DOAN BROOK RESTORATION

90% DESIGN UPDATE PRESENTATION

THE DOAN BROOK RESTORATION NEAR HORSESHOE LAKE PARK

MARCH, 2025

Northeast Ohio Regional Sewer District

STIMSON

AGENDA

1 Project schedule update

2 Stream Restoration Summary

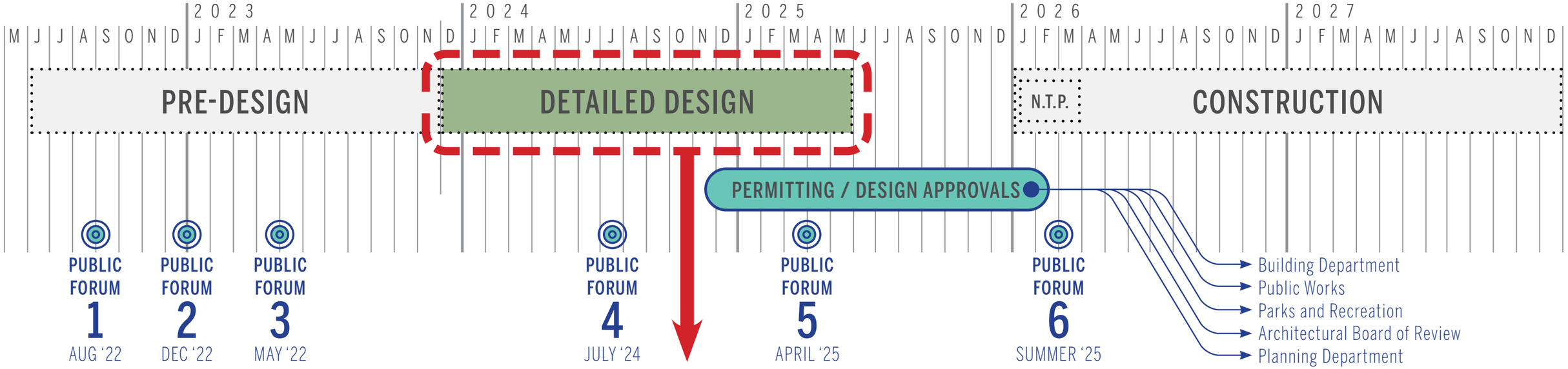
3 Landscape Integration Plan update

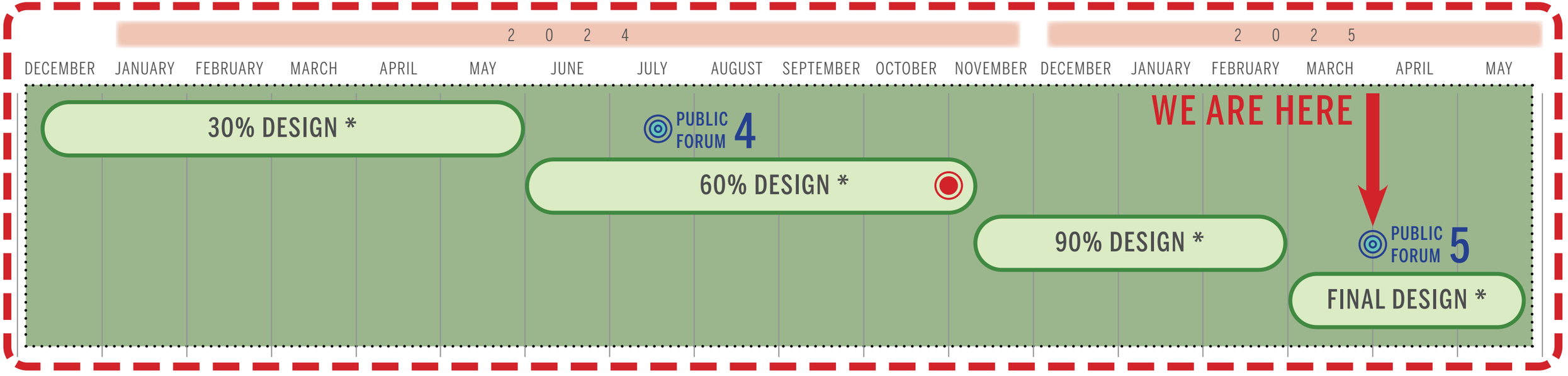
4 Summary of Probable Construction Costs

5 Next Steps

6 Discussion

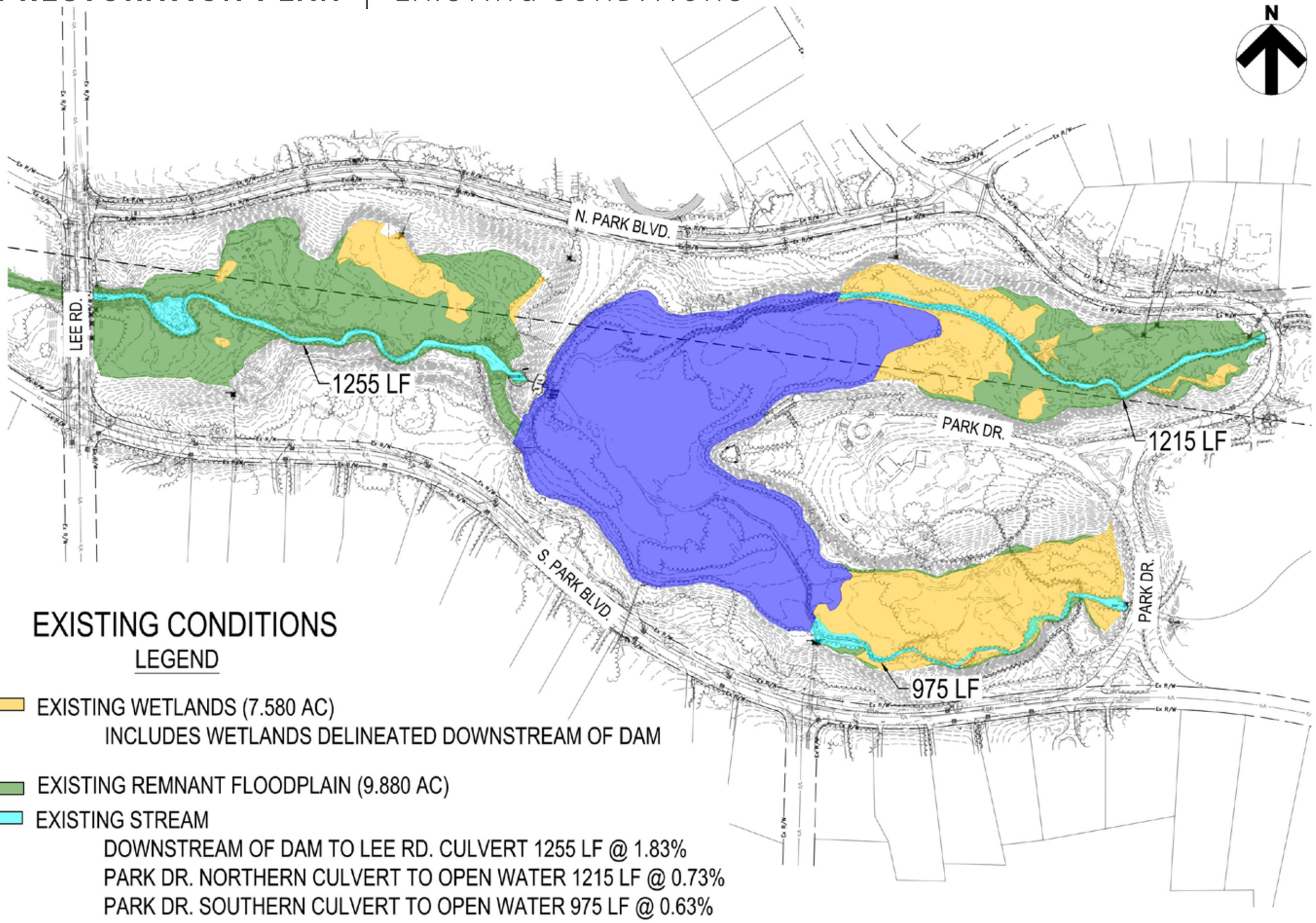
DESIGN SCHEDULE





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

STREAM RESTORATION PLAN | EXISTING CONDITIONS



EXISTING CONDITIONS

LEGEND

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

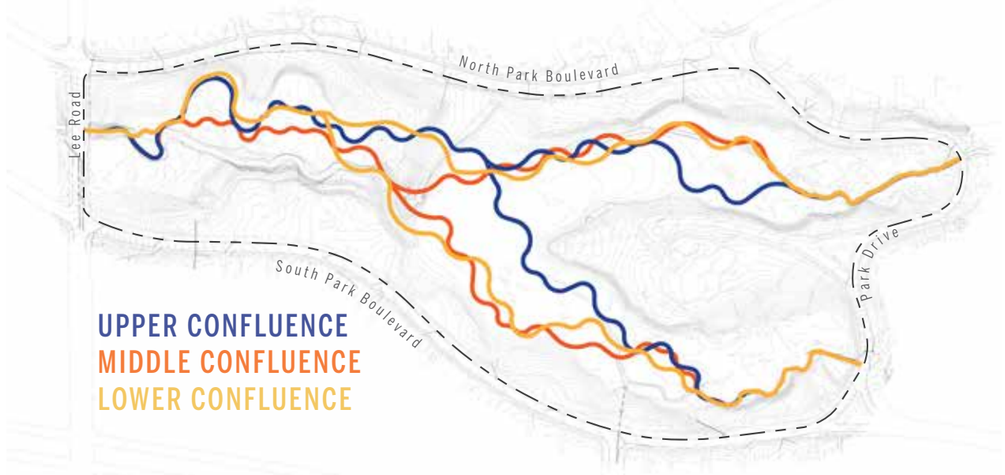
EXISTING REMNANT FLOODPLAIN (9.880 AC)

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)

STREAM RESTORATION PLAN | ALTERNATIVES ANALYSIS

STREAM ALIGNMENT ALTERNATIVES EVALUATION



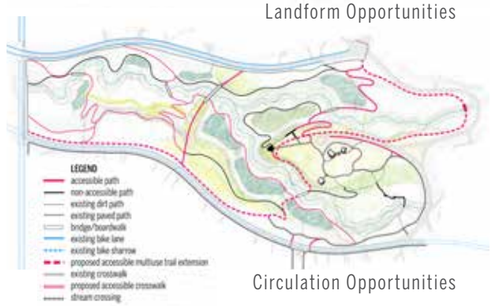
Primary Criteria for Evaluation:

