CUYAHOGA COUNTY

PLAN SUMMARY

PROCESS AND RECOMMENDATIONS SUMMARY FOR CUYAHOGA COUNTY LAKEFRONT PUBLIC ACCESS

SMITHGROUP

February 2022

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PREPARED FOR:

COUNTY OF CUYAHOGA, OHIO
PUBLIC WORKS

County Planning
CUYAHOGA COUNTY
PLANNING COMMISSION

PREPARED BY:

SMITHGROUP

THIRD SPACE ACTION LABS | CTL ENGINEERING | WSP

ACKNOWLEDGMENTS

The Cuyahoga County Lakefront Public Access Plan is commissioned by the Cuyahoga County Department of Public Works in close collaboration with the Cuyahoga County Planning Commission.

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BIKE EUCLID

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CLEVELAND WATER ALLIANCE

CLEVELAND FOUNDATION

DOWNTOWN CLEVELAND ALLIANCE

DETROIT-SHOREWAY DEVELOPMENT CORPORATION

OHIO CITY INCORPORATED

SAINT CLAIR-SUPERIOR

GREATER COLLINWOOD DEVELOPMENT CORPORATION

LAKEWOODALIVE

1.0 PROJECT BACKGROUND

1.1 PROJECT OVERVIEW

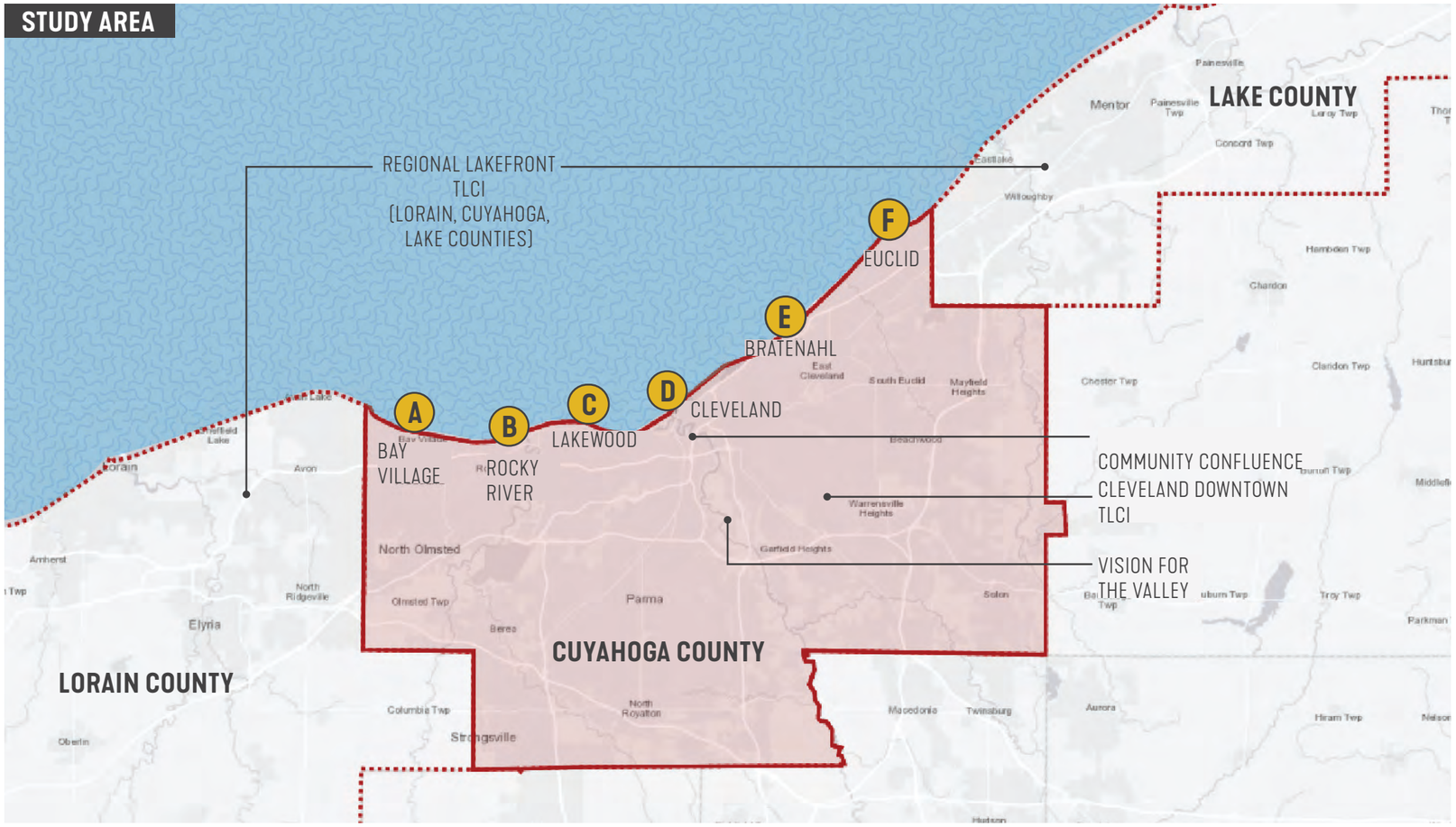
The Lakefront Public Access Plan was announced by County Executive Armond Budish during his State of the County address in 2019 and aims to improve transportation networks and increase public access to Lake Erie in concert with shoreline stabilization efforts. The Lakefront Public Access Plan covers three general topic areas: improved public access to Lake Erie, erosion control and ecological enhancement, and enhanced transportation networks along the shoreline.

This plan outlines a multimodal network of connected paths, all-purpose trails, boardwalks, roads, bridges, and public access points across the Lake Erie shoreline. These investments will positively impact the lives of Cuyahoga County residents by supporting equitable access to the shoreline and providing a more resilient lakefront through the formation of public-private partnerships between the County, lakefront municipalities, and lakefront landowners.

The Plan considers the entire 30-mile Lake Erie shoreline within Cuyahoga County and provides a continuous network from the east to west side of the County. From the County's border with Lake County in the East to Lorain County in the West, the lakefront network traverses six jurisdictions (the Cities of Bay Village, Rocky River, Lakewood, Cleveland, Euclid, and the Village of Bratenahl) and three Cleveland Metroparks Reservations (Huntington, Lakefront, and Euclid Creek). It builds on initiatives occurring throughout the county including many key plans such as the Northeast Ohio Areawide Coordinating Agency Regional Lakefront TLCI, Cuyahoga County Greenways Plan, Cleveland Harbor Eastern Embayment Resilience Study (CHEERS), Community Confluence TLCI, Vision for the Valley TLCI, and the Downtown Cleveland Transportation Connectivity TLCI.

INTEGRATE	Recommendations and ongoing initiatives occurring throughout the County as a means of elevating the region and providing a consistent message and vision for the lakefront.
EXPAND	Equitable public lakefront access through the formation of public-private partnerships and a system of trails and multimodal network improvements.
PROTECT	Shorelines and private properties from the threat of lakefront erosion while supporting public lakefront access.
ENHANCE	Water quality, ecology, and resilience of the lakefront through the development of access and shoreline protection projects that support private economic investment and result in multiple benefits.

STUDY AREA



A CAHOON LAKEFRONT PUBLIC ACCESS STUDY

B ROCKY RIVER BRADSTREET'S LANDING

C LAKEWOOD SOLSTICE STEPS

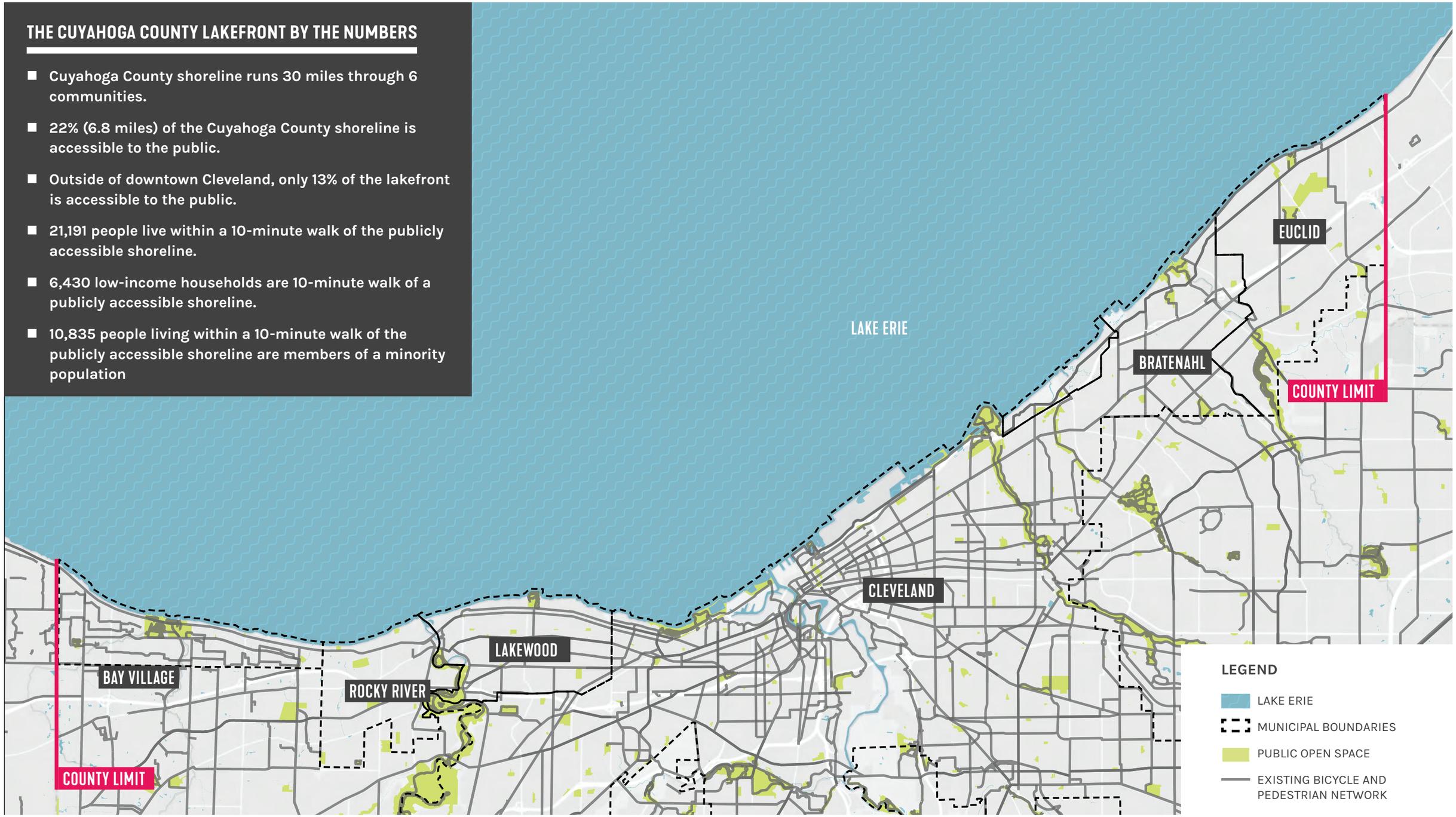
D CLEVELAND HARBOR EASTERN EMBAYMENT RESILIENCE STUDY

E CLEVELAND METROPARKS LAKEFRONT RESERVATION

F EUCLID WATERFRONT IMPROVEMENTS

THE CUYAHOGA COUNTY LAKEFRONT BY THE NUMBERS

- Cuyahoga County shoreline runs 30 miles through 6 communities.
- 22% (6.8 miles) of the Cuyahoga County shoreline is accessible to the public.
- Outside of downtown Cleveland, only 13% of the lakefront is accessible to the public.
- 21,191 people live within a 10-minute walk of the publicly accessible shoreline.
- 6,430 low-income households are 10-minute walk of a publicly accessible shoreline.
- 10,835 people living within a 10-minute walk of the publicly accessible shoreline are members of a minority population



DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, GARMIN, USGS, EPA, NPS, NOACA

1.2 PROJECT GOALS

The plan will guide Cuyahoga County, partnering municipalities and organizations, and private landowners in determining opportunities and priorities for expanding public lakefront access along the 30 mile lakefront.

