

DAMMED

Master Planning Along the Lower Snake River in a Post Dam-Removal Condition

INTRODUCTION

The four dams on the lower Snake River in Washington state have numerous impacts on the surrounding environment, and although provide benefits of hydroelectric power, irrigation services, and waterway navigation that alter the state of the river and adjacent land ecologically. The question that persists is if these structures need to be maintained, replaced, or removed altogether; since like all man-made structures, they have a finite lifespan that is approaching its end. The following research and methodologies address design solutions for these dam sites in a post-removal condition through case studies, site analysis, site planning, and design interventions from a landscape architectural lens. Although total removal is not certain as it deals with the influence of many different stakeholders, for the approach it will err on the hypothesis of removal. The unique design approach will open the door for greater opportunities along the river corridor.

HYPOTHESIS

A solution suitable for this problem will be a large-scale plan (The Lower Snake River Nature Preserve) with various site programs that not only aim to bring the river back as closely to its original state as possible, but the inclusion of an educational feature is vital to promote alternatives to dams, and the value a healthy river corridor holds. These areas are to be designed to promote outdoor human activities along with normal wildlife functions that were typical to the area before the massive altering was implemented. A designed and restored riparian and shrubland along the affected riverbanks will be described and implemented accordingly to match the native planting arrangements of the local landscape.

PROJECT OBJECTIVES

- Restore native ecology including riparian plant communities, shrubsteppe areas, and aquatic habitat.
- Integrating a connecting parkway and recreational master plan to encompass human activity, interaction, and education.
- Restoring natural configuration to the river with proper shoreline stabilization.

Andrew Kodet | MLA Candidate

Landscape Architecture 772 | Landscape Architecture Thesis
LADREM | SoDAA | NDSU | Spring 2024
Primary Advisor - Craig Larson | Studio Instructor - Jay Kost

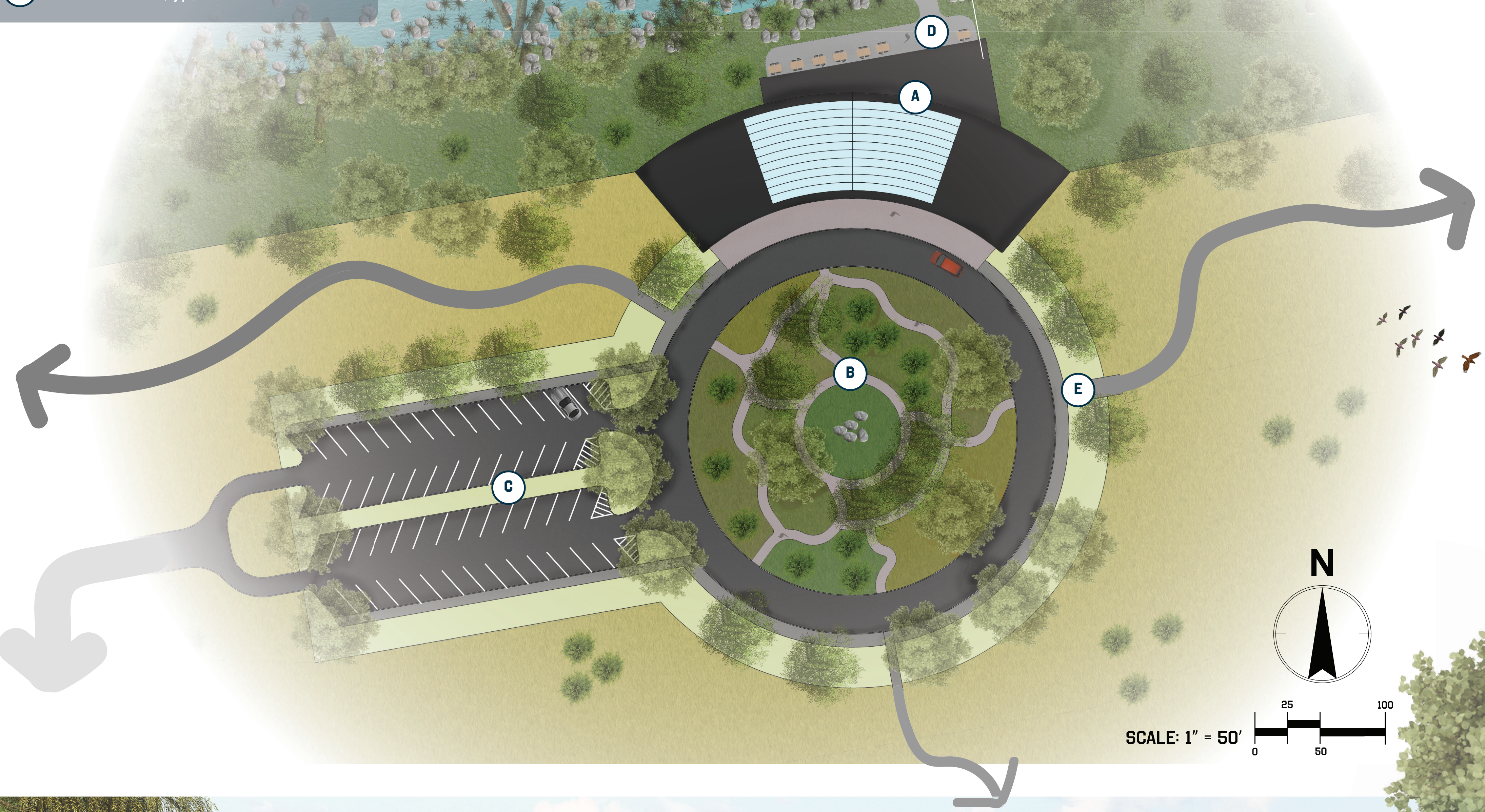
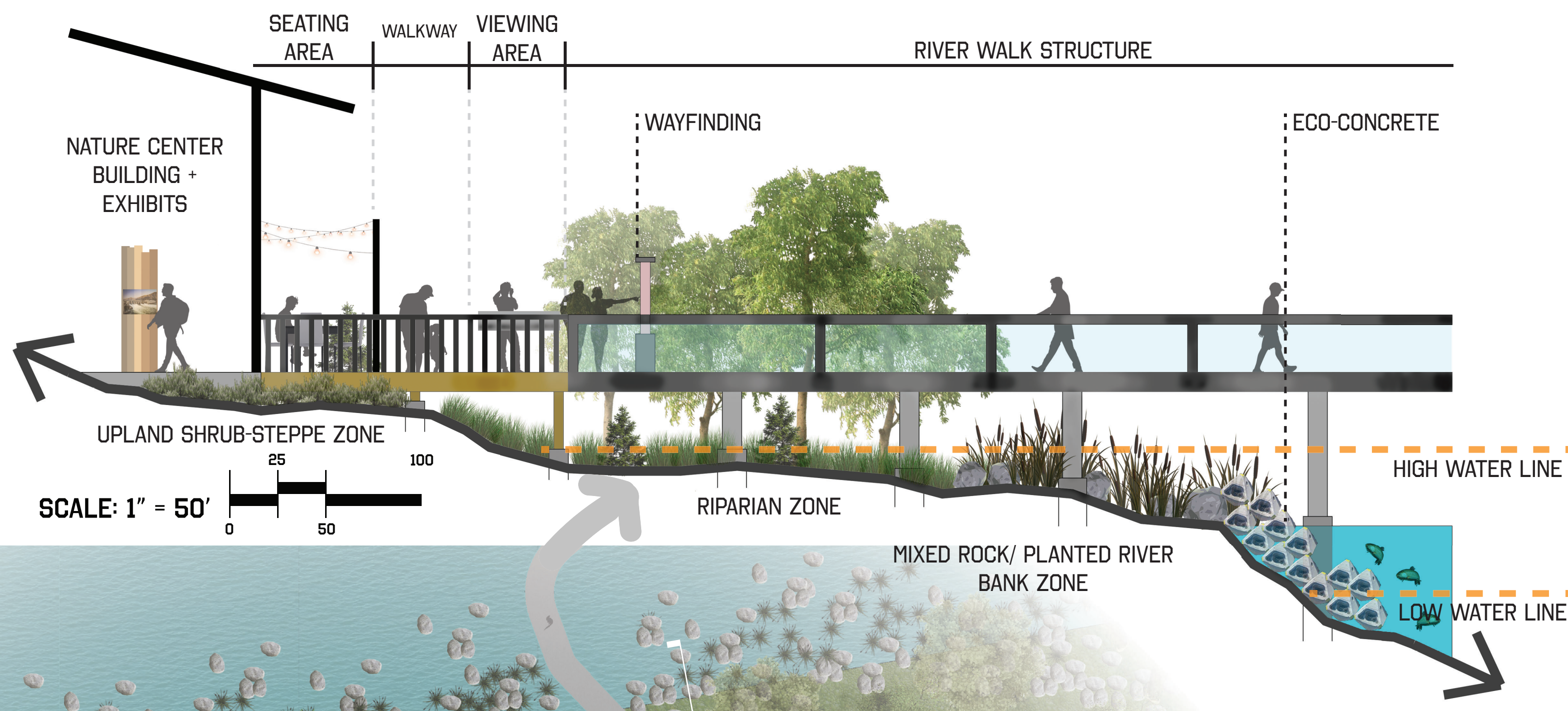


