DOAN BROOK RESTORATION

PLANNING COMMISSION PRESENTATION

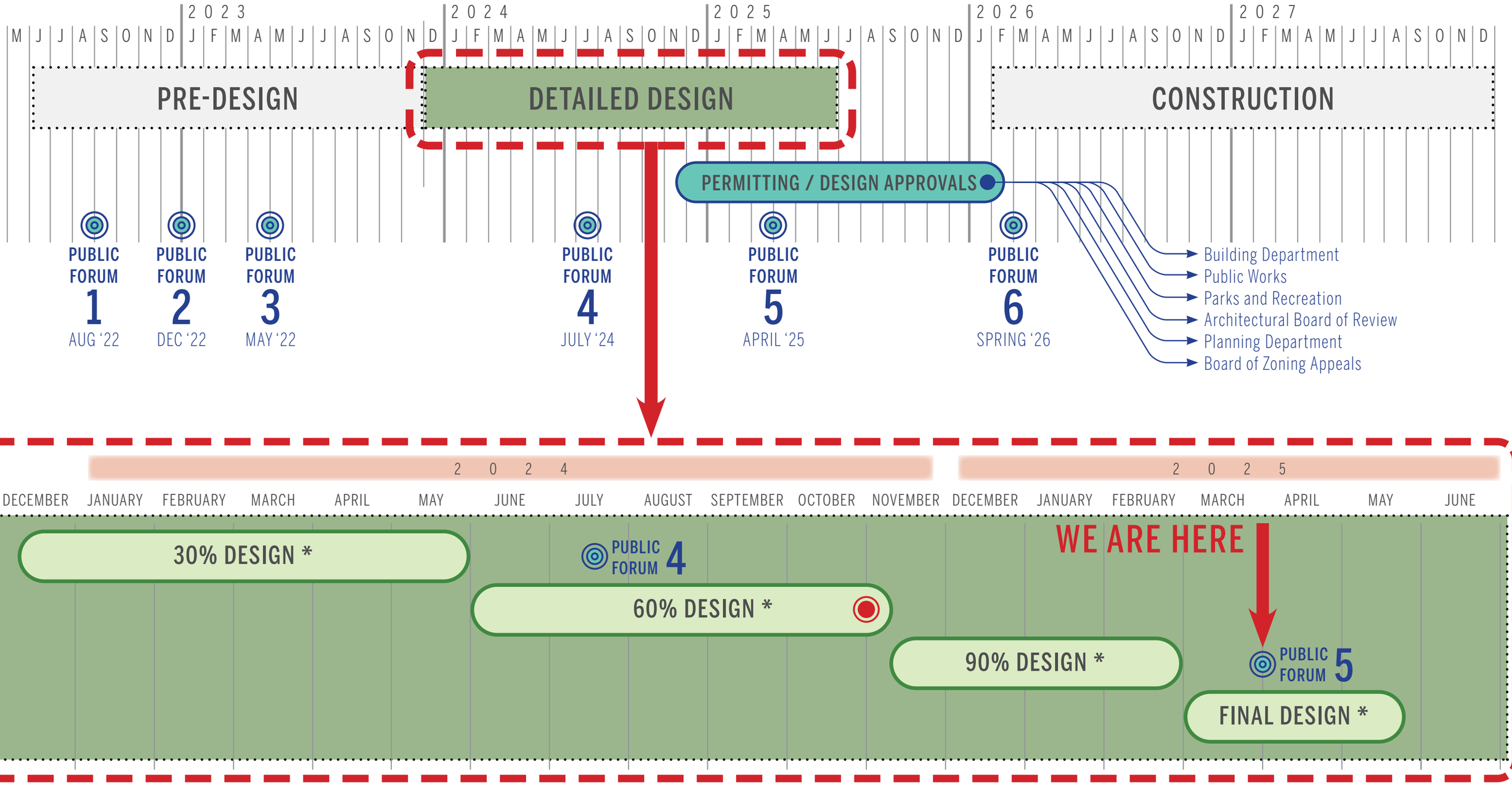
THE DOAN BROOK RESTORATION NEAR HORSESHOE PARK

JUNE, 2025

Northeast Ohio Regional Sewer District

STIMSON

DESIGN SCHEDULE



* DETAILED DESIGN TASKS FOR DISTRICT SCOPE AND CITIES (LANDSCAPE INTEGRATION) SCOPE RUN CONCURRENT TO EACH OTHER *

UNIVERSITY CIRCLE

AMBLER HEIGHTS

CLEVELAND HEIGHTS

SOUTH EUCLID

UNIVERSITY HEIGHTS

DOAN BROOK

BUCKEYE

LOWER LAKE

STUDY AREA

HORSESHOE LAKE

NORTH BRANCH

MIDDLE BRANCH

HORSESHOE LAKE
DRAINAGE AREA:
1,180 ACRES

UNIVERSITY CIRCLE
DRAINAGE AREA:
6,005 ACRES

MARSHALL LAKE

GREEN LAKE

WOODLAND HILLS

LOWER SHAKER LAKE
DRAINAGE AREA:
3,121 ACRES

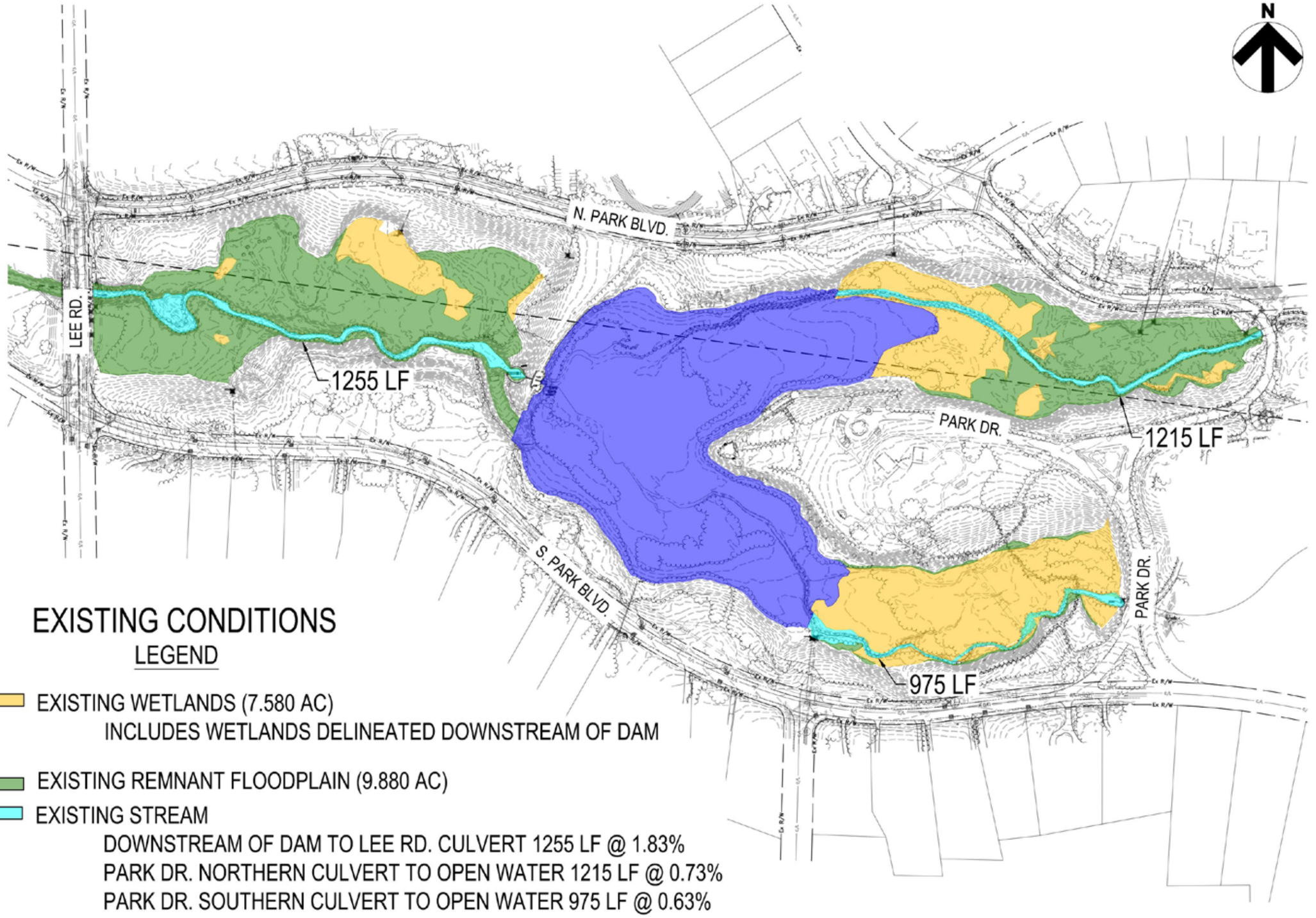
SOUTH BRANCH

MT PLEASANT

SHAKER HEIGHTS

Key plan of entire watershed

EXISTING CONDITIONS



EXISTING CONDITIONS

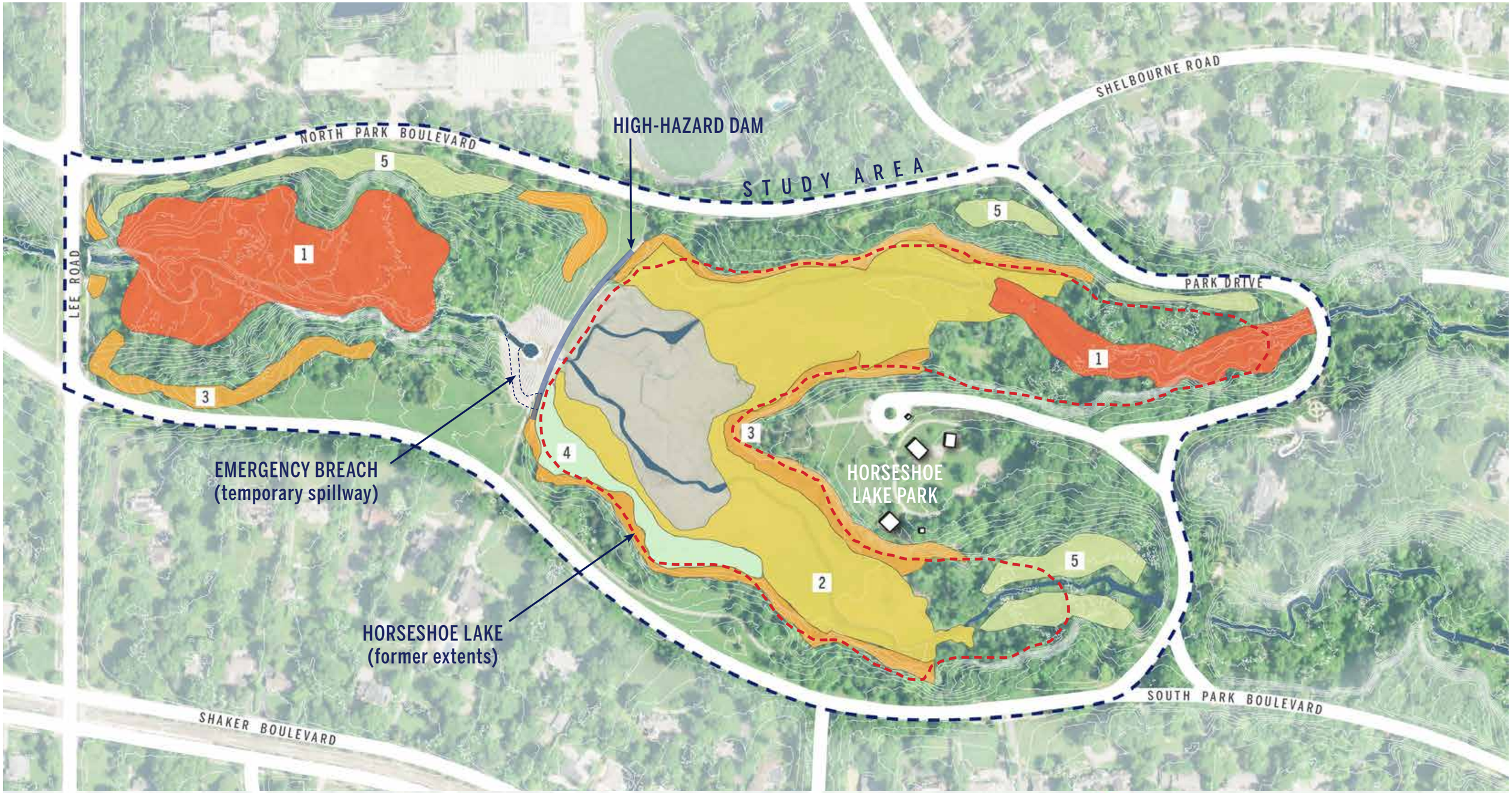
LEGEND

EXISTING WETLANDS (7.580 AC)
INCLUDES WETLANDS DELINEATED DOWNSTREAM OF DAM

EXISTING REMNANT FLOODPLAIN (9.880 AC)