- 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



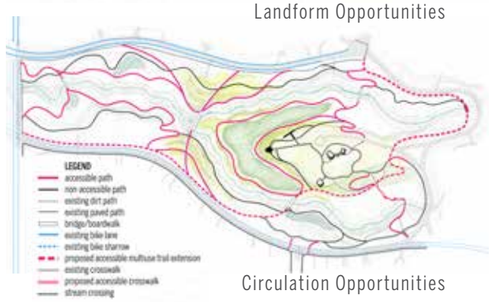
Circulation Opportunities

Planting Concept

MIDDLE CONFLUENCE

Landform Opportunities

Hydrology Considerations



Circulation Opportunities

Planting Concept

LOWER CONFLUENCE

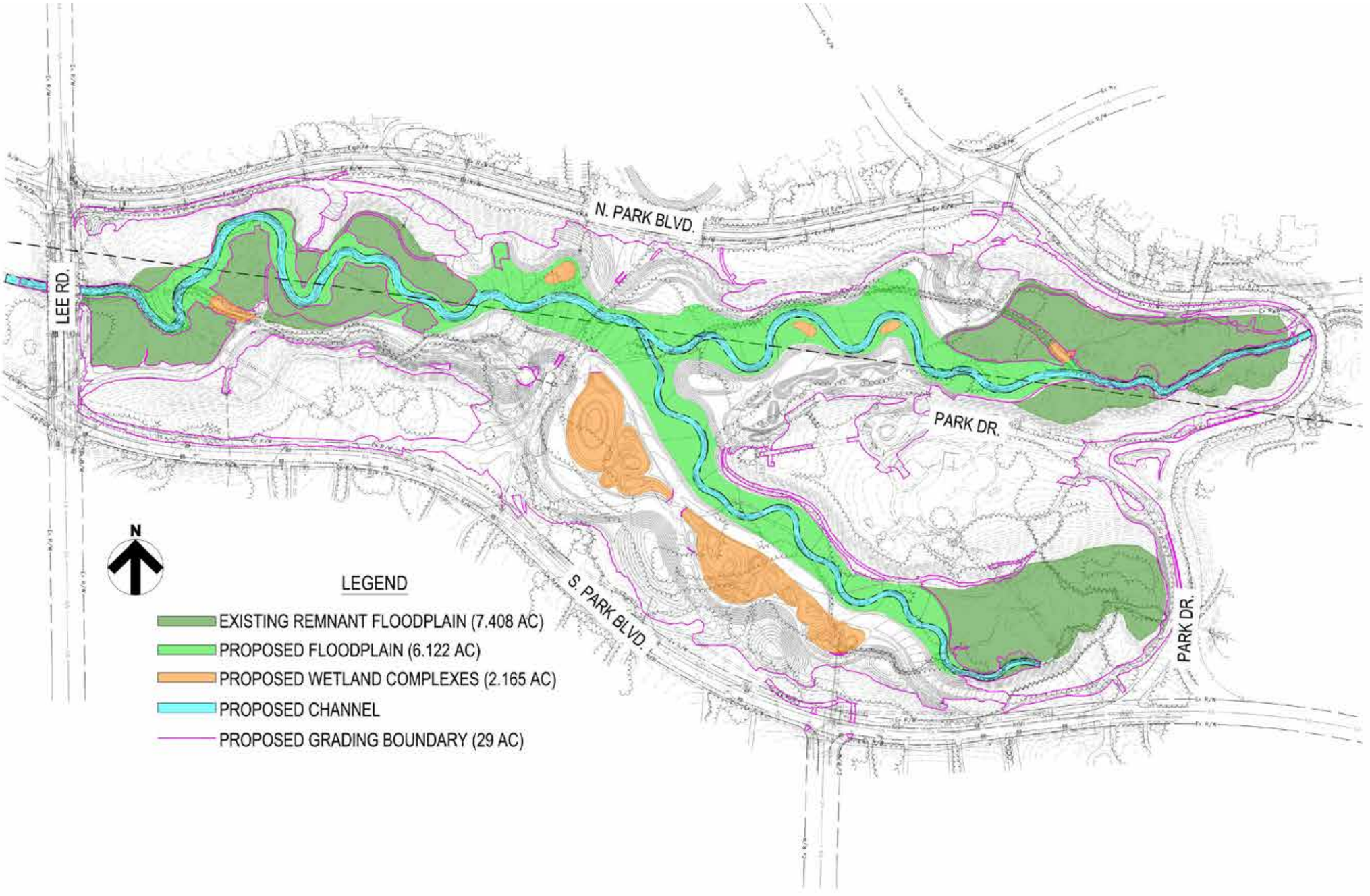
Landform Opportunities

Hydrology Considerations

Circulation Opportunities

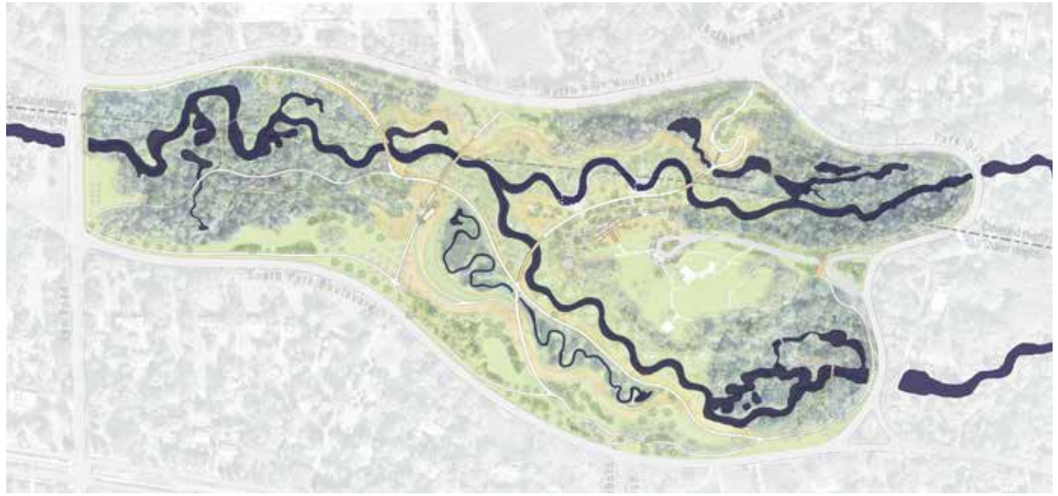
Planting Concept

STREAM RESTORATION PLAN | PROPOSED STREAM ALIGNMENT

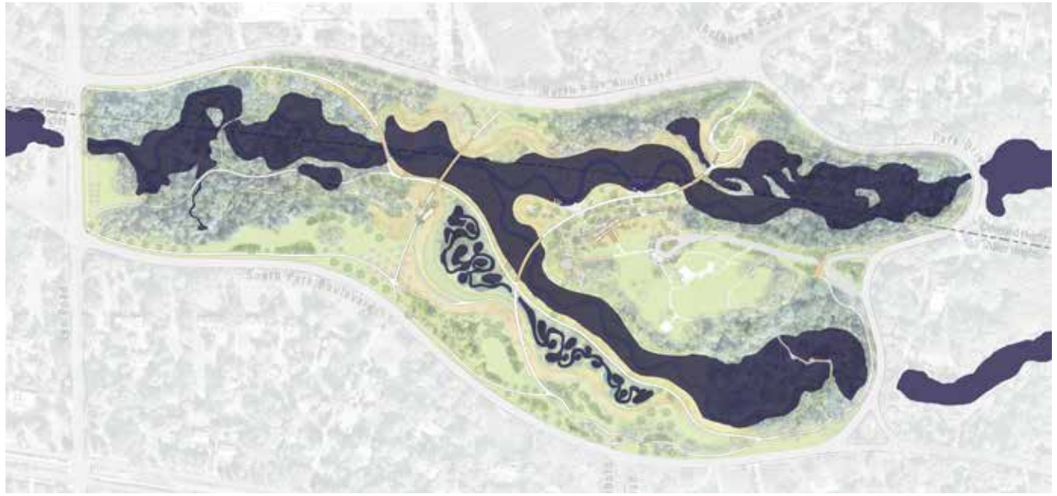


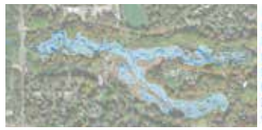
STREAM RESTORATION PLAN | MANAGING STORMWATER

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

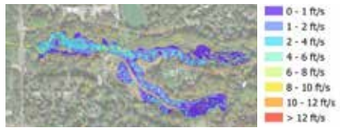


1-YEAR STORM EVENT (1.98 INCHES OF RAIN IN A 24-HOUR PERIOD)

