

## WOLTER WOODS AND PRAIRIES

Location: Sherrill, Iowa

Entry Category: Planning And Urban Design

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Wolter Woods and Prairies is located on **160 acres** of unglaciated land in northeast Iowa along the **Mississippi River Bluff**. The client acquired the land to develop an education and research center for environmental science to promote stewardship of nature and increase ecosystems biodiversity.

The master planning efforts started with **identifying the site's natural resources and geological patterns**. Inspired by the unique geological setting with panoramic views toward the Mississippi River, the plan strives to **enhance the natural experience with sublime natural moments** underscored by light design interventions and minimal construction footprint.

## Master Plan for a Research and Academic & Research Client

The 160-acre property sits on the Mississippi River Bluff and ravines at the border of Iowa and Wisconsin at navigation pool 11. The site includes untouched woodlands, restored prairies, natural streams, river floodplains, wetlands, and agriculture plots. The Landscape Architecture Team identified that this stretch of river corridor is abundant in diverse habitats but is rarely studied compared to comparable Mississippi River pools. Therefore, the Team advised the Client to **broaden their vision** and position the institution as **a leader in river study and environmental research for the whole Upper Midwest Region**.

### STAKEHOLDER PARTICIPATION

The Master Planning Process emphasis on **synergistic design and collaboration**. The Landscape Architecture Team advocated for and led a diverse design committee beginning from the early discovery stage. The Committee consisted of stakeholders, board members, philanthropists, faculty, and staff with various backgrounds including environmental science, student life and administration, marketing and alumni affairs, academic and curriculum development, as well as campus management. These perspectives brought the variety of project aspirations: research and education, preservation and restoration, development and recreation. Committee findings were distilled and translated by the Landscape Architecture Team to complete the final master plan.

### PROJECT PRIORITY: PRESERVE AND ENHANCE NATURE

**Key inhabitants** include federally endangered species such as the Indiana Bat and Rusty-Patched Bumblebees, and Southern Flying Squirrel, designated by Iowa as a “species of special concern.” There are also areas disturbed by human activity, such as **10 acres of filled historical wetland within the 100-year floodplain**, which were dredged and manipulated to develop marinas and a pad for mobile homes.

### EXPERIENTIAL + ECOLOGICAL MASTER PLAN

The Master Plan, created the Landscape Architecture Team, sets the framework for the **conservation, restoration and sustainable development** of the site. The Team utilized **programming districts** to establish landscape development districts and to delineate development limitations. Spatial programming plans synchronized eco-educational opportunities, areas for research, and interpretative spaces while circulation and wayfinding systems connect these elements. Special attention was given to accessibility, due to the acute grade changes across the bluff and ravines. Other Master Plan strategies included river floodplain restoration, creek daylighting, and adoption of low impact development best management practices (LID BMP). Native plant revegetation was identified for the woodland, grassland, riparian, and wetland habitats.

### NATURE INSPIRED DESIGN STRATEGY

Inspired by the unique geological setting of the site with an unmatched panoramic view toward the Mississippi River, the Plan strives to **enhance experience of unique natural resource through planning and space making**, create **sublime natural moments** with a light design touch and minimal construction footprint.

The Master Plan takes the **150 ft elevation change and the alternating terrain of ravines and hilltops** to its advantage, setting buildings of different programming districts at separate elevations with minimal visual interference with each other, and preserving the naturalistic appearance of the woodland setting. A signature building was sited at the bluff to take full advantage of the expansive view toward the Mississippi River. Student housing is planned as off-grid prefabricated units nested in the deciduous forest to minimize the impact on existing topography and to provide immersive natural experience. The main entrance off Waupeton Road is designed as a bridge built over the footprint of the demolished concrete road. It swipes through the restored wetland, leading visitors to the arrival plaza, providing an immersive arrival experience.





