

# Site Analysis

## Surrounding Context



Located along the Delaware River in the Fishtown district of Philadelphia, the 30-acre site is adjacent to the well-used Penn Treaty Park. The site is not welcoming or accessible, and it lacks value for residents and migrating wildlife.

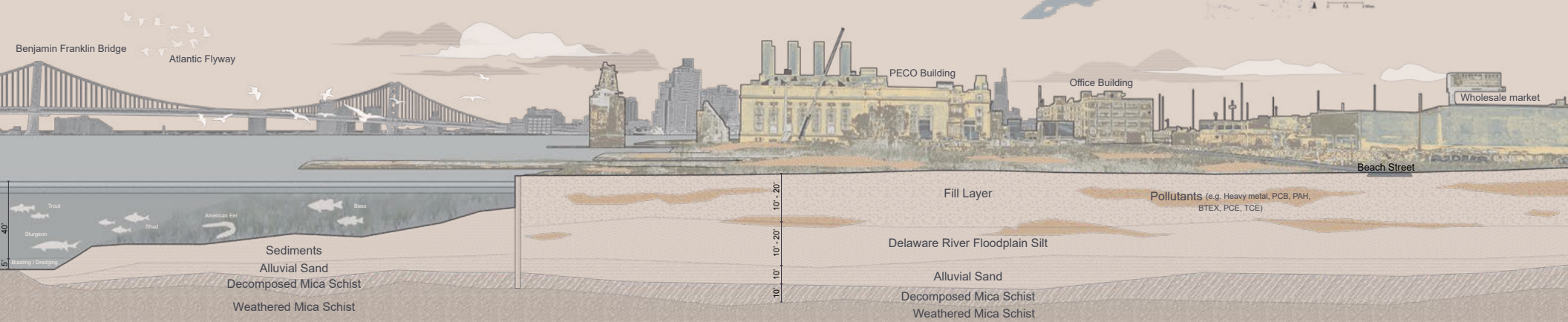
## Accessibility



## Site Location

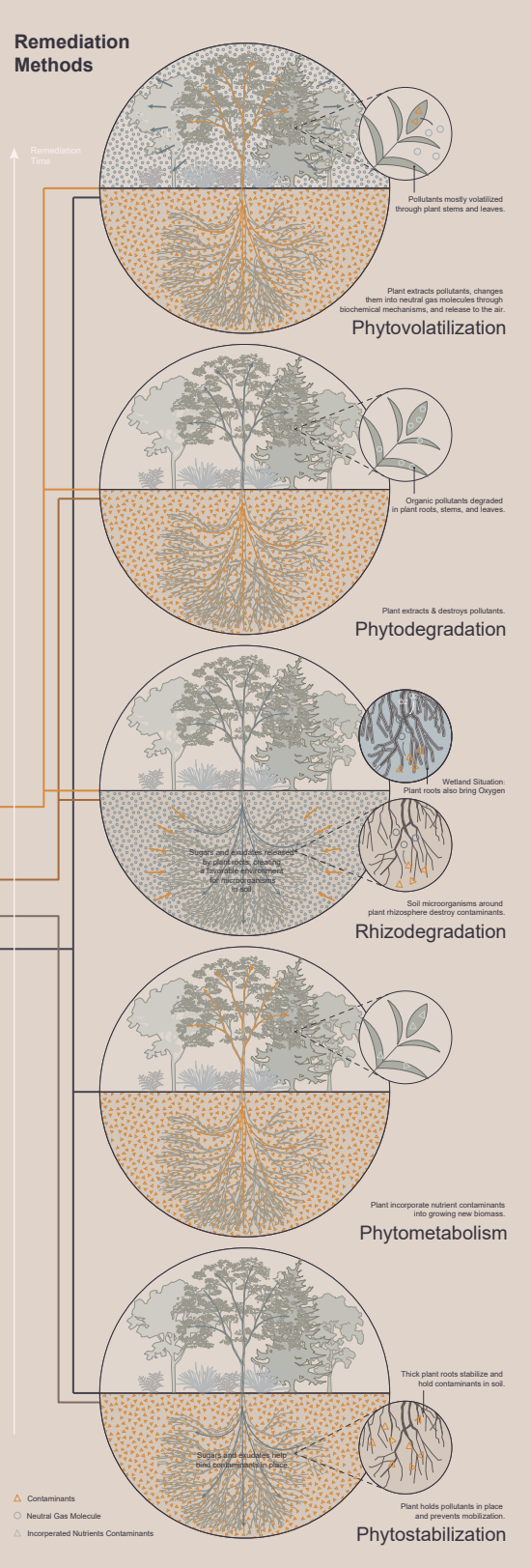
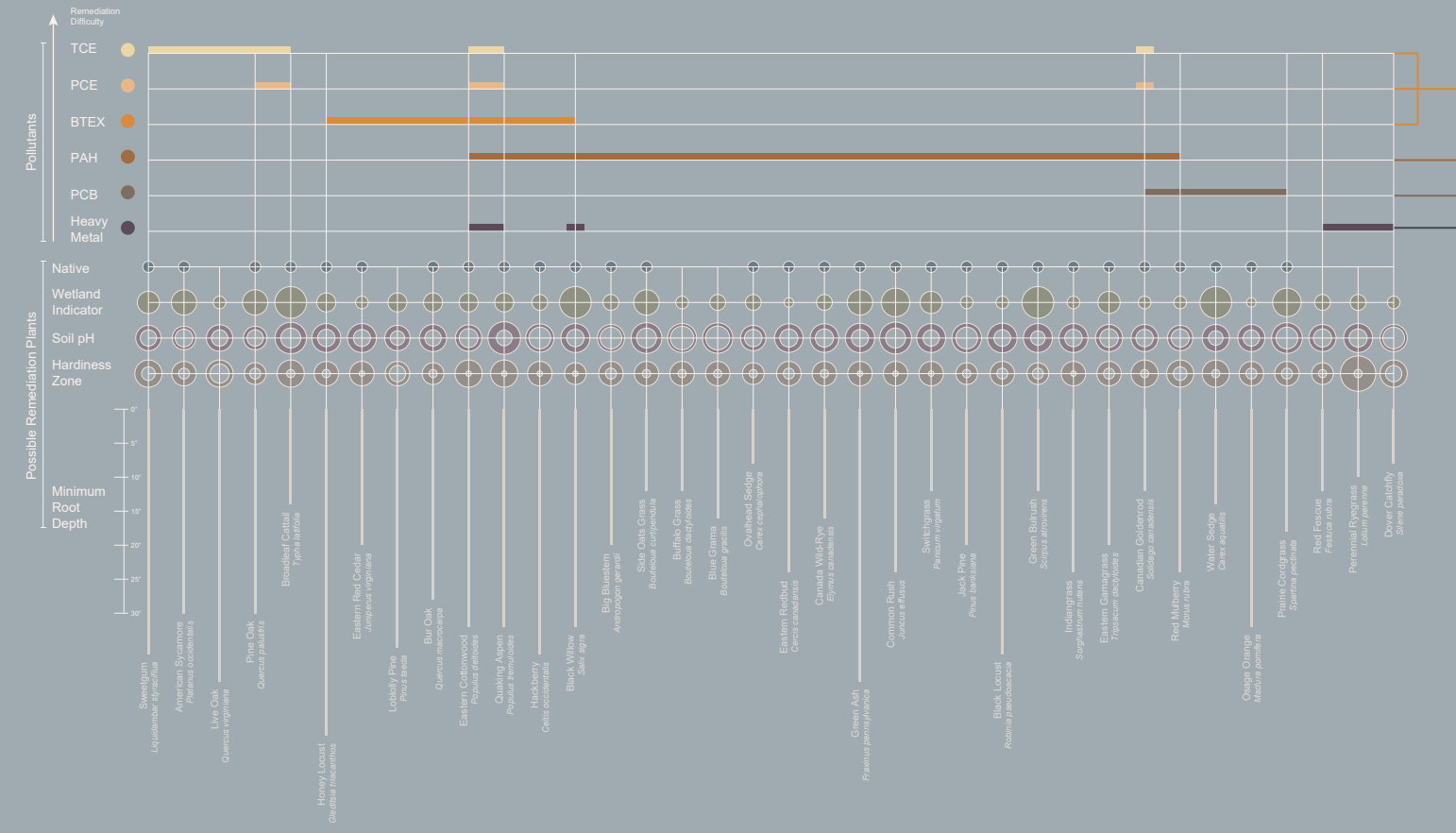