ESTABLISH CRITERIA TO HELP PRIORITIZE POTENTIAL PUBLIC LAKEFRONT INVESTMENT

IDENTIFY PROTOTYPICAL SHORELINE AND TRAIL TREATMENTS

OUTLINE STRATEGIES AND PARTNERSHIPS TO SUPPORT IMPLEMENTATION

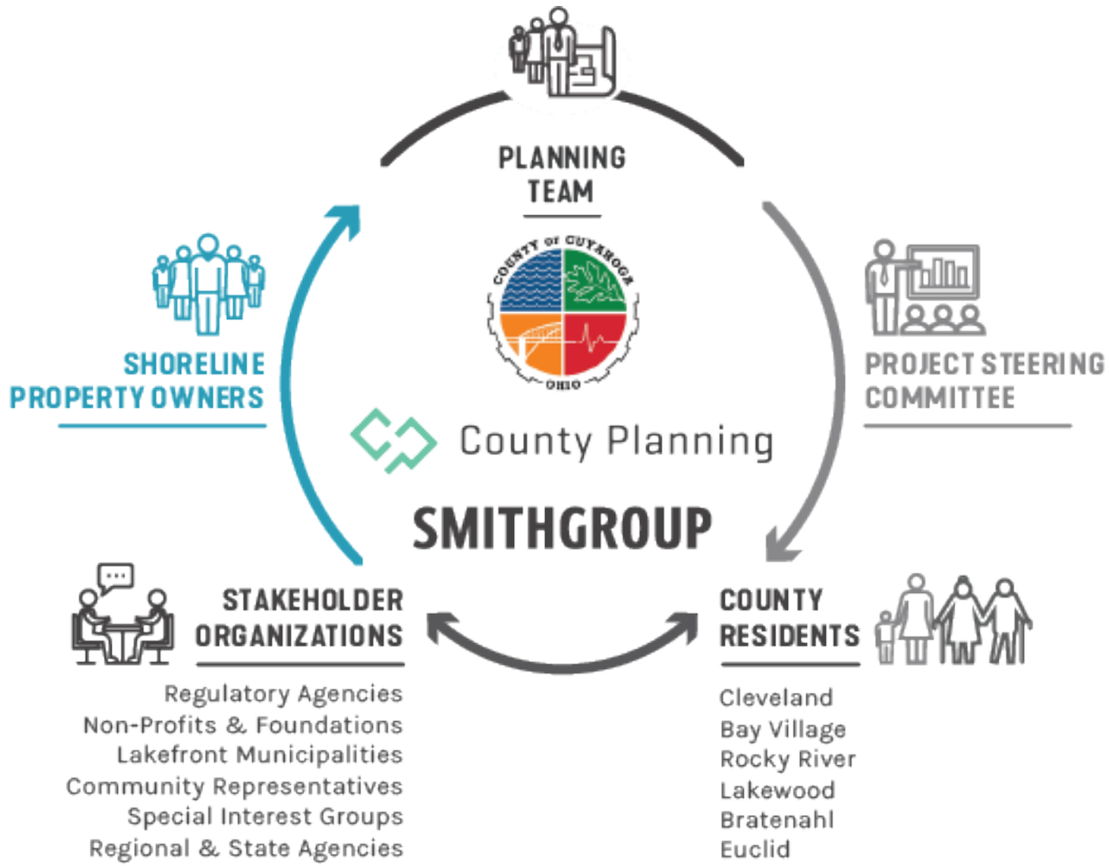
DEFINE ORDER OF MAGNITUDE COSTS FOR POTENTIAL IMPROVEMENTS

2.0 PLANNING PROCESS

2.1 PROJECT ROAD MAP

The Lakefront Public Access Plan preparation process explores a range of opportunities to forge public-private partnerships toward expanding public shoreline access in exchange for shoreline protection, provides recommendations for prioritizing segments of shoreline for potential investment along with corresponding strategies for lakefront access and bluff stabilization, and defines the steps needed to advance toward implementation of its recommendations. Each of these aspects are described in more detail in the remaining segments of this document.

The various exploration and plan development stages were informed by discussions with a variety of project partners including municipal leaders, governmental and non-profit organizations, residents, and lakefront landowners. Feedback from community input sessions and focused stakeholder interviews offered guidance on key plan objectives. Lakefront landowner engagement was a critical and iterative process, offering opportunities to educate, test ideas, and begin exploring receptivity that is at the heart of building the public-private partnerships needed to meaningfully expand public lakefront access throughout the county. As ideas and discussions progressed, the project steering committee remained active serving both as a sounding board and strong group of decision-makers that directed the resulting plan recommendations.



IDENTIFY OPPORTUNITIES + DETERMINE PRIORITIES

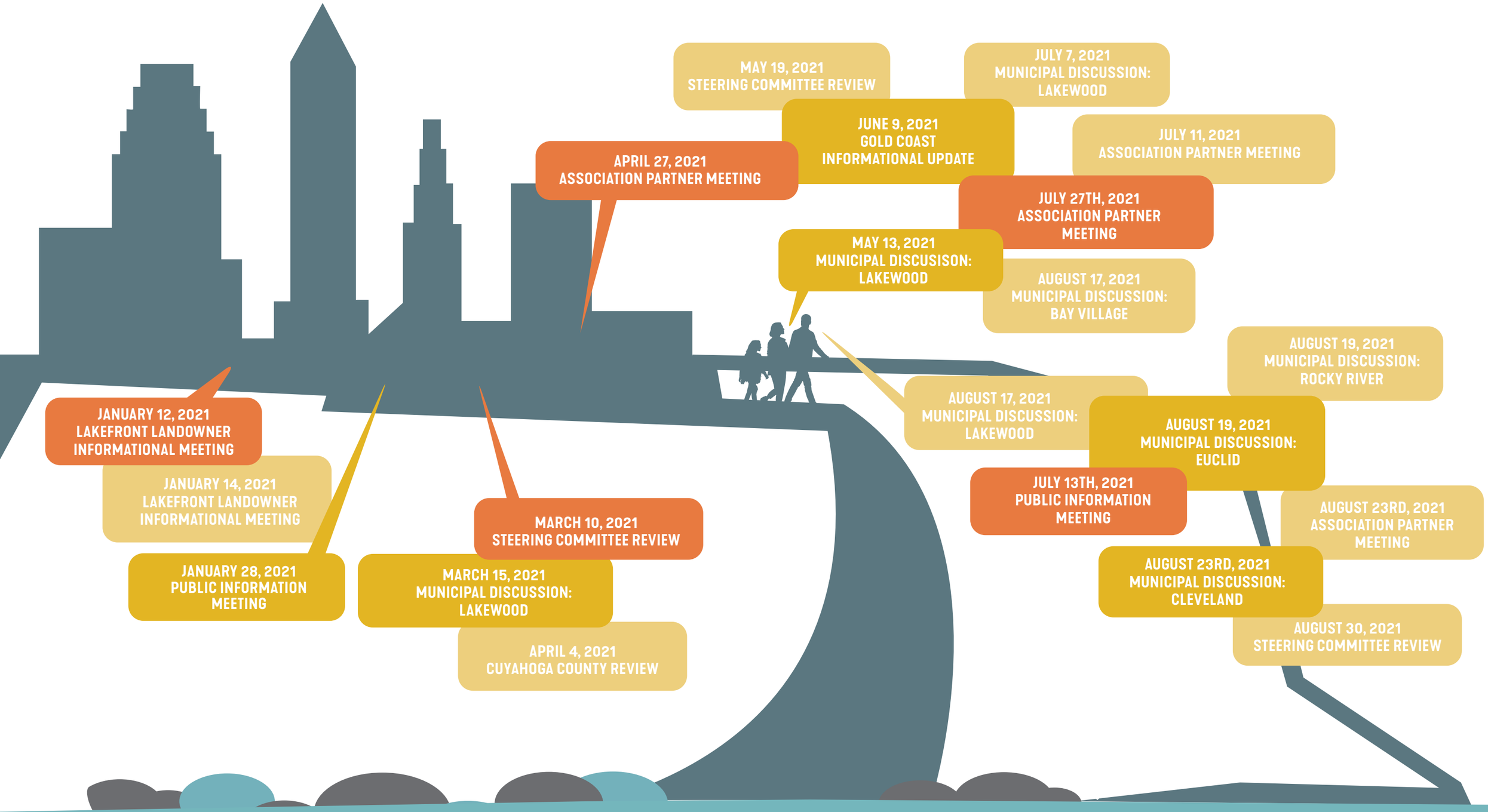
- Develop themes for prioritizing investment
- Catalog opportunities and assets
- Evaluate shoreline segments

LAKEFRONT PUBLIC ACCESS PLAN

- Priority shoreline segments
- Shoreline treatment and access typologies

IMPLEMENTATION

- Public-private partnership recommendations
- Initial focus areas
- Anticipated cost
- Potential funding opportunities



PUBLIC + STAKEHOLDER ENGAGEMENT DISCUSSIONS

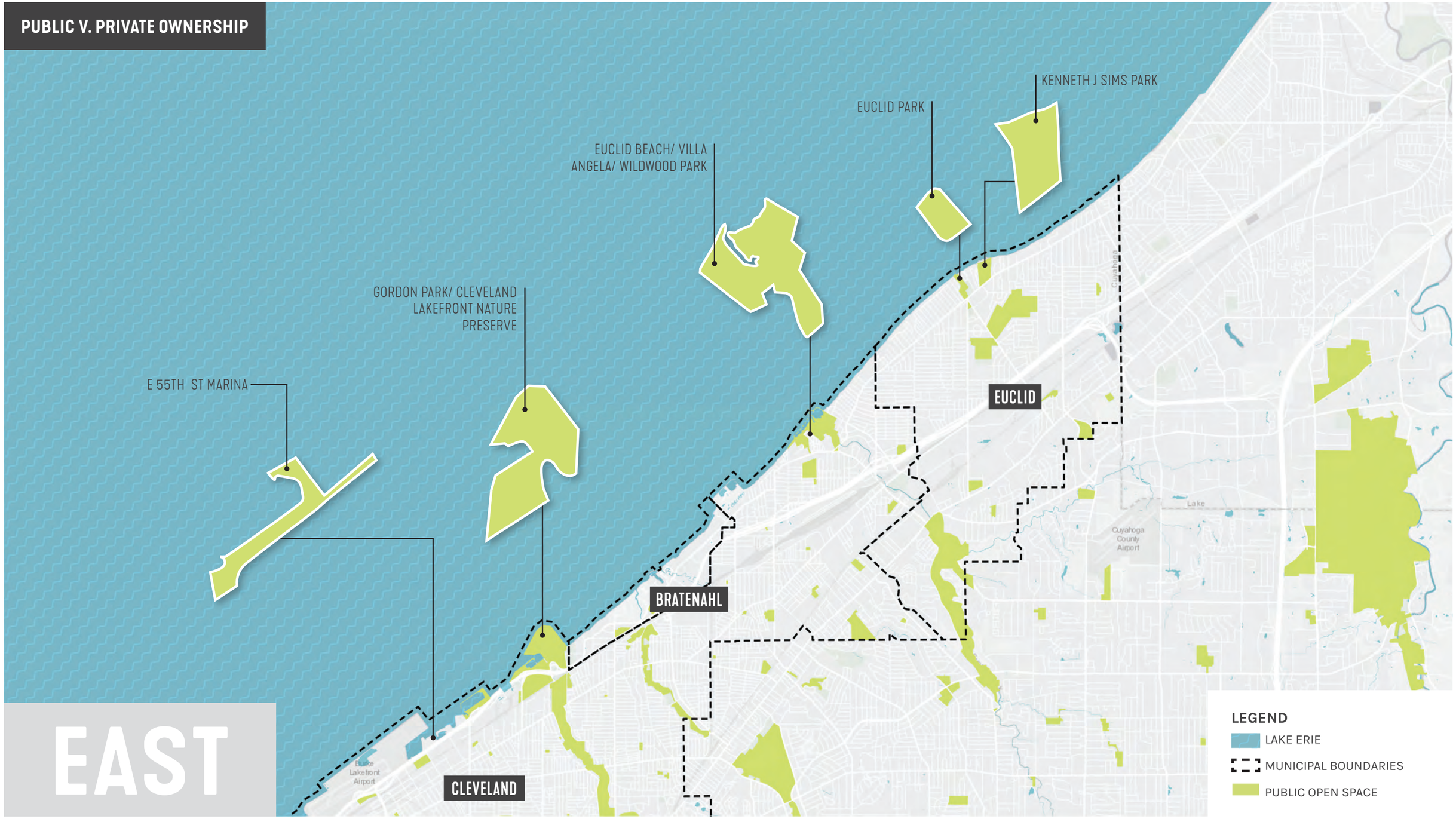
WHERE IS PUBLIC ACCESS CURRENTLY?