Event Center

Welcome Center

Student Center

Outdoor Classroom and Pavilion

Restored Wetland

Restored Prairie

Restored Woodland

Student Housing

Signature Building

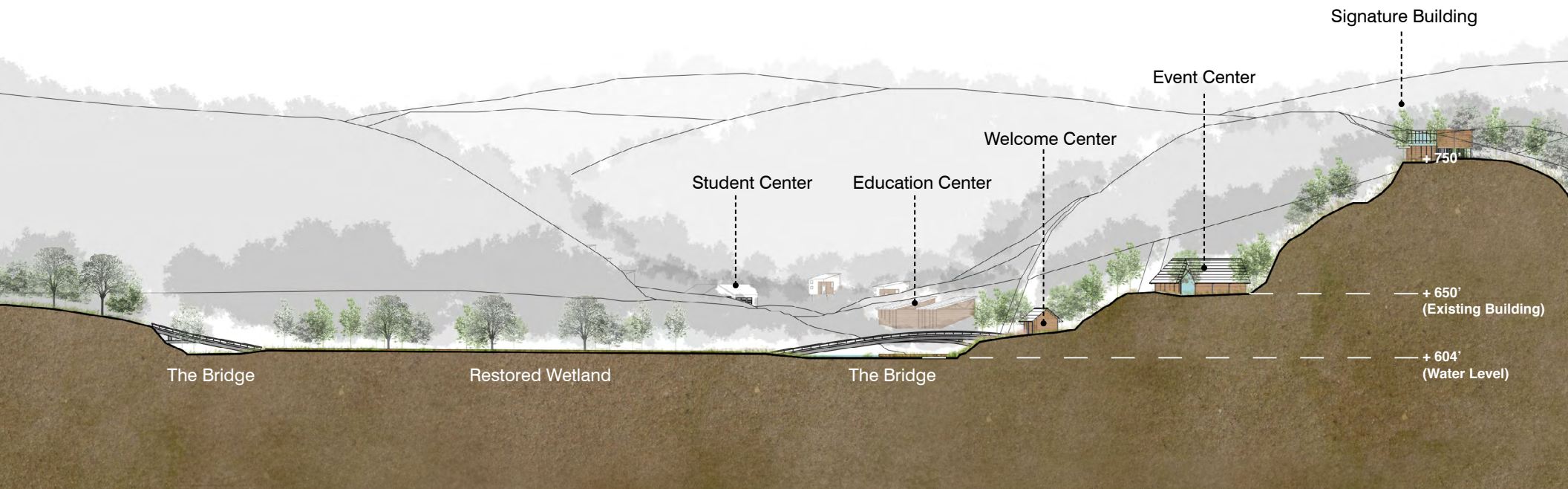
Education Center

Library/Archive Center

Mississippi River

MASTER PLAN AERIAL VIEW





The Arrival Bridge



Student Center

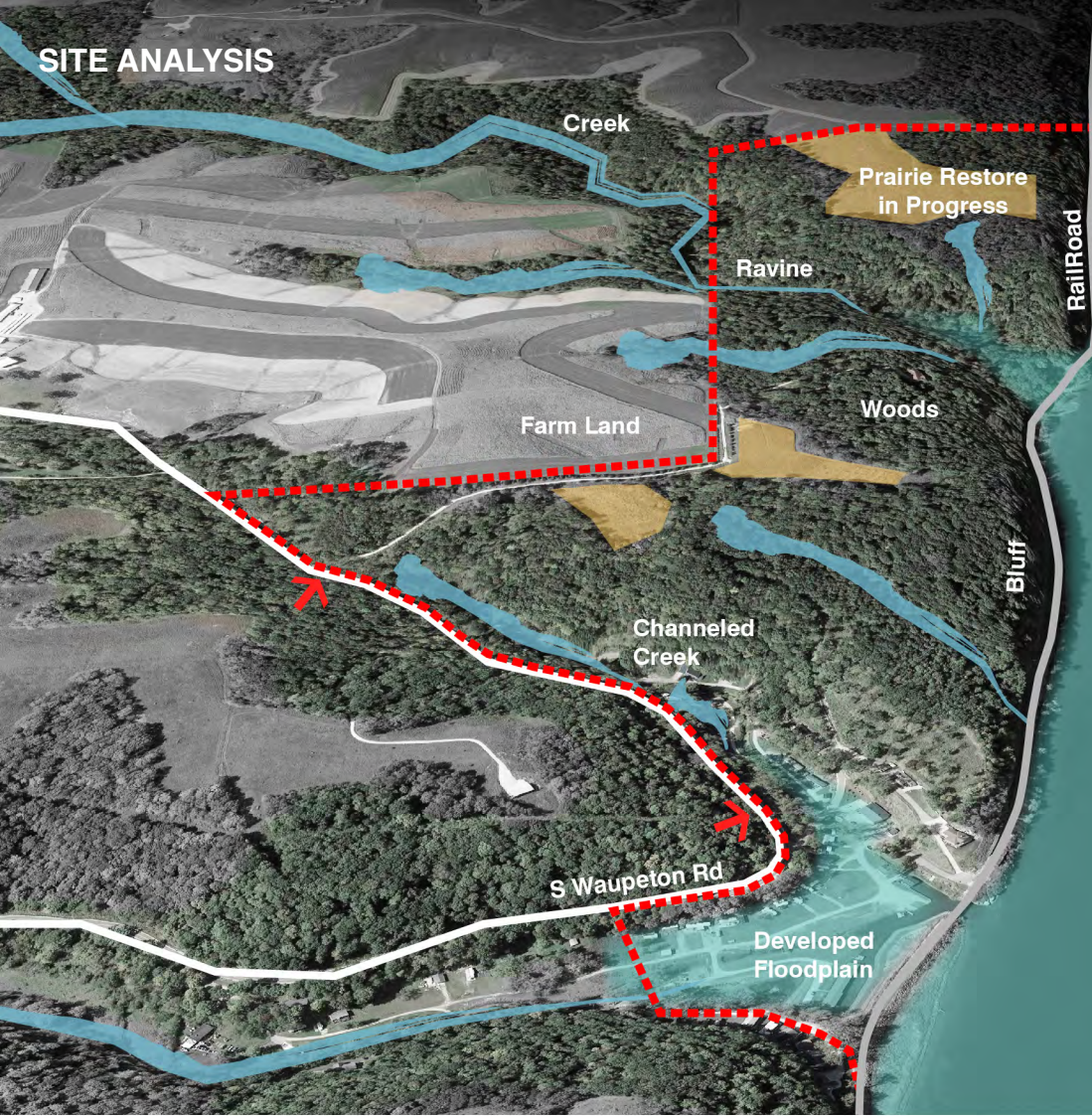


Signature Building




**NATURE INSPIRED DESIGN**



# SITE ANALYSIS







## ENDANGERED\* KEY SPECIES

-  Indiana Bat
-  Rusty-patched Bumble Bee
-  Southern Flying Squirrel

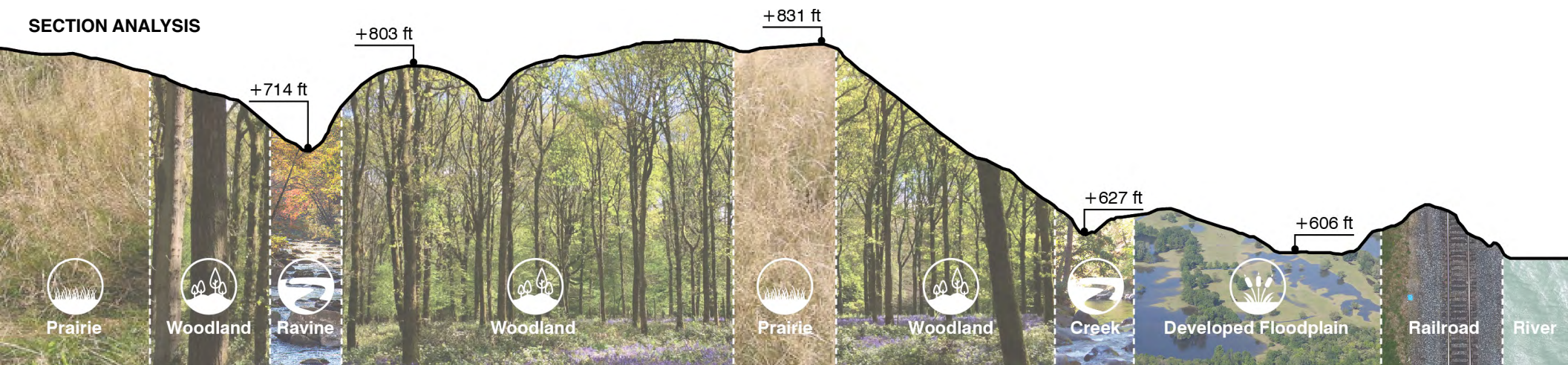
*Southern Flying Squirrel is a "species of special concern" in Iowa, and is the research focus of the institution.*

## SIGNIFICANT PLANT SPECIES

-  Spring Ephemerals
-  Forest Understory
-  Prairie Forbs
-  Prairie Grasses

Mississippi River Islands # 201

# SECTION ANALYSIS







PANORAMIC RIVER VIEW



PRAIRIE RESTORATION IN PROGRESS



UNDEFINED VIEW MOMENT



OVERGROWN WOODLAND