## Section Perspective of Site Condition





## Site Pollutants and Remediation Palette



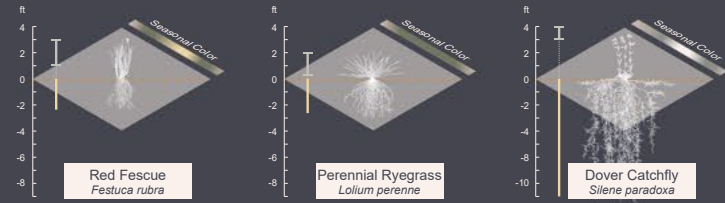
# Choice of Phytoremediation Plants

## Tree Species Used

## Herbaceous Species Used

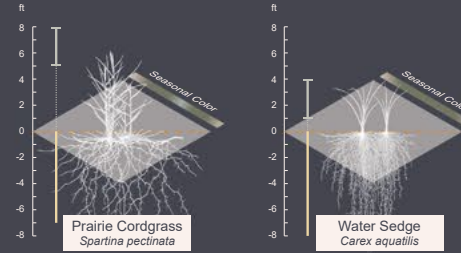
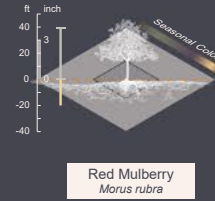
### Remediation Group 1

Plants mostly focus on Heavy Metals.



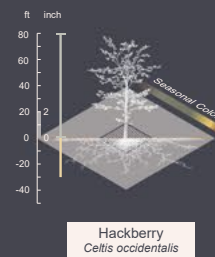
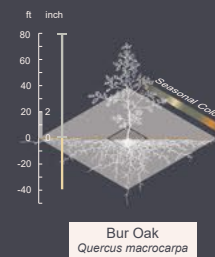
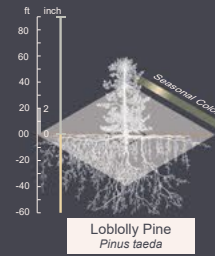
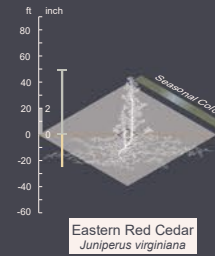
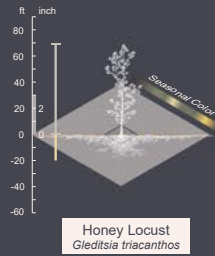
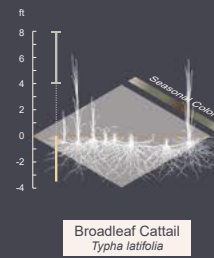
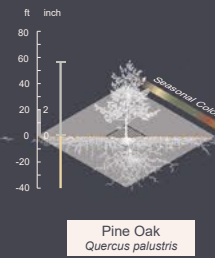
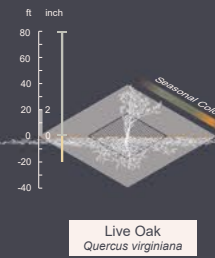
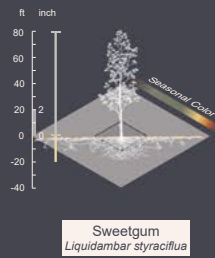
### Remediation Group 2

Plants mostly focus on PCB.



### Remediation Group 3

Plants mostly focus on Organic Pollutants.



- Growth Rate (inch/year)
- Maximum Height when Mature
- Typical Root Depth
- ▨ Typical Canopy Width

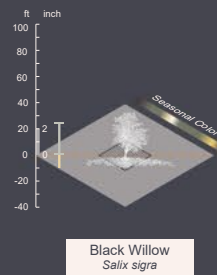
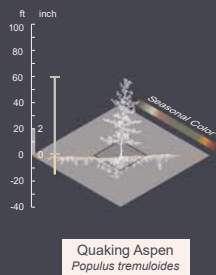
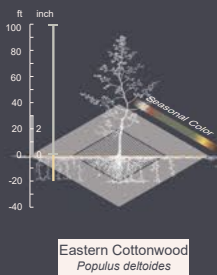
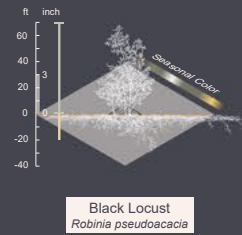
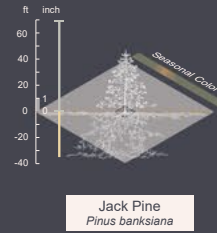
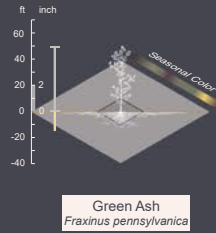
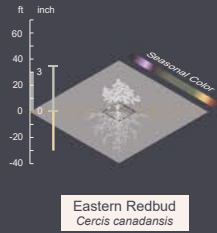
# Choice of Phytoremediation Plants