EXISTING STREAM
DOWNSTREAM OF DAM TO LEE RD. CULVERT 1255 LF @ 1.83%
PARK DR. NORTHERN CULVERT TO OPEN WATER 1215 LF @ 0.73%
PARK DR. SOUTHERN CULVERT TO OPEN WATER 975 LF @ 0.63%

EXISTING OPEN WATER PRIOR TO BREACH & DRAINING (12.209 AC)



INVASIVE PLANT COMMUNITIES

1. **Stream Bank |** honeysuckle, privet, japanese knotweed
2. **Freshwater |** tyhpa, phragmites
3. **Pioneer Forest Understory |** japanese honeksuckle, european buckthorn
4. **Wet Meadow |** fleabane, iris psuedacorus
5. **Upland Herbaceous Invasives |** vinca, goutweed


CATTAIL


PHRAGMITES

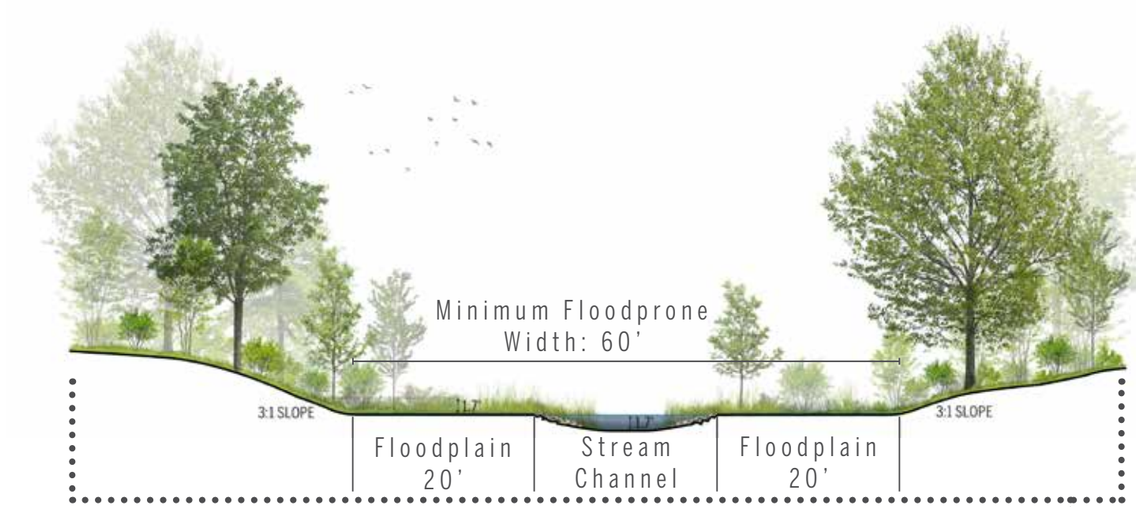

PRIVET


HONEYSUCKLE


BUCKTHORN

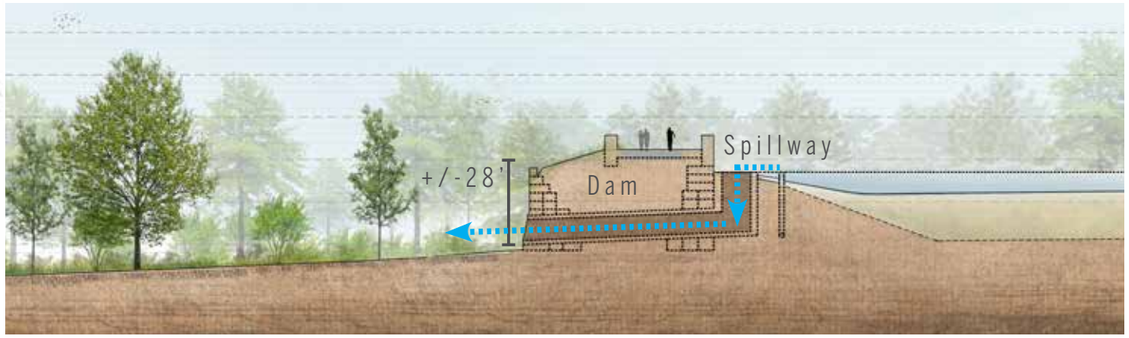

VINCA


KNOTWEED



Restore the stream corridors

and enhance ecological sustainability

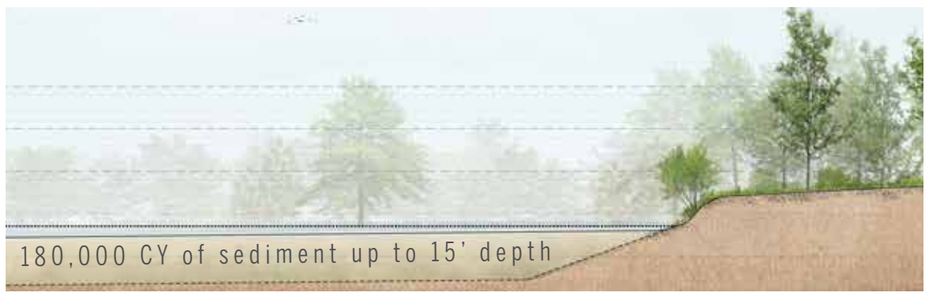


Remove the dam

to mitigate risk to the community and environment during and after construction

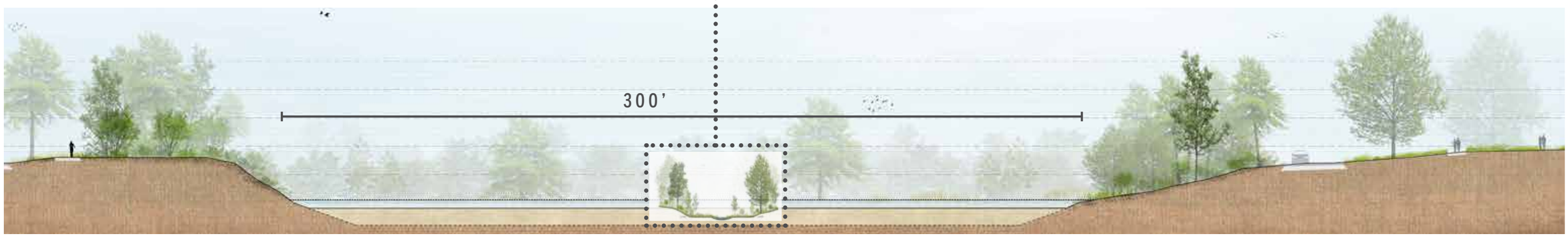
Manage waterway sediment

to accommodate the project program in a cost effective way

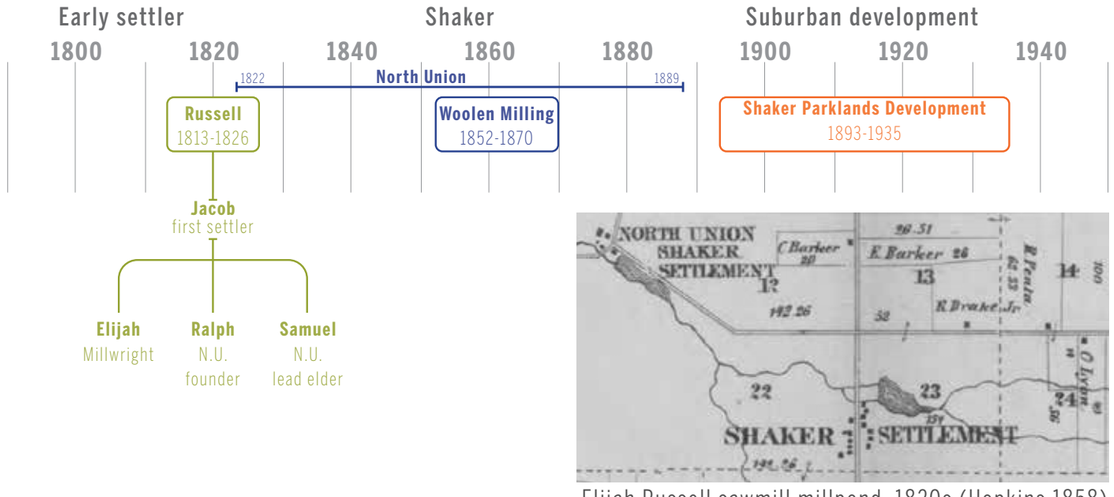


Develop a comprehensive landscape plan

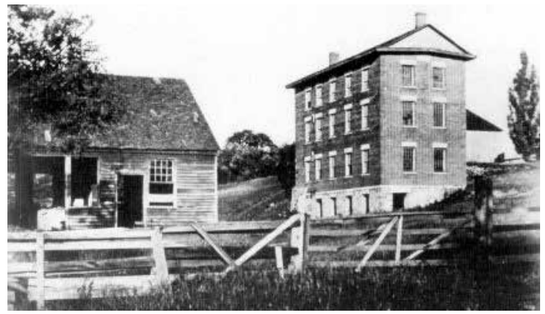
that integrates ecological, cultural, & recreational amenities throughout the 60-acre study area



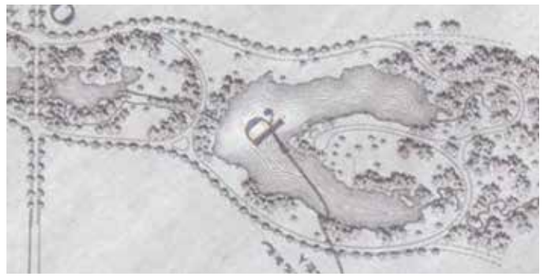
HISTORICAL RESOURCES TIMELINE



Elijah Russell sawmill millpond, 1820s (Hopkins 1858)