GULLY EROSION



AGING STRUCTURE



100 YEAR FLOODPLAIN

EXISTING DEVELOPMENT BELOW FLOODPLAIN

CHANNELIZED CREEK

LARGE IMPERVIOUS SURFACE



DREDGED WETLAND AS MARINA

DISORGANIZED UTILITY

ADVANTAGEOUS VIEWS

100 YEAR FLOOD LINE

# VISUAL IMPRESSION



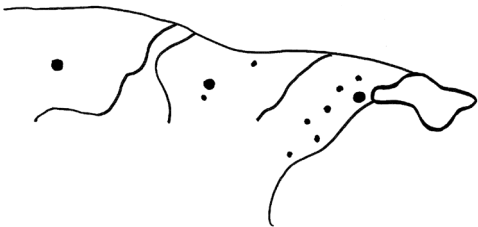
# SYNERGISTIC DESIGN AND COLLABORATION

The landscape architects worked directly with a diverse Committee of stakeholders to identify areas of interest. These stakeholders included faculty and staff from environmental sciences, student life, administration, marketing, development, and operations.

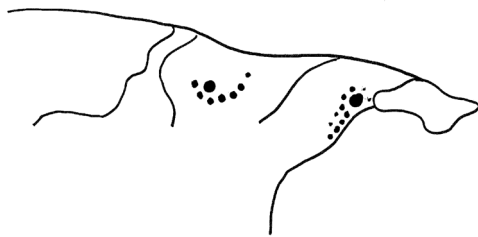
The Committee's ideas were organized by the landscape architects into programming district frameworks with an overlaid circulation network. Ultimately, the stakeholder process and the input from the landscape architect resulted in a balanced set of overall project principles: research and education, preservation and restoration, and development and recreation.