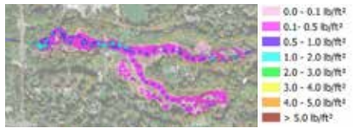




WATER DEPTH

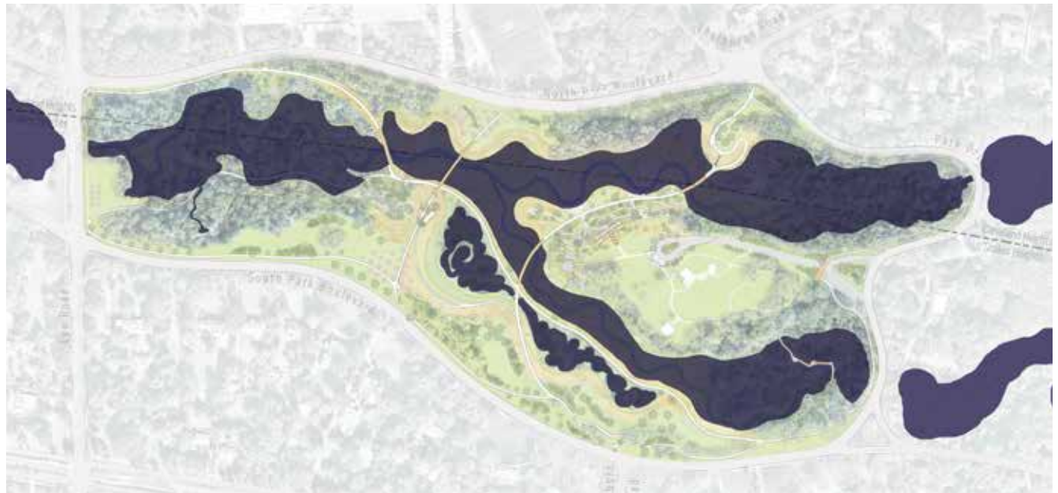


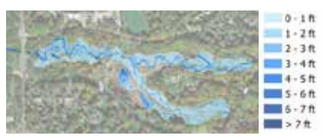
WATER VELOCITY



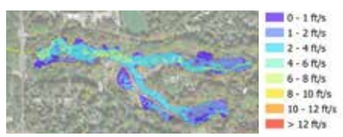
SHEAR STRESS

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

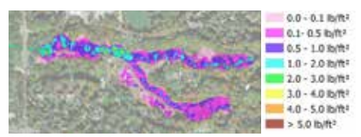




WATER DEPTH



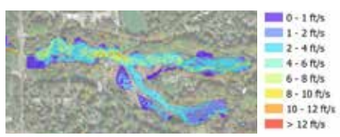
WATER VELOCITY



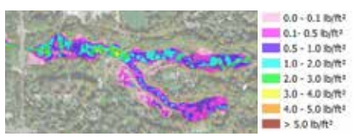
SHEAR STRESS

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

WATER DEPTH



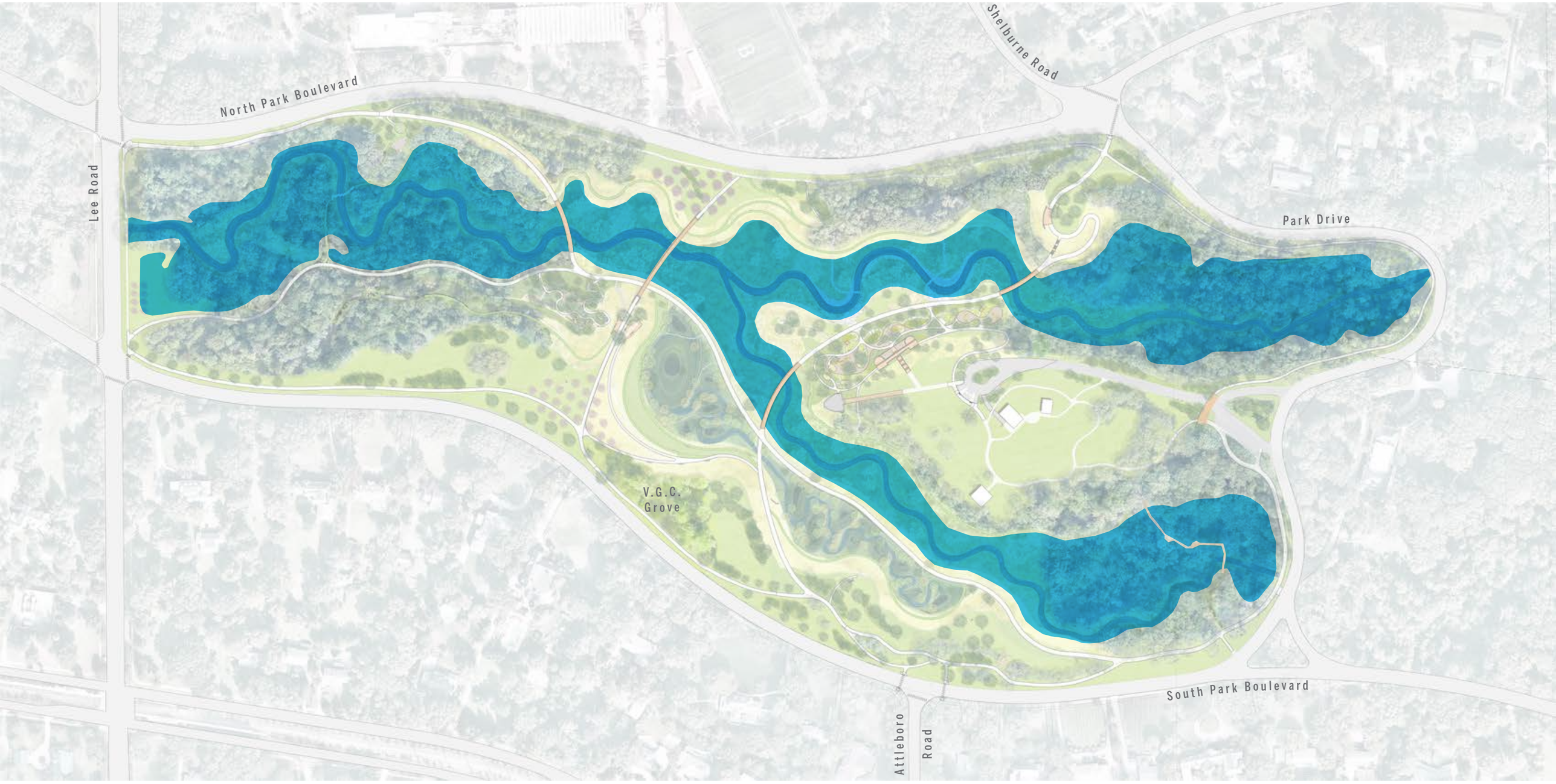
WATER VELOCITY



SHEAR STRESS

STREAM RESTORATION PLAN | NEW 100-YEAR FLOODPLAIN

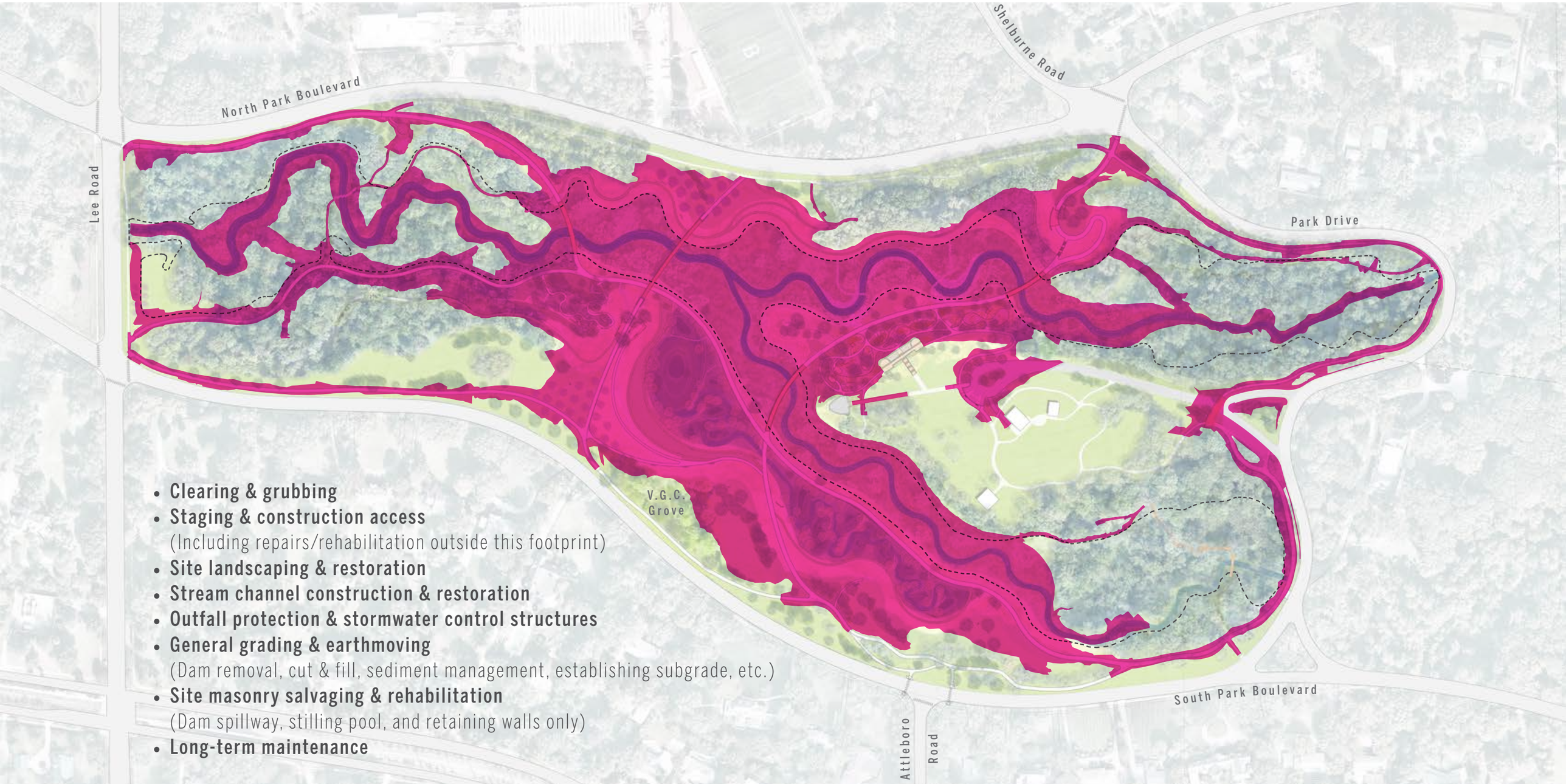
18.31 ACRES



Proposed 100-year floodplain

STREAM RESTORATION PLAN | EXTENT OF GRADING

+/- 26 ACRES



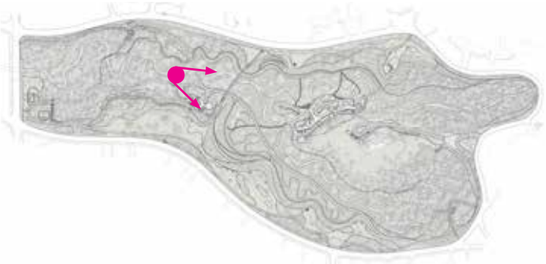
- **Clearing & grubbing**
- **Staging & construction access**
  (Including repairs/rehabilitation outside this footprint)
- **Site landscaping & restoration**
- **Stream channel construction & restoration**
- **Outfall protection & stormwater control structures**
- **General grading & earthmoving**
  (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



HILLSIDES

FLOODPLAIN

HILLSIDES

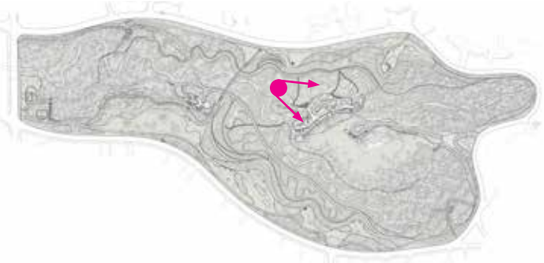
UPLAND

WETLANDS

HILLSIDES

UPLAND

STREAM RESTORATION PLAN | FLOODPLAIN PLANTING

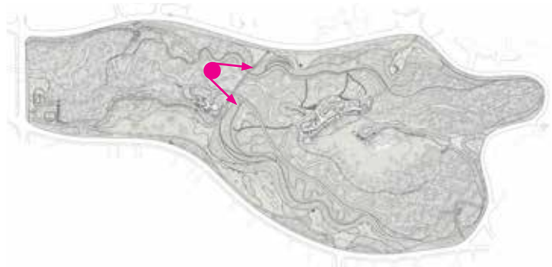


STREAM RESTORATION PLAN | FLOODPLAIN PLANTING

SHARED-USE PATH THROUGH FLOODPLAIN

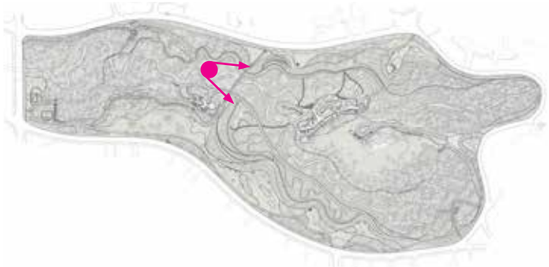
STREAM RESTORATION PLAN | FLOODPLAIN PLANTING

PEDESTRIAN BRIDGE AT MID-PARK CROSSING



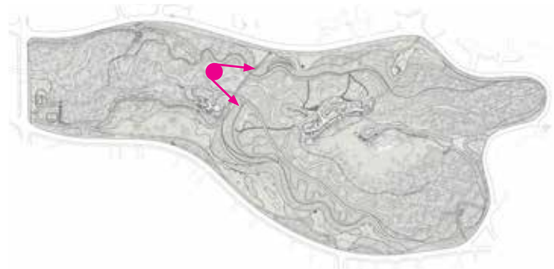
STREAM RESTORATION PLAN | FLOODPLAIN PLANTING +20 YEARS

PEDESTRIAN BRIDGE AT MID-PARK CROSSING



STREAM RESTORATION PLAN | FLOODPLAIN PLANTING +50 YEARS

PEDESTRIAN BRIDGE AT MID-PARK CROSSING



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)

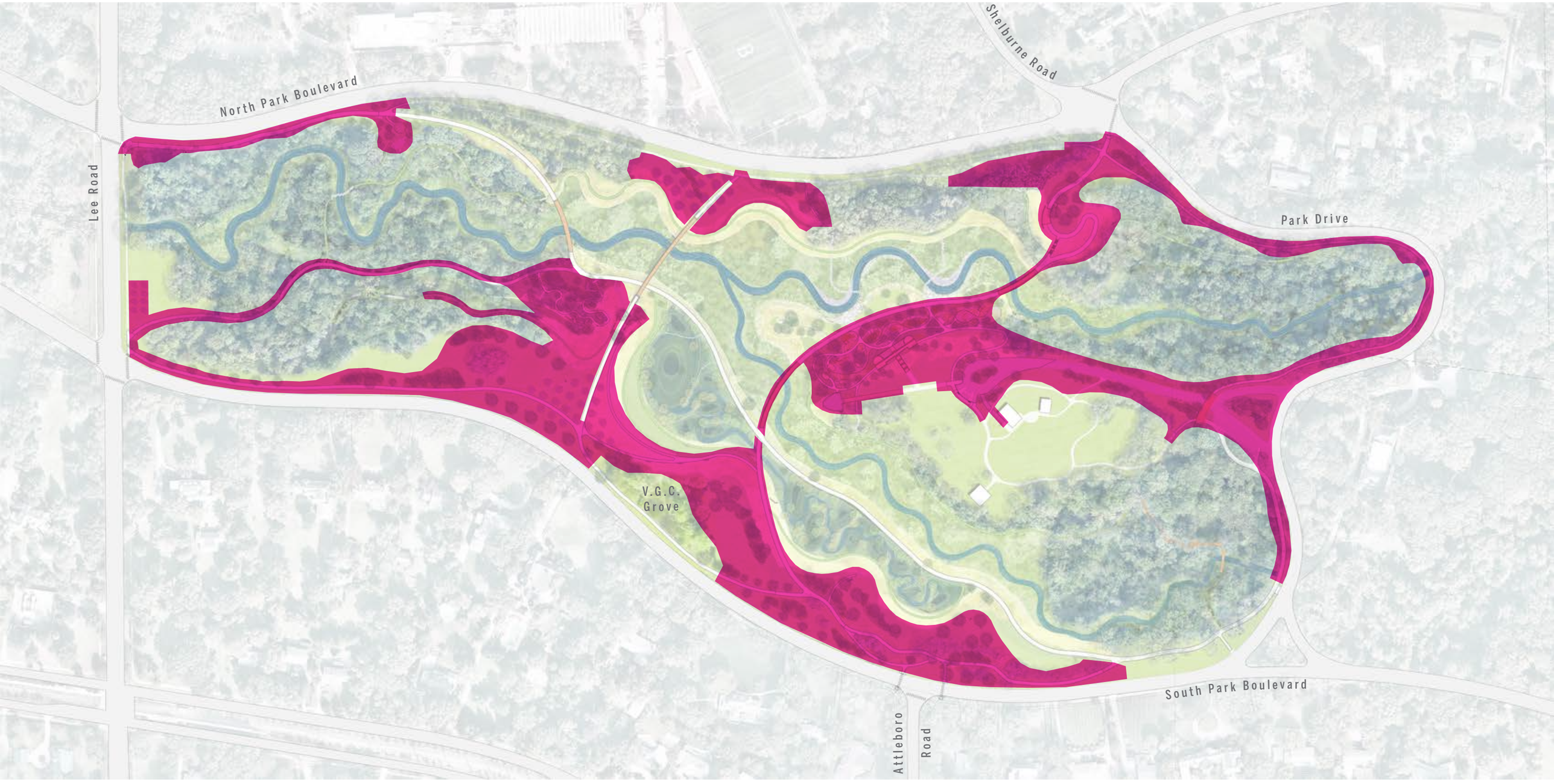
Public Forum #3 Virtual Meeting Attendees (5/15/23):	180 *(est.)*
Public Forum #3 Open House Attendees (5/18/23):	30 *(est.)*
Public Forum #4 Virtual Meeting Attendees (7/15/24):	100 *(est.)*
Public Forum #4 Open House Attendees (7/16/24):	50 *(est.)*
Public Forum #5 Virtual Meeting Attendees (3/31/25):	_____
Public Forum #5 Open House Attendees (4/02/25):	_____
Total public engagement to date:	**2,247**