Public lakefront access is focused on 14 lakefront public parks spread out from the western to eastern edges of the county. As a system, these lakefront parks offer a wide range of passive and active recreational opportunities. Some support structured activities such as larger community events like concerts while others offer a chance to connect with nature and enjoy views of the lake.

Expanding public lakefront access beyond what currently exists can be accomplished in a couple ways - purchasing properties in strategic locations or working with lakefront landowners to form partnerships in which public access along private shorelines can be created in exchange for public investment in shoreline protection. The Lakefront Public Access Plan seeks to leverage the latter strategy, understanding the availability of property to assemble for purchase and the cost of that activity can be incredibly difficult to find and expensive to do. As part of the plan development process, private landowners of the nearly 3,824 lakefront parcels were asked about their interest in forging such partnerships.

DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, GARMIN, USGS, EPA, NPS

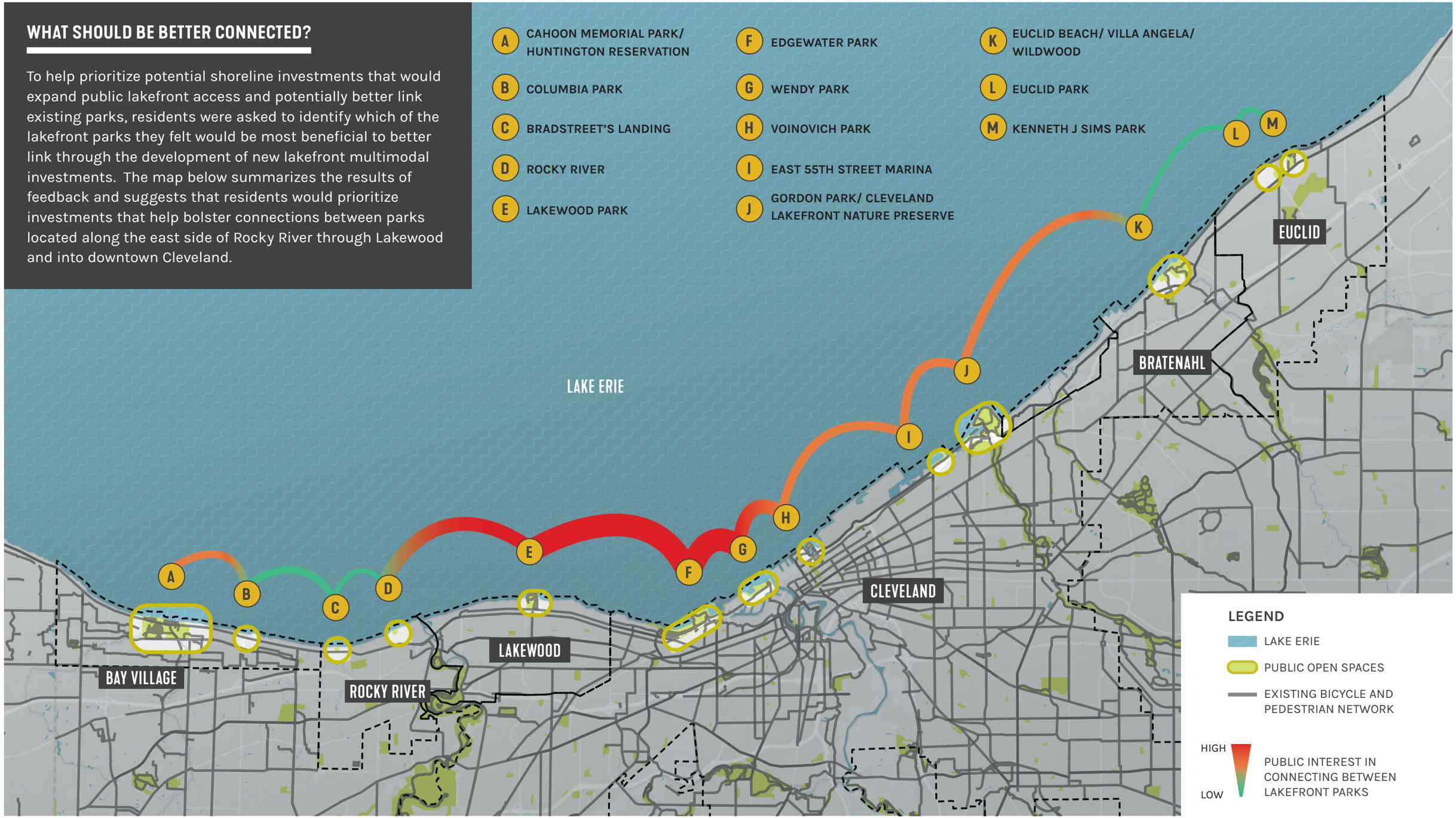
PUBLIC V. PRIVATE OWNERSHIP



DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, INCREMEND P, GARMIN, USGS, EPA

WHAT SHOULD BE BETTER CONNECTED?

To help prioritize potential shoreline investments that would expand public lakefront access and potentially better link existing parks, residents were asked to identify which of the lakefront parks they felt would be most beneficial to better link through the development of new lakefront multimodal investments. The map below summarizes the results of feedback and suggests that residents would prioritize investments that help bolster connections between parks located along the east side of Rocky River through Lakewood and into downtown Cleveland.



DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, GARMIN, USGS, EPA, NPS, NOACA

2.2 HOW IS THE PUBLICLY ACCESSIBLE SHORELINE CURRENTLY USED?

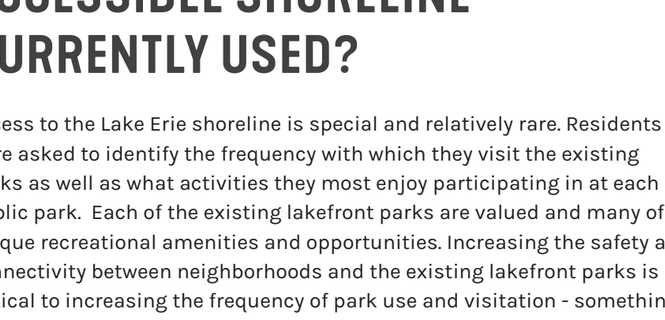
Access to the Lake Erie shoreline is special and relatively rare. Residents were asked to identify the frequency with which they visit the existing parks as well as what activities they most enjoy participating in at each public park. Each of the existing lakefront parks are valued and many offer unique recreational amenities and opportunities. Increasing the safety and connectivity between neighborhoods and the existing lakefront parks is critical to increasing the frequency of park use and visitation - something that many current and ongoing studies are exploring in more detail. As trails recommended by the Lakefront Public Access Plan are developed, the types of amenities and recreational opportunities offered should reflect the interests of those who will use them.

VISITATION

- Weekly Visits
- Monthly Visits
- Yearly Visits
- Would Like To But Don't
- Never Likely To Visit

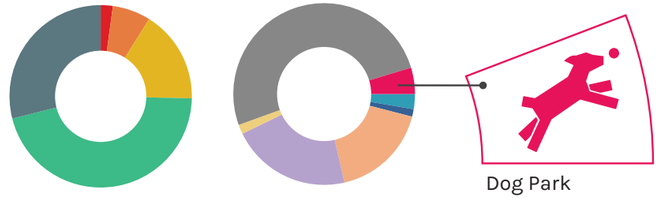
ACTIVITY

- Fishing
- Kayaking/ Canoing
- Walking/ Running/ Biking
- Viewing/ Relaxing
- Attending an Event
- None/ I don't visit this park
- Other

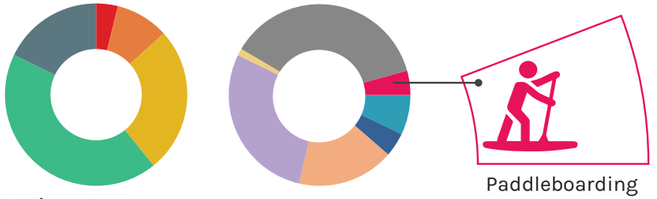


HUNTINGTON RESERVATION

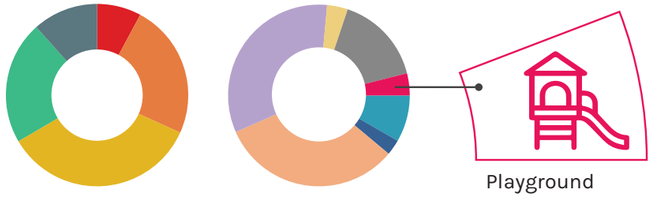
CAHOON MEMORIAL PARK



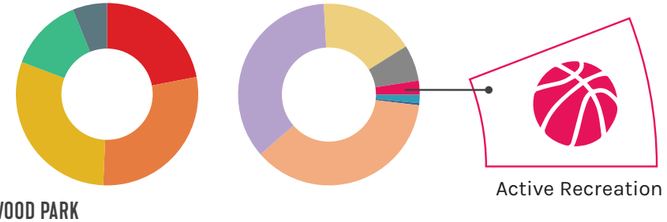
COLUMBIA PARK



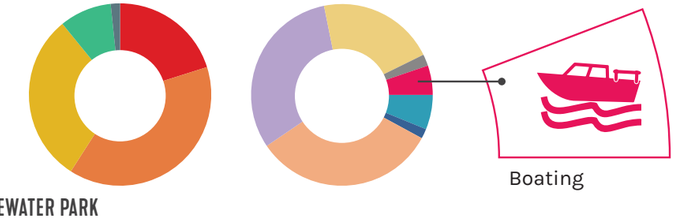
BRADSTREET'S LANDING



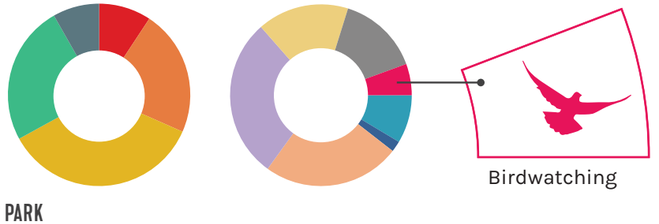
ROCKY RIVER PARK



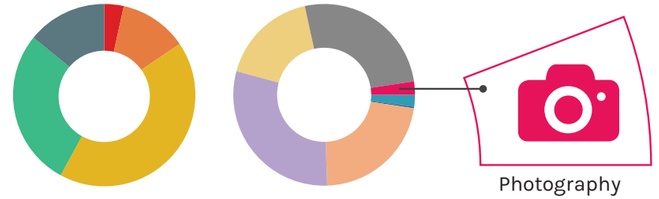
LAKEWOOD PARK



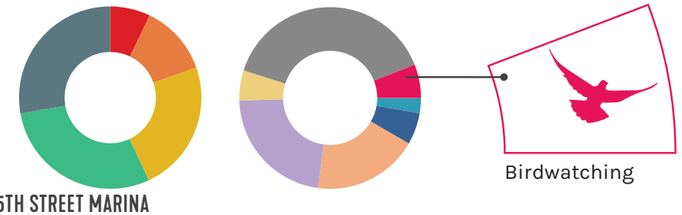
EDGEWATER PARK



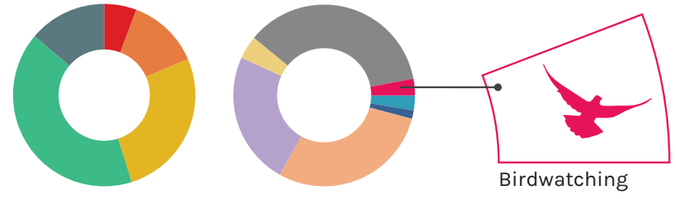
WENDY PARK



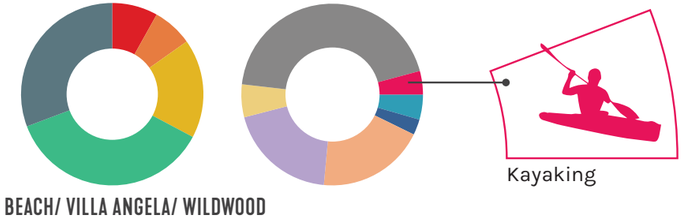
VOINOVICH PARK



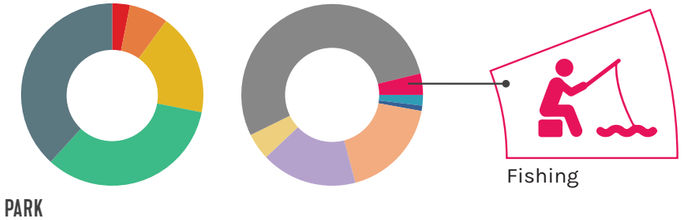
EAST 55TH STREET MARINA



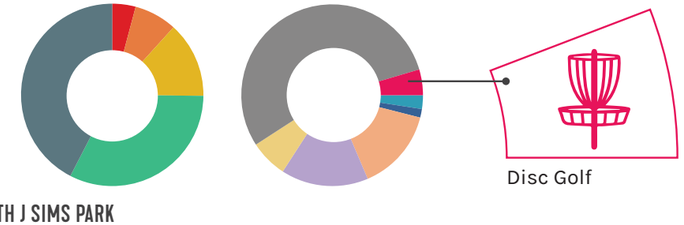
GORDON PARK/ CLEVELAND LAKEFRONT NATURE PRESERVE