## Remediation Group 4

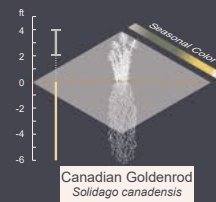
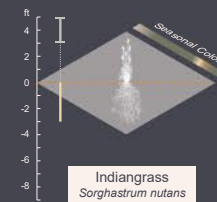
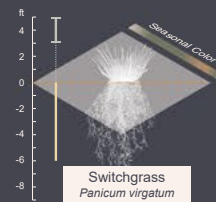
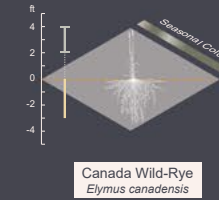
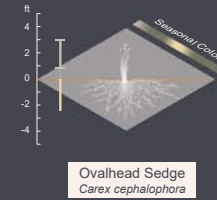
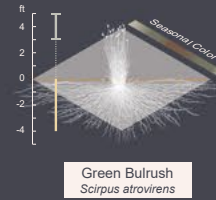
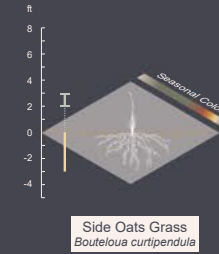
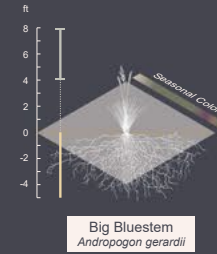
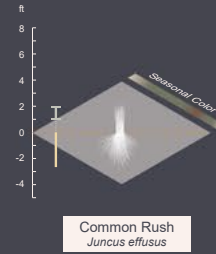
Plants mostly focus on PAH.