P01. Restoration in Action



1 NATURE CENTER

- A** Nature Center Building
- B** Central Roundabout Landscape
- C** Site Parking Lot
- D** Observation Deck/River Walk
- E** Trail Connection (Typ.)

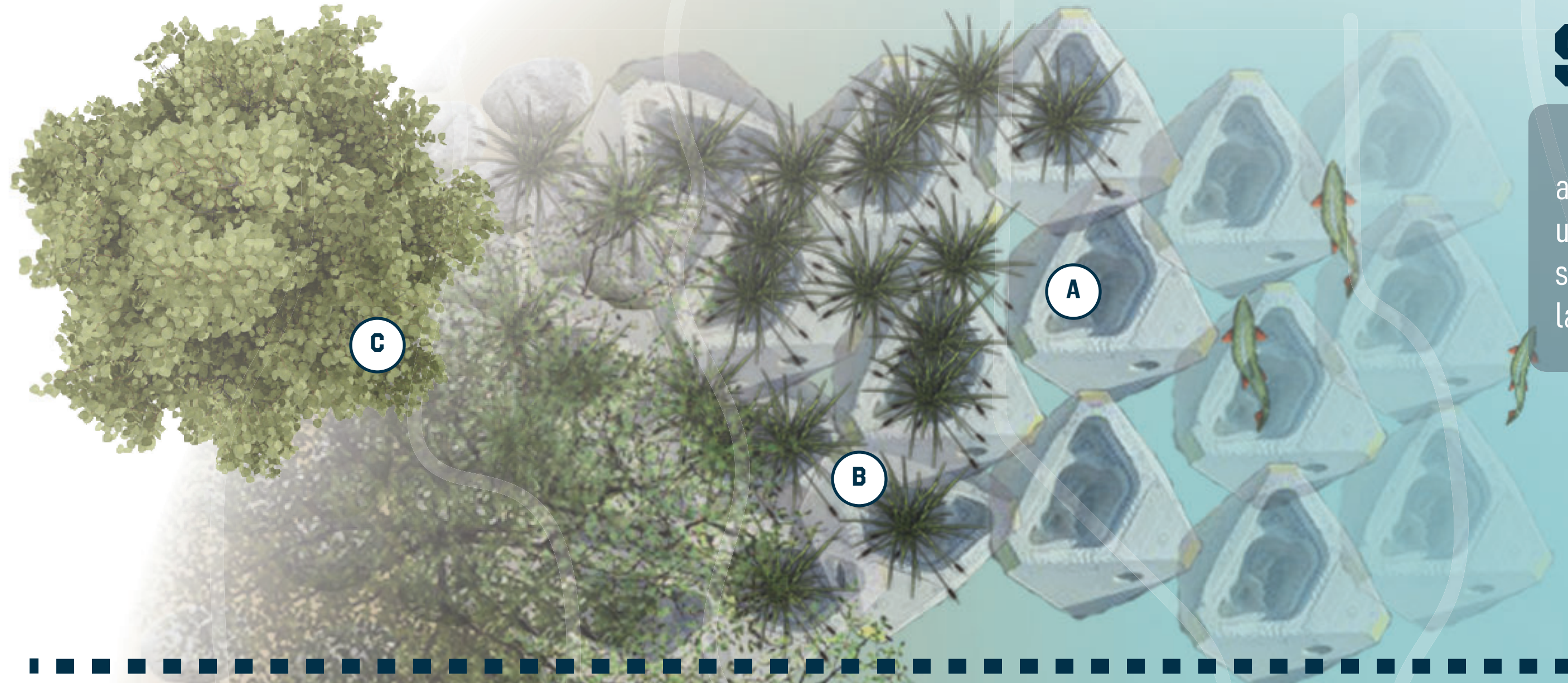


Serving as the hub of the master plan, a nature center serving social and educational values of the surrounding area persists as the pinnacle, and the least primitive portion of the design implementation.

STABILIZED STRUCTURE

Mainly utilized around areas with structures impeding upon the natural riverbank, a structural shoreline should not lack plant/aquatic life.

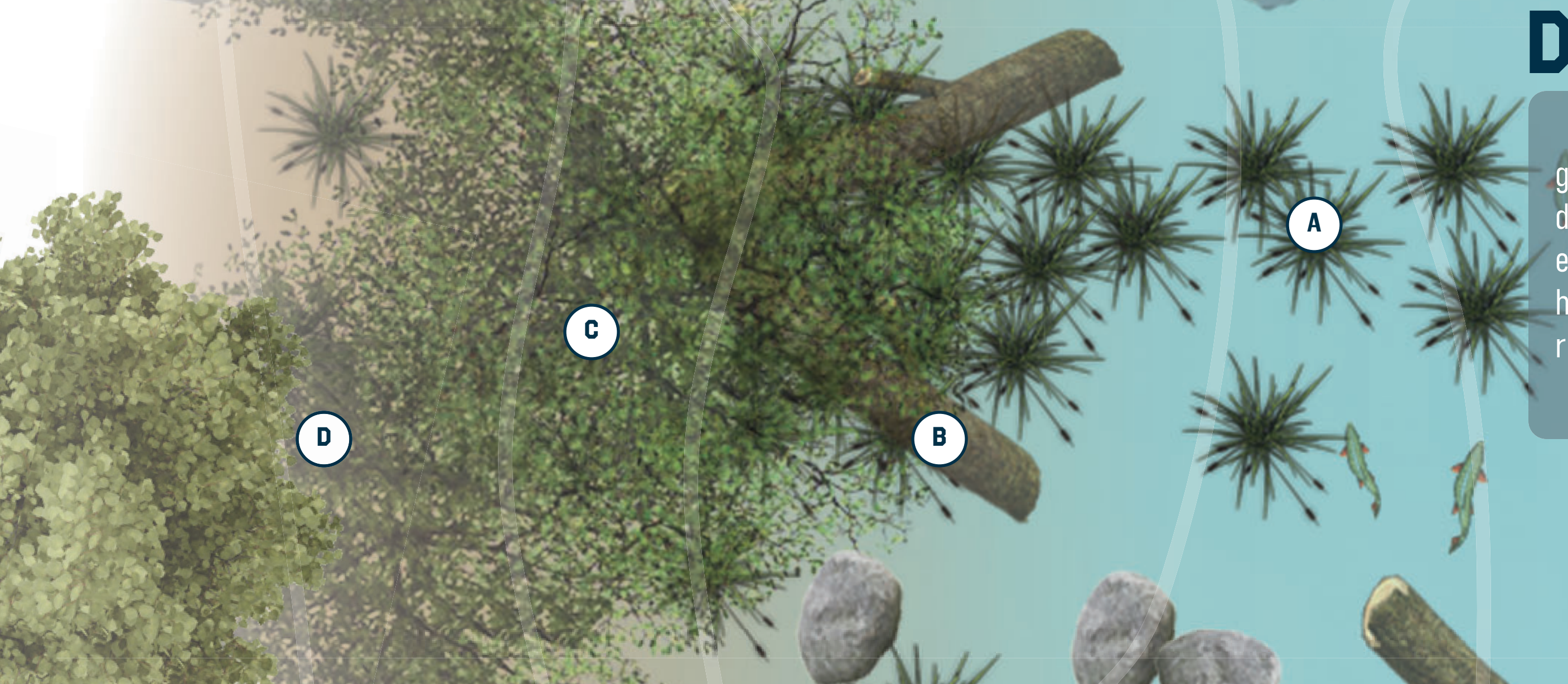
- A** Eco-Concrete Rip Rap (Typ.)
- B** Vegetated Crevice (Typ.)
- C** Riparian Shoreline



DENSE VEGETATED EDGE

Used more throughout more gently flowing backwater areas, dense vegetation and marsh-like environments allows for aquatic habitat to flourish in less rambling riverine settings.