Woolen Mill & blacksmith shop c. 1895



Ernest Bowditch & Charles pratt - 1894

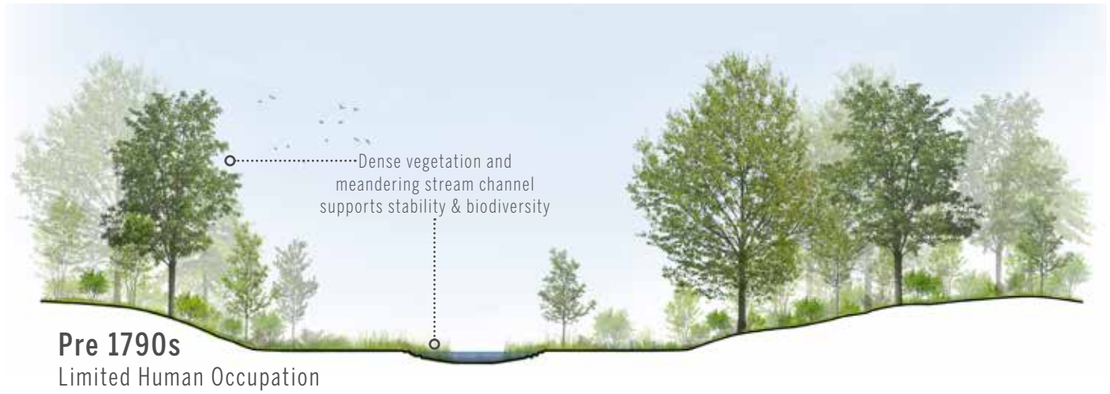
Upper Lake spillway outfall c. 1900

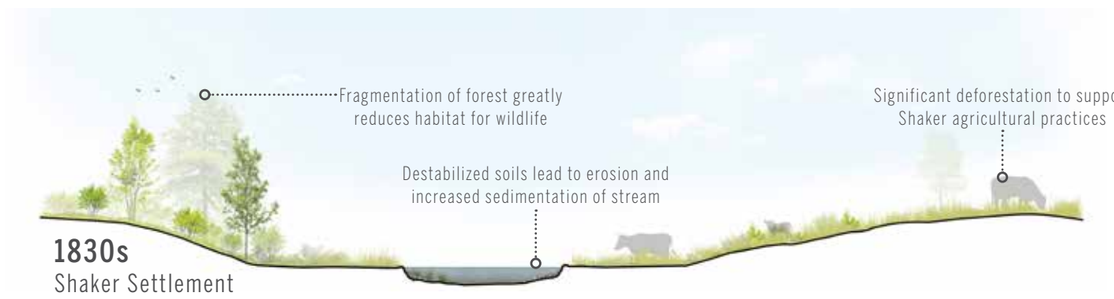
Pitkin & Mott - 1932

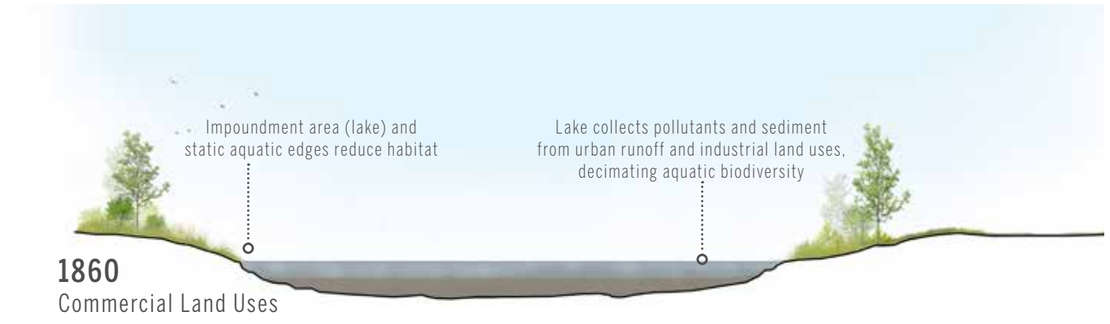
Deforestation c. 1900

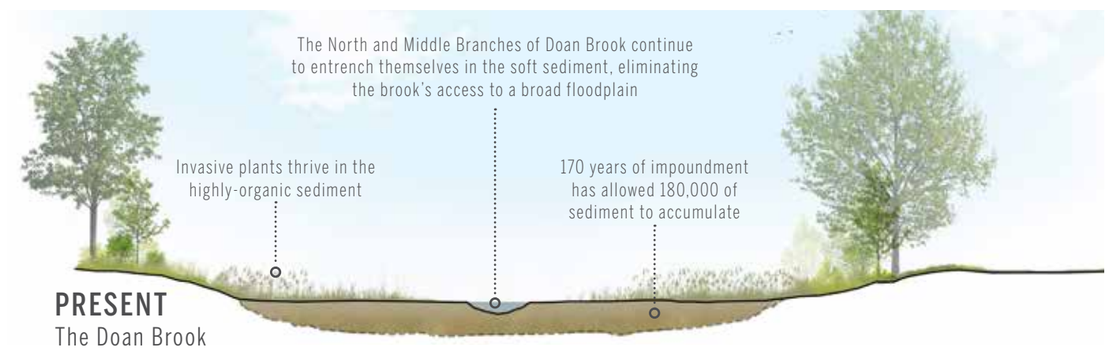
Proctor Noyes - 1940

EXPLOITING NATURAL RESOURCES



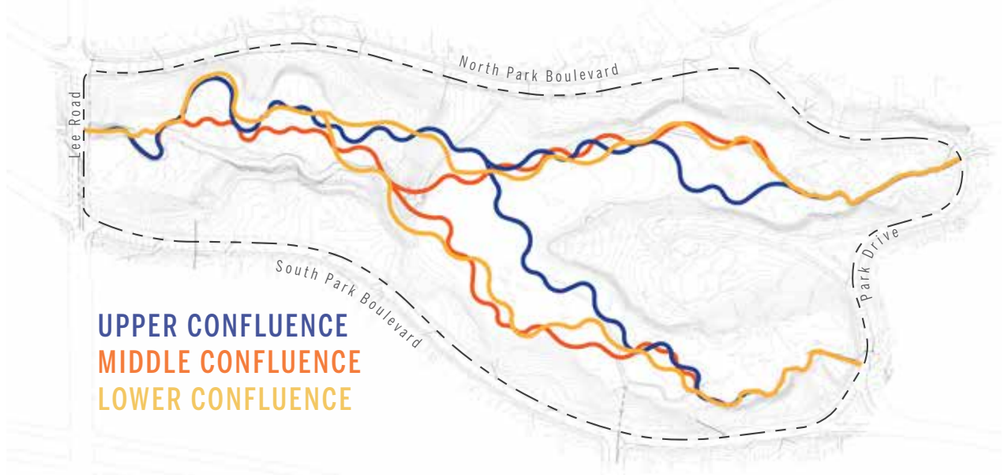






STREAM RESTORATION PLAN | ALTERNATIVES ANALYSIS

STREAM ALIGNMENT ALTERNATIVES EVALUATION



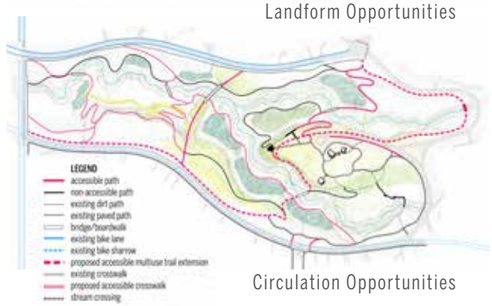
Primary Criteria for Evaluation:

- Average stream & floodplain velocity
- Average stream & floodplain shear stress
- Active floofplain size (floodprone storage)
- Ecological uplift potential
- Historic preservation
- Sediment analysis
- Constructability
- Cost development