EUCLID BEACH/ VILLA ANGELA/ WILDWOOD



EUCLID PARK



KENNETH J SIMS PARK

3.0 IDENTIFYING OPPORTUNITIES AND DETERMINING PRIORITIES

3.1 METHODOLOGY FOR ANALYZING SEGMENTS

1. BREAK PRIVATELY-OWNED LAKEFRONT INTO SEGMENTS

18.6 miles of privately-owned shoreline were organized into 41 logical segments based on ownership patterns, geological features, and logical points of upland / inland connections. Areas of the shoreline that are publicly owned or already accessible to the public were not included in the segmentation.

2. ESTABLISH CRITERIA TO AID IN PRIORITIZING INVESTMENTS

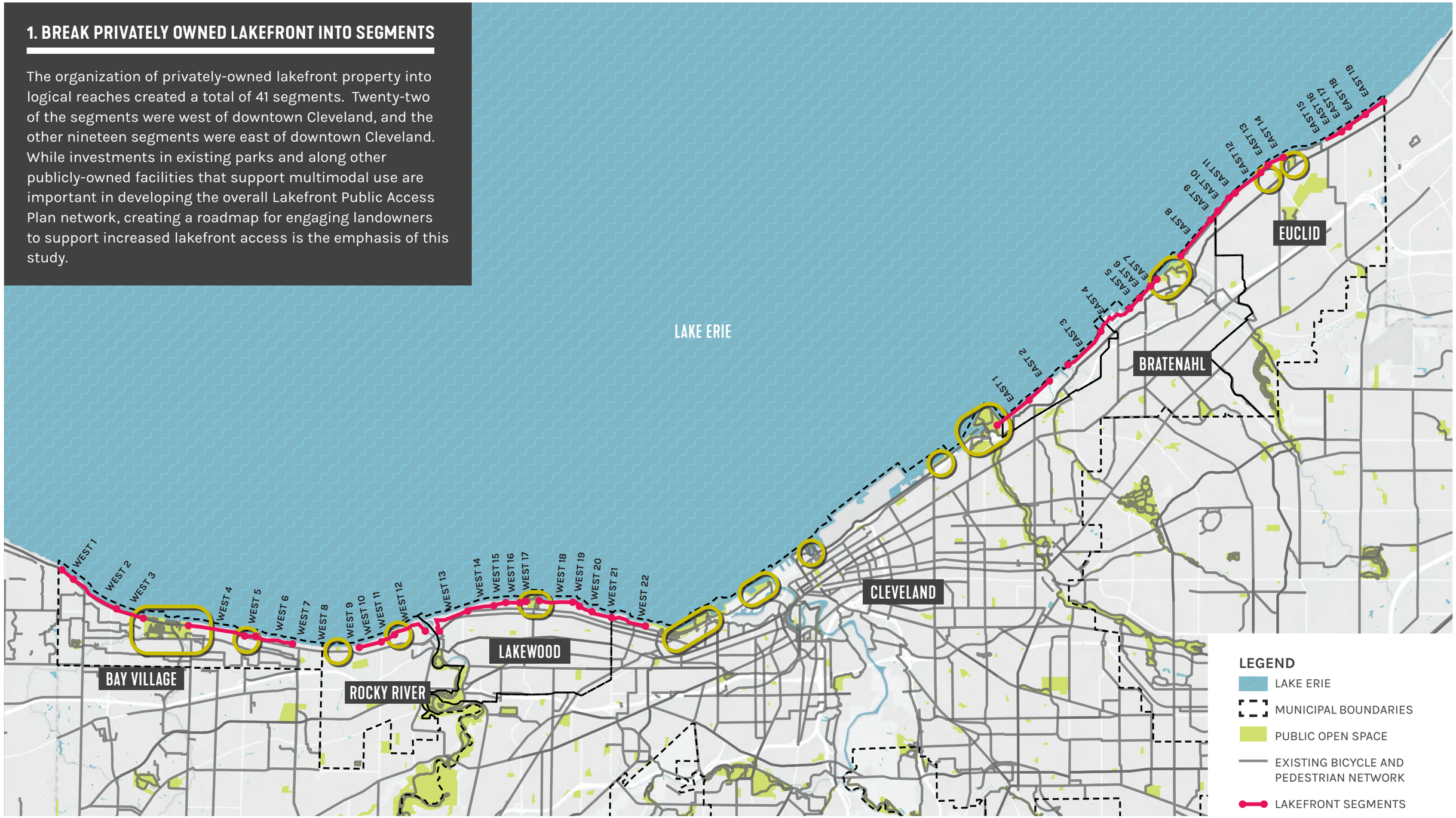
Key criteria across a range of issues were derived from public, stakeholder and steering committee input. The criteria address issues related to equity, ecology, economics, and user experience and enjoyment. A weighting exercise was used to compare the relative importance of the individual criteria.

3. EVALUATE OPPORTUNITIES & ASSETS FOR EACH SEGMENT AGAINST CRITERIA TO PRIORITIZE POTENTIAL AREAS FOR PUBLIC INVESTMENT

Each of the 41 shoreline segments was evaluated against the same set of criteria resulting in a composite score. The segments were then organized into three categories (low, medium, and high) which were used to prioritize potential segments for exploring public-private partnerships toward shoreline protection in exchange for public access.

1. BREAK PRIVATELY OWNED LAKEFRONT INTO SEGMENTS

The organization of privately-owned lakefront property into logical reaches created a total of 41 segments. Twenty-two of the segments were west of downtown Cleveland, and the other nineteen segments were east of downtown Cleveland. While investments in existing parks and along other publicly-owned facilities that support multimodal use are important in developing the overall Lakefront Public Access Plan network, creating a roadmap for engaging landowners to support increased lakefront access is the emphasis of this study.



DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, GARMIN, USGS, EPA, NPS, NOACA

2. ESTABLISH CRITERIA TO AID IN PRIORITIZING INVESTMENTS

Public, stakeholder, and steering committee input shaped the criteria used to prioritize potential investments. Four broad themes provide a way to organize the criteria and reflect the goals and objectives set forth for the Cuyahoga County Lakefront Public Access Plan. The themes include promoting ecological enhancement, supporting economic reinvestment, promoting public use, and enjoyment along the Lake Erie shoreline.

SOCIETY

PUBLIC INTEREST IN LAKEFRONT CONNECTIVITY

Public interest in connecting existing adjacent lakefront public parks and access points to one another (parallel to shoreline).

EASE OF PUBLIC ACCESSIBILITY

Ability to physically connect a specific stretch of shoreline to existing or planned inland public access points (rights-of-way, parks, etc.).

PROXIMITY TO EXISTING PUBLIC LAKEFRONT ACCESS POINTS

Potential for a specific trail segment to expand access at existing lakefront public access points or provide new access in areas without existing public lakefront access.

EQUITABLE ACCESS (BOTH INCOME + RACE FACTORS)

Potential for a specific shoreline segment to increase public lakefront access for underserved/invested communities (based on income and race/ethnicity) within the county.

GREATEST POPULATION SERVED

Serving the greatest number of people with proximity to a specific segment of shoreline.

HUMAN SPIRIT

PRIORITY AMENITIES + ACTIVITIES

Degree to which a specific segment of shoreline supports/expands access to recreational activities and opportunities most desired by the community.

UNIQUE NATURAL ASSETS

Degree to which access to a specific segment of shoreline provides access to a special natural area or unique natural feature (views, ecological resources, etc.) that is relatively uncommon within the county.

ECONOMY

PRIVATE INVESTMENT ATTRACTION

Potential for public investment in trail development along a specific stretch of shoreline to support existing, or act as a catalyst for attracting new private investment / economic development.

PROTECTS EXISTING PRIVATE ASSETS

Level to which investment in a specific stretch of shoreline will help retain or protect privately-owned land and improvements along the lakefront that may be subject to loss from shoreline and bluff erosion.

PROTECTS EXISTING PUBLIC ASSETS

Level to which investment in a specific stretch of shoreline will help retain or protect existing public improvements (roads, utilities, parks, etc.) along the lakefront that may be subject to loss from shoreline and bluff erosion.

ECOLOGY

SHORELINE EROSION / STABILITY

Degree to which a specific shoreline segment may be eroding and unstable based on high-level visual review and knowledge of local geology and which may be stabilized through shoreline protection investment.

HABITAT ENHANCEMENT

Degree to which investment in a specific shoreline segment may support the protection, enhancement, and/or creation of habitat (and benefit from potentially attracting funding to help implement the project).