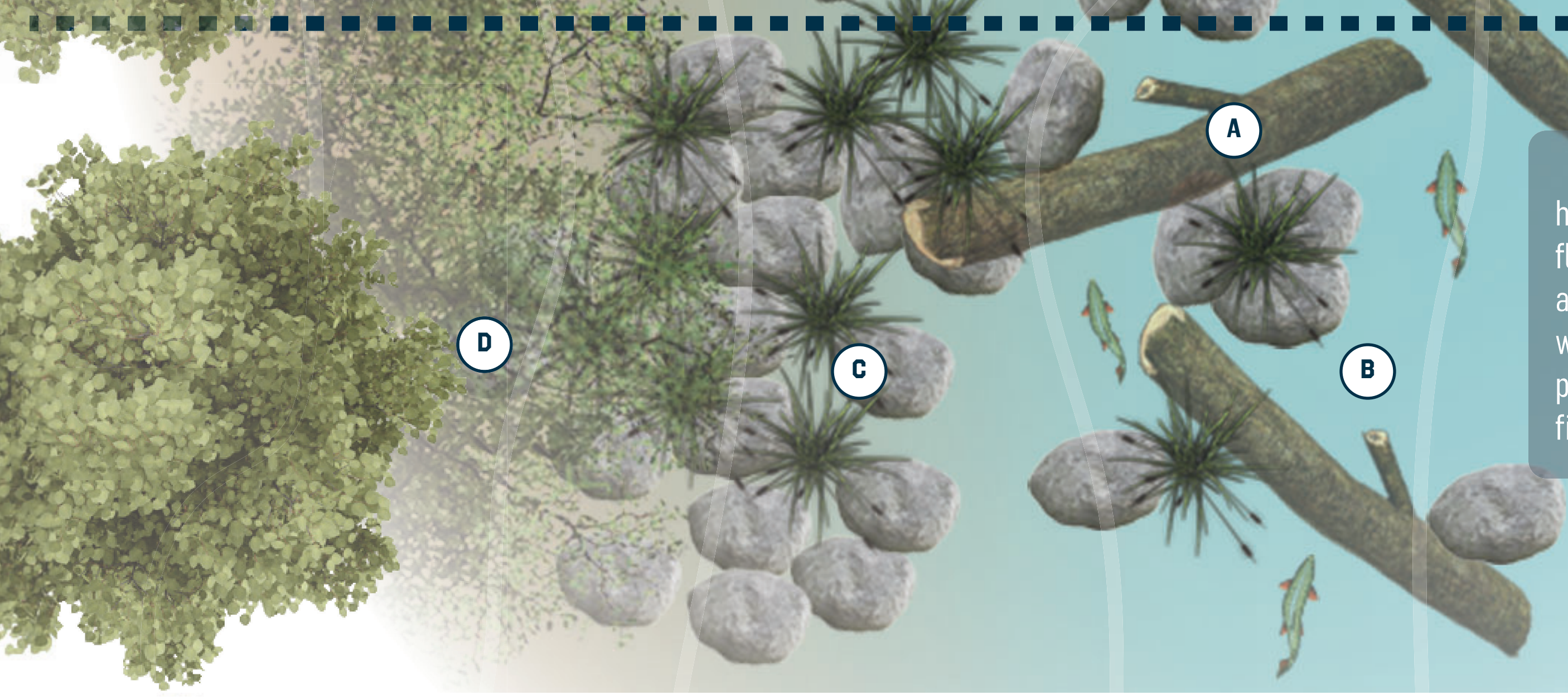
- A** Reed Planting (Typ.)
- B** Log Placement (Typ.)
- C** Dense Vegetated Edge
- D** Riparian Shoreline



ENHANCED HABITAT

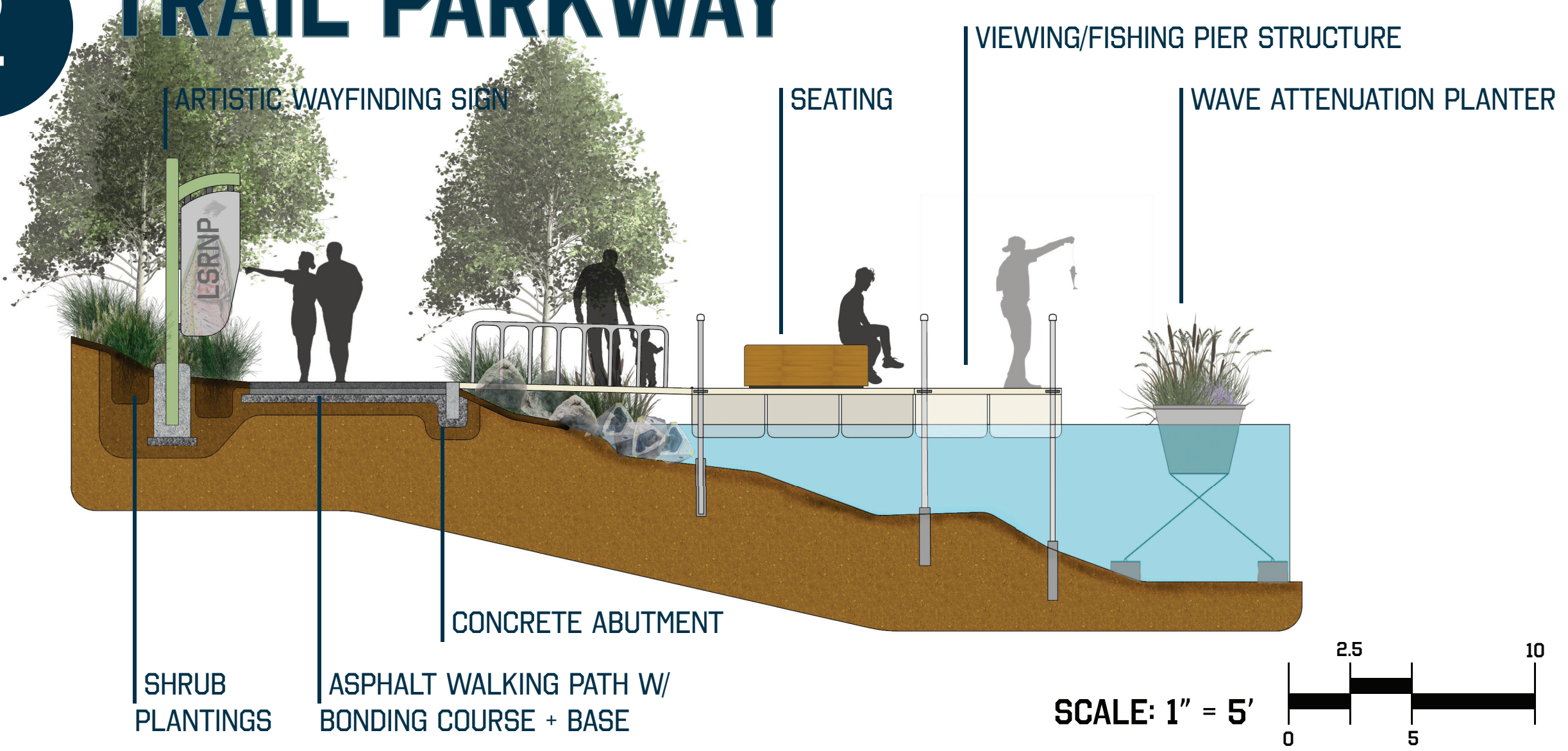
Enhancing shoreline habitats to break up the linear flow of the river current and allowing for pockets in the water will allow for more protection and cover among fish and other aquatic life.