UPPER CONFLUENCE

Landform Opportunities

Hydrology Considerations



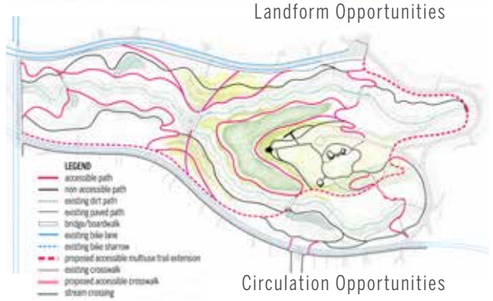
Circulation Opportunities

Planting Concept

MIDDLE CONFLUENCE

Landform Opportunities

Hydrology Considerations



Circulation Opportunities

Planting Concept

LOWER CONFLUENCE

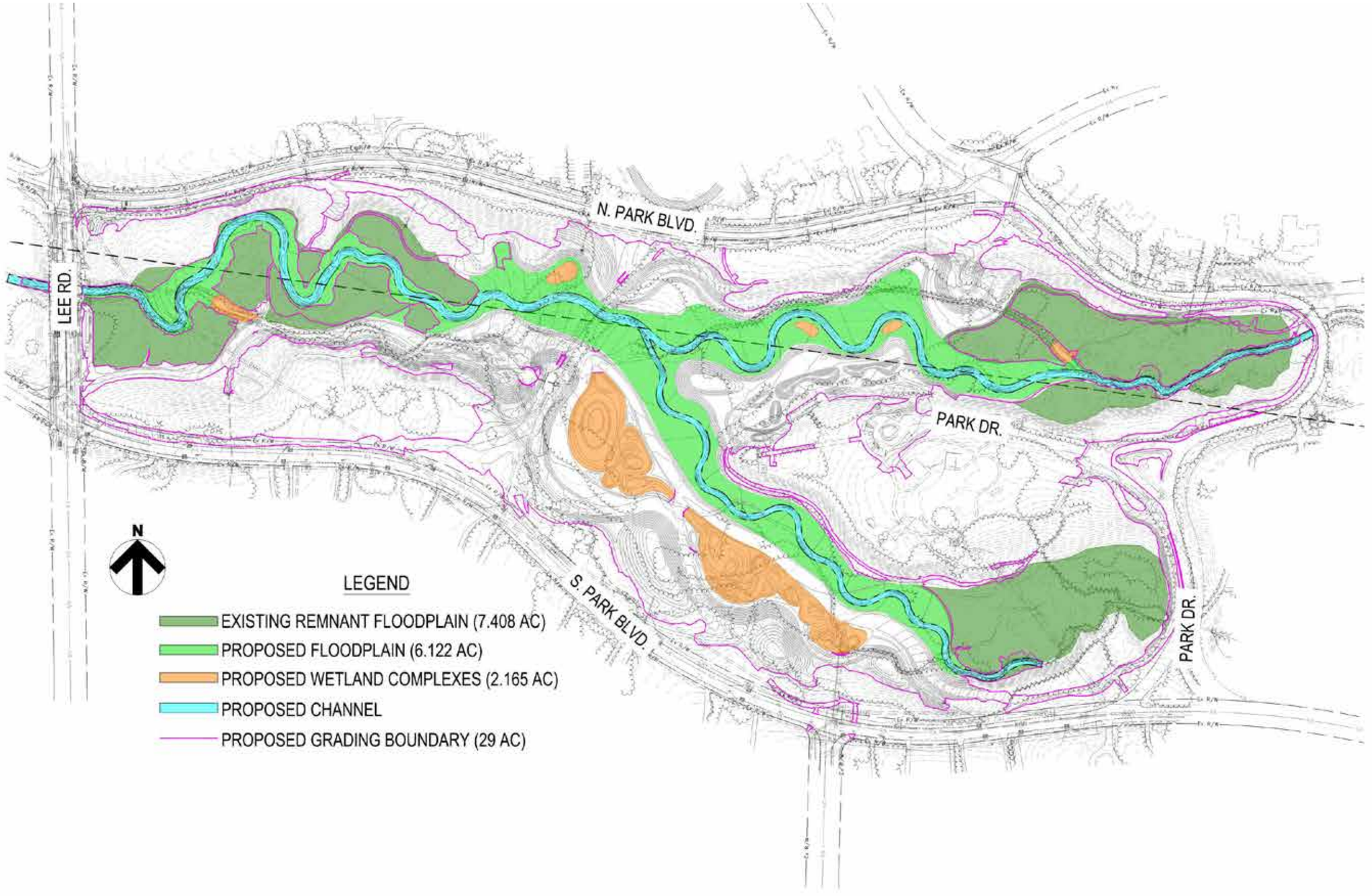
Landform Opportunities

Hydrology Considerations

Circulation Opportunities

Planting Concept

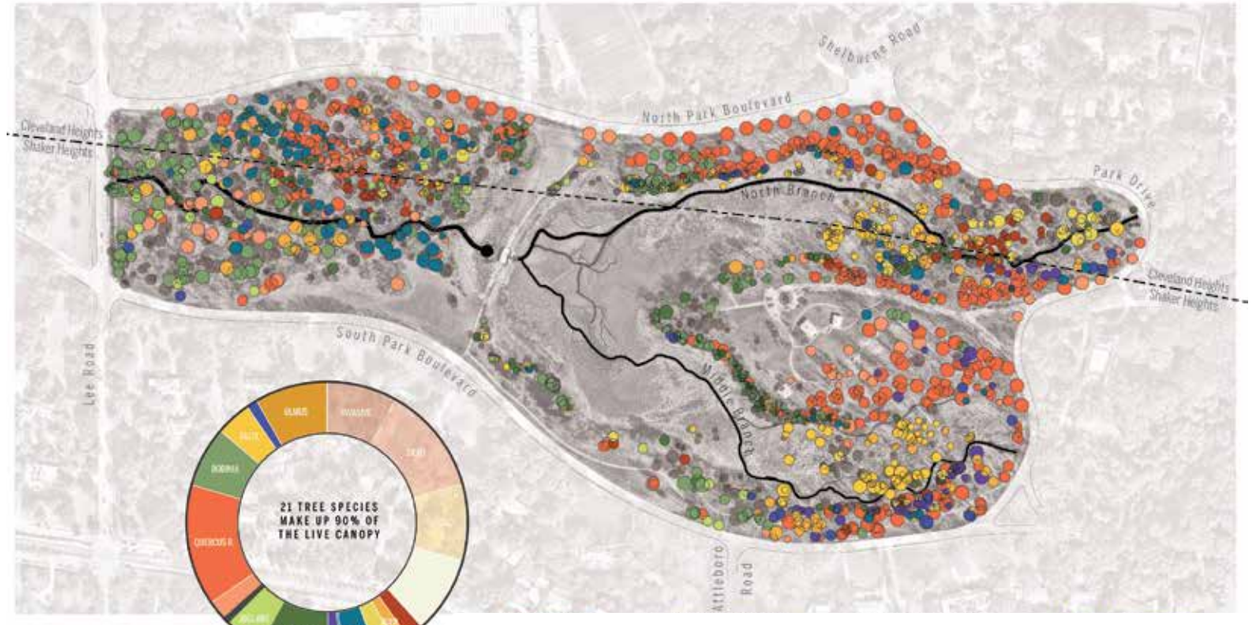
PROPOSED STREAM ALIGNMENT



STREAM ALIGNMENT

PROPOSED STREAM ALIGNMENT

TREE INVENTORY



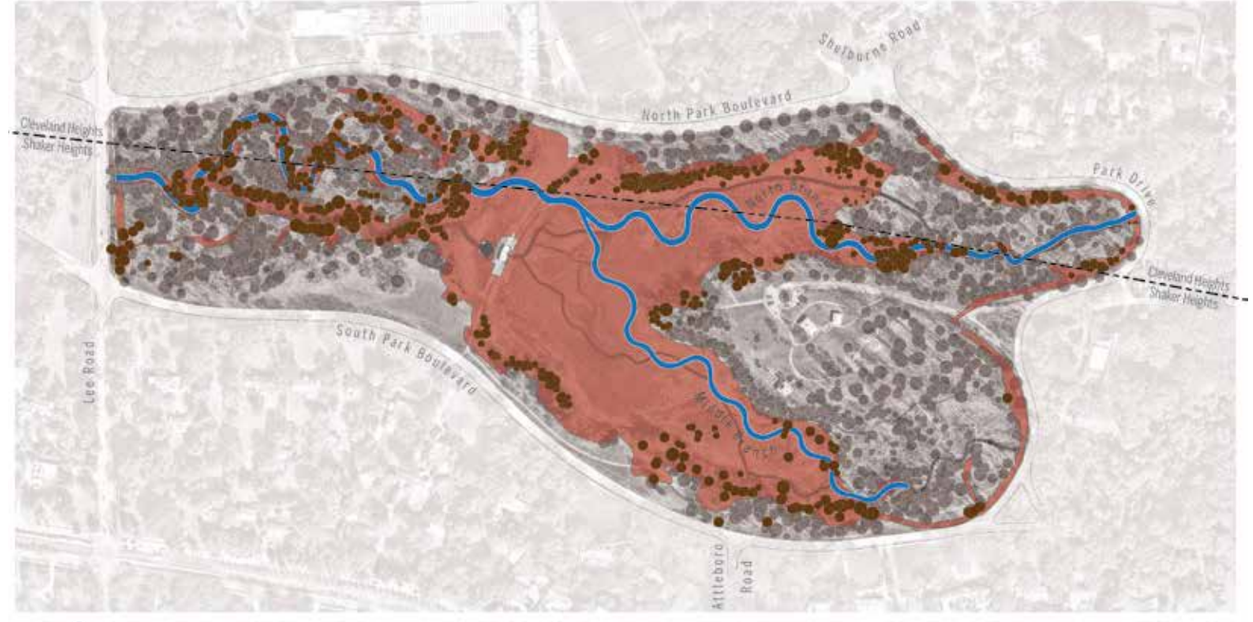
- ACER RUBRUM
- ACER SACCHARINUM
- ACER SACCHARUM
- CARYA CORDIFORMIS
- CARYA OVATA
- FAGUS GRANDIFOLIA
- FRAXINUS AMERICANA
- FRAXINUS PENNSYLVANICA
- JUGLANS CINEREA
- JUGLANS NIGRA
- OSTRYA VIRGINIANA
- PLATANUS OCCIDENTALIS
- QUERCUS ALBA
- QUERCUS ELLIPSOIDALIS
- QUERCUS RUBRA
- SALIX GLAUCOSERICEA
- SALIX LUCIDA
- SALIX NIGRA
- TILIA AMERICANA / CORDATA
- ULMUS AMERICANA

LANDFORM CREATION

PROPOSED STREAM ALIGNMENT

PROPOSED LANDFORM CREATION

TREE REMOVALS



PROPOSED STREAM ALIGNMENT

LIMITS OF PROJECT RE-GRADING

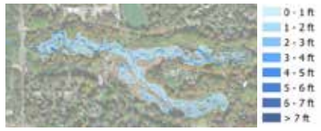
REQUIRED TREE REMOVALS

MANAGING STORMWATER

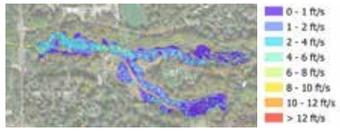
TYPICAL SUMMER RAINSHOWER (LESS THAN 1 INCH OF RAIN IN A 24-HOUR PERIOD)

1-YEAR STORM EVENT (1.98 INCHES OF RAIN IN A 24-HOUR PERIOD)

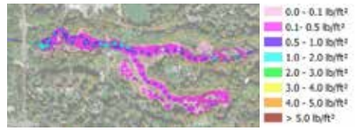
WATER DEPTH



WATER VELOCITY



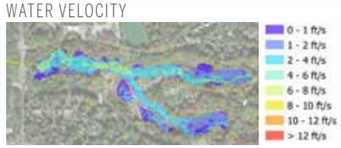
SHEAR STRESS



10-YEAR STORM EVENT (3.46 INCHES OF RAIN IN A 24-HOUR PERIOD)

WATER DEPTH

WATER VELOCITY

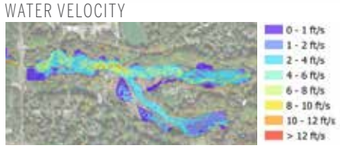


SHEAR STRESS

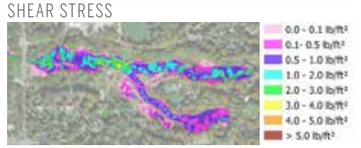
100-YEAR STORM EVENT (5.38 INCHES OF RAIN IN A 24-HOUR PERIOD)

WATER DEPTH

WATER VELOCITY

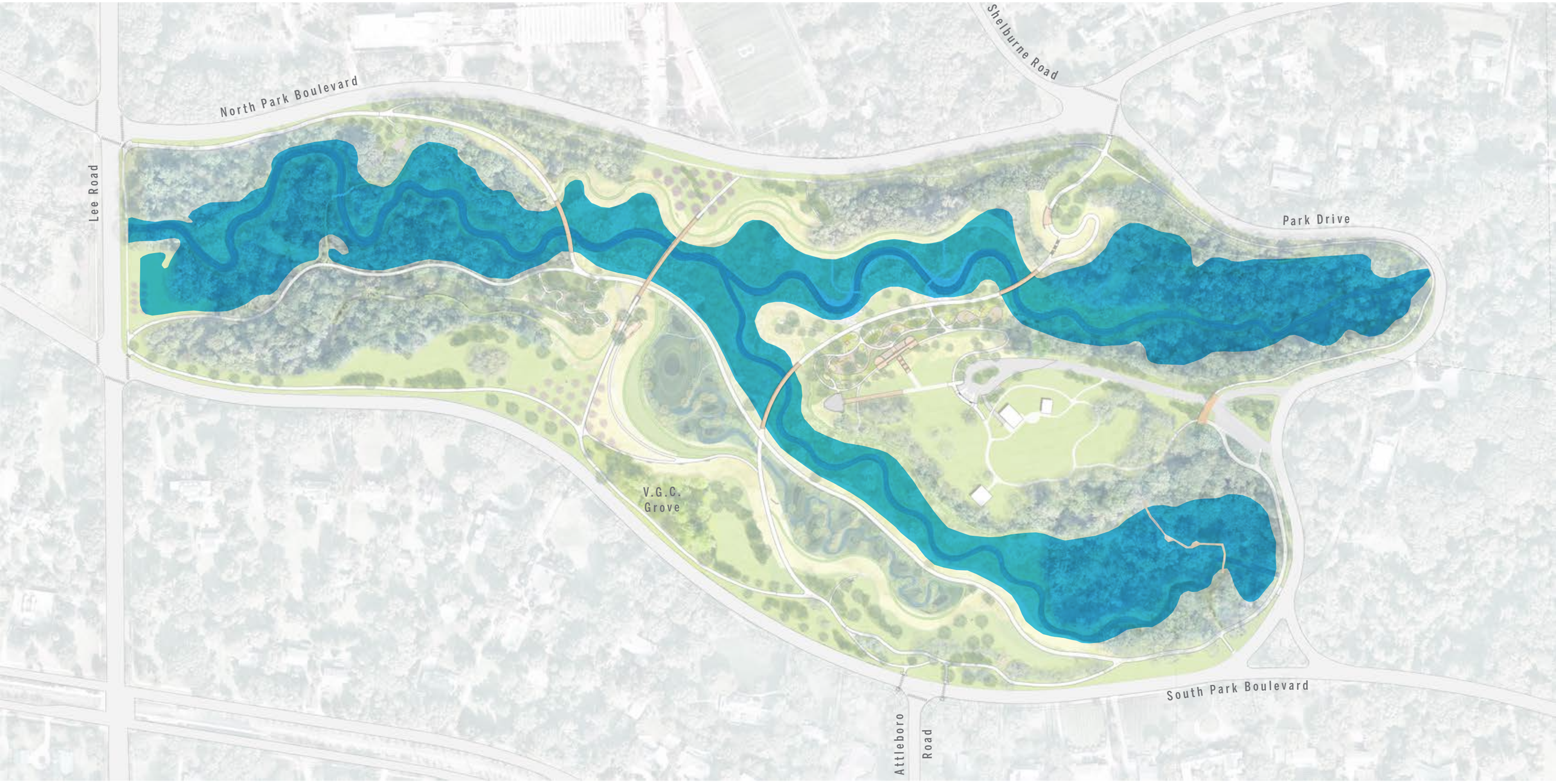


SHEAR STRESS



NEW 100-YEAR FLOODPLAIN

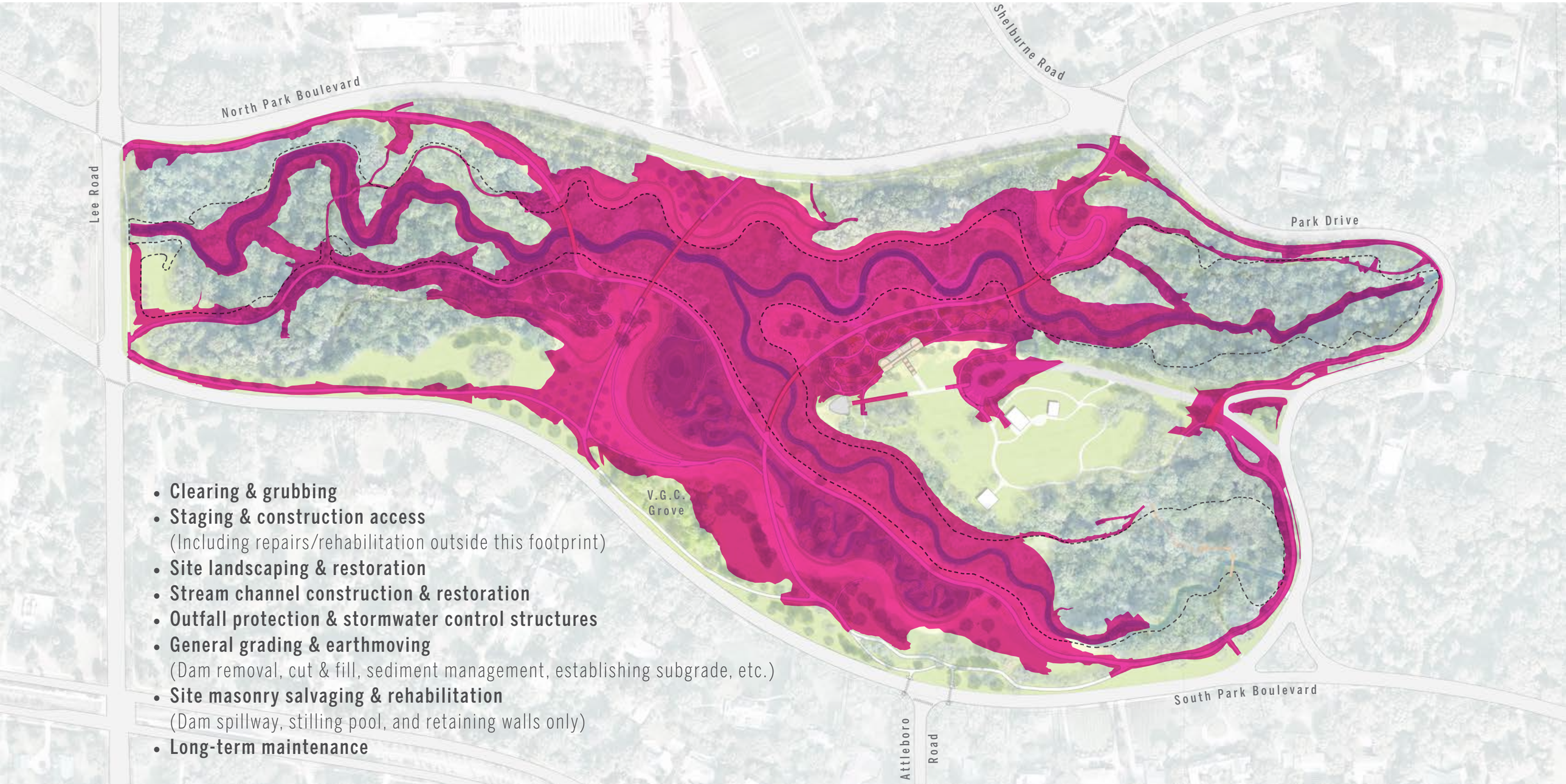
18.31 ACRES



Proposed 100-year floodplain

STREAM RESTORATION PLAN | DISTRICT SCOPE AREA

+/- 26 ACRES

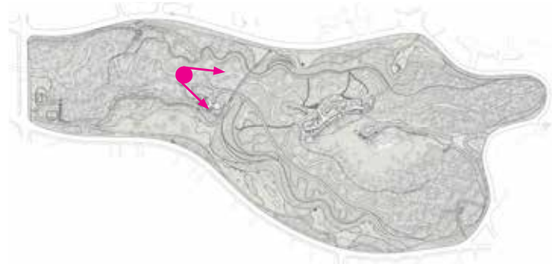


- **Clearing & grubbing**
- **Staging & construction access**
  (Including repairs/rehabilitation outside this footprint)
- **Site landscaping & restoration**
- **Stream channel construction & restoration**
- **Outfall protection & stormwater control structures**
- **General grading & earthmoving**
  (Dam removal, cut & fill, sediment management, establishing subgrade, etc.)
- **Site masonry salvaging & rehabilitation**
  (Dam spillway, stilling pool, and retaining walls only)
- **Long-term maintenance**