Charrette participants were divided into three groups to share their ideas



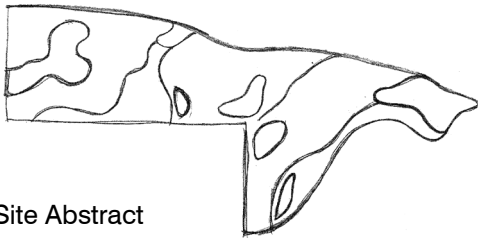
Team One



Team Two



Team Three



Site Abstract

Abstract diagrams distilled from the Charrette



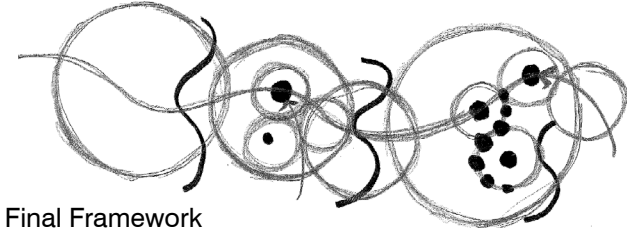
Team One



Team Two



Team Three



Final Framework

Further abstract diagram exercises to develop ideas

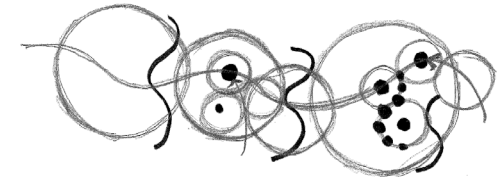


# MASTER PLAN LAND DEVELOPMENT STRATEGIES

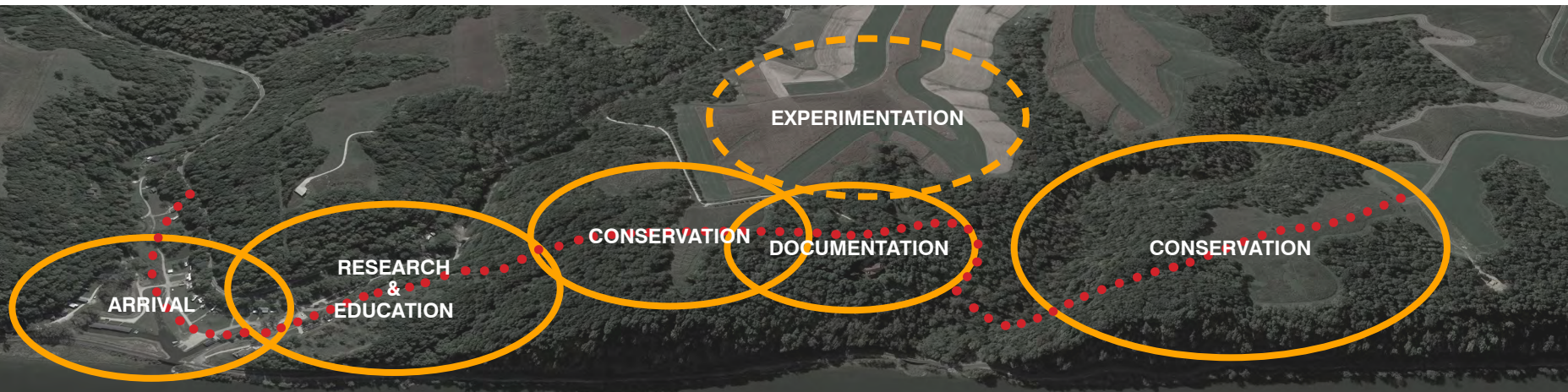
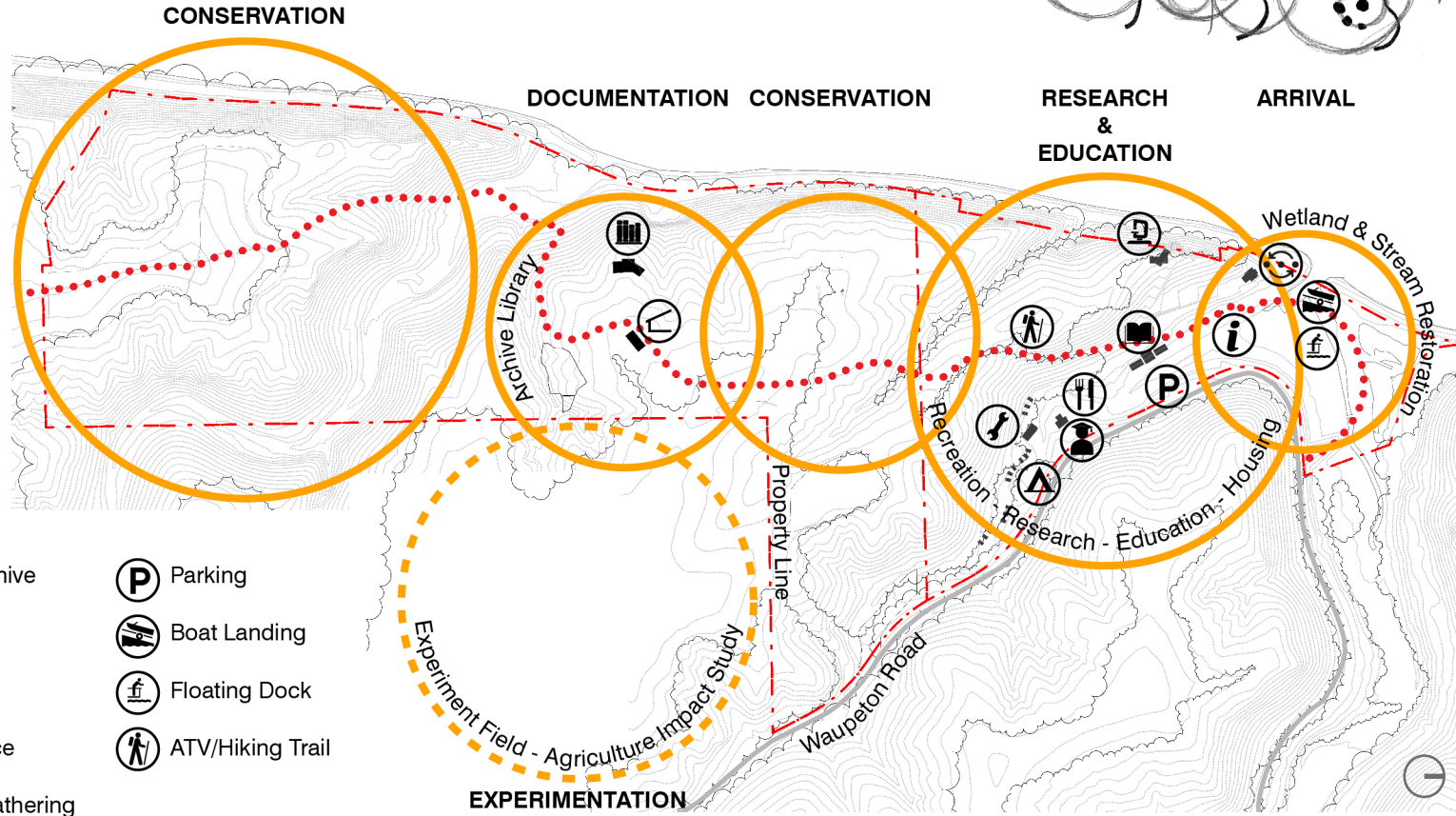
The Master Plan included the following development strategies:

- Programming Districts to delineate development zones and limitations
- Ecological restoration through native vegetation and creek daylighting
- Adoption of LID (Low Impact Development) and BMP (Best Management Practices) principles

The **programming districts** are represented as circular zones to clearly communicate land characteristics and site recommendations to the client, including areas for academic and public programming.