- A** Log/Root Wad Placement (Typ.)
- B** Pocket for Aquatic Habitat
- C** Boulder Shoreline
- D** Riparian Shoreline

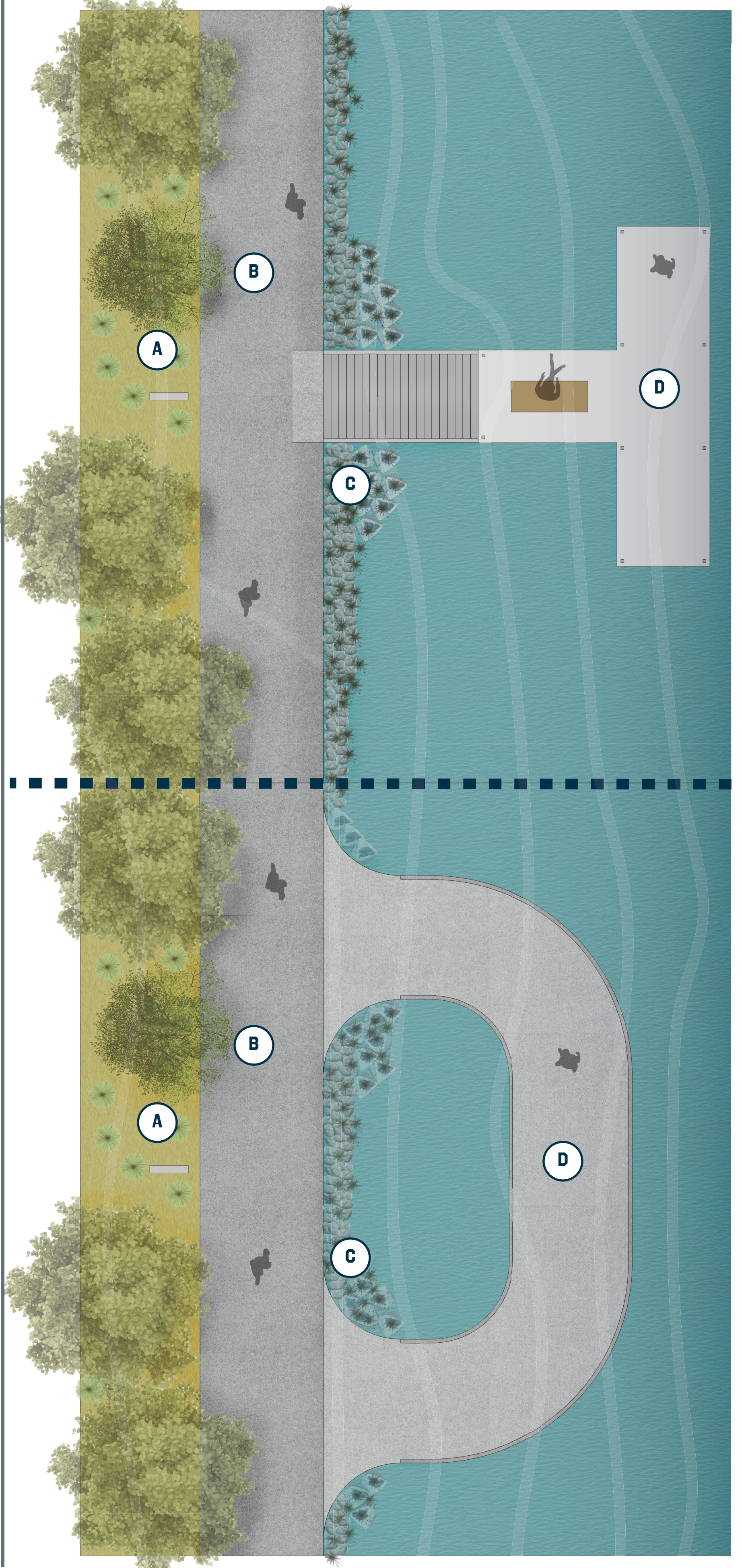


Trail design along the Lower Snake River Nature Preserve aims to allow for up close interactions with the newly revamped river corridor. Whether it may be strolling along the riparian area, viewing wildlife, or fishing, a multitude of activities are created.