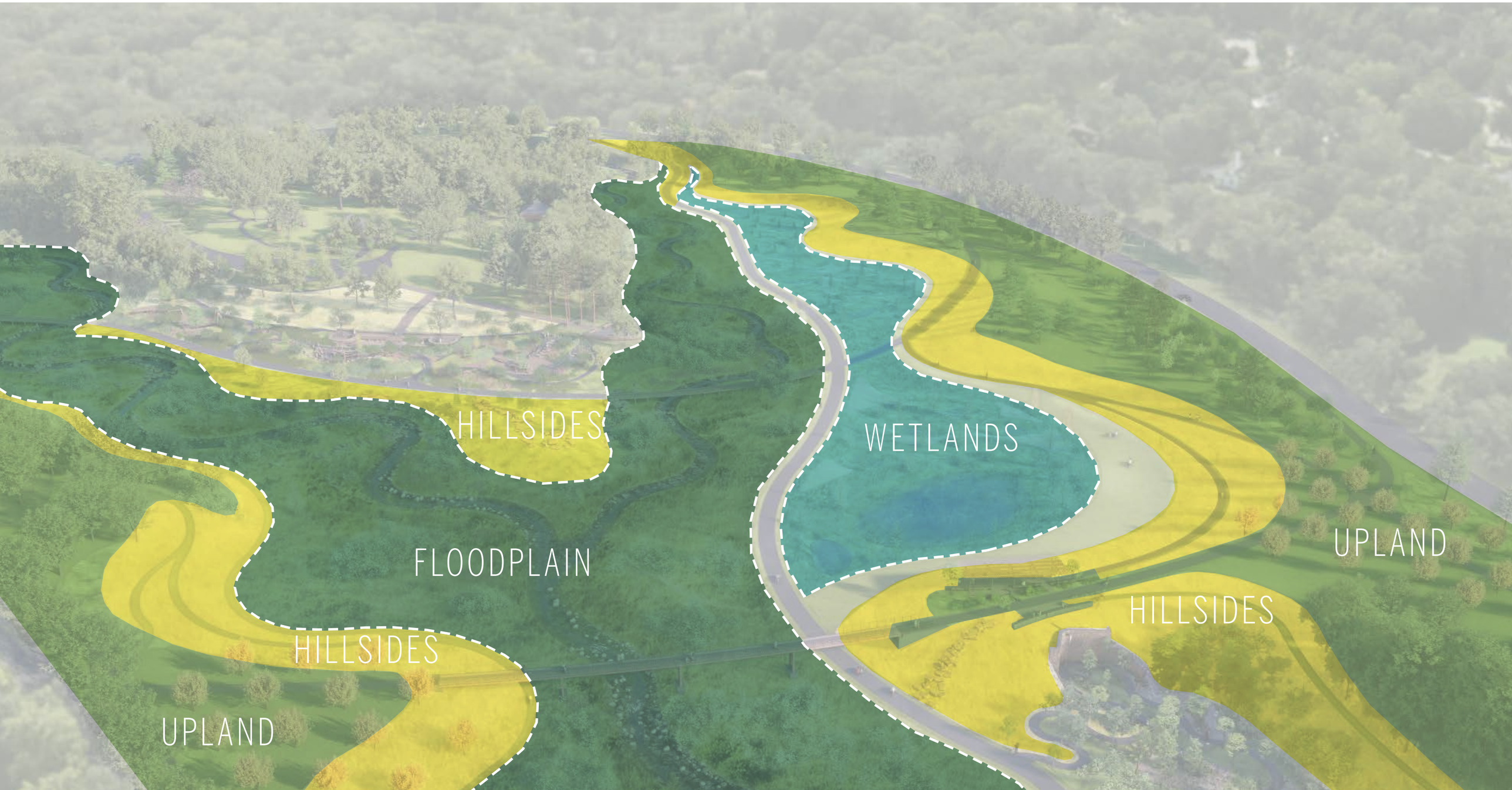
Proposed earthwork extents

Proposed 100-year floodplain

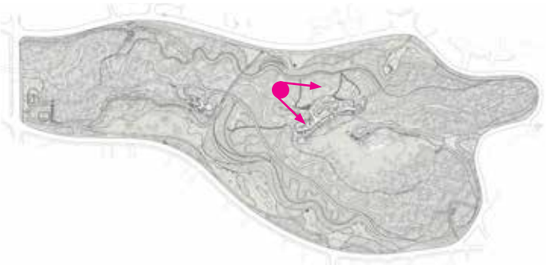
STREAM RESTORATION PLAN | REVEGETATION



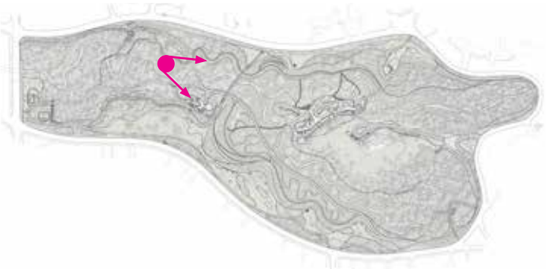
STREAM RESTORATION PLAN | REVEGETATION



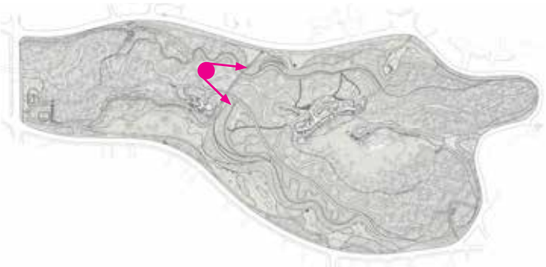
STREAM RESTORATION PLAN | FLOODPLAIN PLANTING



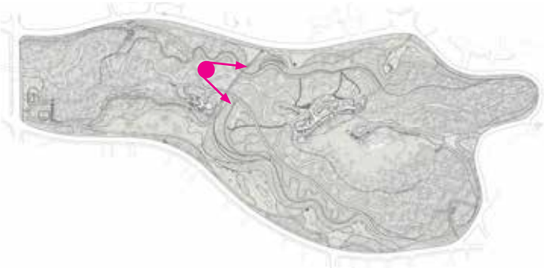
STREAM RESTORATION PLAN | FLOODPLAIN PLANTING



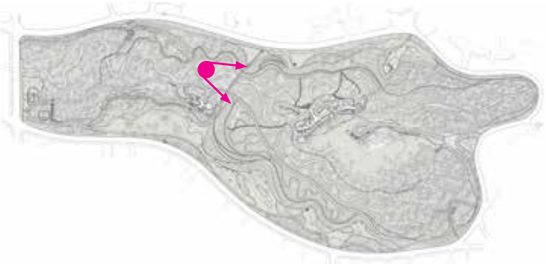
STREAM RESTORATION PLAN | FLOODPLAIN PLANTING



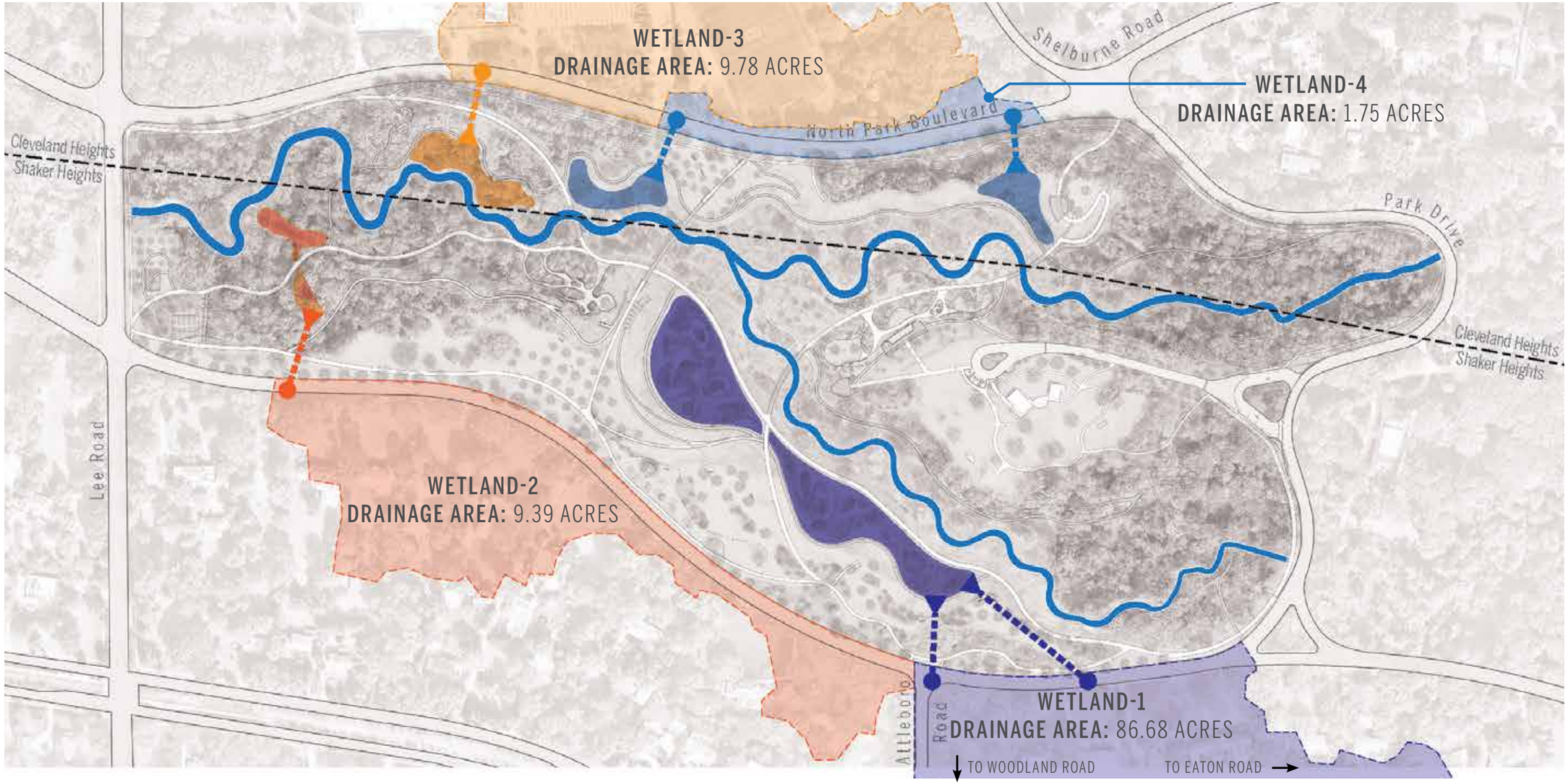
STREAM RESTORATION PLAN | FLOODPLAIN PLANTING + 20 YEARS



STREAM RESTORATION PLAN | FLOODPLAIN PLANTING + 50 YEARS



STREAM RESTORATION PLAN | CONSTRUCTED WETLANDS



TYPICAL SUMMER RAINSHOWER

(LESS THAN 1 INCH OF RAIN IN A 24-HOUR PERIOD)

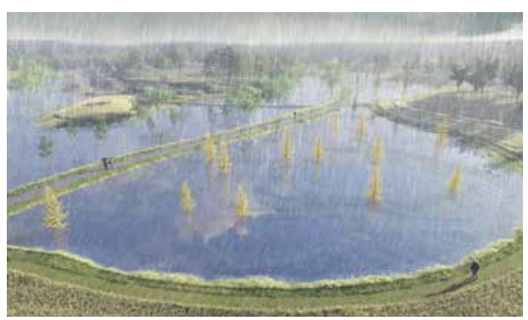
1-YEAR STORM EVENT

(1.98 INCHES OF RAIN IN A 24-HOUR PERIOD)

10-YEAR STORM EVENT

(3.46 INCHES OF RAIN IN A 24-HOUR PERIOD)

100-YEAR STORM EVENT



(5.38 INCHES OF RAIN IN A 24-HOUR PERIOD)

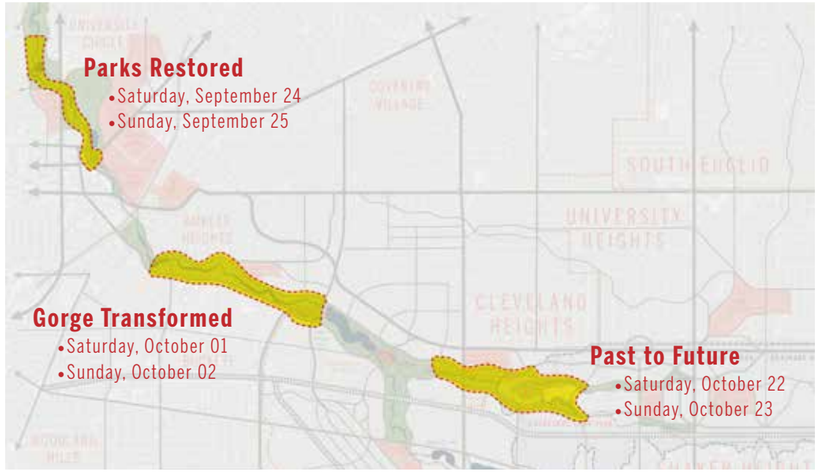
PUBLIC ENGAGEMENT | BY THE NUMBERS

Public Forum #1 Virtual Meeting Attendees (08/25/22):	283
Public Forum #1 Open House Attendees (08/27/22):	275 *(est.)*
Pop-up Engagement event participants:	60 *(est.)*
Walking Tour event participants:	98
Online Survey participants:	846
Public Forum #2 Virtual Meeting Attendees (11/30/22):	200 *(est.)*
Public Forum #2 Open House Attendees (12/02/22):	125 *(est.)*