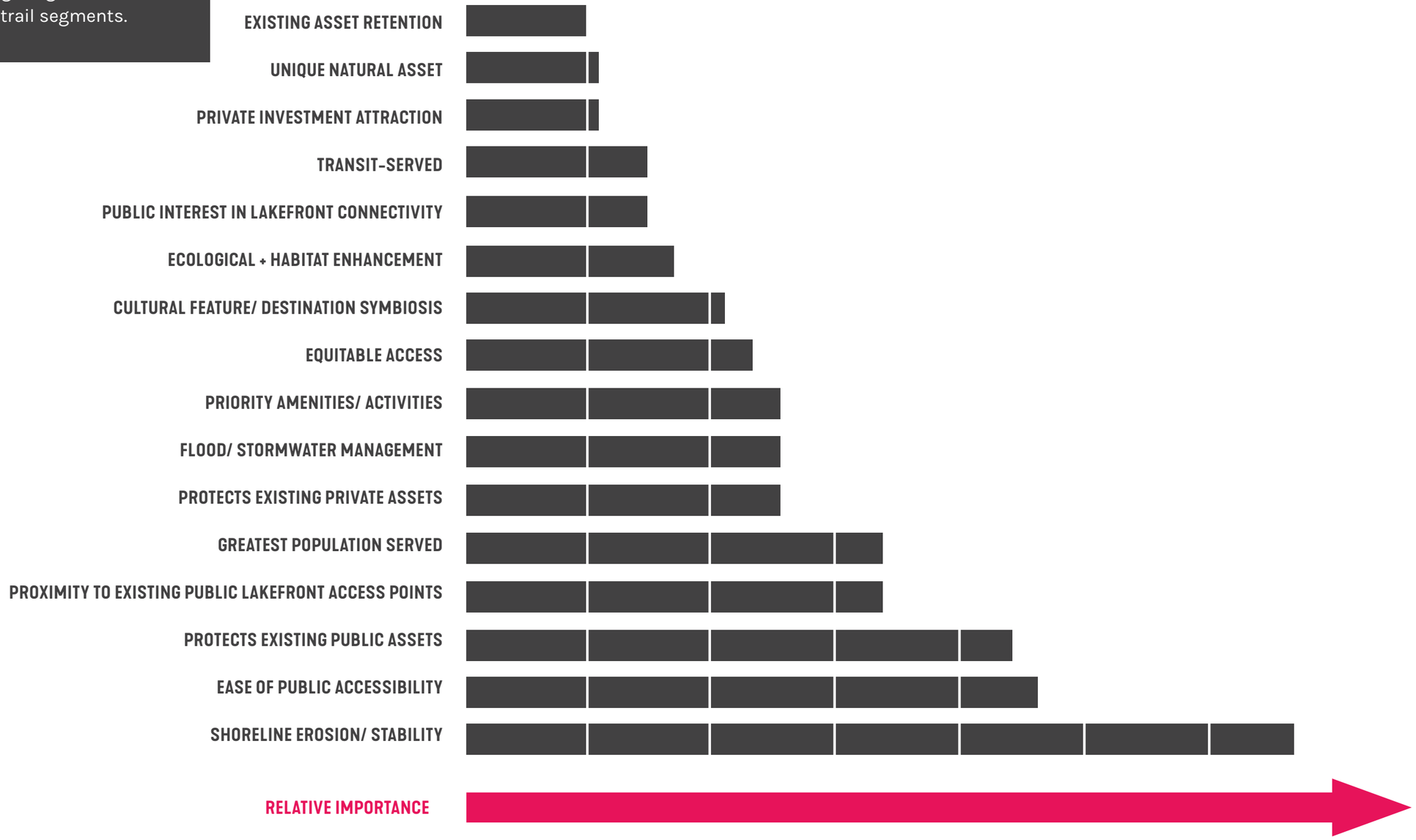
FLOODING + STORMWATER ENHANCEMENT

Degree to which investment in a particular segment of shoreline may be integrated with mitigation measures to help address localized flooding or known stormwater infrastructure deficiencies (and benefit from potentially attracting funding to help implement the project).

2. ESTABLISH CRITERIA TO AID IN PRIORITIZING INVESTMENTS

CRITERIA IMPORTANCE

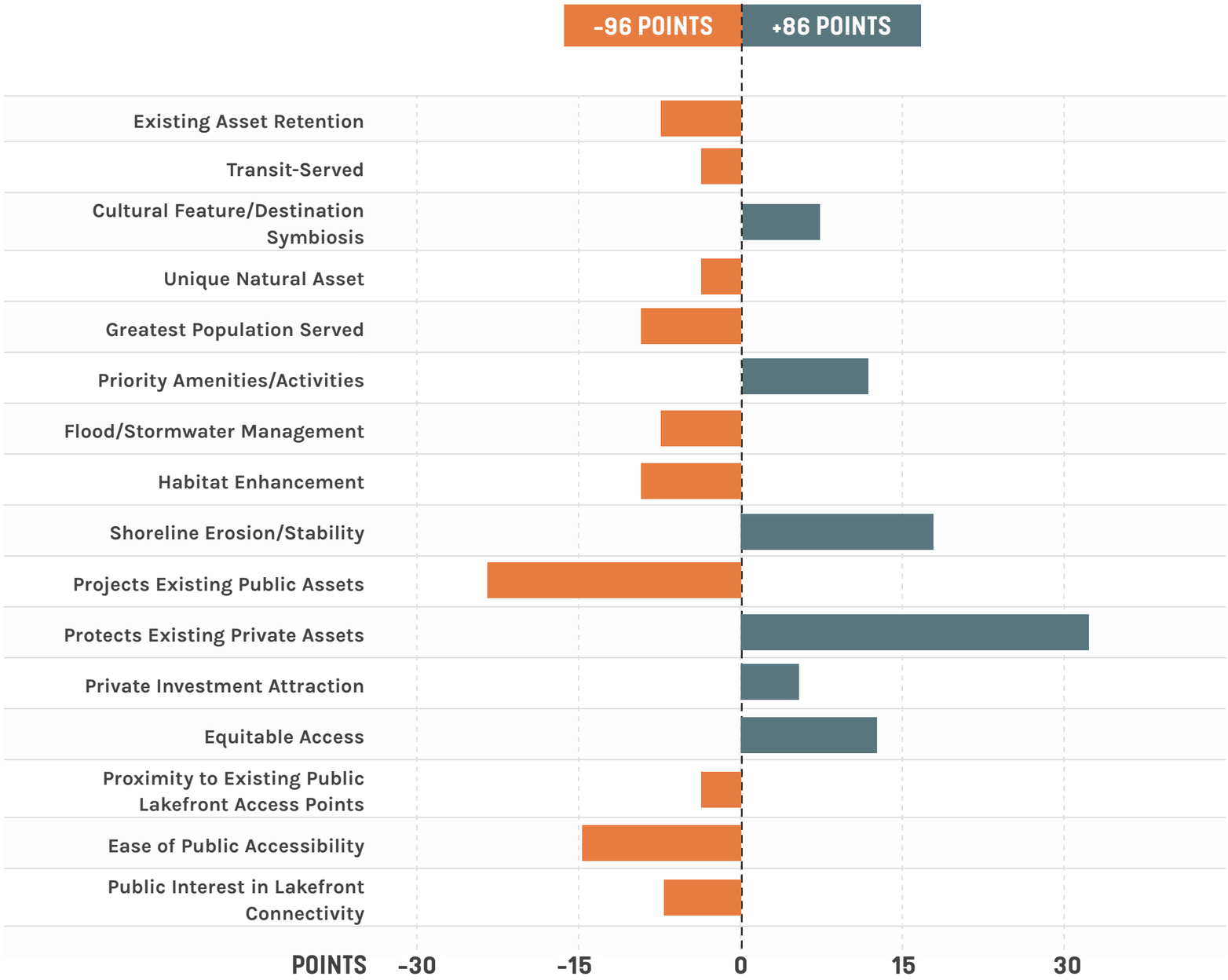
Steering Committee members were asked to compare each of the criteria to determine their relative importance to one another. The relative importance, or weighting, was then used to analyze each of the 41 lakefront trail segments.



3. EVALUATE OPPORTUNITIES & ASSETS FOR EACH SEGMENT AGAINST CRITERIA TO PRIORITIZE POTENTIAL AREAS FOR PUBLIC INVESTMENT

Scoring of each lakefront segment relative to the weighted criteria provided a composite score. Segments were organized into three groups - low, medium, and high scoring. These designations help the County and its partners identify the segments where partnering with private landowners best aligns with the Lakefront Public Access Plan criteria and goals.

The composite scores for each of the 41 segments are included in the appendix. The graphic to the right is an example segment illustrating the scoring relative to each criteria. The average score across all segments is represented by the dashed line in the middle. Bars to the left highlight criteria where the segment score for the specific criteria achieved fewer points than the average of all lakefront segments. Bars to the right illustrate those criteria where this segment scored higher than average. Overall, this segment scored 10 points below the average segment composite score.



3. EVALUATE OPPORTUNITIES & ASSETS FOR EACH SEGMENT AGAINST CRITERIA TO PRIORITIZE POTENTIAL AREAS FOR PUBLIC INVESTMENT

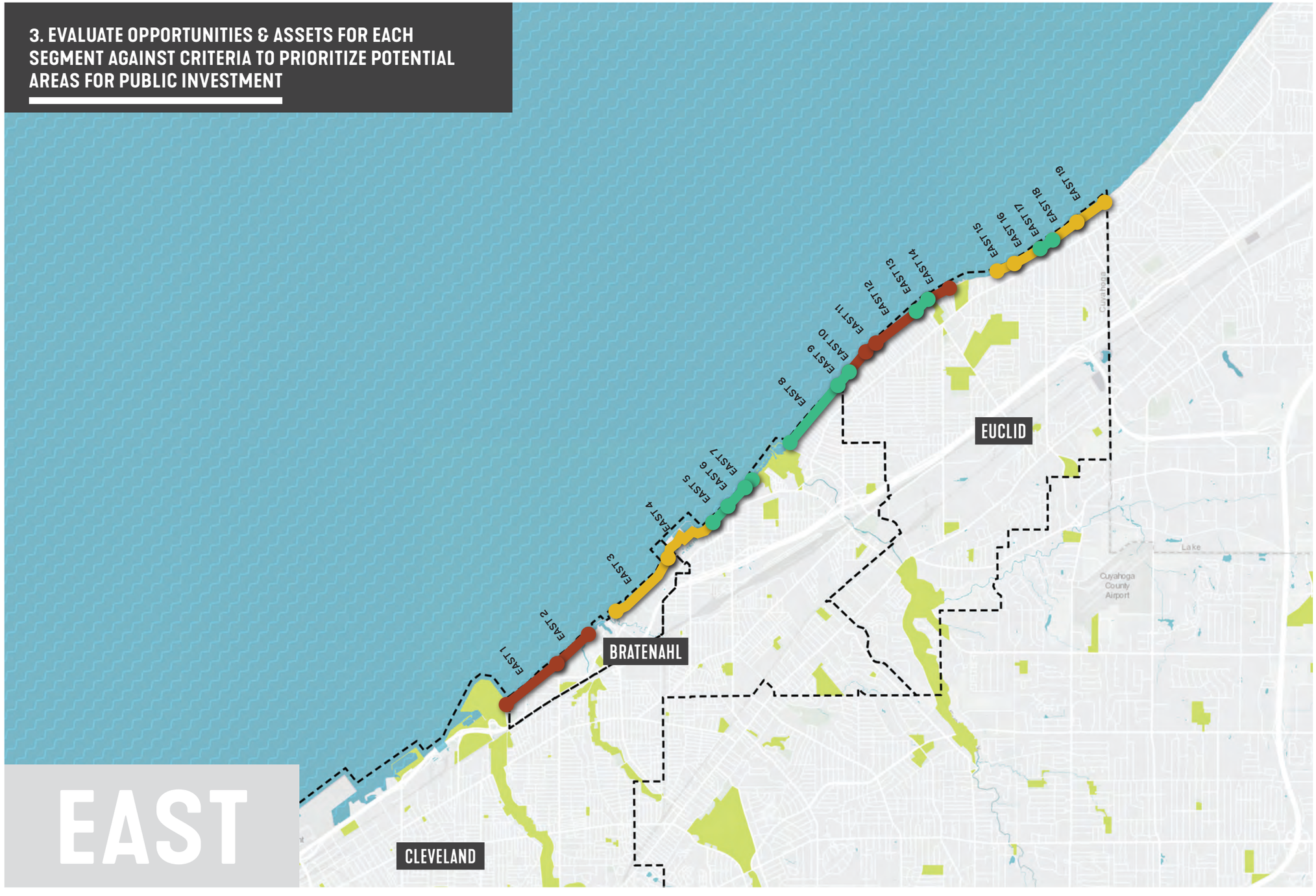
Priority ratings for the 41 lakefront trail segments identified for the County, partner entities, and lakefront landowners where public investment in shore protection and public access best aligns with Lakefront Public Access Plan criteria. Segments rated as High Priority are stretches of shoreline where the greatest level of effort in exploring public-private partnerships toward the development of shoreline protection and public access improvements should occur. Those segments rated as Medium Priority represent areas where partnerships should be explored after exploring other higher priority stretches and if funds and support exist to make additional investments. Segments rated as Low Priority lack good alignment with the diverse goals and objectives of the Lakefront Public Access Plan as represented in the evaluative criteria and are less solid candidates for public investment.

While one of the key goals of the Lakefront Public Access Plan is to maximize equitable access along the Lake Erie shoreline, shoreline protection and lakefront public access is costly. Therefore, prioritizing where to invest is important. However, priority rankings alone do not mean public investment is a foregone conclusion. Landowner receptivity, creating a logical connected multimodal network between potential lakefront trails and upland linkages, and local municipality interest in supporting the development of Lakefront Public Access Plan improvements are other factors key to determining where investments can and should be made.