COMMUNITY VOICES

LANDSCAPE INTEGRATION PLAN | 90% DESIGN

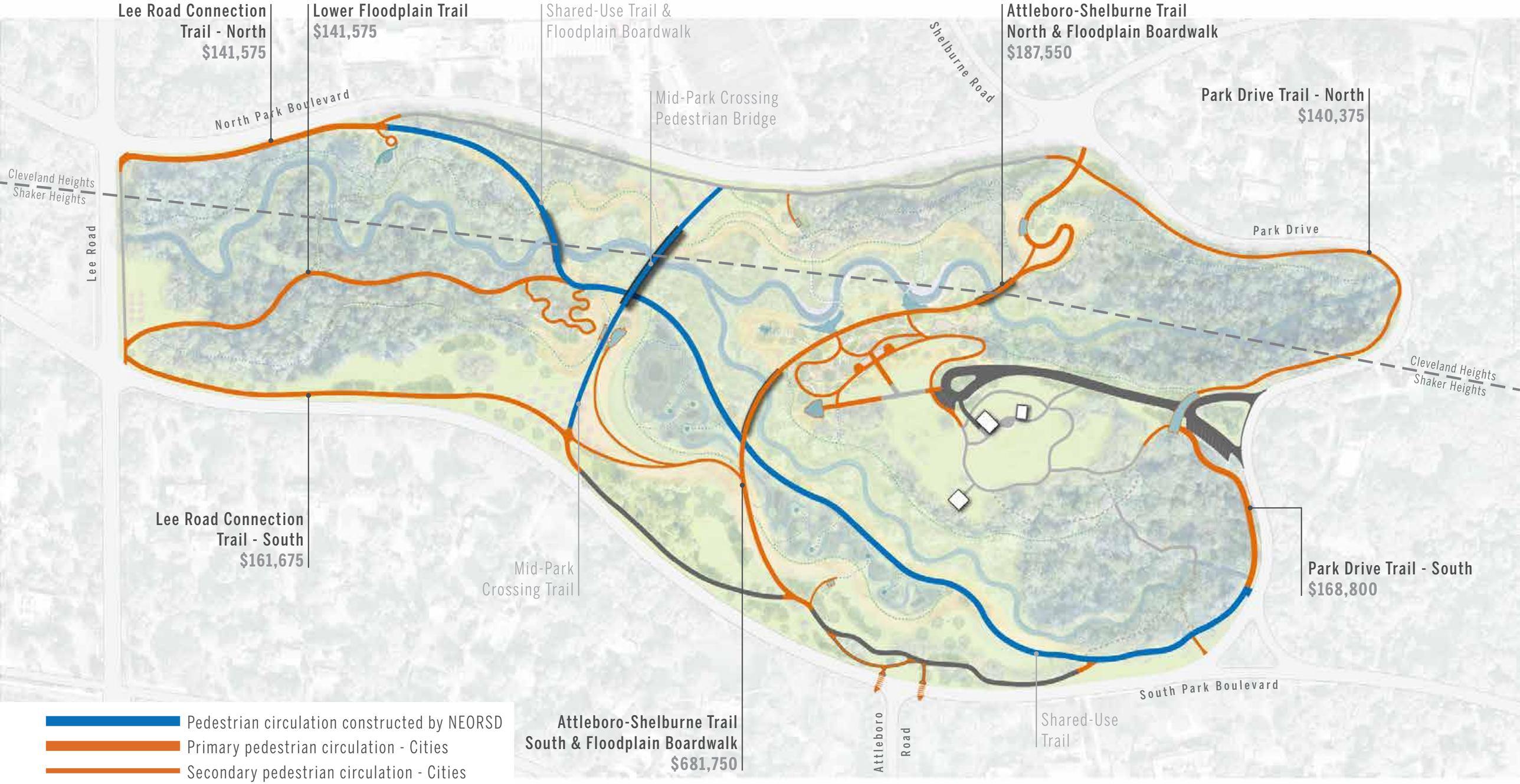
LANDSCAPE INTEGRATION PLAN | CITIES SCOPE AREA