(80 Park Design Activity Participants & 46 completed park designs)

Public Forum #3 Virtual Meeting Attendees (5/15/23):	180 *(est.)*
Public Forum #3 Open House Attendees (5/18/23):	30 *(est.)*
Public Forum #4 Virtual Meeting Attendees (7/15/24):	100 *(est.)*
Public Forum #4 Open House Attendees (7/16/24):	50 *(est.)*
Public Forum #5 Virtual Meeting Attendees (3/31/25)**:**	95 *(est.)*
Public Forum #5 Open House Attendees (4/02/25)**:**	40 *(est.)*
Total public engagement to date:	**2,382 COMMUNITY VOICES**

WALKING TOURS



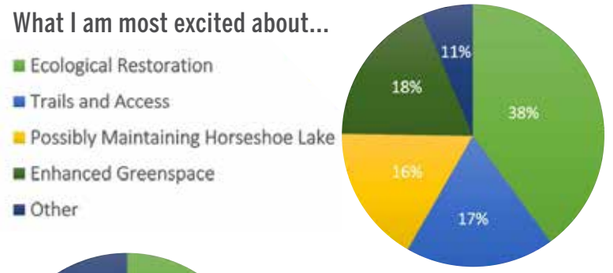
POP-UP EVENTS

OPEN HOUSE ACTIVITIES

ONLINE SURVEY

Age	Gender	Area Code
Ages 25 & under: **2%**	Female: **56%**	44120: **32%**
Ages 26 – 39: **21%**	Male: **39%**	44118: **30%**
Ages 40 – 49: **21%**	Prefer not to answer: **3%**	44122: **24%**
Ages 50 – 59: **19%**	Prefer to self-describe: **1%**	44106: **7%**
Ages 60 – 69: **22%**	Non-binary/third gender: **<1%**	44121: **3%**
Ages 70 – 79: **12%**	None of the above: **<1%**	Other: **4%**
Ages 80 & over: **3%**		

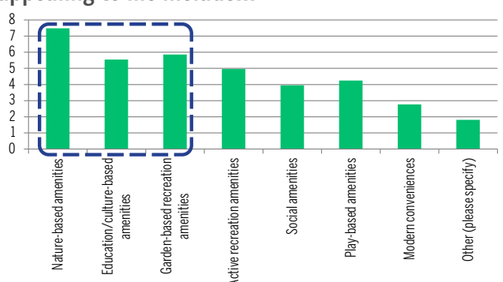
What I am most excited about...



What I am most concerned about...

One word to describe the future park...

The types of park amenities that are most appealing to me include...



POTENTIAL PARK AMENITIES COMMUNITY PRIORITIZATION ACTIVITY

Park Amenities	% Selected
Nature Play	72%
Pollinator Garden	61%
Canopy Walk / Wetland Boardwalk	50%
Stream Overlook	48%
Water's Edge Observation Deck	46%
Forest Amphitheater	43%
Allee / Promenade	35%
Lounge Swings	33%
Sledding Hill	33%
Sensory Garden	33%
Overlook Deck	28%
Fruit/Nut Orchard	26%
Hammock Grove	24%
Bird Blind	24%
Outdoor Classroom	22%
Bocce Courts / Horseshoe Pits	17%
Slide Embankment	15%
Large Trellis	15%
Small Trellis	13%

GARDENS, WILDLIFE OBSERVATION, & GATHERING:
$100 BUDGET

$5 AMENITIES


LOUNGE SWINGS


HAMMOCK GROVE


OUTDOOR CLASSROOM


WATER'S EDGE OBSERVATION DECK


BOCCE COURTS / HORSESHOE PITS


SLEDDING HILL


FRUIT / NUT ORCHARD


TREE ALLEE & PROMENADE

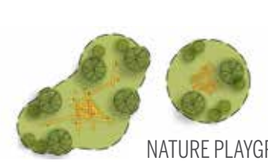
$15 AMENITIES


SMALL TRELLIS

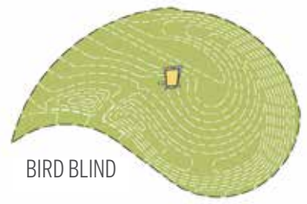

LARGE TRELLIS

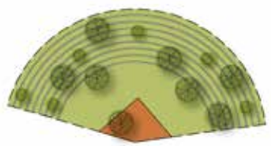

STREAM OVERLOOK DECK


SENSORY GARDEN


NATURE PLAYGROUND


POLLINATOR GARDEN


BIRD BLIND


AMPHITHEATER

$40 AMENITIES


SLIDE HILL

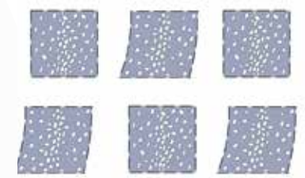

OVERLOOK DECK


CANOPY WALK / WETLAND BOARDWALK (600' LENGTH)