## Matrix Group

### Tree Species Used

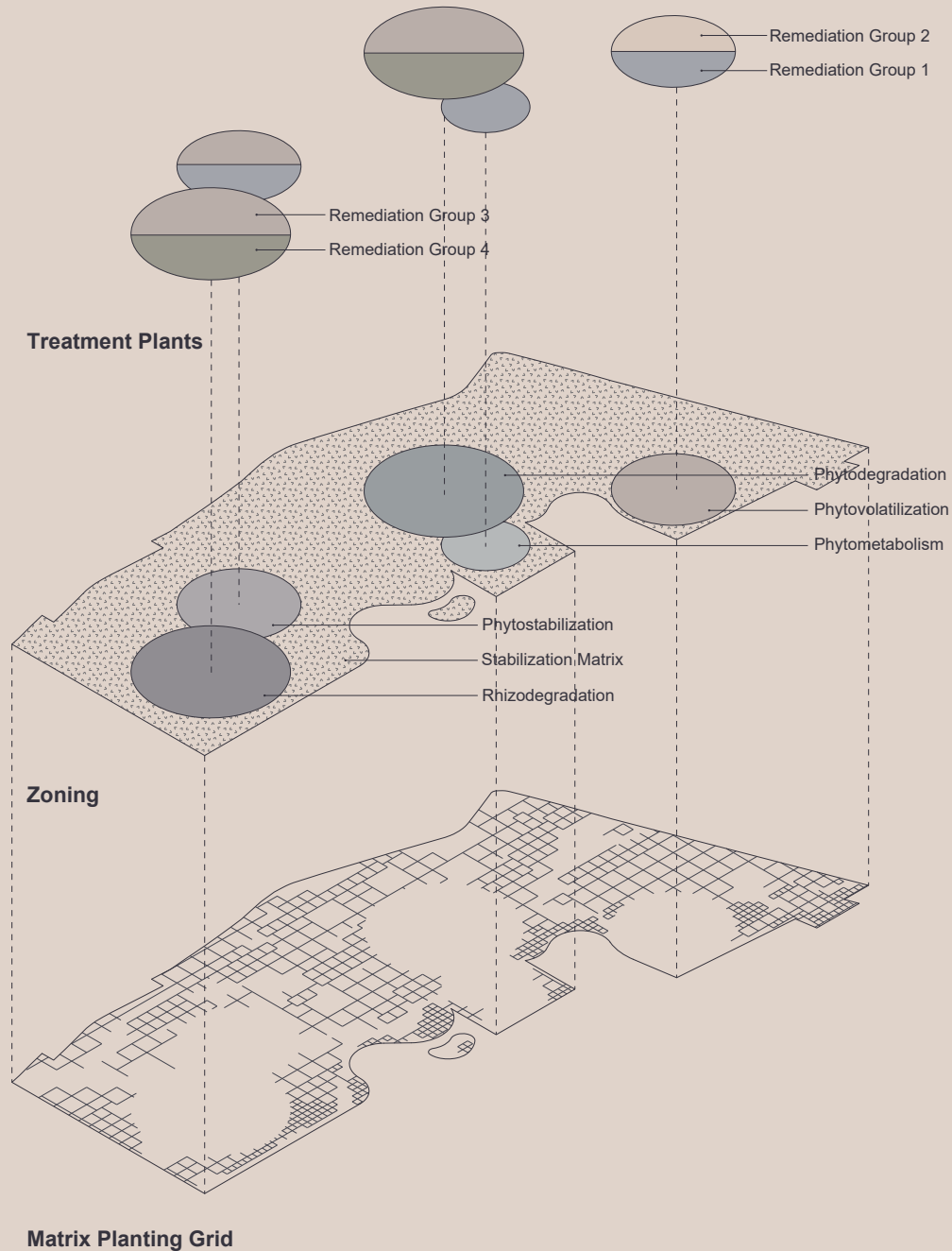


### Herbaceous Species Used



- Growth Rate (inch/year)
- Maximum Height when Mature
- Typical Root Depth
- ▨ Typical Canopy Width

# Overall Zoning Analysis



See the previous two pages for species details

## Remediation Group 1

*Plants mostly focus on Heavy Metals.*

Dover Catchfly      Perennial Ryegrass      Red Fescue

## Remediation Group 2

*Plants mostly focus on PCB.*

Water Sedge      Prairie Cordgrass      Red Mulberry

## Remediation Group 3

*Plants mostly focus on Organic Pollutants.*

Broadleaf Cattail      Pine Oak      Live Oak  
 Sweetgum      Loblolly Pine      Eastern Red Cedar  
 Honey Locust      Hackberry      Bur Oak