+/- 15 ACRES

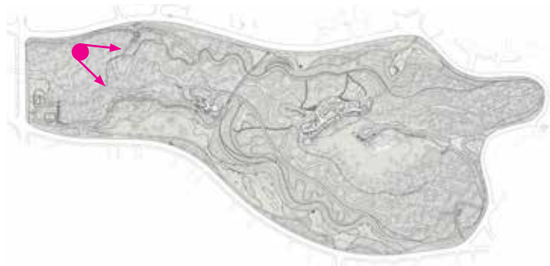


PARK CIRCULATION

ESTIMATED TOTAL: **$1,623,300**



PARK CIRCULATION | PRIMARY TRAILS



PARK DRIVE

ATTLEBORO - SHELBURNE TRAIL

SOUTH PARK BOULEVARD

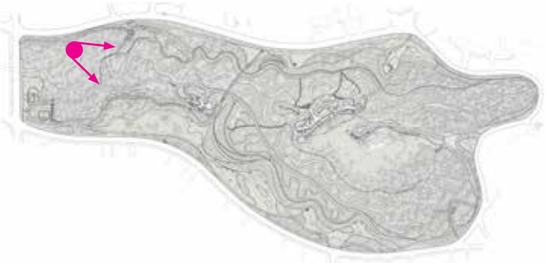
NORTH PARK BOULEVARD

MID-PARK CROSSING

SHARED-USE TRAIL

LOWER FLOODPLAIN TRAIL

PARK CIRCULATION | 100-YEAR STORM EVENT



PARK DRIVE

ATTLEBORO - SHELBURNE TRAIL

SOUTH PARK BOULEVARD

NORTH PARK BOULEVARD

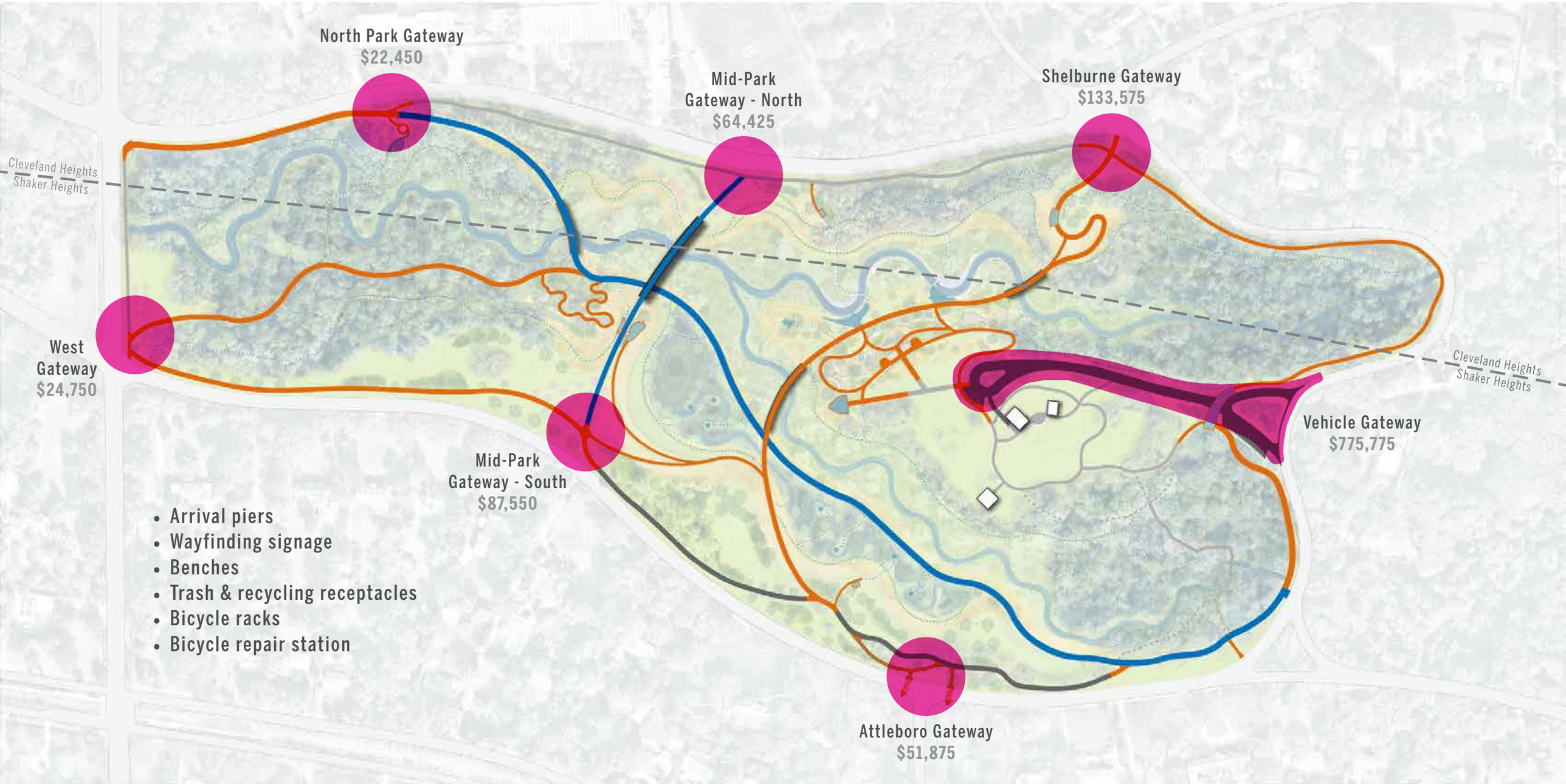
MID-PARK CROSSING

SHARED-USE TRAIL

LOWER FLOODPLAIN TRAIL

PARK GATEWAYS

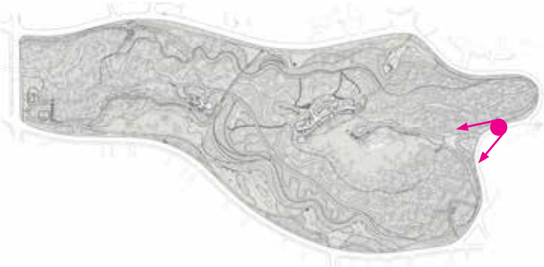
ESTIMATED TOTAL: **$1,160,400**



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

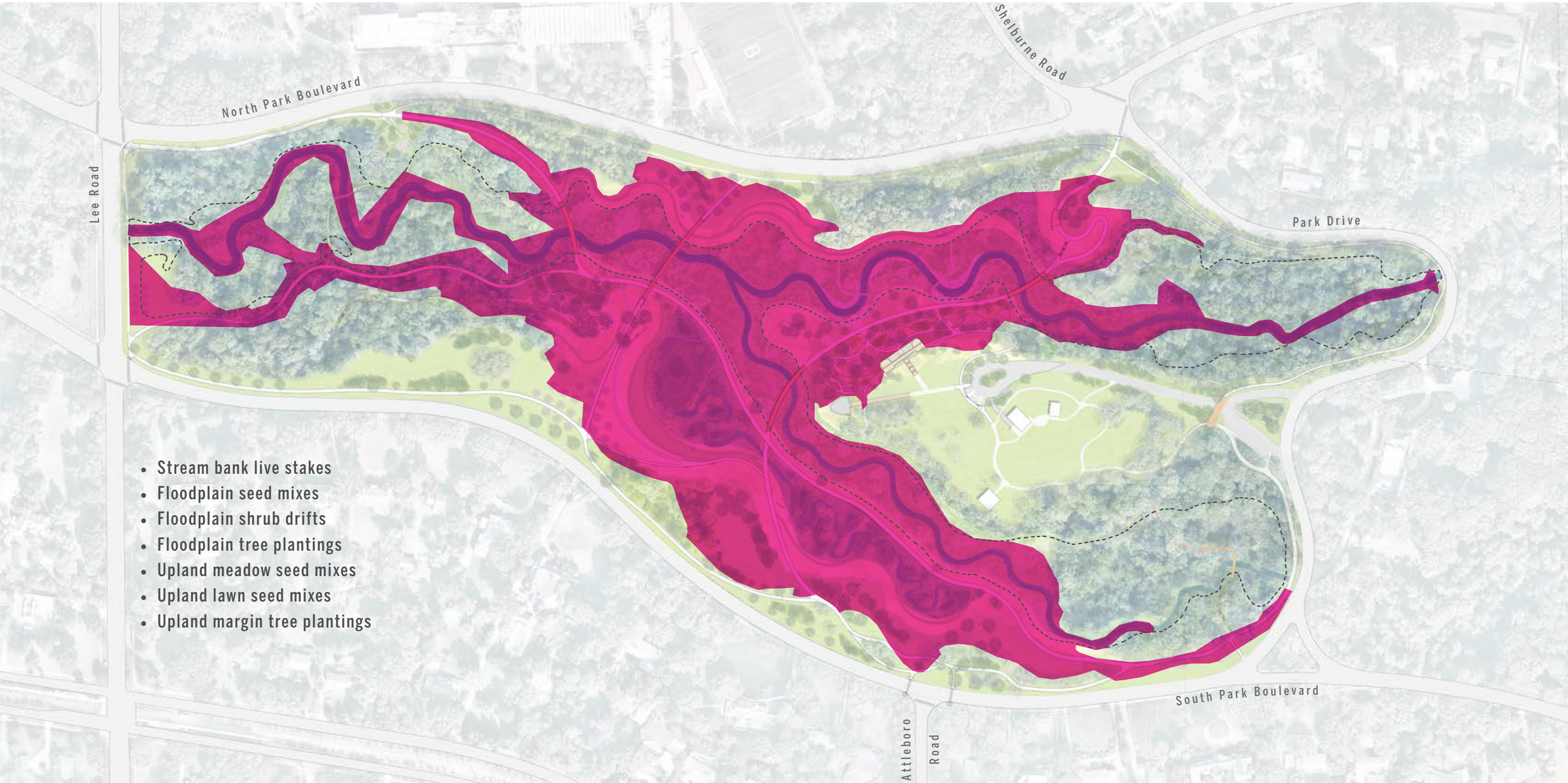
PARK GATEWAYS | ATTLEBORO GATEWAY

PARK GATEWAYS | VEHICLE GATEWAY



PARK GATEWAYS | VEHICLE GATEWAY

PARK PLANTING | DISTRICT PLANTING SCOPE AREA



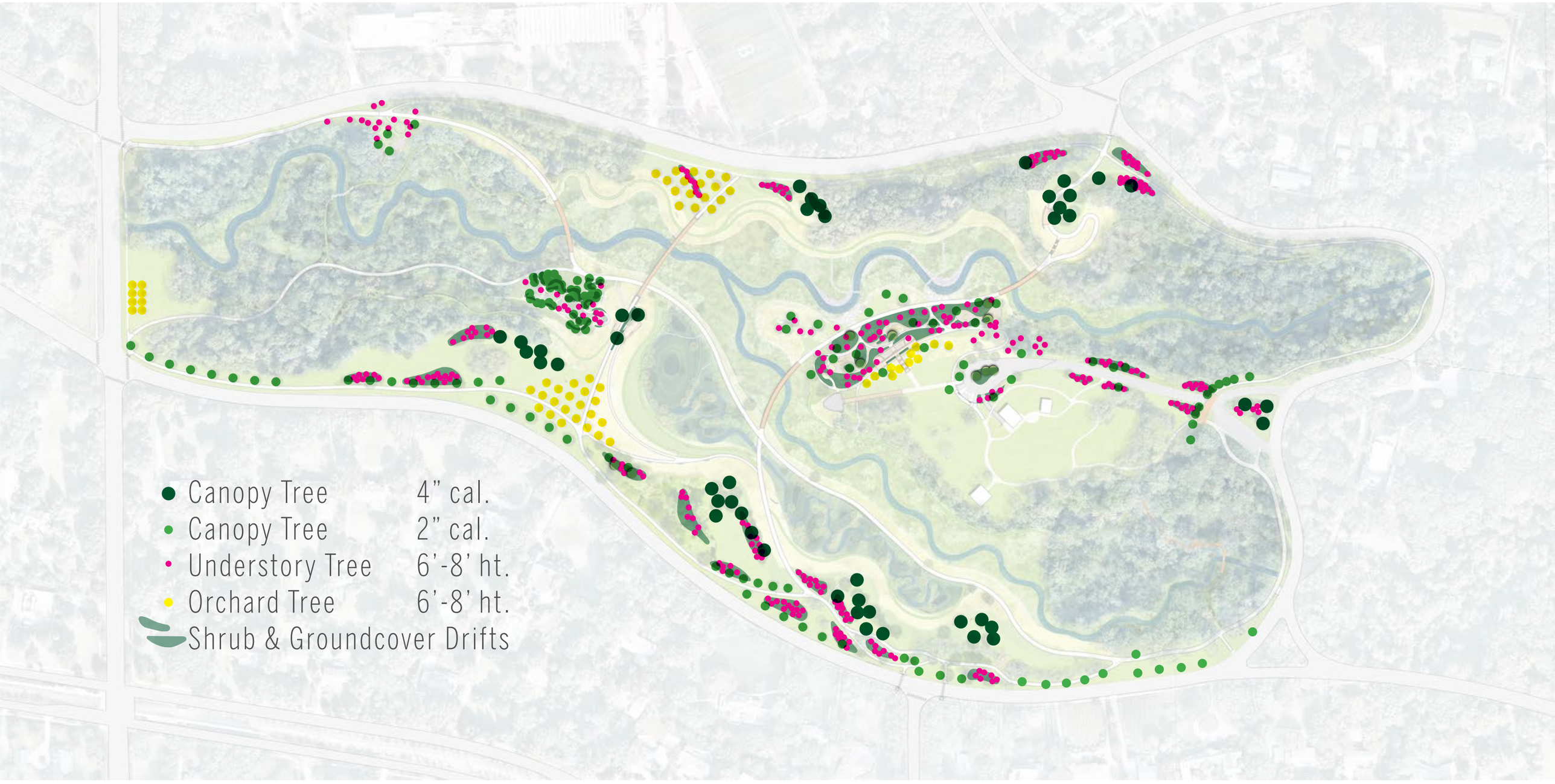
- Stream bank live stakes
- Floodplain seed mixes
- Floodplain shrub drifts
- Floodplain tree plantings
- Upland meadow seed mixes
- Upland lawn seed mixes
- Upland margin tree plantings

Proposed earthwork extents

Proposed 100-year floodplain

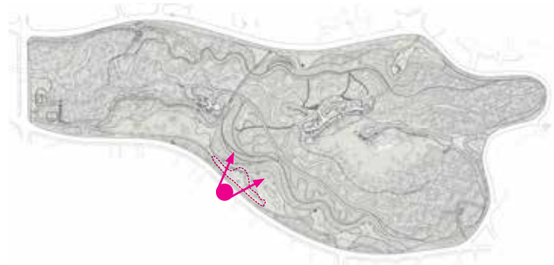
PARK PLANTING | DISTRICT-FUNDED PLANTINGS

PARK PLANTING | CITIES-FUNDED PLANTINGS



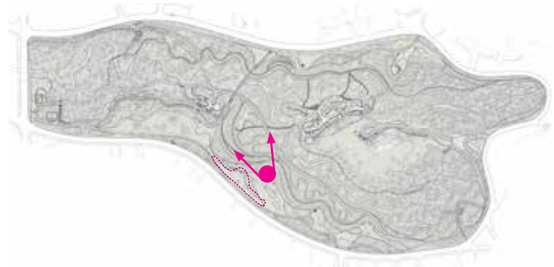
PARK PLANTING | VILLAGE GARDEN CLUB GROVE

PARK PLANTING | VILLAGE GARDEN CLUB GROVE



PARK PLANTING | LARGE PROMONTORY

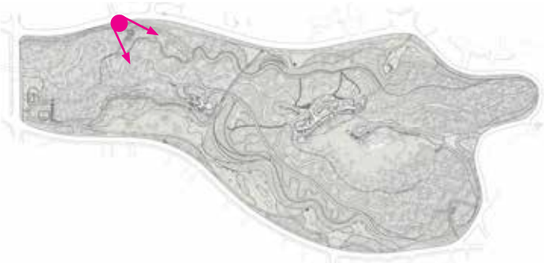
PARK PLANTING | LARGE PROMONTORY



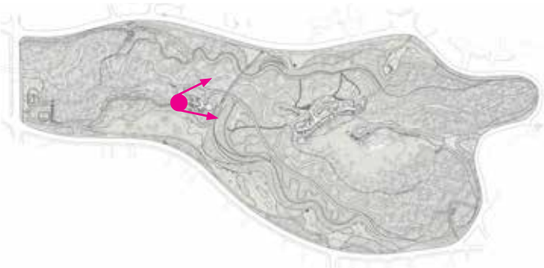
PARK AMENITIES

ESTIMATED TOTAL: **$2,927,525**

PARK AMENITIES | OUTDOOR CLASSROOM

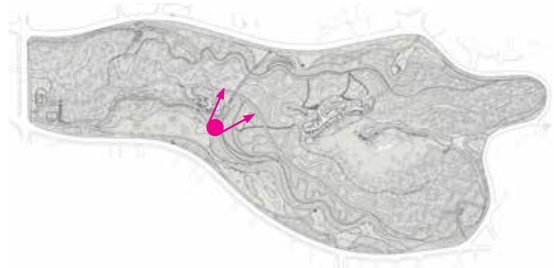


PARK AMENITIES | SENSORY GARDEN

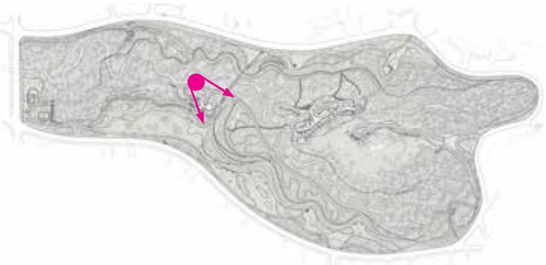


PARK AMENITIES | HILLSIDE MEADOWS

PARK AMENITIES | WETLAND OBSERVATION TERRACE
AND PAVILION

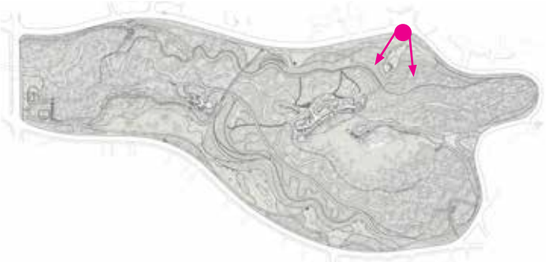


PARK AMENITIES | WETLAND OBSERVATION TERRACE
AND PAVILION

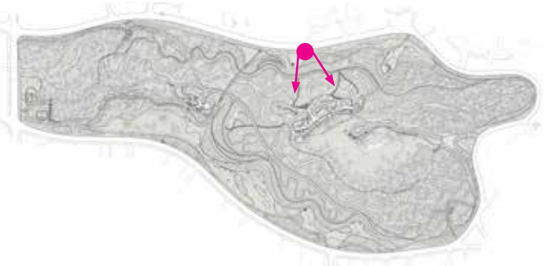


PARK AMENITIES | DOAN BROOK OVERLOOK

NEAR SHELBURNE GATEWAY



PARK AMENITIES | NATURE PLAY



PARK AMENITIES | NATURE PLAY

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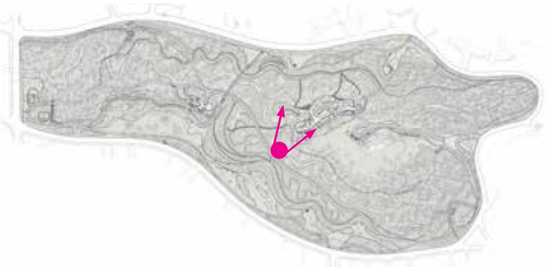
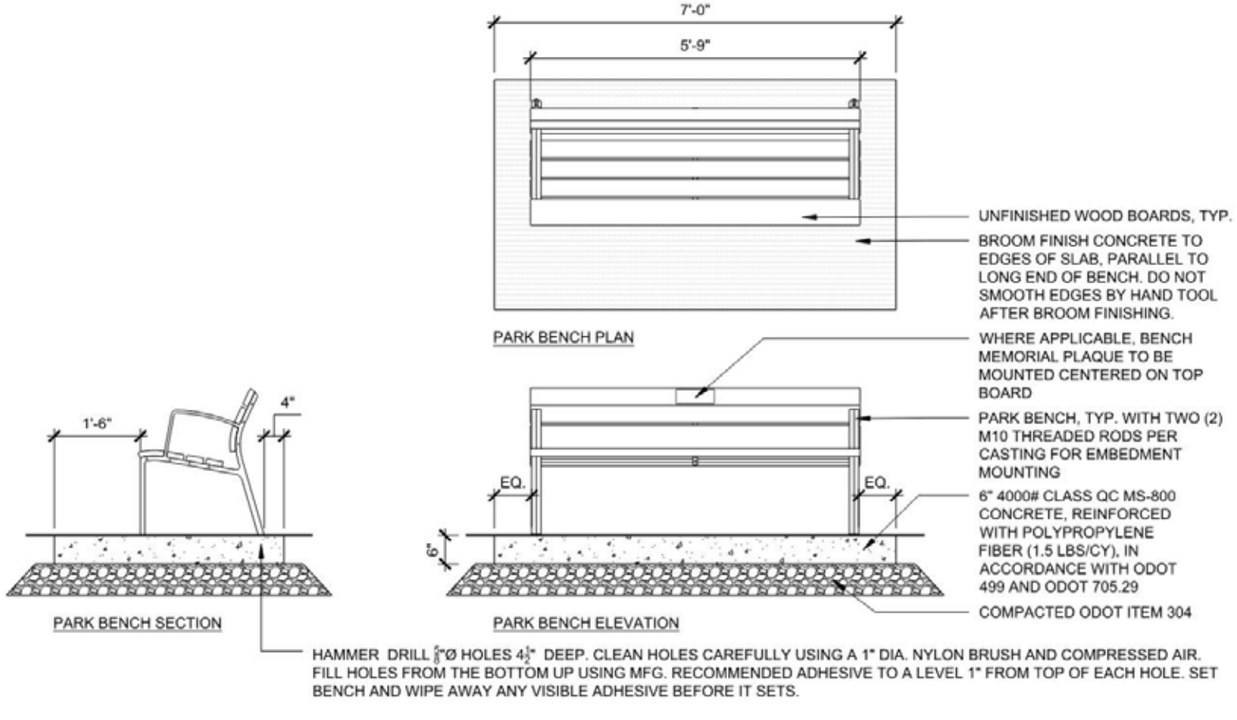


