the wet meadow, and the wooded slopes leading up to the driveway.
- Highly visible
- Buckthorn and other domineering species an issue
- Lowest laying area on site



Sweet Cicely



Pennsylvania sedge



Porcupine sedge



American Slough grass

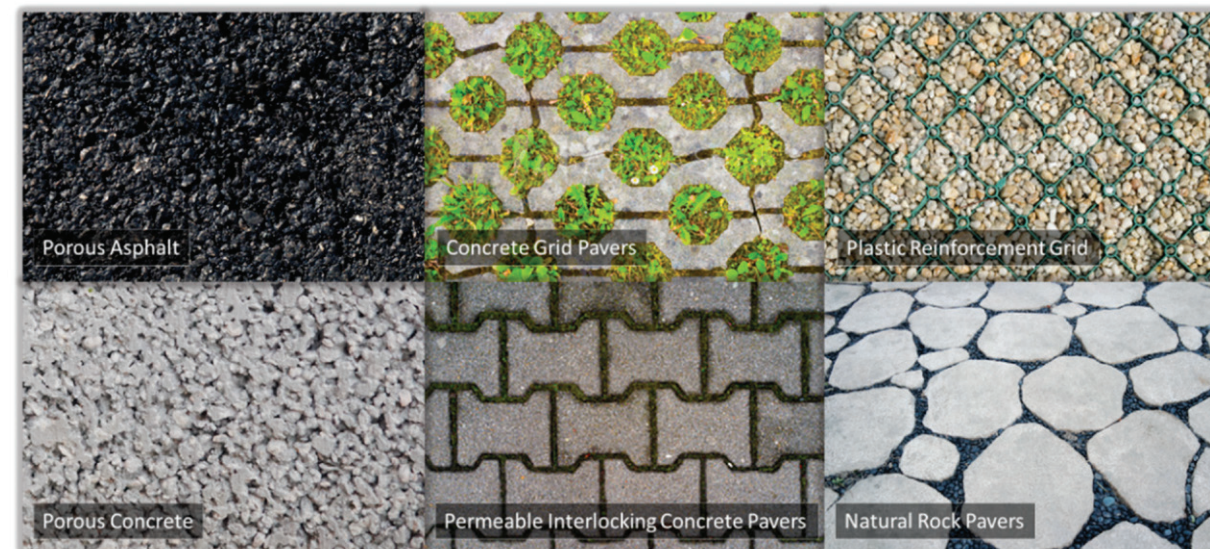


Cutleaf coneflower

Riparian area

Activities

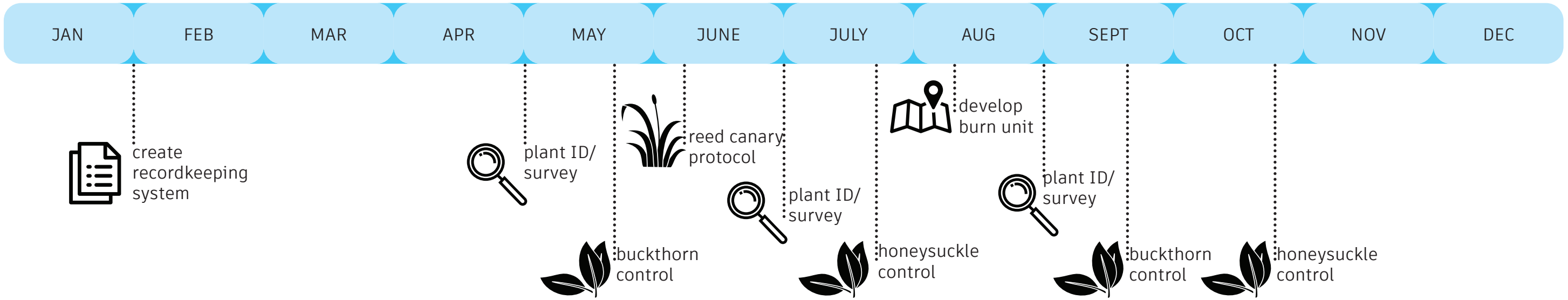
- Plant survey
- Buckthorn control
- Reed canary grass management
- Woody species control
- Burning
- Seeding & plant install
- Pervious surface install
- Demonstration area



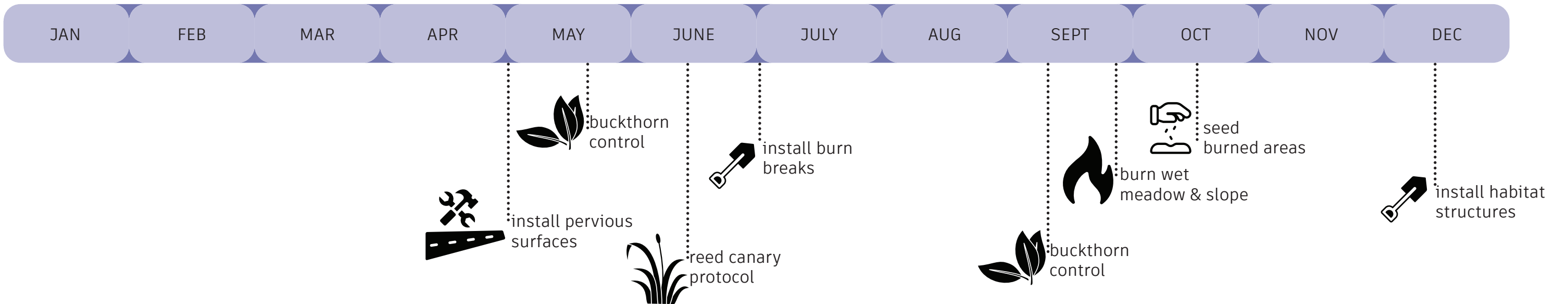
Riparian area

Timeline

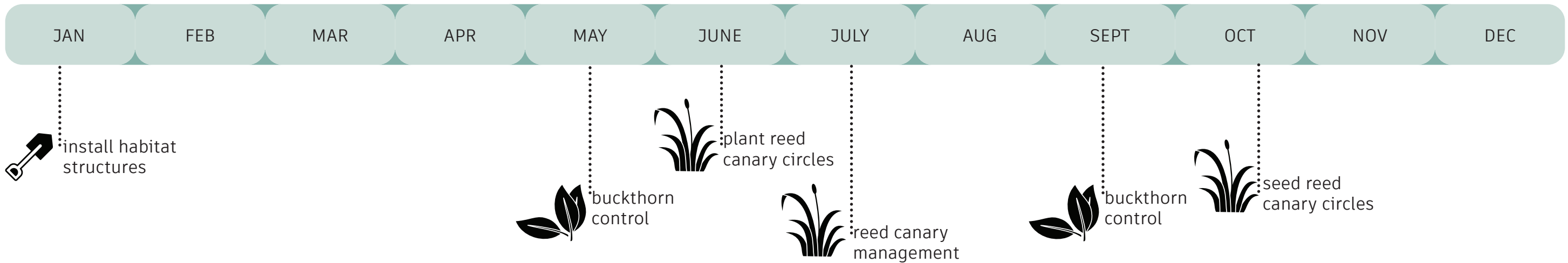
YEAR ONE



YEAR TWO



YEAR THREE



Thank you!

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