- |  |                    |  |                   |  |                  |
|--|--------------------|--|-------------------|--|------------------|
|  | Education Center   |  | Library/Archive   |  | Parking          |
|  | Signature Building |  | Lodging           |  | Boat Landing     |
|  | Welcome Center     |  | Cafeteria         |  | Floating Dock    |
|  | Event Center       |  | Maintenance       |  | ATV/Hiking Trail |
|  | Student Center     |  | Outdoor Gathering |  |                  |

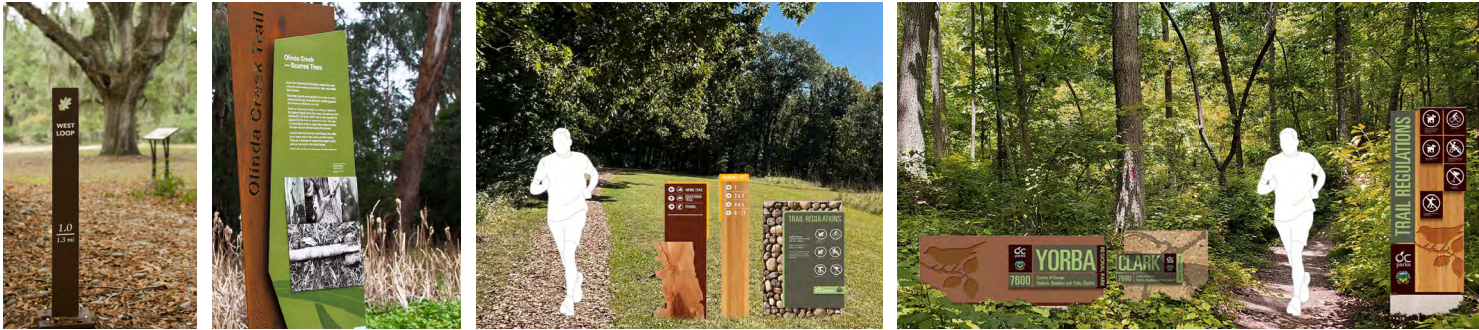
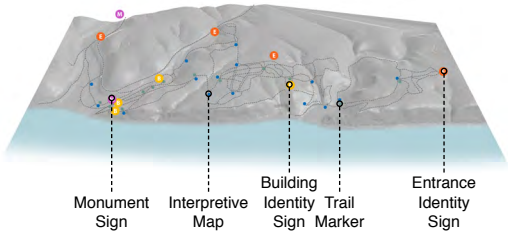




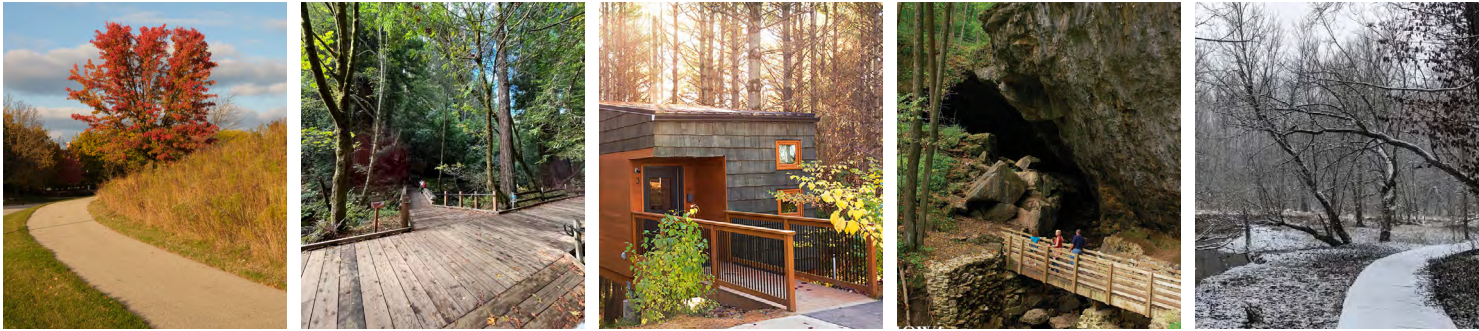
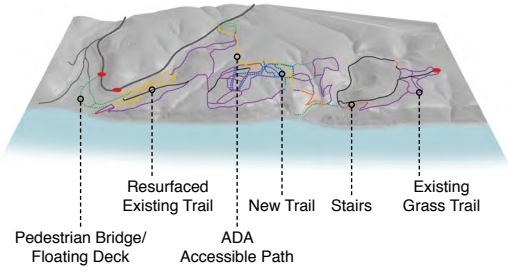
# PROGRAMMING FRAMEWORK

- On Site Documentation and Research Program
- Spatial Programming for Education and Research
- Create Circulation Hierarchy
- Develop Way-Finding System
- Enhance Accessibility