PARK AMENITIES | NATURE PLAY

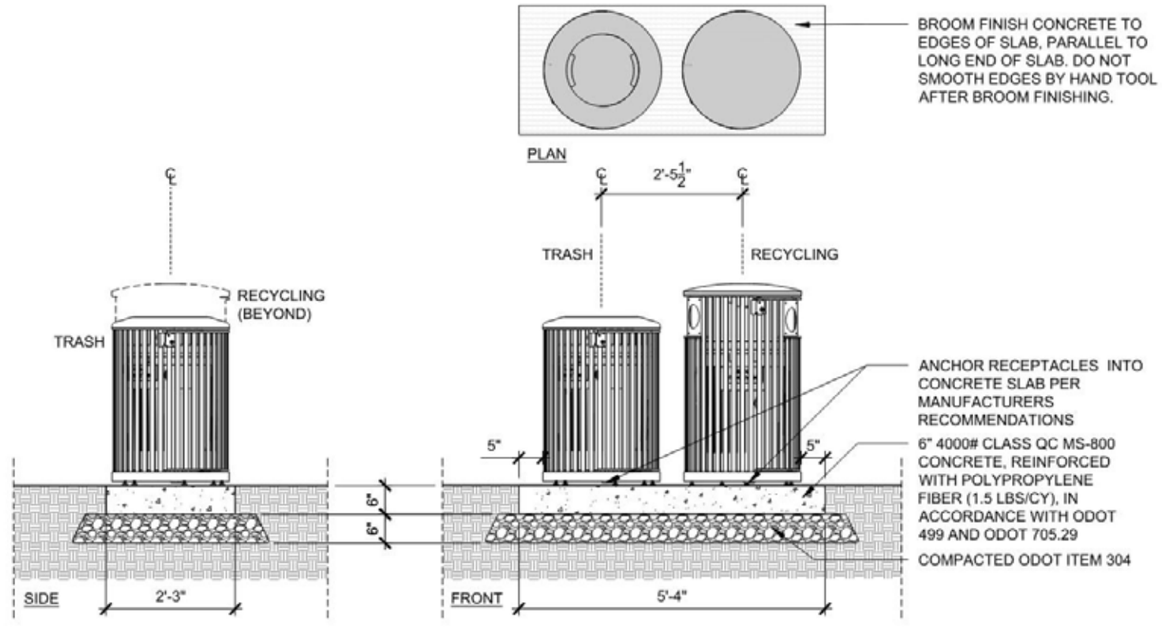
SITE FURNISHINGS | BENCHES (19)



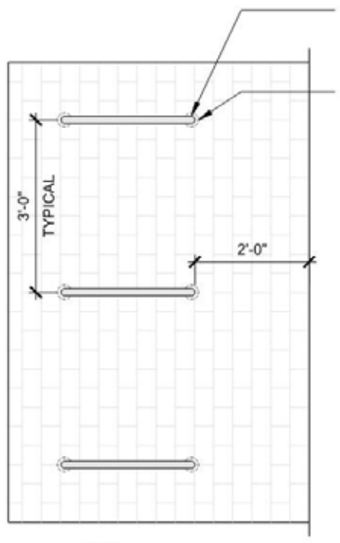
SITE FURNISHINGS | TRASH & RECYCLING RECEPTACLES

TRASH RECEPTACLES (5)

RECYCLING RECEPTACLES (5)



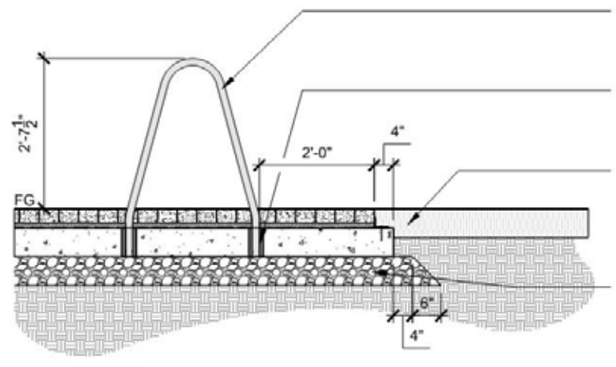
SITE FURNISHINGS | BIKE RACKS (15)



PLAN

NOTE THAT THE 3"Ø CORE DOES NOT COME TO THE SURFACE OF THE CONCRETE UNIT PAVING. UNIT PAVERS SHALL BE CAREFULLY CUT TO MAINTAIN A CLEAN AND CONSISTENT CUT AROUND THE BIKE RACK BASE. MAXIMUM JOINT WITH SHALL BE ¼"

PREPARE CORE HOLES FOR ANCHORING CEMENT. FOLLOW MFG INSTRUCTIONS FOR BLOWING OUT DUST, FILLING WITH WATER, SCRUBBING, AND REMOVING EXCESS WATER PRIOR TO FILLING THE HOLES WITH ANCHORING CEMENT.



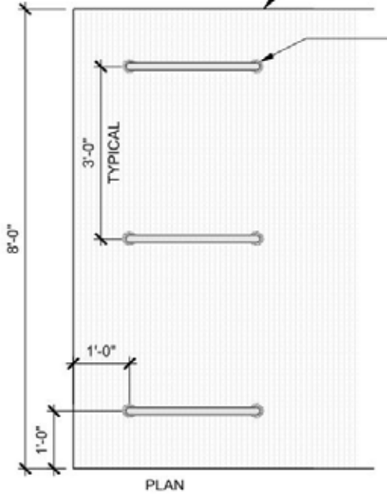
STAINLESS STEEL BIKE RACK, WITH CUSTOM 4" EXTENSIONS FOR FULL EMBEDMENT IN CONCRETE SLAB.

CORE DRILL 3"Ø HOLES 6" DEEP IN SLAB. USE ANCHORING CEMENT PER MFG. RECOMMENDATIONS

6" 4000# CLASS QC MS-800 CONCRETE, REINFORCED WITH POLYPROPYLENE FIBER (1.5 LBS/CY), IN ACCORDANCE WITH ODOT 499 AND ODOT 705.29

COMPACTED ODOT ITEM 304

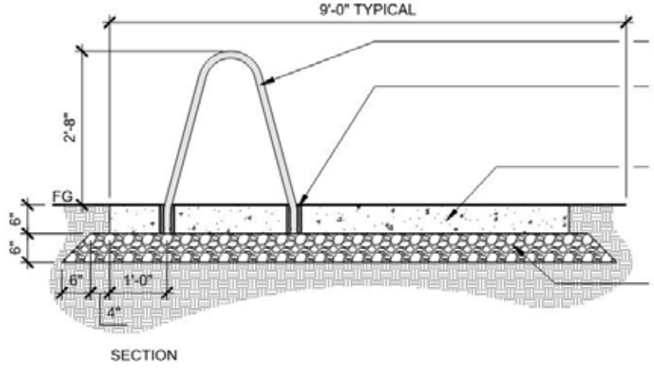
SECTION



PLAN

BROOM FINISH CONCRETE TO EDGES OF SLAB, PERPENDICULAR TO BIKE RACKS. DO NOT SMOOTH EDGES BY HAND TOOL AFTER BROOM FINISHING.

USE EXTREME CARE WHEN PREPARING CORE HOLES FOR ANCHORING CEMENT. FOLLOW MFG INSTRUCTIONS FOR BLOWING OUT DUST, FILLING WITH WATER, SCRUBBING, AND REMOVING EXCESS WATER PRIOR TO FILLING THE HOLES WITH ANCHORING CEMENT. CAREFULLY WIPE AWAY EXCESS ANCHORING CEMENT FROM SURFACES BEFORE IT CURES.



STAINLESS STEEL BIKE RACK, TYP.

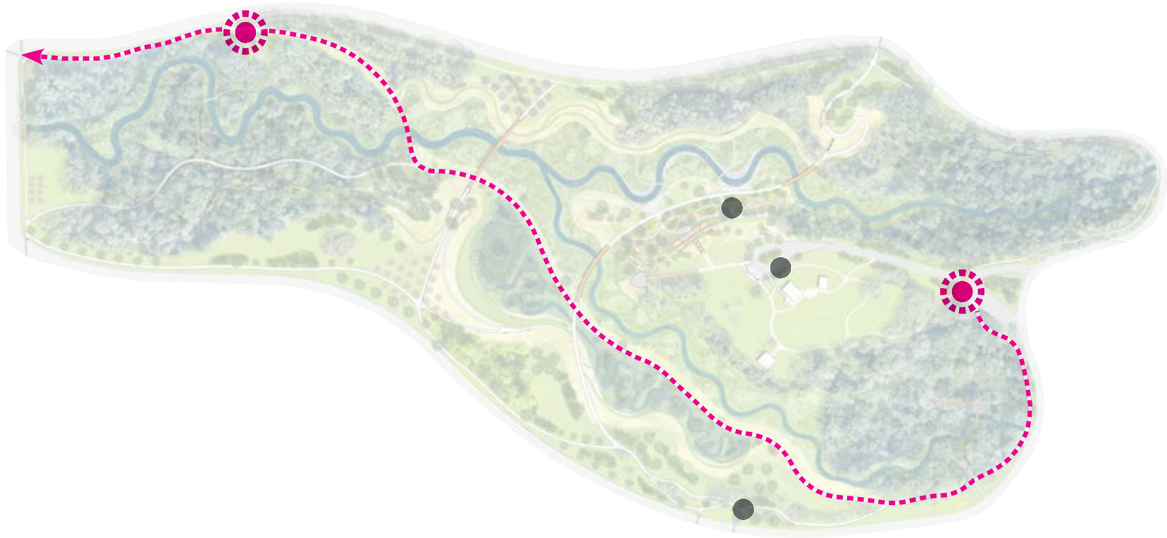
CORE DRILL 3"Ø HOLES 6" DEEP. USE ANCHORING CEMENT PER MFG. RECOMMENDATIONS

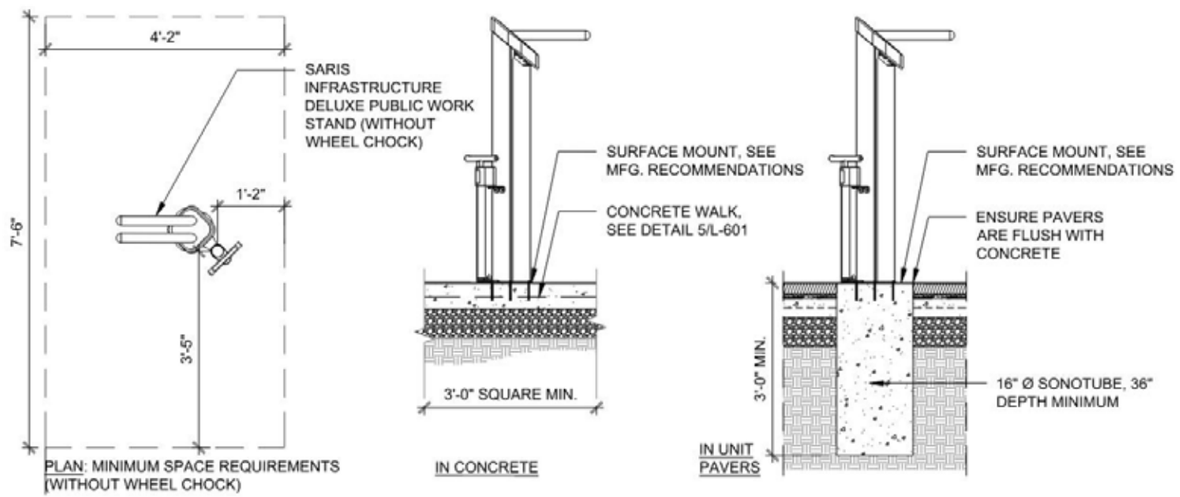
6" 4000# CLASS QC MS-800 CONCRETE, REINFORCED WITH POLYPROPYLENE FIBER (1.5 LBS/CY), IN ACCORDANCE WITH ODOT 499 AND ODOT 705.29