SEGMENT PRIORITY	
WEST 1	WEST 12
WEST 2	WEST 13
WEST 3	WEST 14
WEST 4	WEST 15
WEST 5	WEST 16
WEST 6	WEST 17
WEST 7	WEST 18
WEST 8	WEST 19
WEST 9	WEST 20
WEST 10	WEST 21
WEST 11	WEST 22

DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, INCREMEND P, GARMIN, USGS, EPA

3. EVALUATE OPPORTUNITIES & ASSETS FOR EACH SEGMENT AGAINST CRITERIA TO PRIORITIZE POTENTIAL AREAS FOR PUBLIC INVESTMENT



EAST

LEGEND

- LAKE ERIE
- MUNICIPAL BOUNDARIES

LAKEFRONT SEGMENTS:

- HIGH PRIORITY
- MED PRIORITY
- LOW PRIORITY

SEGMENT PRIORITY
EAST 1
EAST 2
EAST 3
EAST 4
EAST 5
EAST 6
EAST 7
EAST 8
EAST 9
EAST 10
EAST 11
EAST 12
EAST 13
EAST 14
EAST 15
EAST 16
EAST 17
EAST 18
EAST 19

DATA SOURCES: SMITHGROUP, CUYAHOGA COUNTY, ESRI, HERE, INCREMEND P, GARMIN, USGS, EPA

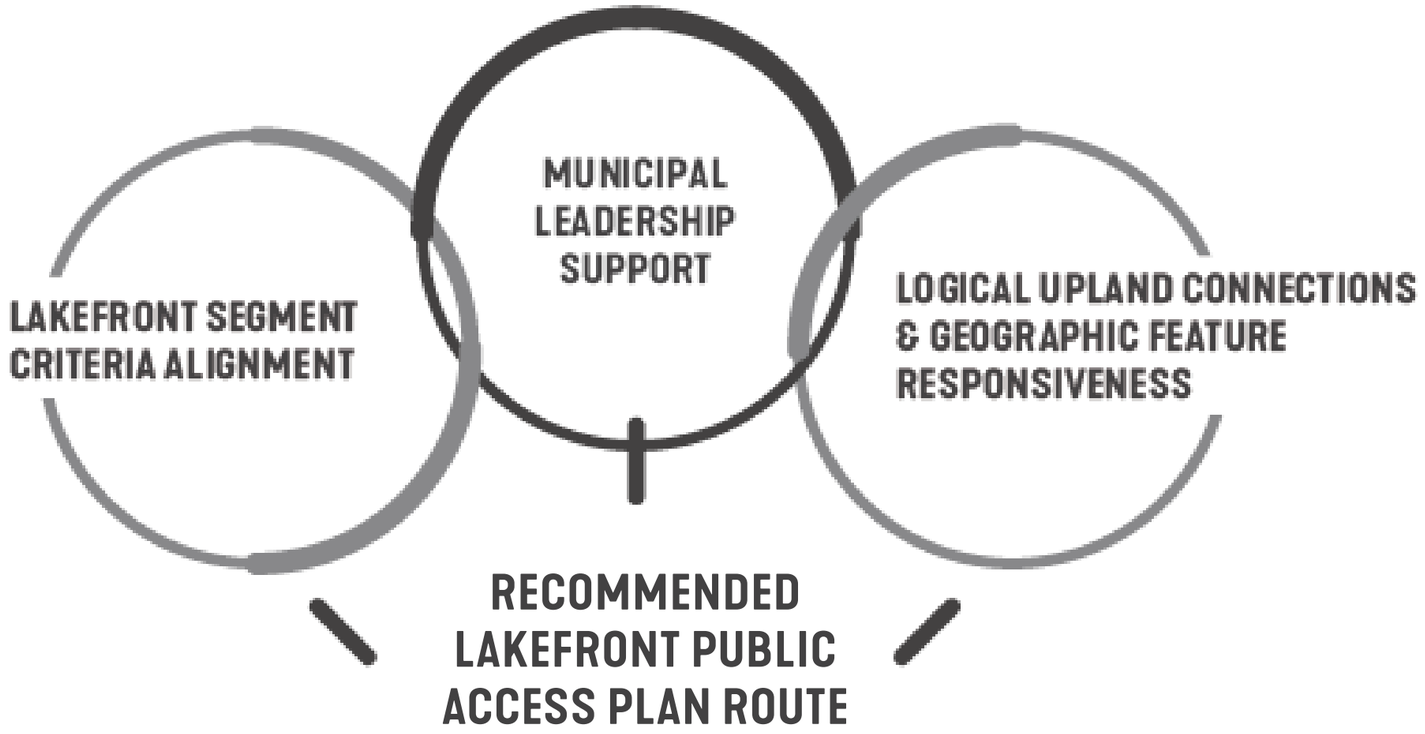
MILES
0 .75 1.5 3

4.0 LAKEFRONT PUBLIC ACCESS PLAN

4.1 DEFINING A RECOMMENDED ROUTE

Creating the continuous, connected multimodal network for the Lakefront Public Access Plan that extends from one end of the County to the other means building a system that is at the shoreline and also parallel to the lake in upland areas. It represents a mix of investments in public infrastructure and parks as well as trails that may be developed along privately owned segments of lakefront that score well against the established criteria.

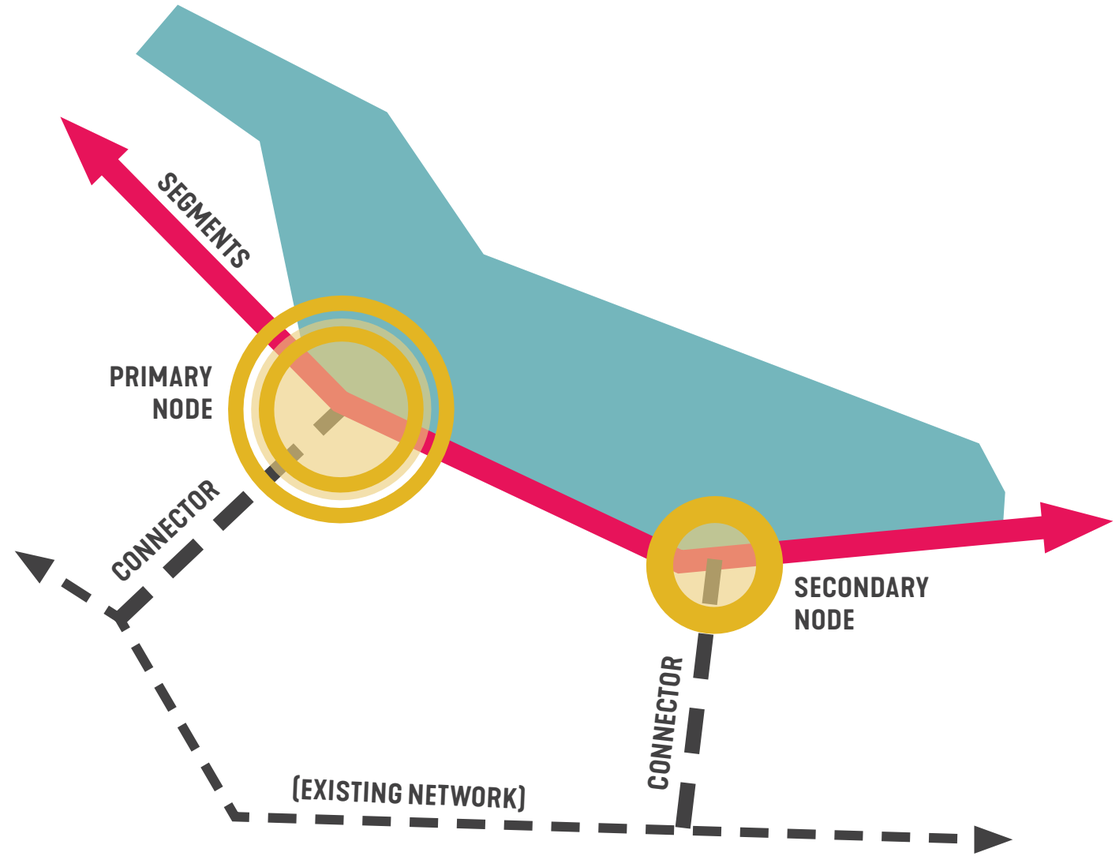
The pages that follow offer details on the recommended Lakefront Public Access Plan alignments. Feedback from individual municipalities as to their support for lakefront trail development on both public and private segments of shoreline are incorporated. Not all highly-rated privately owned lakefront segments are included both due to municipal perspectives and to create a logical network that ties in with existing and planned multimodal investments. Landowner receptivity will directly influence implementation efforts and the final route location. For this reason, alternative routes are included in an attempt to provide options for achieving a continuous network.



4.2 ANATOMY OF THE NETWORK

Nodes, or the gateways that connect from upland areas into the Lakefront Public Access Plan network, are an important element. Those that are more regional serving should include a greater number of amenities and a higher level of investment than nodes that are more local serving.

Segments along the lakefront and between the nodes offer physical proximity to the lake and the lakefront trail access critical to meeting the plan's objectives. Connectors represent those multimodal improvements that occur in the upland and extend from those improvements to the lakefront system.



LAKEFRONT PUBLIC ACCESS PLAN NETWORK

- **Linear corridors that provide access along the lakefront**
- **Occur along both public and private shorelines**
- **May include amenities that support outdoor recreation, habitat improvements, ecological enhancements, and green infrastructure**

CONNECTORS

Serve as the conduit between existing inland multimodal facilities and lakefront trails:

- Existing or funded routes providing connections to the lakefront
- Frequently part of local and county multimodal improvement projects along existing public right-of-ways
- To be evaluated and verified by the local municipality and NOACA

MULTIMODAL LAKEFRONT NETWORK

SEGMENTS

- Proposed multimodal paths along privately owned stretches of lakefront.
- Connect existing open spaces and nodes including a range of solutions for achieving lakefront access and shoreline stablilization.

NODES

Nodes, or lakefront gathering spaces, fall within two categories:

PRIMARY

Landmark destinations with the primary role of providing support facilities for regional use.

SECONDARY

Pedestrian-focused neighborhood access points which provide basic amenities.

SEGMENTS

The shoreline conditions and local geology are significantly different throughout the county. West of Downtown Cleveland the shoreline is generally characterized by 50-60 foot tall nearly vertical bluffs primarily composed of shale. Bluffs east of Downtown are generally characterized as being shorter, under 30-35 feet tall, and consisting of a mix of sediments that both more rapidly erode and are typically sloping versus vertical. While all segments exhibit some amount of erosion and makeshift attempts to mitigate erosion through the dumping of concrete debris and rubble, the recommended approaches to stabilizing the bluffs and developing lakefront trails are specific to this divide. While similarities exist between east and west mitigation approaches, lakefront trails and shore protection along the west is more expensive due to bluff height.

Three prototypical shoreline treatments for west and east segments of shoreline are described on the following pages. Many nuances to the application of these prototypes exist and key factors associated with regulatory boundaries for the Ohio Department of Natural Resource and the US Army Corps of Engineers exist, however, they represent "tools" that can be applied to achieve the desired goals of providing access while protecting shorelines.