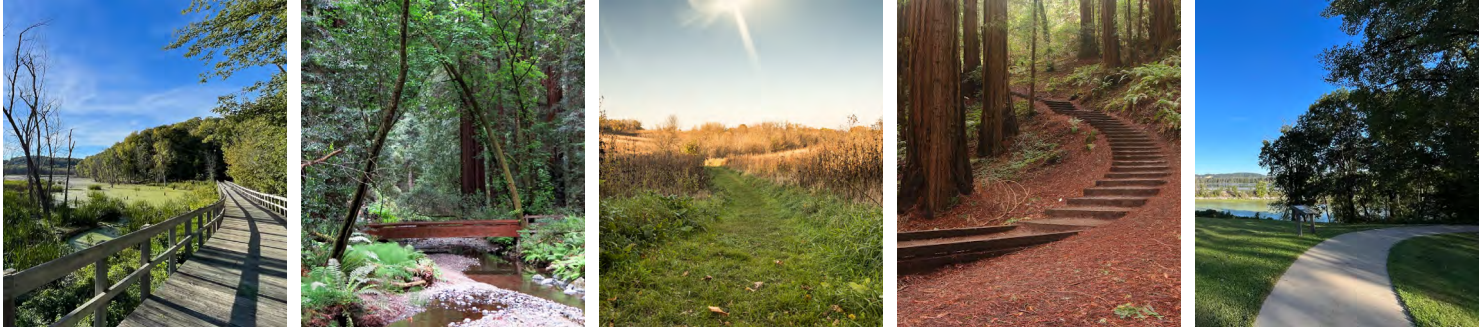
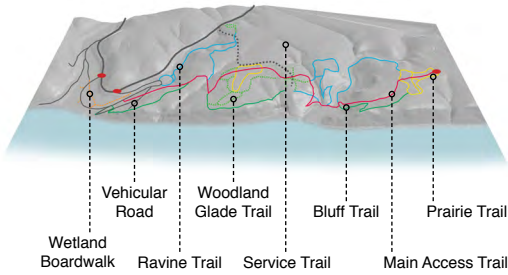
## SIGNAGE