COMPACTED ODOT ITEM 304

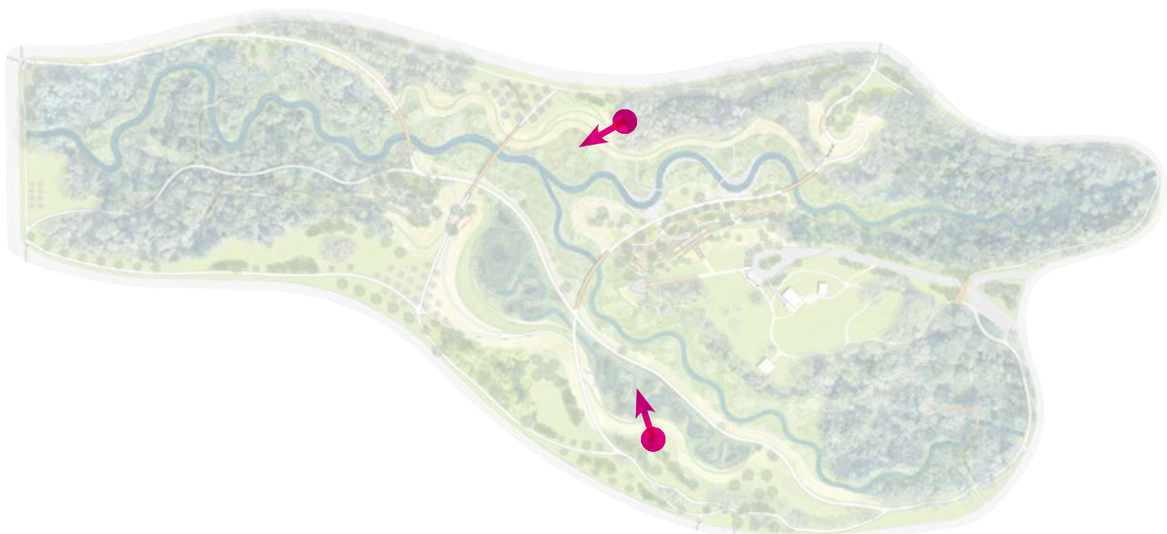
SECTION

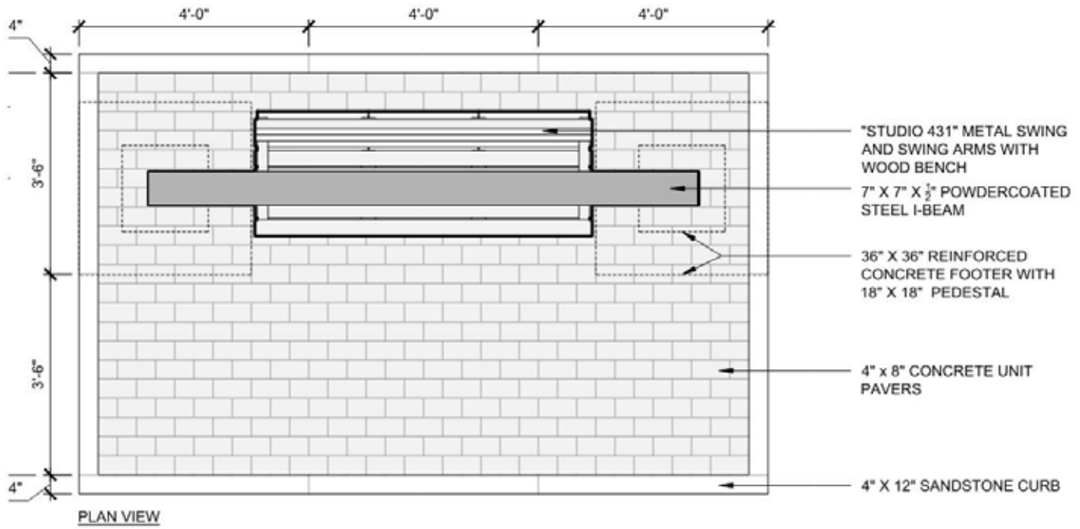
SITE FURNISHINGS | BIKE REPAIR STATIONS (2)



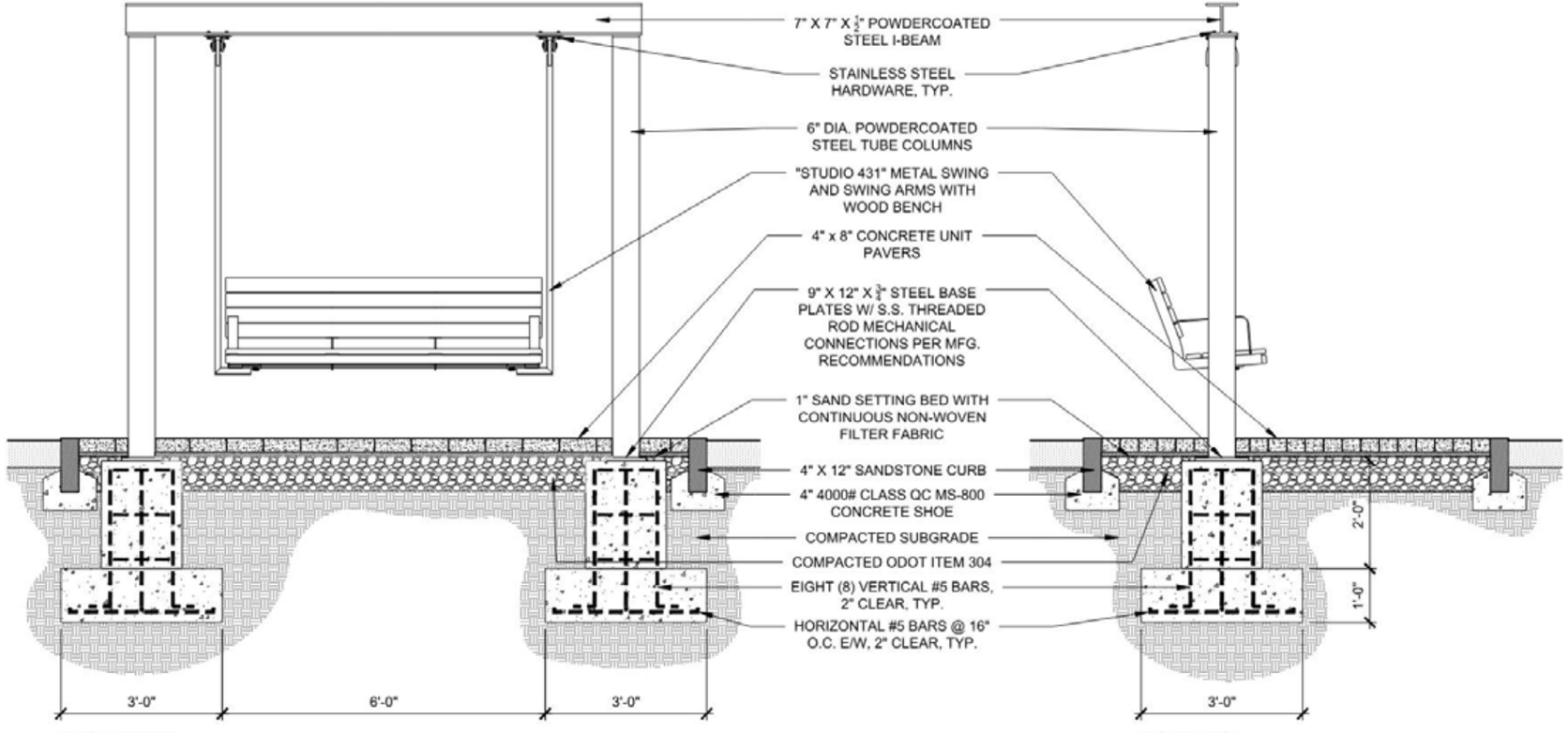


SITE FURNISHINGS | PARK LOUNGE SWINGS (2)