2 TRAIL PARKWAY



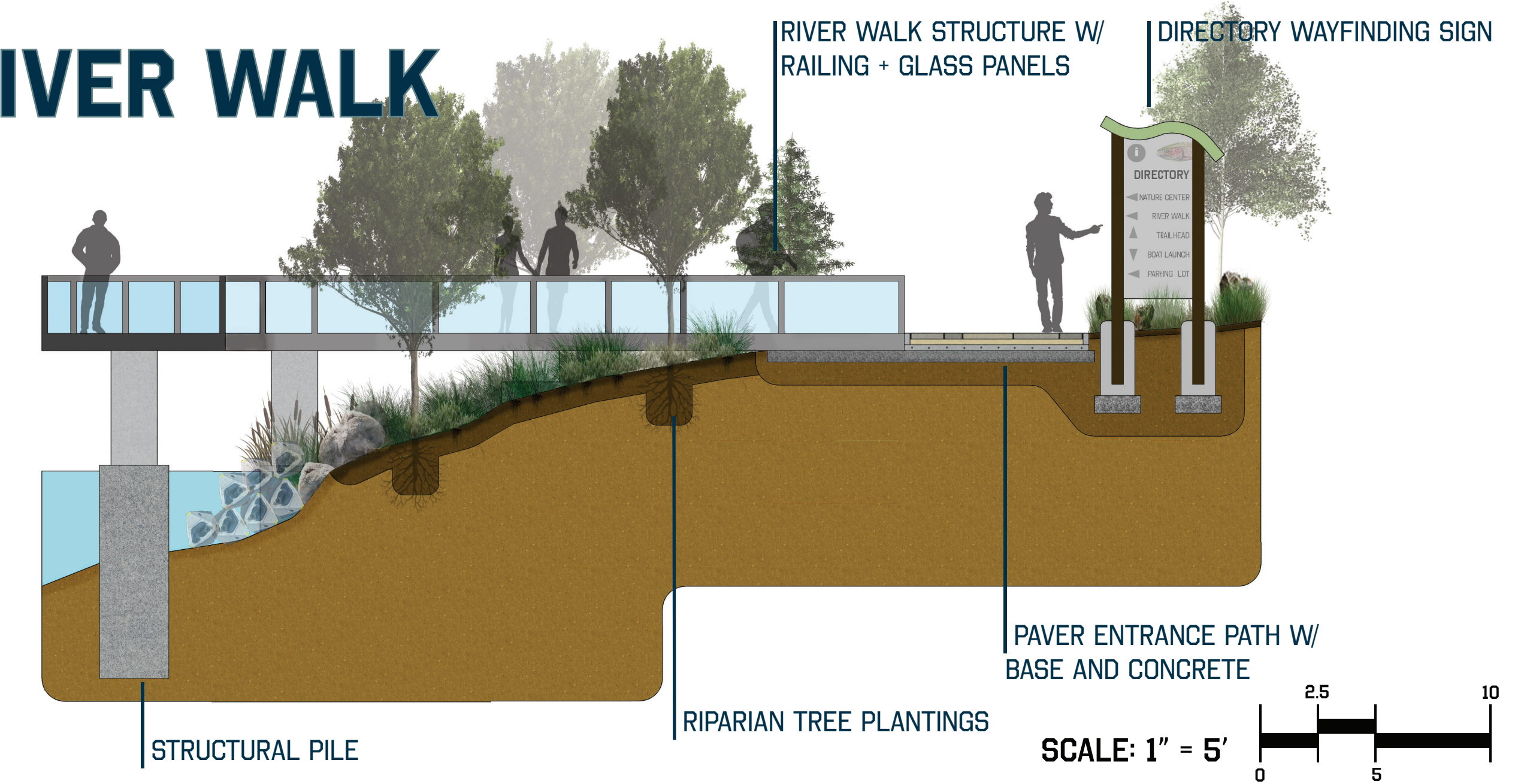
SHORELINE INTERACTION TYPOLOGIES



A more temporary approach to a structure used for interacting with the river. This feature can be adjusted for varying conditions and river levels if needed.

A more permanent interaction structure can be used in other areas along the river corridor. The loop shape mends well with the trail.

3 RIVER WALK

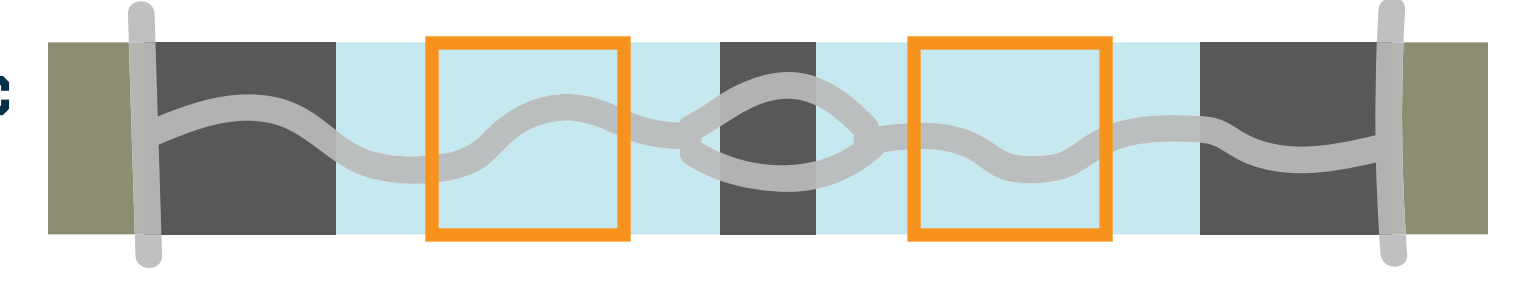


RIVER WALK STRUCTURE ZONES

MEANDERING WALKWAY

The winding and meandering walkway structure across the river allows for a unique way to stroll across the area that was once the hydroelectric dam structure. These structural walkways average about twelve feet above the average water level.