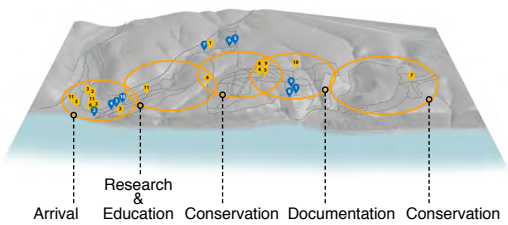
## ACCESSIBILITY



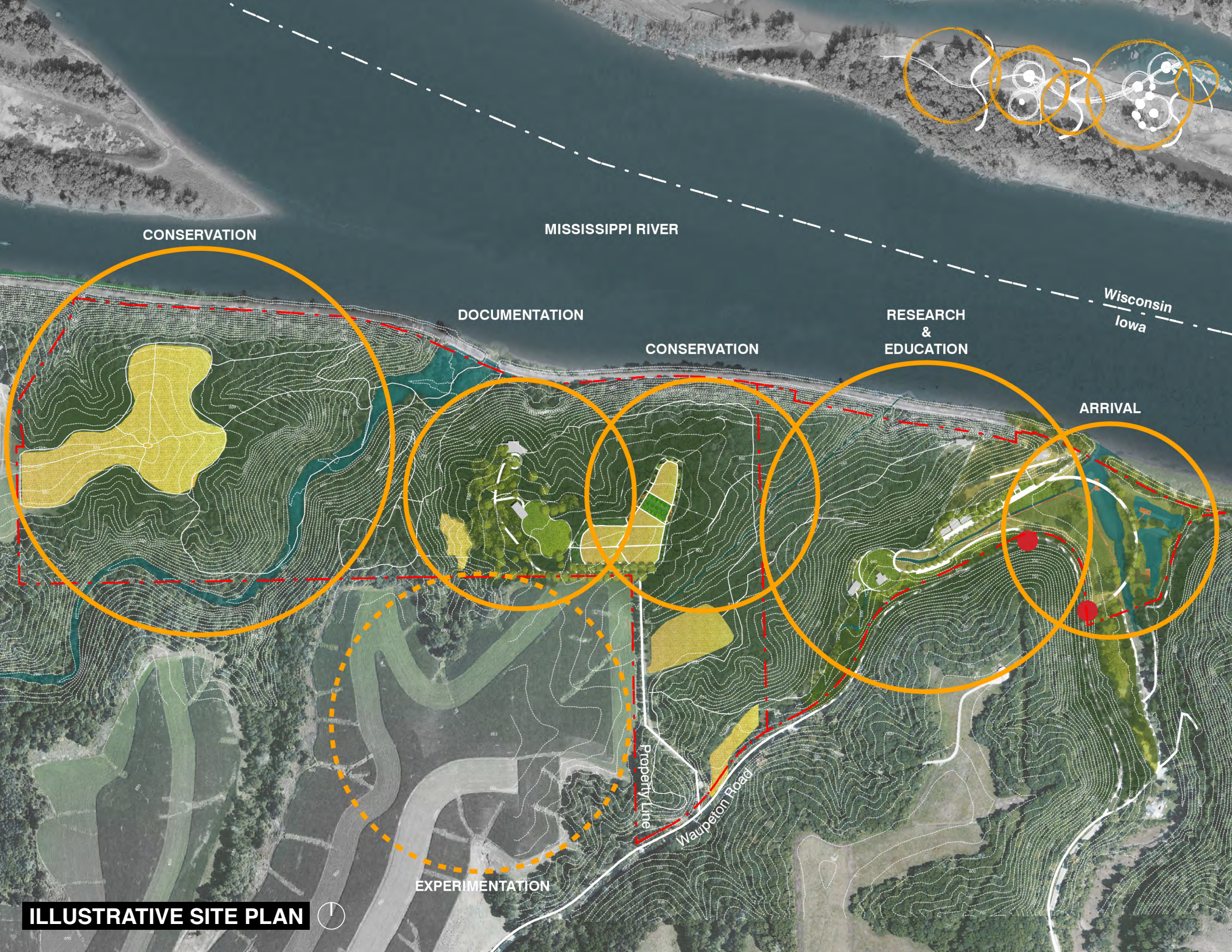
## CIRCULATION



## ACADEMIC PROGRAMMING







CONSERVATION

MISSISSIPPI RIVER

DOCUMENTATION

CONSERVATION

RESEARCH & EDUCATION

Wisconsin  
Iowa

ARRIVAL

EXPERIMENTATION

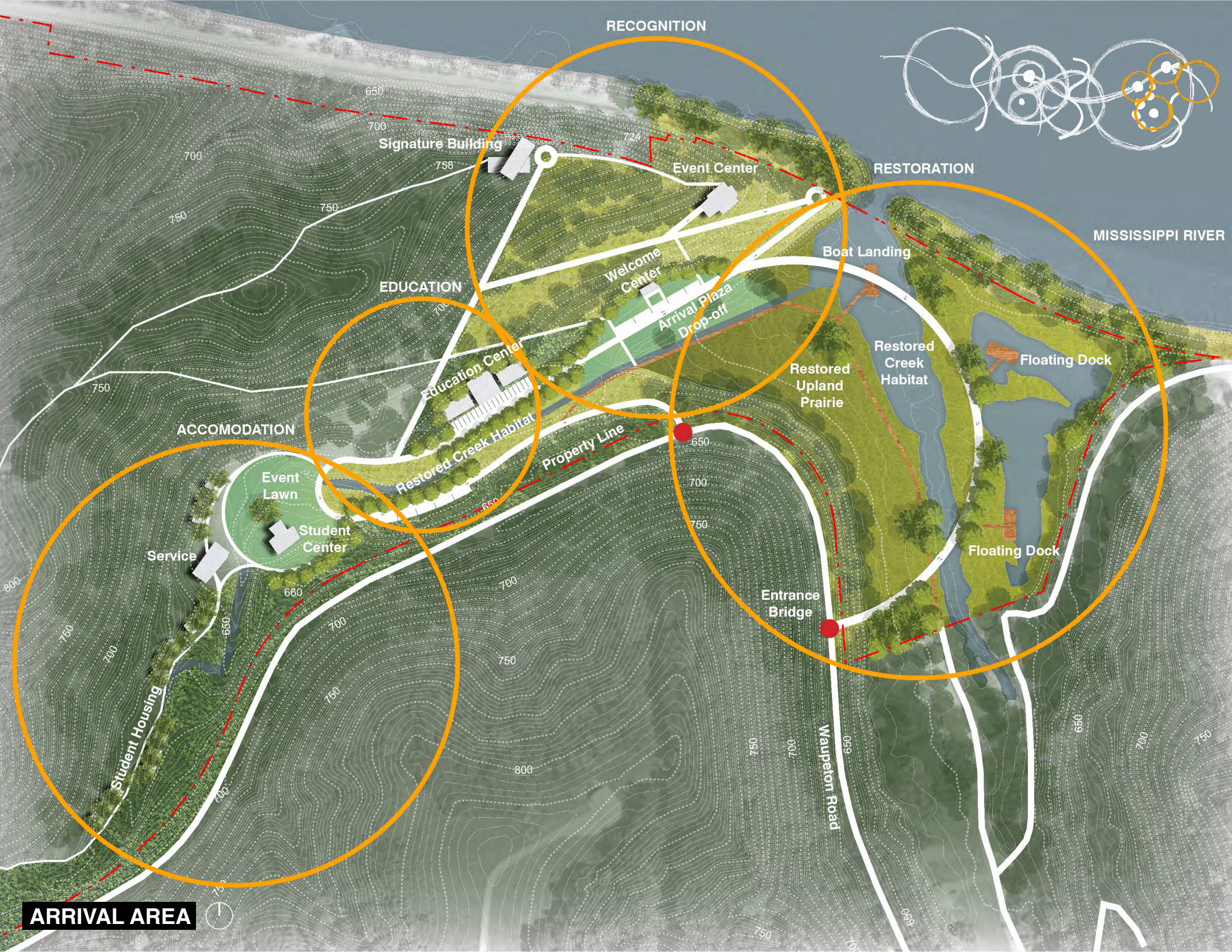
Property Line

Waupeton Road

ILLUSTRATIVE SITE PLAN







RECOGNITION

RESTORATION

MISSISSIPPI RIVER

Signature Building

Event Center

EDUCATION

Welcome Center

Arrival Plaza

Drop-off

Boat Landing

Restored Creek Habitat

Floating Dock

Restored Upland Prairie

Floating Dock

ACCOMMODATION

Event Lawn

Student Center

Service

Restored Creek Habitat

Property Line

Entrance Bridge

Waupeton Road

ARRIVAL AREA

Student Housing



# SUBLIME NATURAL MOMENTS

## Signature Building

Placed at the bluff to take advantage of the expansive view toward the Mississippi River, restored prairies, and wetland.

## Floodplain Habitat Restoration

Restore the Floodplain habitat as wetland, creek, upland prairie and riparian forest. Promote wildlife diversity and improve the water quality of the ecosystem.



## The Arrival Moment

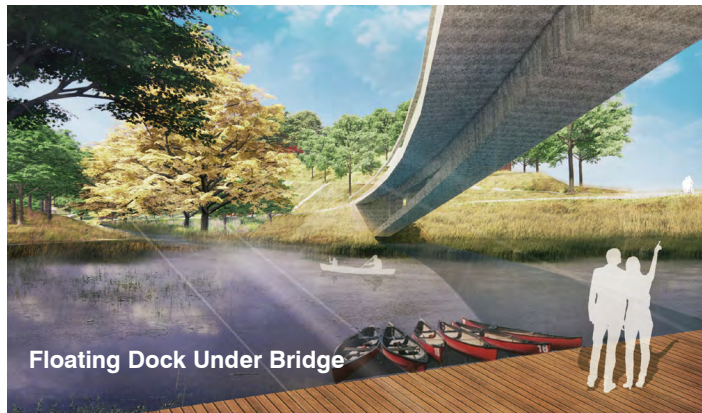
The main entrance off Waupeton Road is designed as a bridge built over the footprint of the demolished concrete road. It travels through the restored wetland, leading visitors to the arrival plaza and providing an immersive remarkable experience at the arrival.