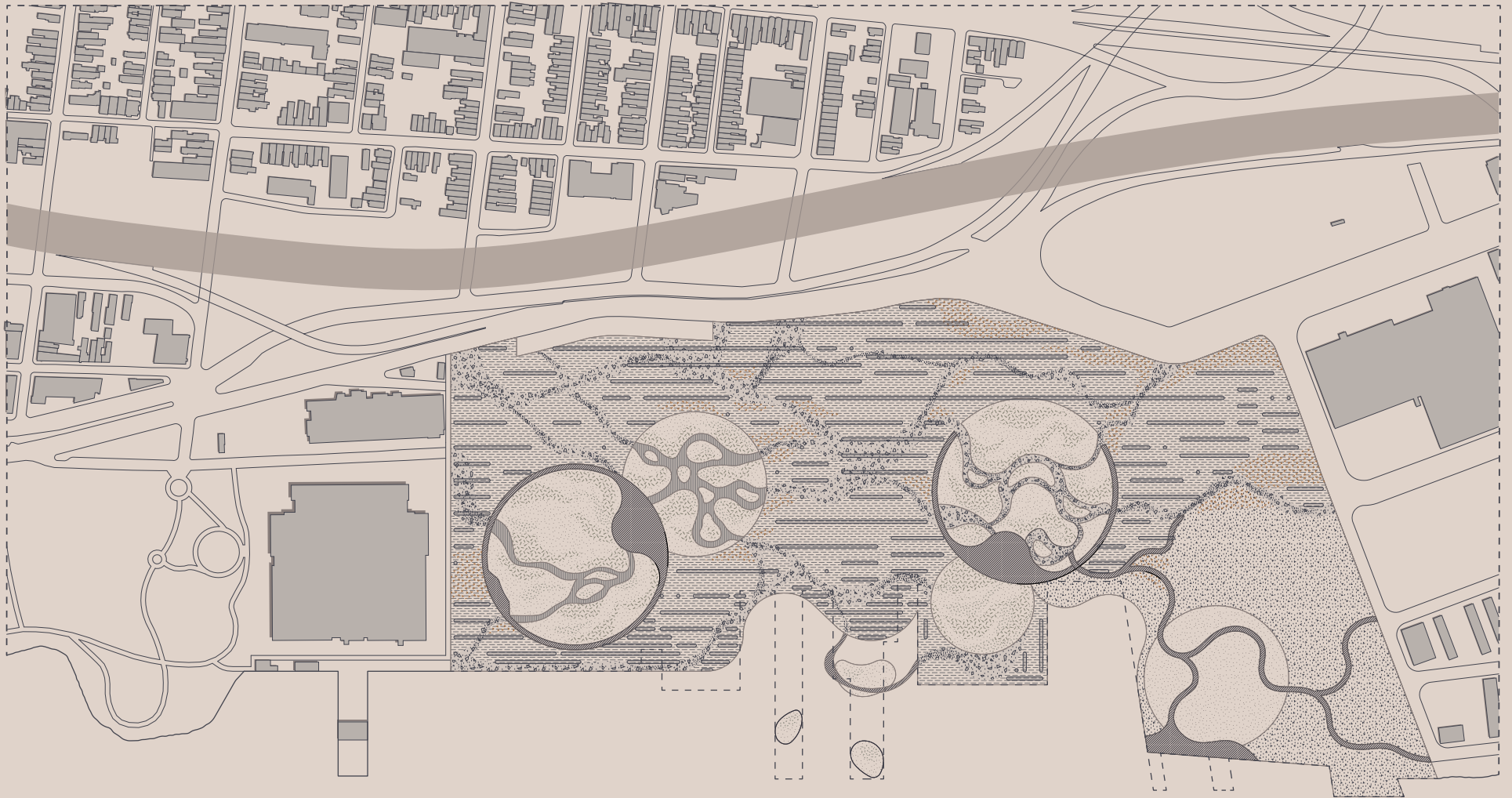
## Remediation Group 4

*Plants mostly focus on PAH.*










Side Oats Grass      Big Bluestem      Common Rush  
 Canada Wild-Rye      Ovalhead Sedge      Green Bulrush  
 Indiangrass      Switchgrass      Jack Pine  
 Green Ash      Eastern Redbud      Black Locust

The design consists of two major parts: the remediation treatment zone and the surrounding matrix. The remediation zone consists of five treatment circles, each representing one kind of remediation method. Specialized plants for each method will be planted in each circle.