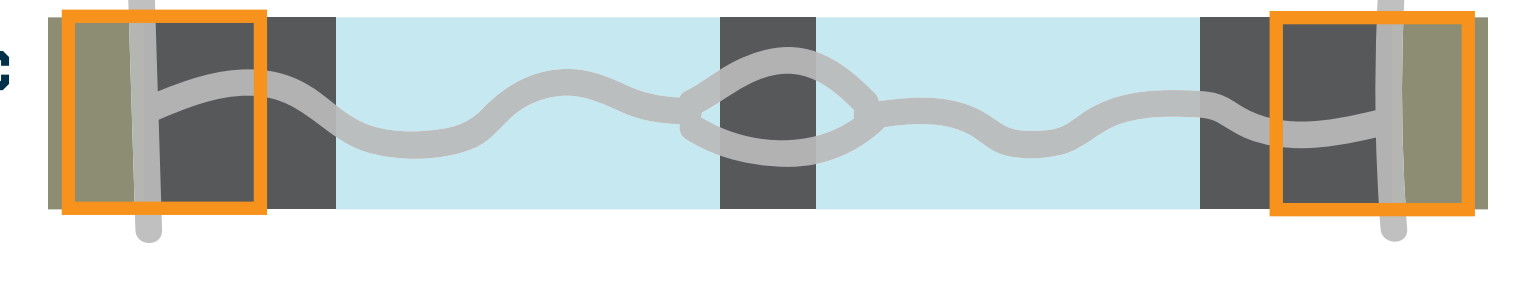
DIAGRAMMATIC KEY MAP



TRAIL SYSTEM CONNECTION

The river walk structure over the water body begins and terminates with connections to the bigger trail network, providing seamless circulation throughout the extents of the trail master plan. At these hubs there shall be a multitude of amenities and wayfinding details for one to successfully rest and move on to more primitive areas of the site.

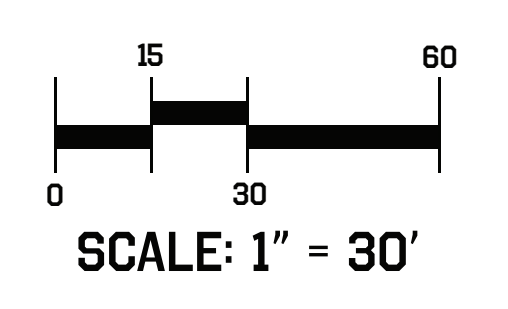
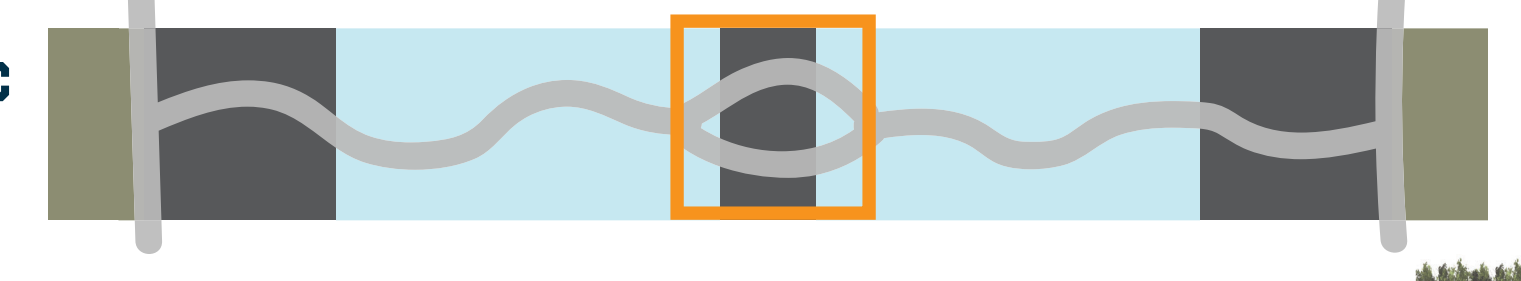
DIAGRAMMATIC KEY MAP