Restored Wetland



Bridge Over Creek



Floating Dock Under Bridge



# NATURALISTIC CAMPUS ENVIRONMENT



## Student Center

Re-purpose the existing cabin within the 100-year Floodplain as Student Center

## Upland Prairie Restoration

## Daylight Channelized Creek

Introduce Wet Meadow vegetation

## Student Housing

Off-grid prefabricated housing units, nesting in the forest to minimize the impact on existing topography and to provide immersive natural experience



Arrival View

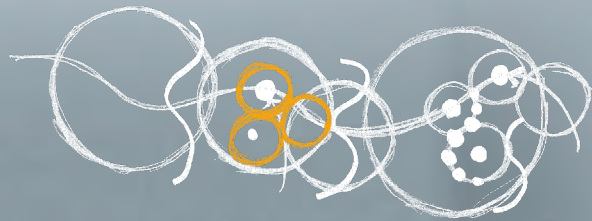


Arrival Plaza And Welcome Center



Education Center





MISSISSIPPI RIVER

DOCUMENTATION

Roundabout

RESTORATION

EXPERIMENTATION

Outdoor Classroom Pavilion

The Common

Garden

Prairie

Orchard

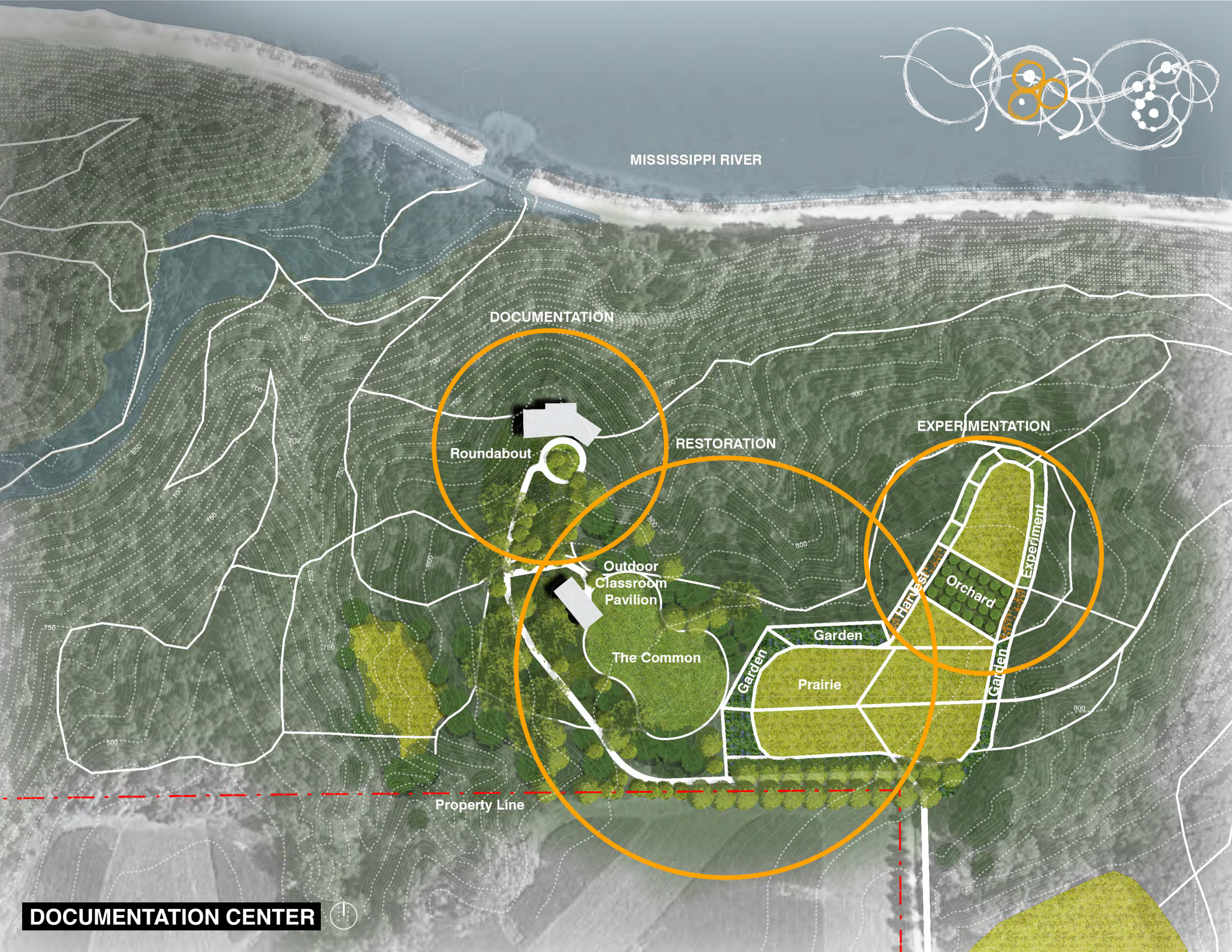
Experiment

Harvest

Garden

Property Line

DOCUMENTATION CENTER





## Woodland Glade

Forest Management to establish native forest with diverse species.  
Remove Invasive species like Buckhorn and Box Elder  
Thin Silver Maple overstory and reintroduce Hickory and Oaks

## Outdoor Classroom And Pavilion

Renovate the existing storage building as a pavilion  
with a direct connection to a wooded Outdoor  
Classroom







### Library/Archive Center

Renovate the existing house as admin office, archiving library for on site ecosystem sampling, documentation and research

### Woodland Revegetation

Preserve Healthy Forest Understory  
Introduce Spring Ephemerals  
Replace turf with native Prairie Grasses and Forbs