STREAM CROSSINGS:
$100 BUDGET

$30 BOARDWALKS

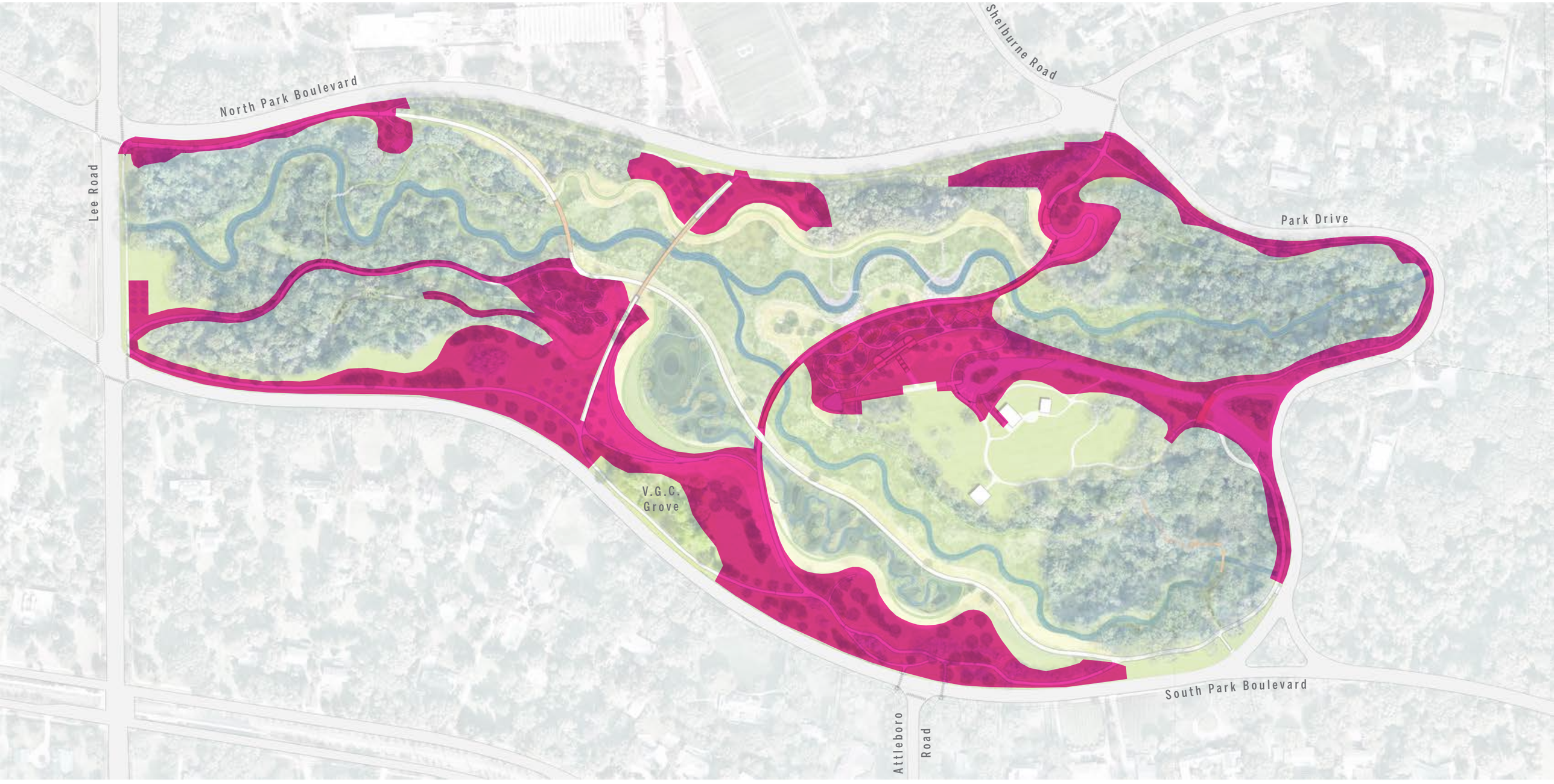
$10 BOULDER CROSSINGS



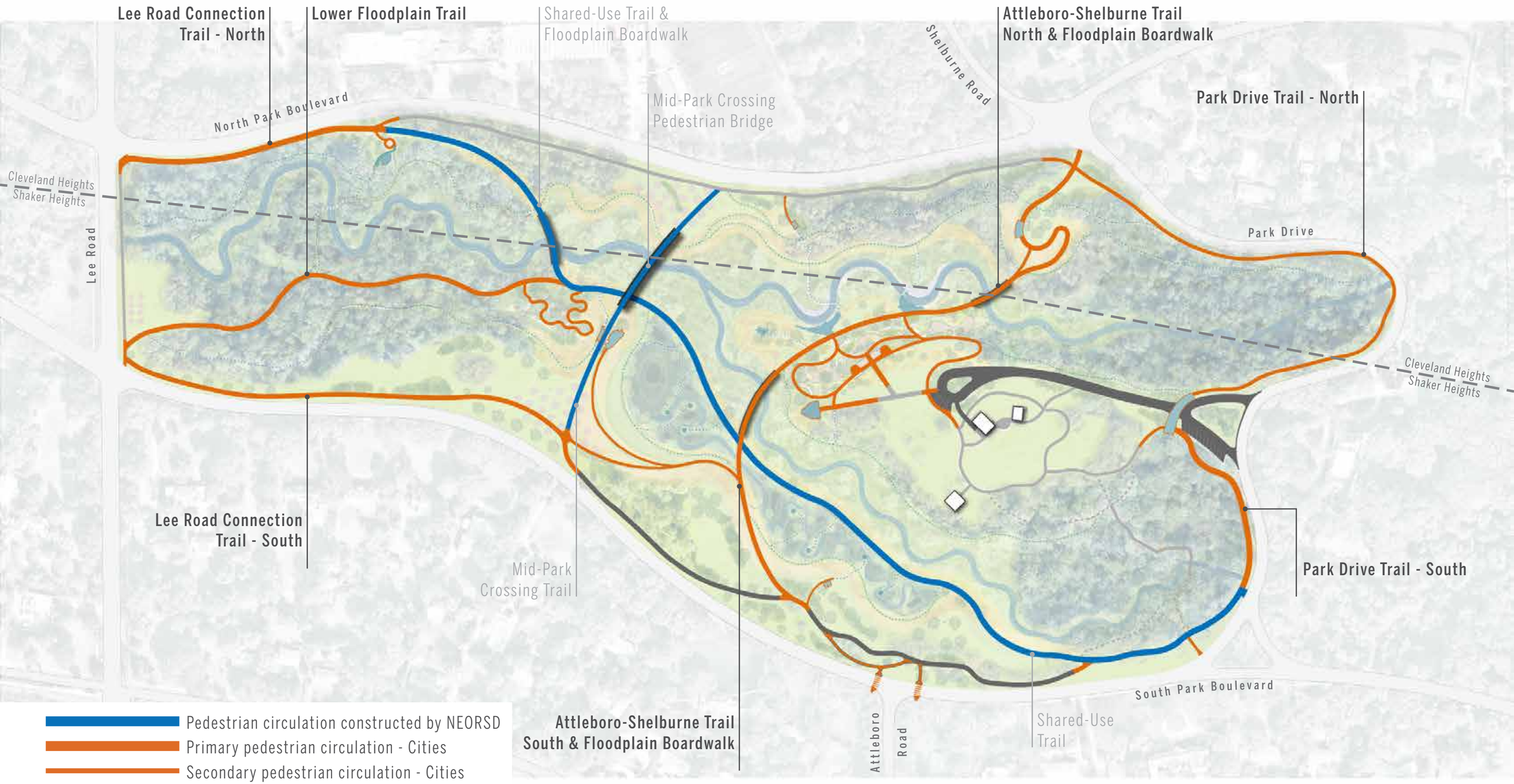
LANDSCAPE INTEGRATION PLAN

LANDSCAPE INTEGRATION PLAN | CITIES SCOPE AREA

+/- 15 ACRES

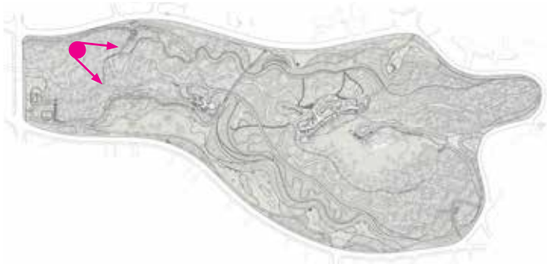


LANDSCAPE INTEGRATION PLAN | PARK CIRCULATION



*Extent of park circulation will be subject to availability of cities funding

LANDSCAPE INTEGRATION PLAN | PARK CIRCULATION



PARK DRIVE

SOUTH PARK BOULEVARD

ATTLEBORO - SHELBURNE TRAIL

NORTH PARK BOULEVARD

MID-PARK CROSSING

SHARED-USE TRAIL

LOWER FLOODPLAIN TRAIL

LANDSCAPE INTEGRATION PLAN | PARK CIRCULATION

PARK DRIVE

ATTLEBORO - SHELBURNE TRAIL

SOUTH PARK BOULEVARD

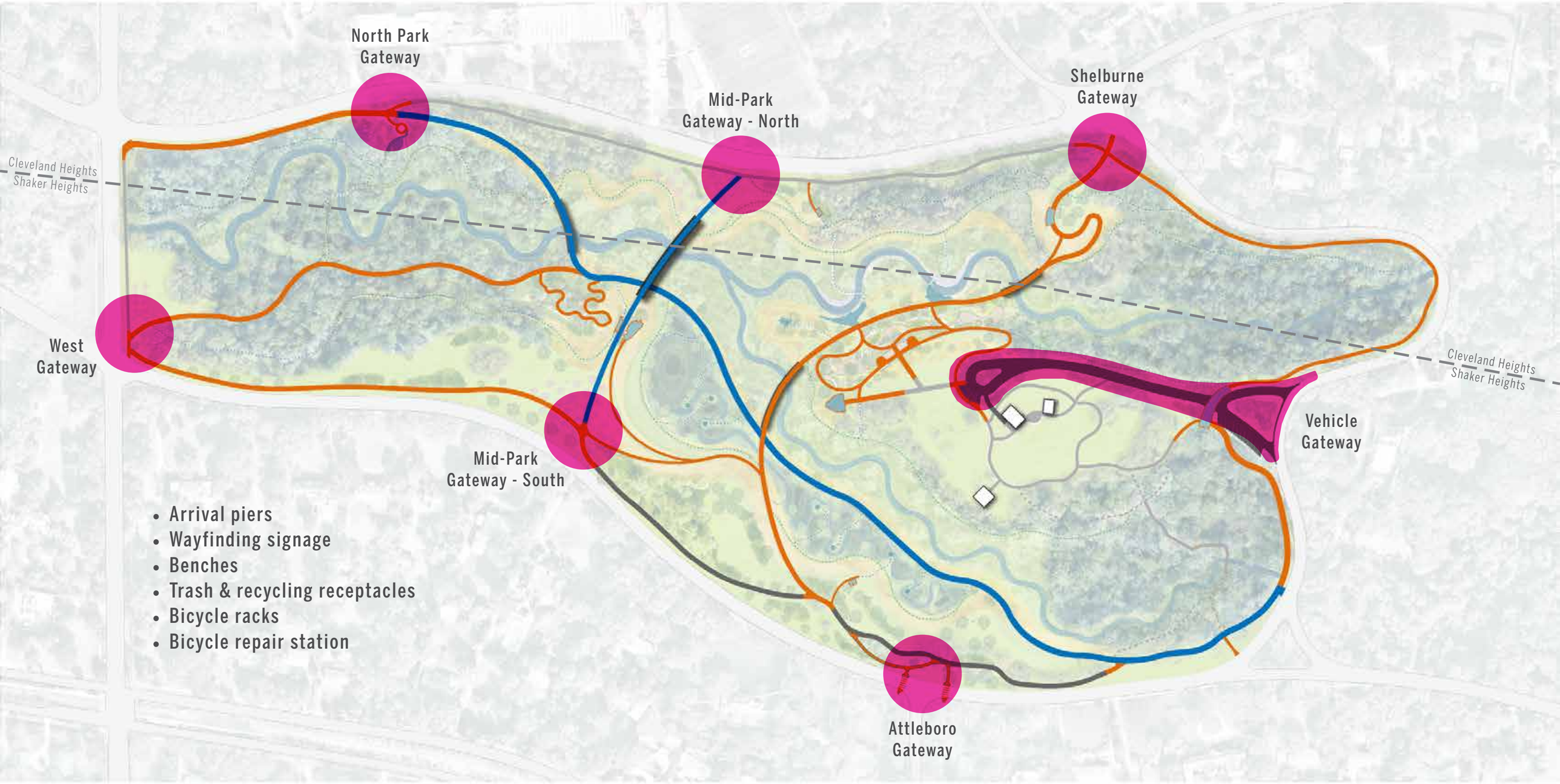
NORTH PARK BOULEVARD

MID-PARK CROSSING

SHARED-USE TRAIL

LOWER FLOODPLAIN TRAIL

LANDSCAPE INTEGRATION PLAN | PARK GATEWAYS

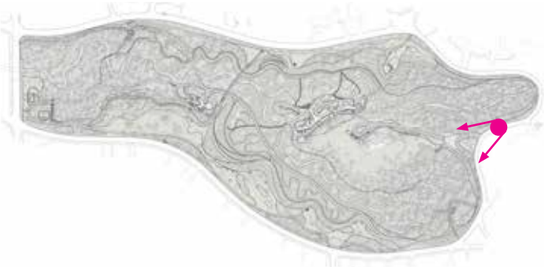


- Arrival piers
- Wayfinding signage
- Benches
- Trash & recycling receptacles
- Bicycle racks
- Bicycle repair station

*Extent of park gateways will be subject to availability of cities funding

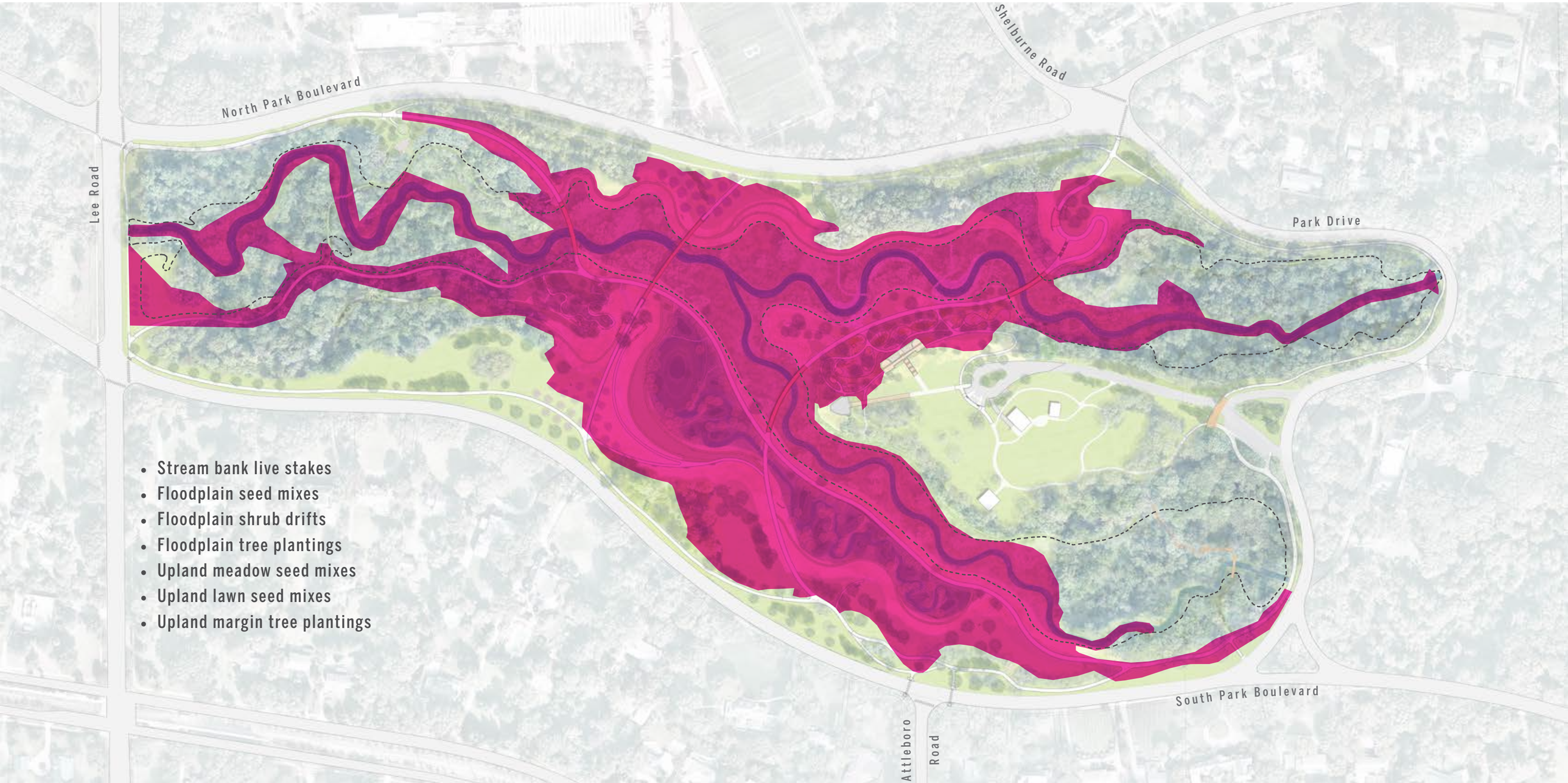
PARK GATEWAYS | ATTLEBORO GATEWAY

PARK GATEWAYS | VEHICLE GATEWAY



PARK GATEWAYS | VEHICLE GATEWAY

PARKLAND PLANTING | DISTRICT PLANTING SCOPE AREA



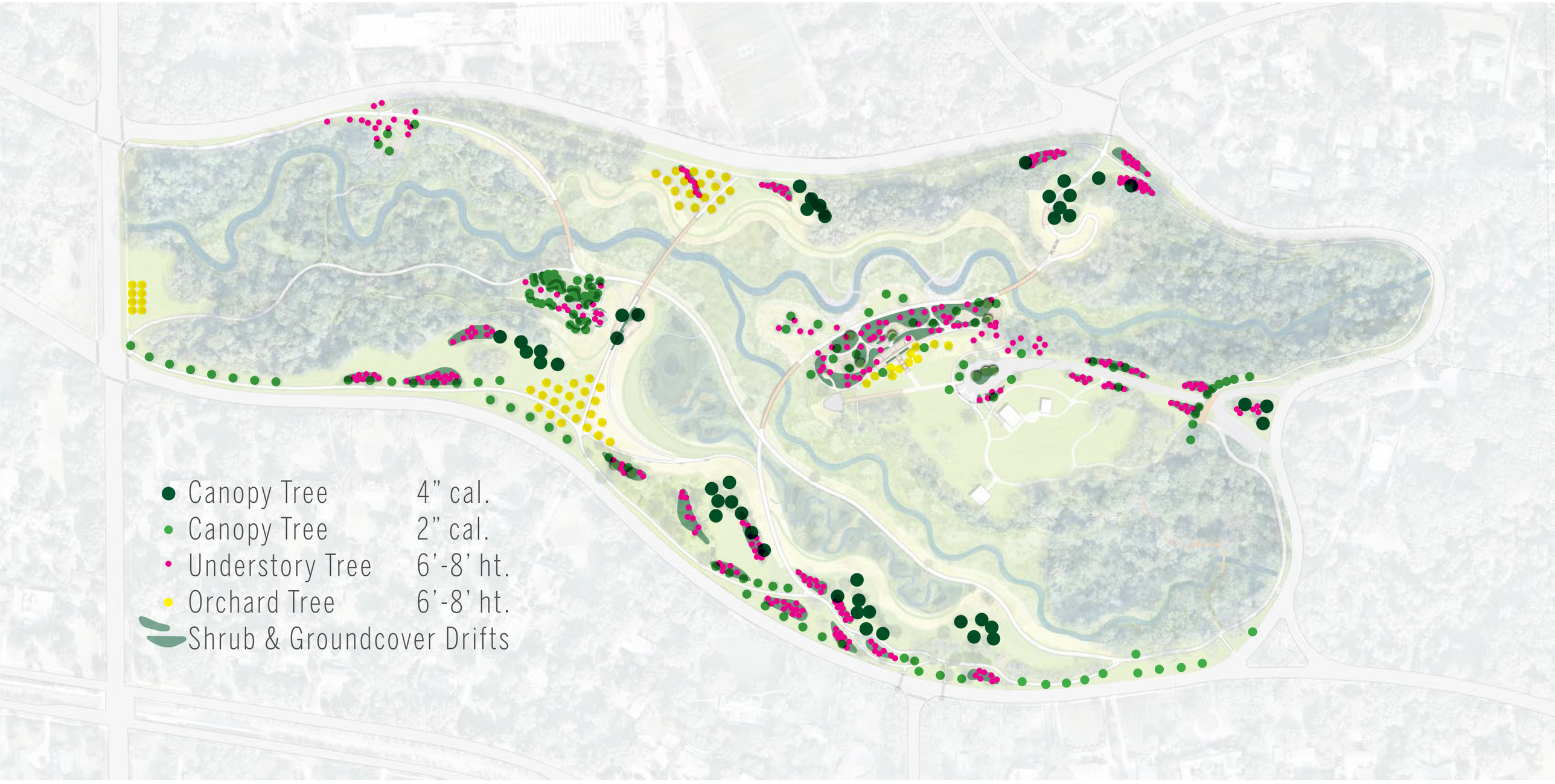
- Stream bank live stakes
- Floodplain seed mixes
- Floodplain shrub drifts
- Floodplain tree plantings
- Upland meadow seed mixes
- Upland lawn seed mixes
- Upland margin tree plantings