ISLAND OBSERVATION LOOP

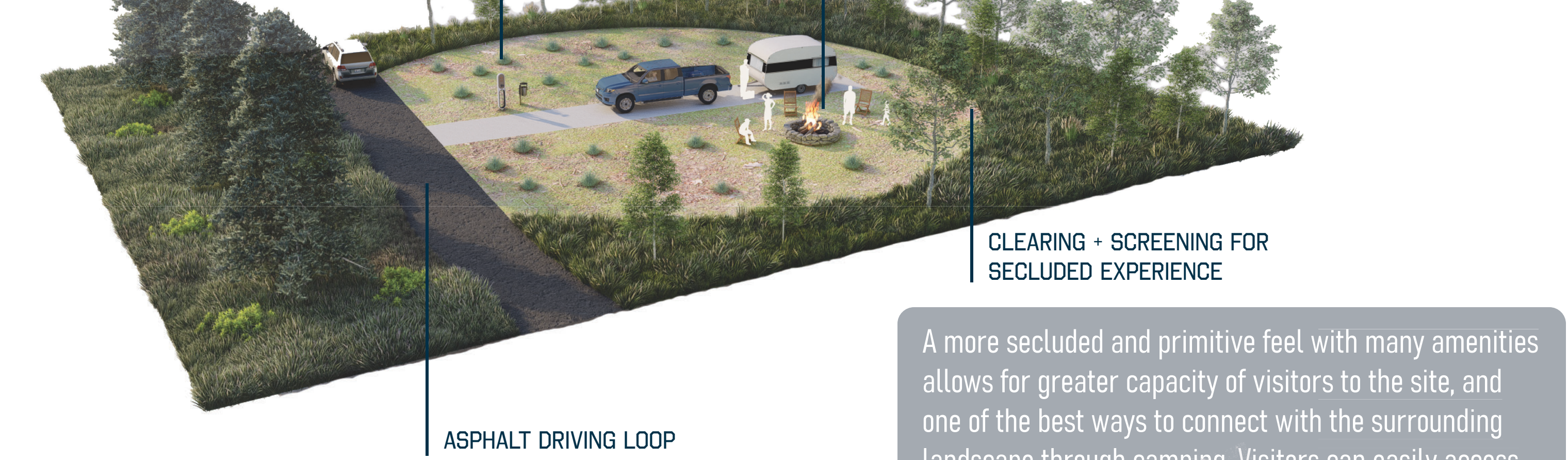
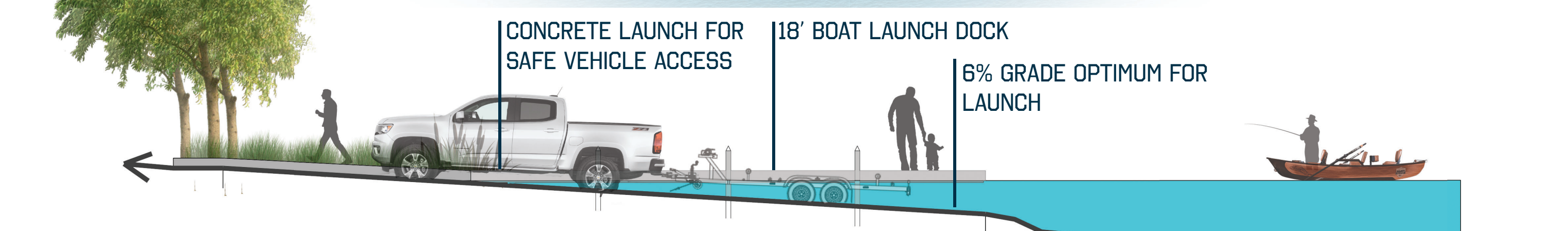
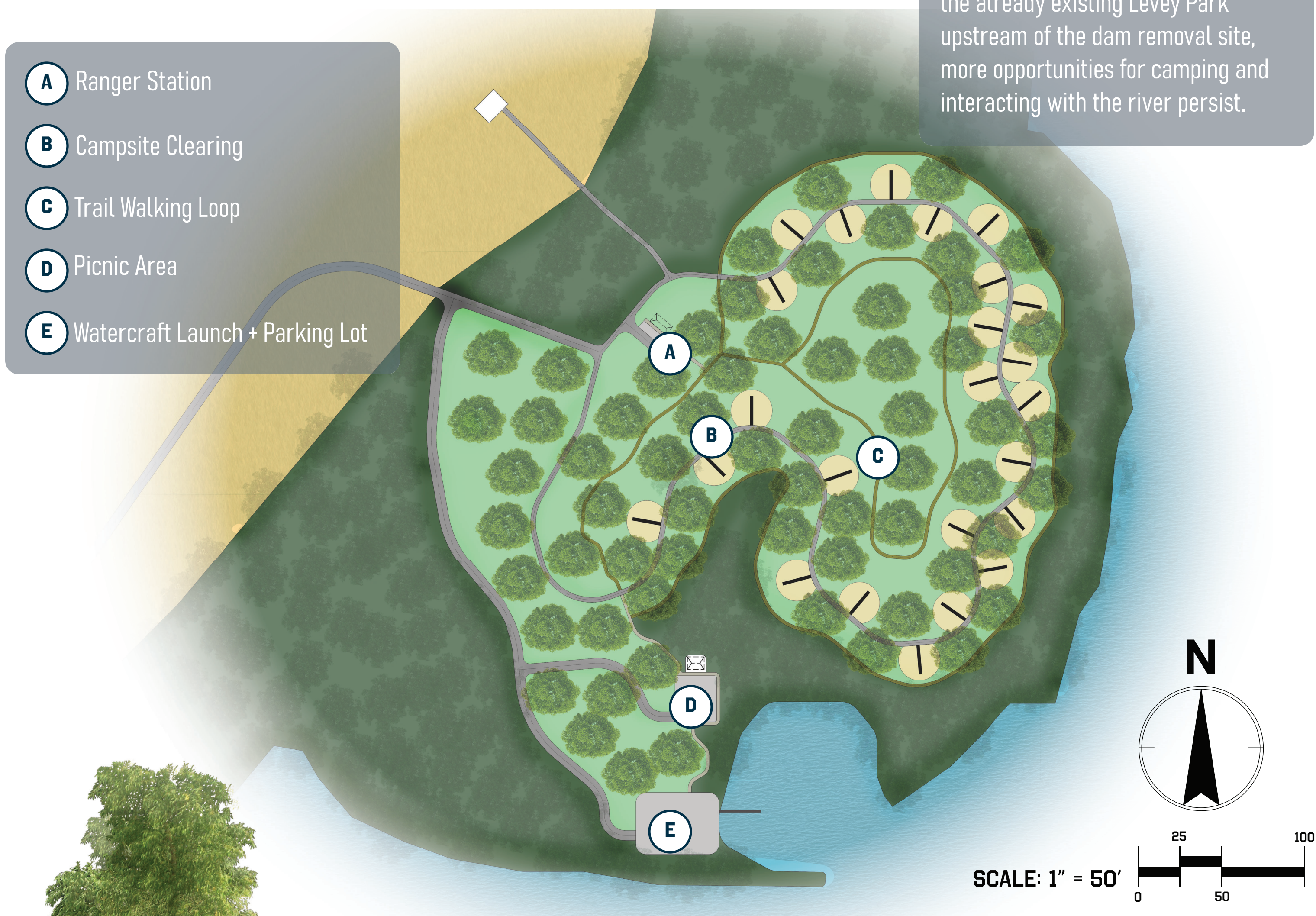
A split loop for observation in the river walk structure allows for different views of the island and natural setting below the walkway. Viewers can enjoy the almost untouched life below, serving as yet another educational opportunity for observing the ever-changing life along the Lower Snake River.

DIAGRAMMATIC KEY MAP



4 LEVEY PARK CAMPGROUND + RECREATIONAL AMENITIES

- A Ranger Station
- B Campsite Clearing
- C Trail Walking Loop
- D Picnic Area
- E Watercraft Launch + Parking Lot



PO4. Levey Park Campsite

A more secluded and primitive feel with many amenities allows for greater capacity of visitors to the site, and one of the best ways to connect with the surrounding landscape through camping. Visitors can easily access the other features of the larger Lower Snake River Nature Preserve within this smaller site.

RIVER CORRIDOR SECTION