SEGMENT SHORELINE TYPOLOGIES

WEST

A| SHEET PILE TOE + BLUFF CLADDING

B| TOE REVETMENT + BLUFF CLADDING

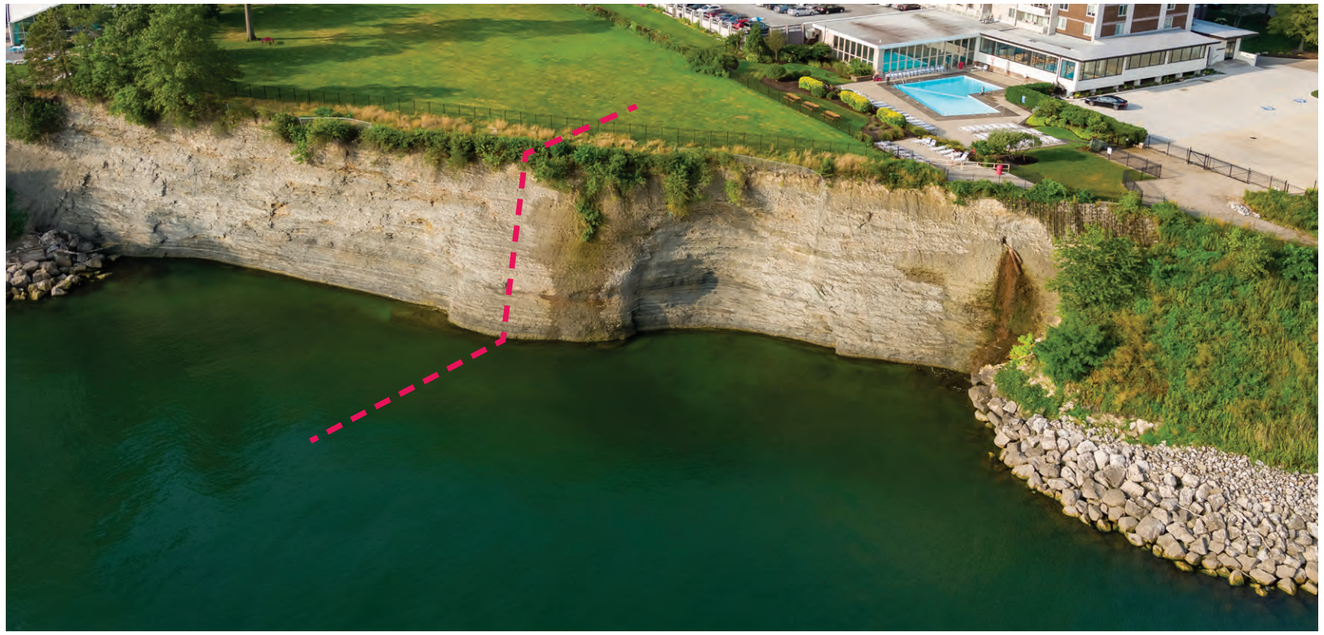
C| PARALLEL BREAKWATER

EAST

D| REVETMENT

E| REVETMENT WITH RETAINING WALL

F| SHEET PILE TOE WALL



50 - 60' TALL BLUFFS EXIST ALONG THE MAJORITY OF THE COUNTY'S WESTERN SHORELINE.

THE EASTERN PORTION OF THE COUNTY IS GENERALLY CHARACTERIZED BY SLOPING 30 - 35' BLUFFS.

NODES: GATEWAYS TO THE NETWORK

Nodes serve as the gateway to the lakefront network. They are categorized into primary and secondary based upon how they serve and the types of amenities offered.

PRIMARY NODES

These gateways occur in conjunction with existing regional-serving park and open space facilities that have amenities such as parking and that support access for users from throughout the County. Primary nodes include informational signage or kiosks that offer information on the overall county-wide trail network along with nearby destinations. Green infrastructure practices such as landscape biofiltration planters, educational signage, lighting, and benches along with plaza space consisting of specialty paving are anticipated. Other potential elements may include lighting, piers, and overlooks that take advantage of lakefront views and proximity.

SECONDARY NODES

Secondary nodes emphasize access from nearby neighborhoods. Smaller scale green infrastructure practices may be integrated and improvements are anticipated to be less architectural and more landscape-oriented. No new parking is anticipated to be developed in conjunction with secondary nodes.

PRIMARY NODES ARE LARGER AND REGIONAL SERVING

SECONDARY NODES INCLUDE FEWER AMENITIES AND SUPPORT LOCAL NEIGHBORHOOD ACCESS

CONSTRUCTED WETLANDS

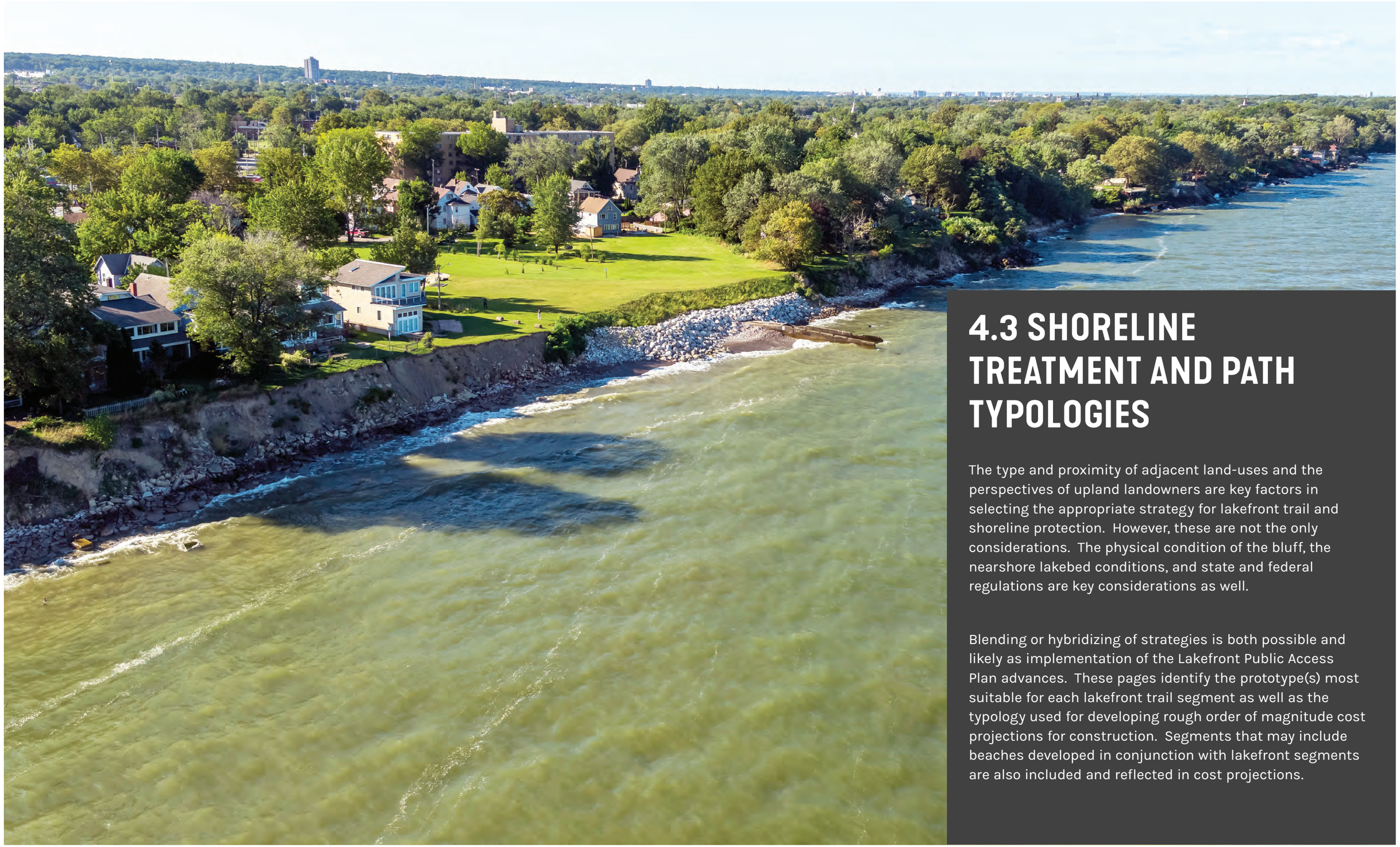
AQUATIC HABITAT LAGOON

NAVIGATION SIGNAGE

EDUCATIONAL SIGNAGE OR KIOSK

SPECIALTY LIGHTING

SPECIALTY PAVING



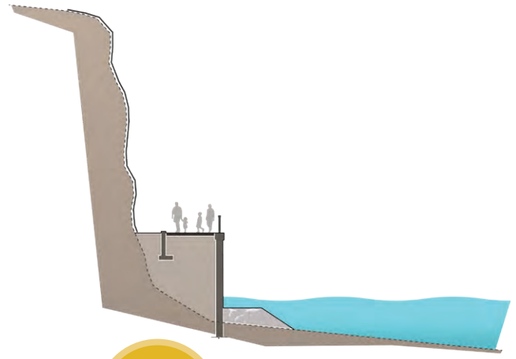
4.3 SHORELINE TREATMENT AND PATH TYPOLOGIES

The type and proximity of adjacent land-uses and the perspectives of upland landowners are key factors in selecting the appropriate strategy for lakefront trail and shoreline protection. However, these are not the only considerations. The physical condition of the bluff, the nearshore lakebed conditions, and state and federal regulations are key considerations as well.

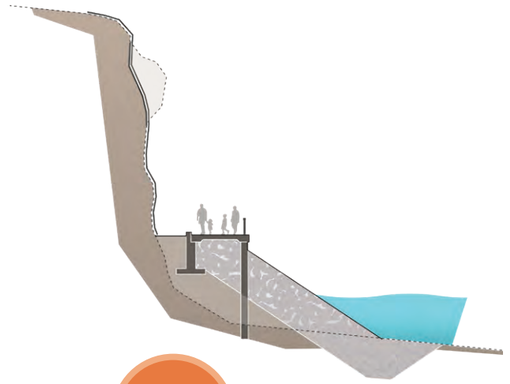
Blending or hybridizing of strategies is both possible and likely as implementation of the Lakefront Public Access Plan advances. These pages identify the prototype(s) most suitable for each lakefront trail segment as well as the typology used for developing rough order of magnitude cost projections for construction. Segments that may include beaches developed in conjunction with lakefront segments are also included and reflected in cost projections.