## Ground Texture Design



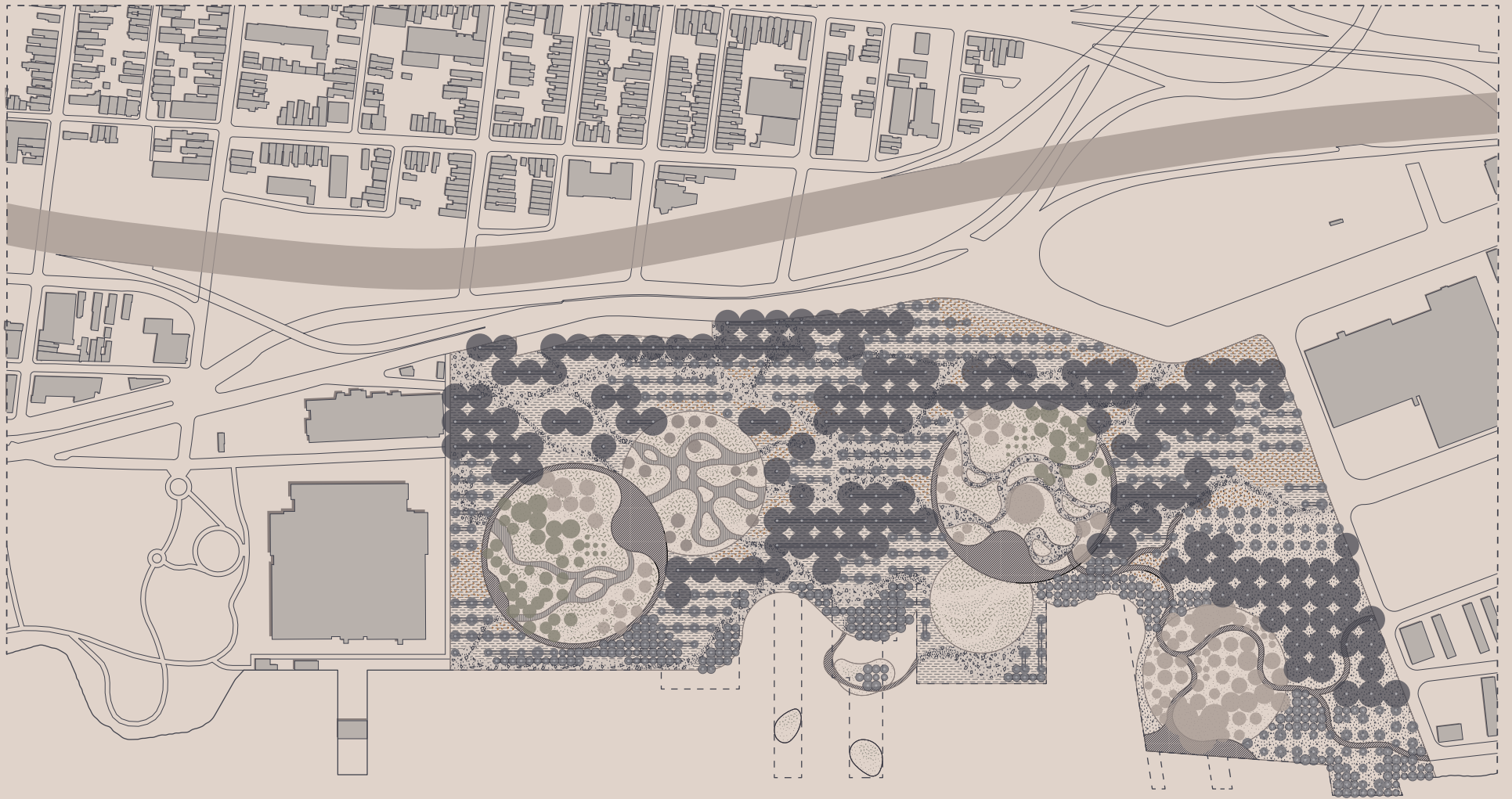
The proposal selectively removes the current asphalt paving only to allow for planting. By cutting and reorganizing the asphalt in certain areas, new patterns are created that invite and guide people through the space while preserving the site's material history.

-  Elevated Structure/Path
-  Shed Structure
-  Cutting Asphalt
-  Cracking Asphalt
-  Asphalt with Goldenrod
-  Existing Vegetation
-  Herbaceous Group 1
-  Herbaceous Group 2
-  Herbaceous Group 3

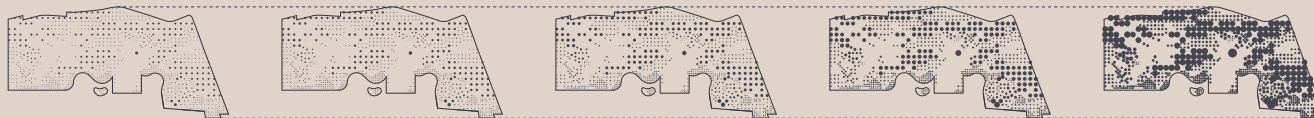
0' 60' 180'



# Planting Design



## Tree Growth Pattern



Sapling

Mature

0' 60' 180'



- Tree Group 1
- Tree Group 2
- Tree Group 3
- Black Willow
- Quaking Aspen
- Eastern Cottonwood
- ▨ Elevated Structure/Path
- ▨ Shed Structure
- ▨ Cutting Asphalt
- ▨ Cracking Asphalt
- ▨ Asphalt with Goldenrod
- ▨ Existing Vegetation
- ▨ Herbaceous Group 1
- ▨ Herbaceous Group 2
- ▨ Herbaceous Group 3

## Elevated Deck of Phytovolatilization Circle



The existing condition of the phytovolatilization circle doesn't have asphalt on top and is mostly vacant land. Thus, an elevated path is added to keep people from accessing the pollutant as well as prevent people from stepping on the remediation plants.



## Matrix Forest



The matrix forest is the largest component of the design. Because we cannot identify the distribution of pollutants on site, the matrix forest consists of a grid system of three "supertree species" that can help with all kinds of contaminants.

## Canopy Walk of Phytostabilization Circle



There are walkway structures within the treatment circles, which provide a range of experiences without contacting the soil. People can be closer to the canopy and observe the remediation plants from above or use the structure to frame the view.

# Section Oblique and Site Model

## Seasonal Change in Section Oblique



## Site Model