Proposed earthwork extents

Proposed 100-year floodplain

PARKLAND PLANTING | DISTRICT-FUNDED PLANTINGS

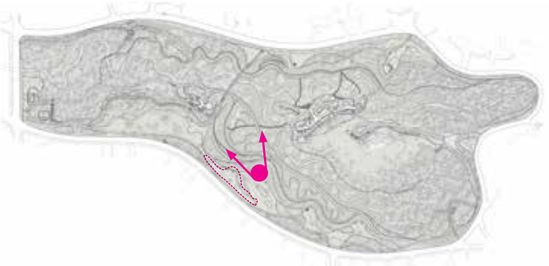
PARKLAND PLANTING | CITIES-FUNDED PLANTINGS



PARKLAND PLANTING | VILLAGE GARDEN CLUB GROVE

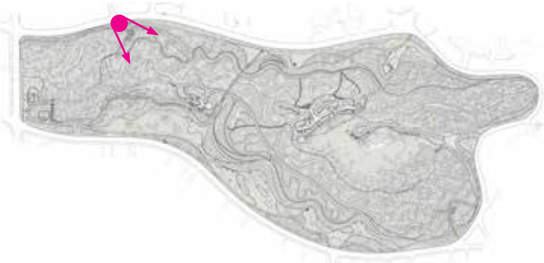
PARKLAND PLANTING | LARGE PROMONTORY

PARKLAND PLANTING | LARGE PROMONTORY

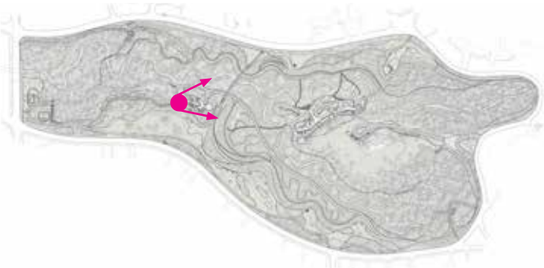


PARK AMENITIES

PARK AMENITIES | OUTDOOR CLASSROOM

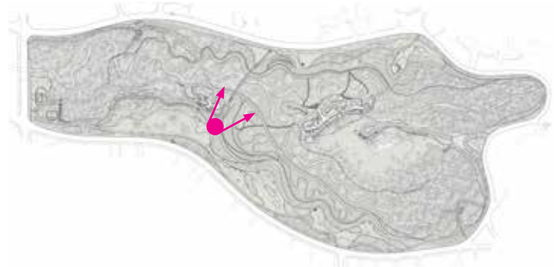


PARK AMENITIES | SENSORY GARDEN

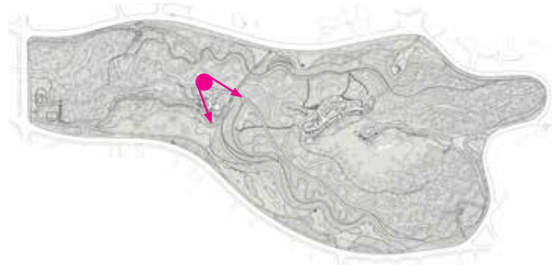


PARK AMENITIES | HILLSIDE MEADOWS

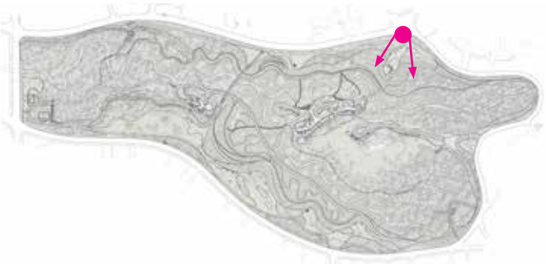
PARK AMENITIES | WETLAND OBSERVATION TERRACE AND PAVILION



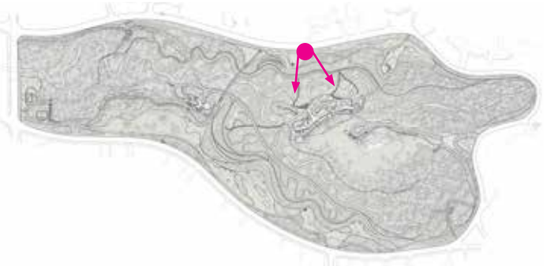
PARK AMENITIES | WETLAND OBSERVATION TERRACE AND PAVILION



PARK AMENITIES | DOAN BROOK OVERLOOK

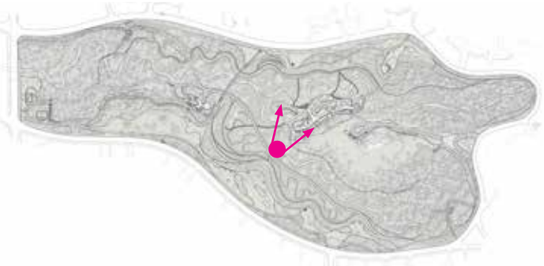


PARK AMENITIES | NATURE PLAY



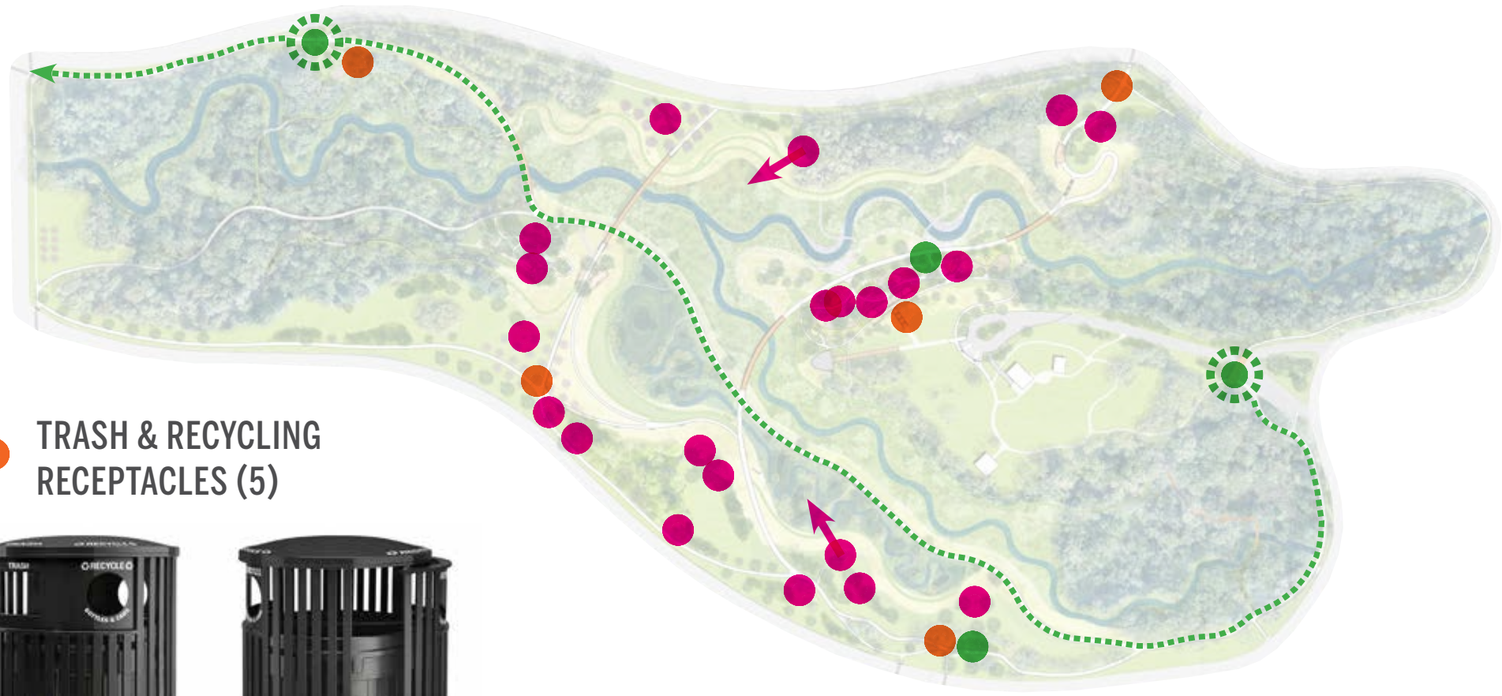
PARK AMENITIES | NATURE PLAY

PARK AMENITIES | NATURE PLAY



PARK AMENITIES | NATURE PLAY

SITE FURNISHINGS



TRASH & RECYCLING RECEPTACLES (5)

BICYCLE REPAIR STATIONS (2)

BIKE RACKS (15)

BENCHES (19)

LOUNGE SWINGS (2)

CITIES SCOPE OF WORK | SUMMARY OF PROBABLE CONSTRUCTION COSTS

PARK CIRCULATION

Lee Road Connection Trail - North:	$ 141,575
Lee Road Connection Trail - South:	$ 161,675
Lower Floodplain Trail:	$ 141,575
Attleboro-Shelburne Trail - North:	$ 187,550
Attleboro-Shelburne Trail - North:	$ 681,750
Park Drive - North:	$ 140,375
Park Drive - South:	$ 168,800
	$1,623,300

PARK AMENITIES

Outdoor Classroom:	$ 149,075
Sensory Garden:	$ 289,475
Wetland Observation Terrace:	$ 540,475
Lounge Swings - North:	$ 100,675
Lounge Swings - South:	$ 78,975
Doan Brook Overlook:	$ 235,900
Nature Play:	$ 1,532,950
	$2,927,525

PARK GATEWAYS

West Gateway:	$ 24,750
North Park Gateway:	$ 22,450
Mid-Park Gateway - North:	$ 64,425
Mid-Park Gateway - South:	$ 87,550
Shelburne Gateway:	$ 133,575
Attleboro Gateway:	$ 51,875
Vehicle Gateway:	$ 775,775
	$1,160,400

OTHER

General landscape improvements:	$ 1,513,875
	$ 1,513,875

TOTAL OF CITIES PROBABLE CONSTRUCTION COSTS:

$7,225,100

NEXT STEPS

- **FINAL DESIGN COMPLETE -** JUNE, 2025
- **CITY DEPARTMENTS DESIGN REVIEWS -** SECOND AND FOURTH QUARTER 2025
- **REGULATORY PERMITTING -** ONGOING, THROUGH FOURTH QUARTER 2025
- **CONSTRUCTION BIDDING -** FIRST QUARTER 2026
- **CONSTRUCTION MOBILIZATION -** SECOND QUARTER 2026

DISCUSSION


Outdoor Classroom
Floodplain Boardwalk (NEORSD Funded)
Wetland Observation Terrace
Pedestrian Bridge (NEORSD Funded)
Lounge Swings North
Nature Play
Floodplain Boardwalk
Doan brook Overlook
North Park Boulevard
North Park Gateway
Lee Road
Shelburne Gateway
Park Drive
Mid Park Crossing
West Gateway
Accessible Parking
Pavilions
Vehicle Gateway
Restrooms
Shaker Millrace Trail
Sensory Garden
Hillside Seating
Village Garden Club Grove
Attleboro Gateway
Constructed Wetlands (NEORSD Funded)
Floodplain Boardwalk
South Park Boulevard
Lounge Swings-South
Attleboro Road
Shared-Use Trail (NEORSD Funded)