PLAN VIEW

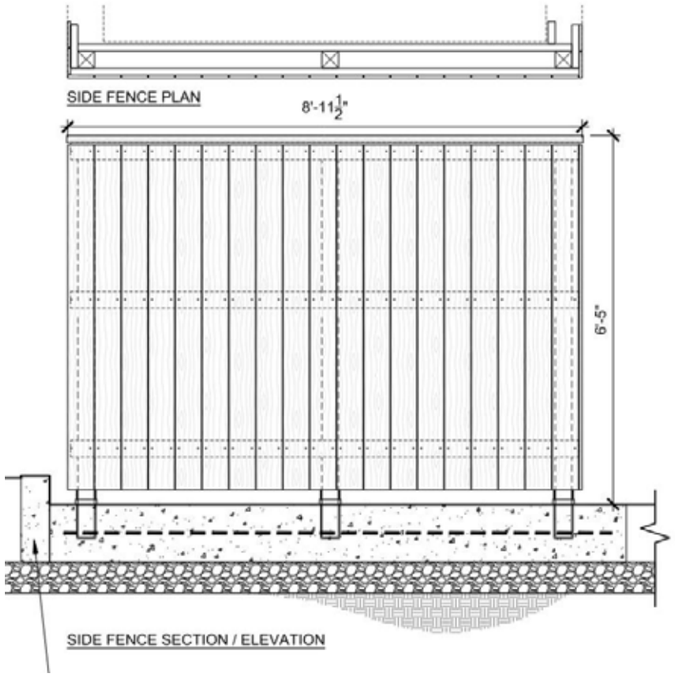


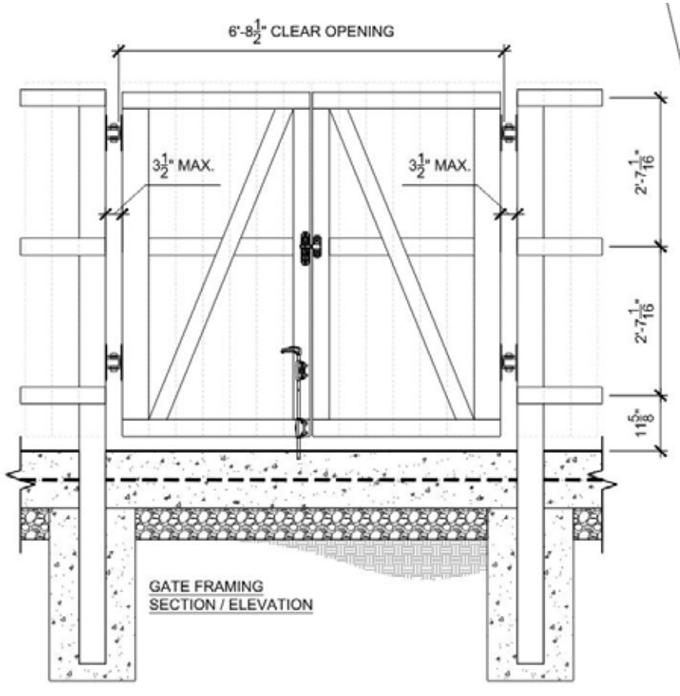
FRONT SECTION

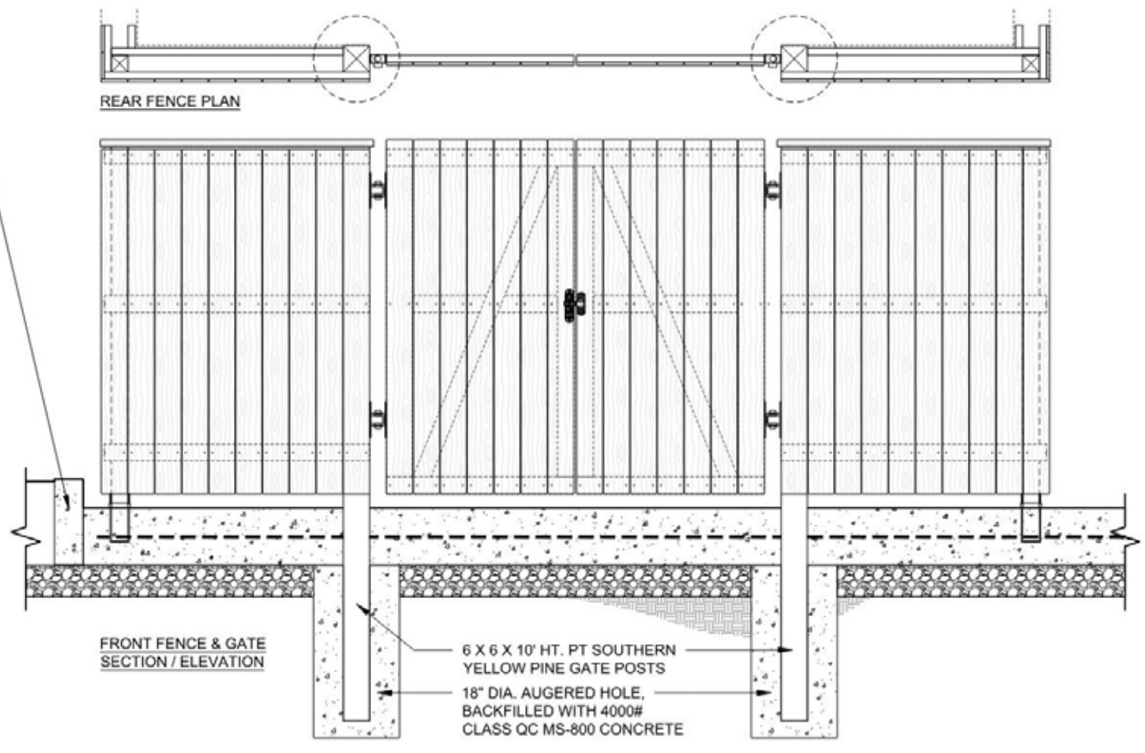
SIDE SECTION

AXONOMETRIC VIEW

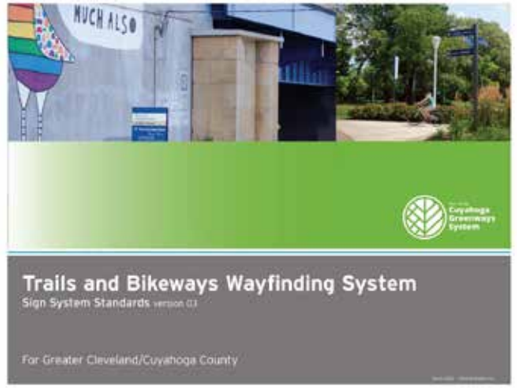
SITE FURNISHINGS | TRASH ENCLOSURE



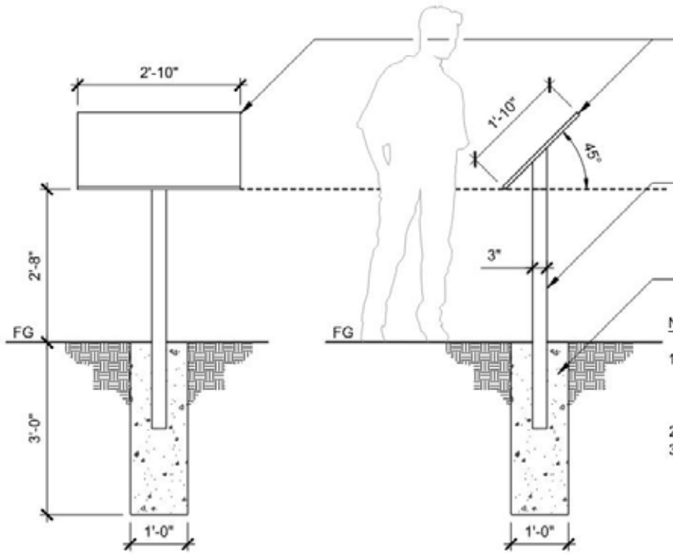




SITE FURNISHINGS | WAYFINDING & INTERPRETIVE SIGNAGE



INTERPRETIVE SIGNAGE (5)



1/2" FULL COLOR, HIGH PRESSURE LAMINATE SIGN; GRAFFITI RESISTANT; 5 YEAR MINIMUM FADE WARRANTY. ENGINEER TO PROVIDE ELECTRONIC IMAGE FILE OF SIGN SUITABLE FOR REPRODUCTION.

POWDER COATED STEEL POST WITH MOUNTINGS, COLOR BLACK

3,000 PSI CONCRETE, MIN.

ITEM SPECIAL - EDUCATIONAL SIGN

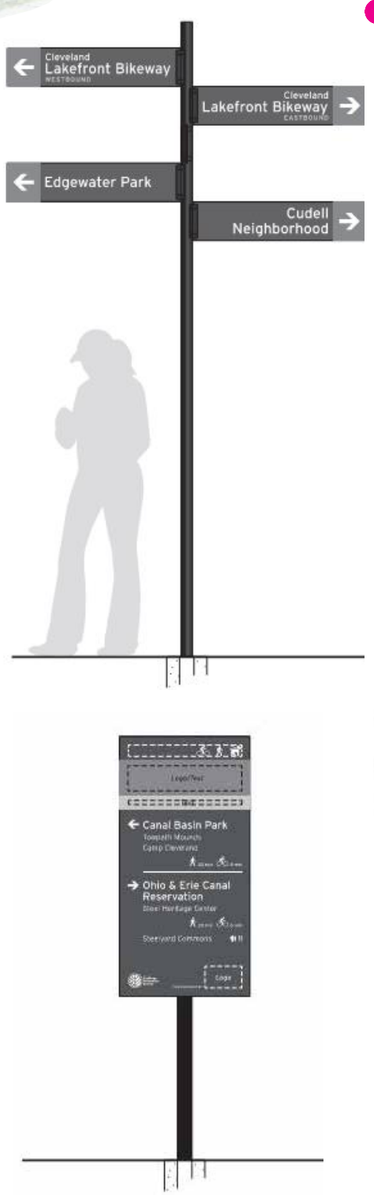
CONTRACTOR IS TO FURNISH ALL EQUIPMENT, MATERIAL, AND LABOR TO INSTALL THE EDUCATIONAL SIGN PER PLAN. THIS ITEM INCLUDES ALL PRINTING OF DIGITAL FILE, AND MOUNTING AS SPECIFIED IN THESE PLANS, MOUNTING POST, CONCRETE AND THEIR INSTALLATION, STORAGE, PREPARATION, EXCAVATION, AND BACKFILL.

EDUCATIONAL SIGN DIGITAL FILE SHALL BE PROVIDED TO THE CONTRACTOR UPON AWARD OF BID.

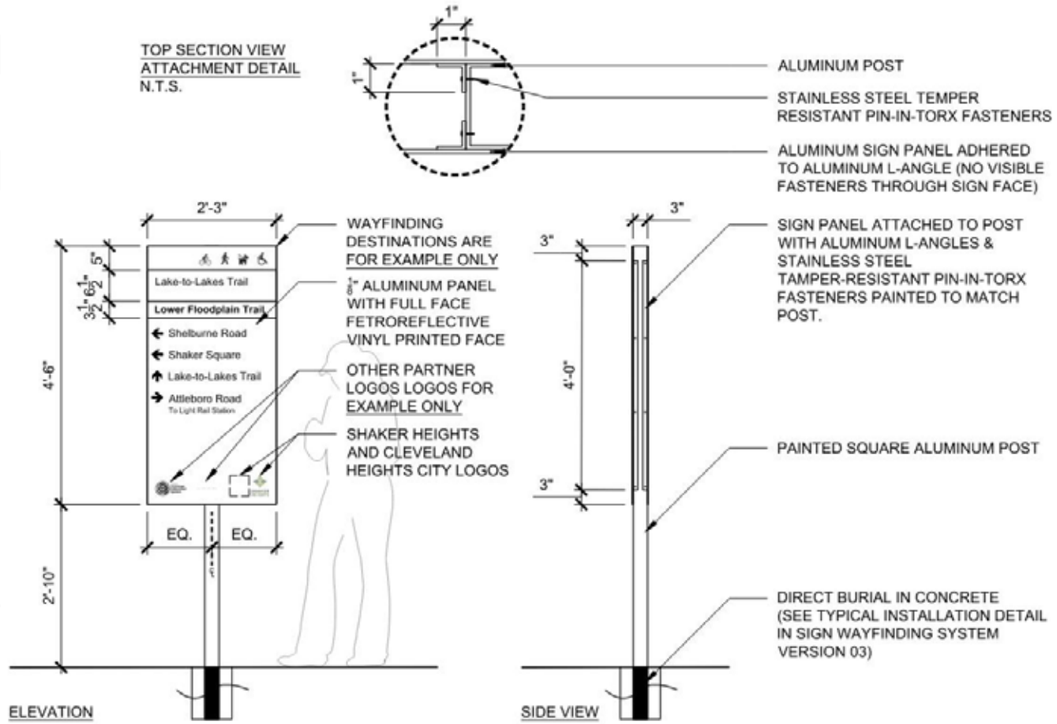
THE ABOVE WORK SHALL BE INCLUDED IN THE UNIT BID PRICE PER EACH FOR ITEM SPECIAL - EDUCATIONAL SIGN. THE QUANTITY HAS BEEN CARRIED OVER TO THE GENERAL SUMMARY.

NOTES:

1. CONTRACTOR WILL BE PROVIDED DIGITAL FILE OF ALL DESIGNS IN 300 DPI CYMK FORMAT BY THE CITY ENGINEER.
2.
3. CONTRACTOR TO SUPPLY ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO INSTALL EDUCATIONAL SIGN AS PER DETAIL, INCLUDING ALL NECESSARY CONNECTORS, CONCRETE FOOTINGS, POSTS, AND HIGH PRESSURE LAMINATE PANELS
4. CONTRACTOR TO INSTALL ONE 22X34 SIGN PER PLAN.
5. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION
6. CONTRACTOR SHALL PAY FOR EDUCATIONAL SIGN IN LUMP-SUM COST.



WAYFINDING SIGNAGE (7)



TRAIL SIGNAGE NOTES:

1. DETAIL REFERENCED FROM TRAILS AND BIKEWAYS WAYFINDING SYSTEM - SIGN SYSTEM STANDARDS VERSION 03 FOR GREATER CLEVELAND / CUYAHOGA COUNTY.
2. "INTERSTATE" FONT TO BE USED AS PRIMARY FONT FAMILY. THE FONTS SPECIFIED ON THIS PAGE ARE COPYRIGHTED AND CONTAIN PROPRIETARY INFORMATION BELONG TO THE CREATORS. UNAUTHORIZED COPYING OR SHARING OF THESE FONT IS EXPRESSLY FORBIDDEN. USERS OF THESE FONTS ARE TO PURCHASE THE APPROPRIATE LICENSES FOR THEIR USE. TYPE FACE LICENSING AGREEMENTS MAY VARY. PURCHASERS SHOULD REVIEW TYPE FACE LICENSING TERMS PRIOR TO PURCHASE. FOR INFORMATION ABOUT PURCHASING FONTS SPECIFIED ON THIS PAGE HTTPS://FONTS.ADOBE.COM/FONTS/INTERSTATE
3. SYMBOLS HAVE BEEN SELECTED FOR USE WITH THE SIGN SYSTEM. ANY ADDITIONAL SYMBOLS SHOULD BE REVIEWED BY THE DESTINATION CLE TASK FORCE PRIOR TO USE.
4. SEE DETAIL FOR INSTALLATION TAKEN FROM TRAILS & BIKEWAYS WAYFINDING SYSTEM STANDARDS VERSION 03.
5. SEE NOTES FOR PERFORMANCE SPECIFICATIONS TAKEN FROM TRAILS & BIKEWAYS WAYFINDING SYSTEM STANDARDS VERSION 03.
6. CONTRACTOR WILL BE PROVIDED DIGITAL FILE OF ALL DESIGNS IN 300 DPI CYMK FORMAT BY OWNER.
7. CONTRACTOR TO SUPPLY ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO INSTALL SIGN AS PER DETAIL, INCLUDING ALL NECESSARY CONNECTORS, CONCRETE FOOTINGS, POSTS, AND HIGH PRESSURE LAMINATE PANELS.
8. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION.
9. LAYOUT TO BE APPLIED TO FRONT AND BACK OF SIGN.
10. CONTRACTOR WILL BE PROVIDED DIGITAL FILES OF ALL DESIGNS IN 300 DPI CYMK FORMAT BY OWNER FOR TWO SIGN FACES. LAYOUT TO BE REVIEWED AND APPROVED WITH LANDSCAPE ARCHITECT PRIOR TO PRINTING.

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

PROJECT SCOPE OF WORK | SUMMARY OF PROBABLE CONSTRUCTION COSTS

DISTRICT SCOPE

Demolition:	$ 898,925
Earthwork:	$9,705,000
Bank Stabilization / Channel Work:	$2,662,000
Erosion Control:	$ 532,500
Storm Sewers:	$ 352,550
Watermain:	$ 50,000
Structural:	$ 1,431,525
Roadways / Trails:	$ 342,650
Landscaping:	$1,876,325
Construction Access:	$ 950,000
Miscellaneous:	$1,510,400
Contingencies & Allowances:	$4,462,375
DISTRICT TOTAL:	**$24,774,250**

CITIES SCOPE

Park Circulation:	$1,623,300
Park Gateways:	$1,160,400
Park Amenities:	$2,927,525
Other Landscape Improvements:	$1,513,875
CITIES TOTAL:	**$7,225,100**

TOTAL PROBABLE
CONSTRUCTION COSTS:

$31,999,350

NEXT STEPS

- **FINAL DESIGN COMPLETE -** JUNE, 2025
- **CITY DEPARTMENTS DESIGN REVIEWS -** SECOND AND THIRD QUARTER 2025
- **REGULATORY PERMITTING -** ONGOING, THROUGH THIRD QUARTER 2025
- **CONSTRUCTION BIDDING -** FOURTH QUARTER 2025
- **CONSTRUCTION MOBILIZATION -** FIRST 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
Lounge Swings-South
South Park Boulevard
Attleboro Road
Shared-Use Trail (NEORSD Funded)