WEST

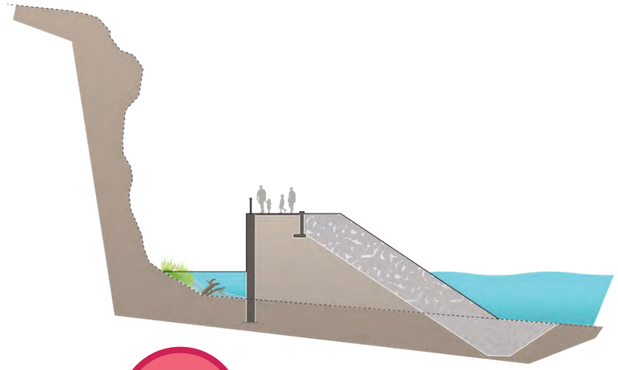
SHORELINE TREATMENT AND PATH TYPOLOGIES



TYPE A — SHEET PILE TOE + BLUFF CLADDING



TYPE B — TOE REVETMENT + BLUFF CLADDING

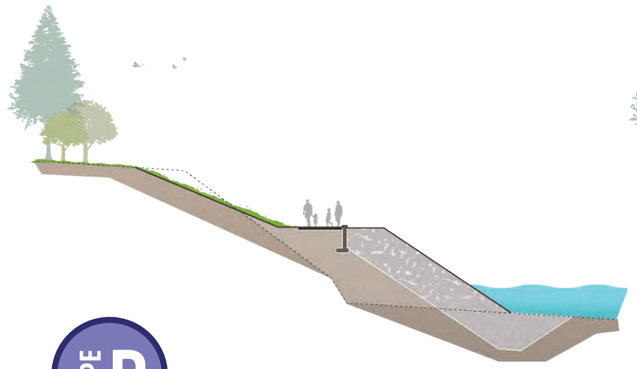


TYPE C — PARALLEL BREAKWATER

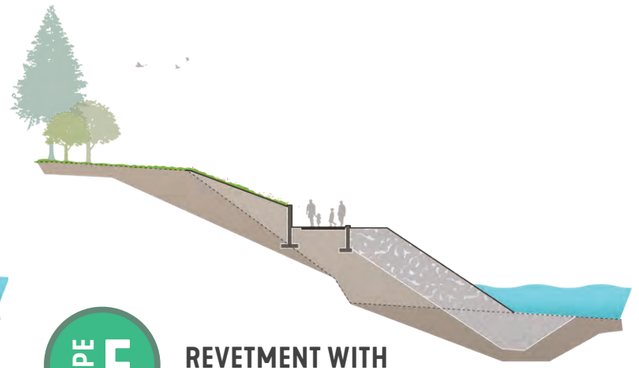
SEE PAGE 50 FOR COST INFO

EAST

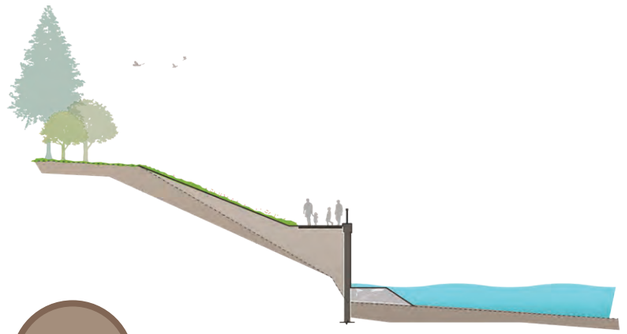
SHORELINE TREATMENT AND PATH TYPOLOGIES



TYPE D — REVETMENT

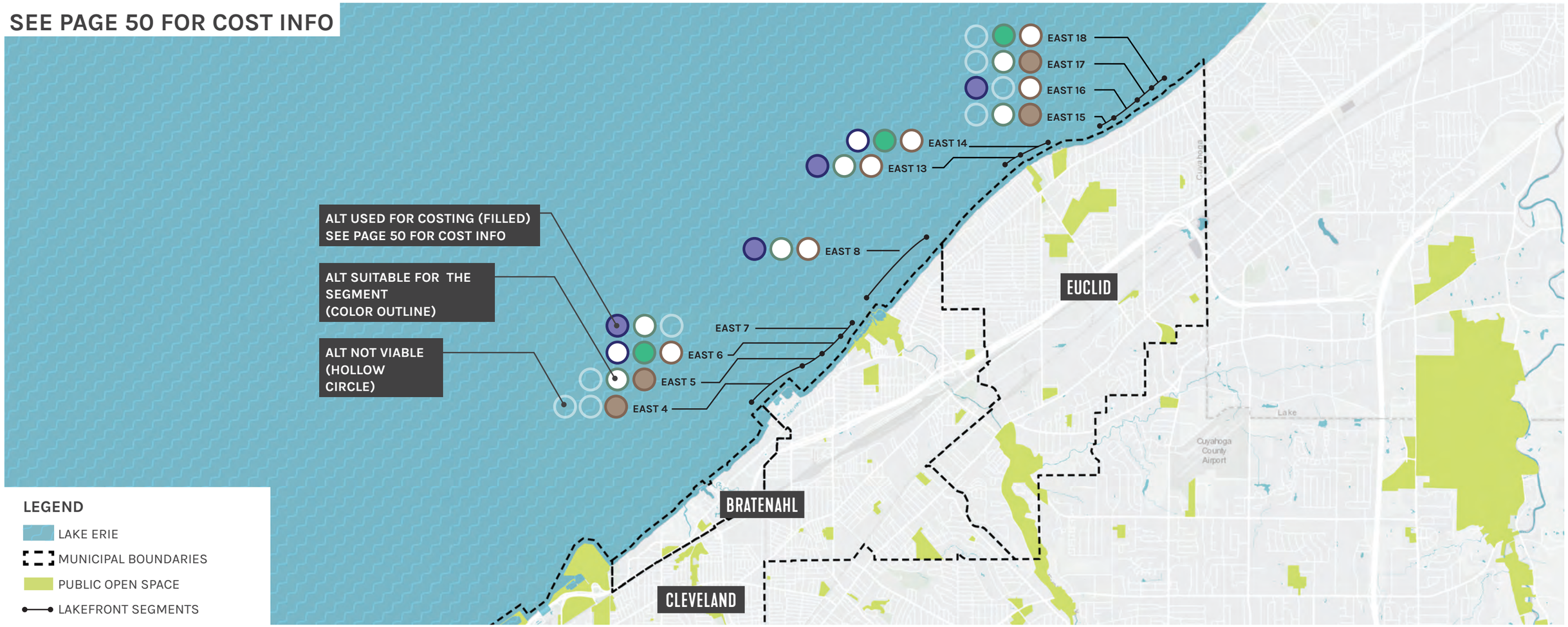


TYPE E — REVETMENT WITH RETAINING WALL



TYPE F — SHEET PILE TOE

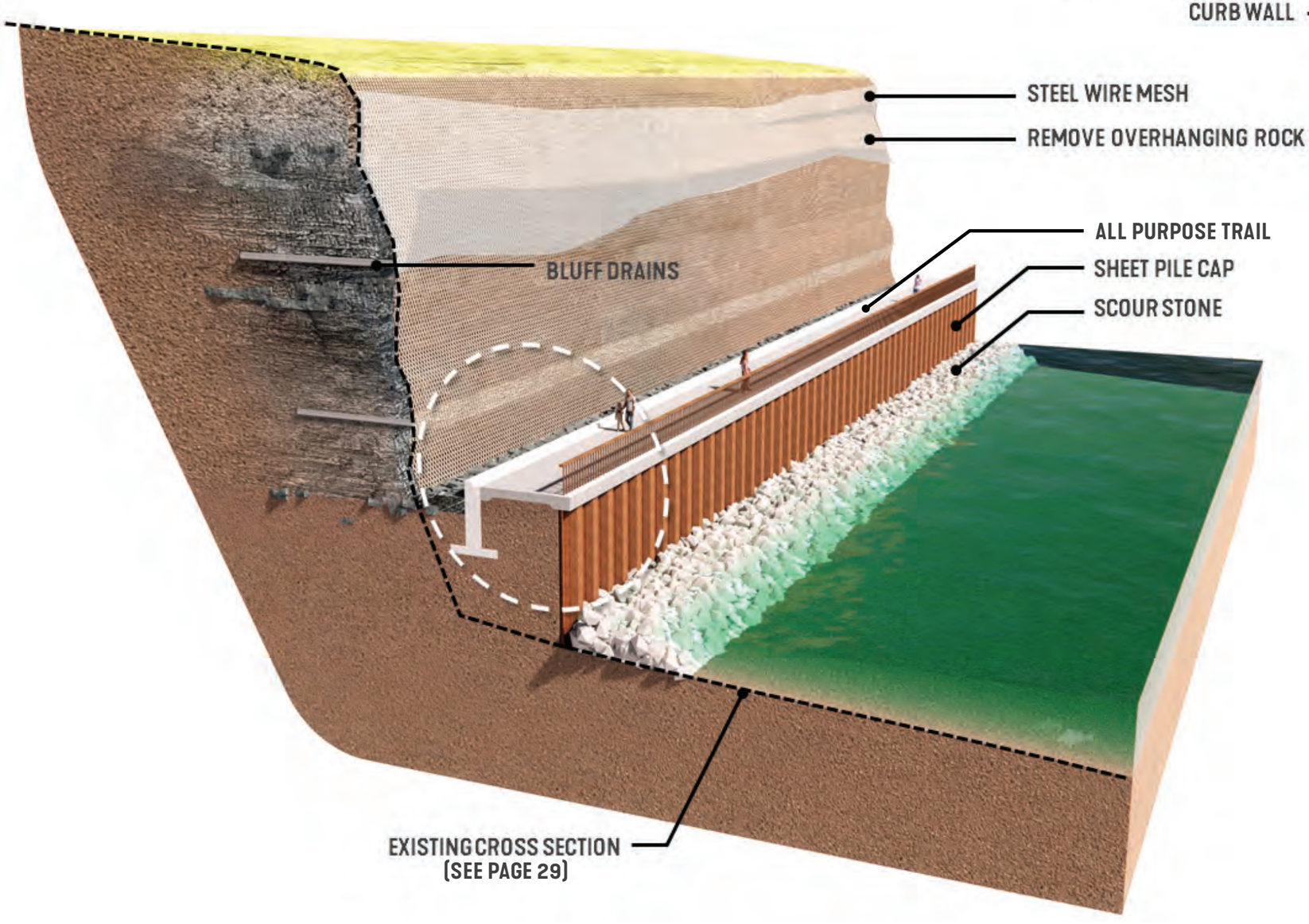
SEE PAGE 50 FOR COST INFO



TYPE A

PROPOSED TRAIL CONDITION:

SHEET PILE TOE + BLUFF CLADDING



TYPE A- SHEET PILE WALL

Shoreline segments where required embedment of sheeting is attainable.

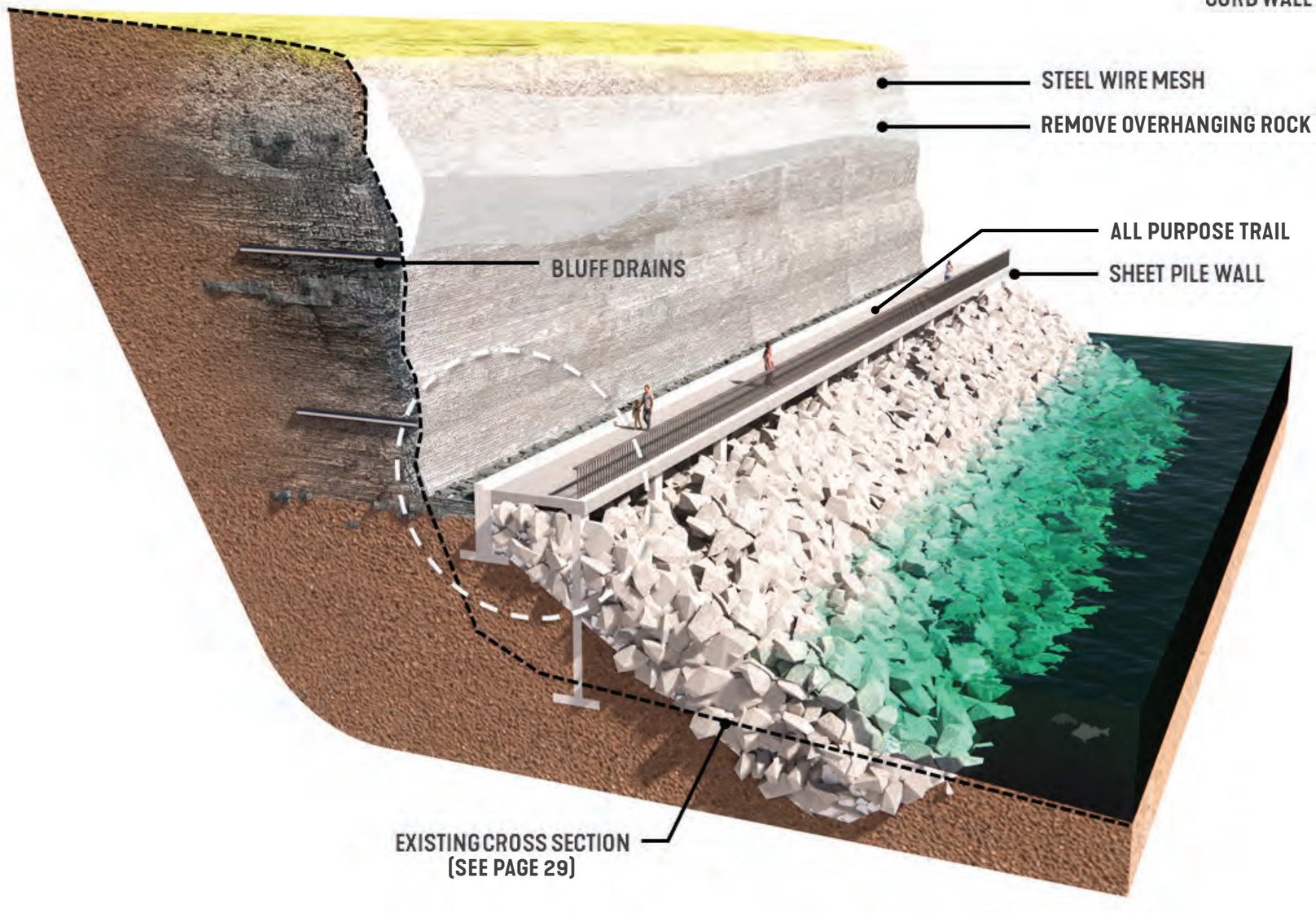
- Scour stone placed at bluff toe
- Trail offset from bluff face
- Guardrails located along lake side as fall protection
- Upland runoff managed and redirected
- Water from bluff seeps managed
- Wire mesh or cladding applied on bluff face in key areas
- Compatible with lakeward beach creation if desirable

COST / LINEAR FOOT = $6,100

TYPE B

PROPOSED TRAIL CONDITION:

TOE REVETMENT + BLUFF CLADDING



TYPE B- CANTILEVER TRAIL WITH REVETMENT

Shoreline segments where sheet pile embedment is unattainable or too costly

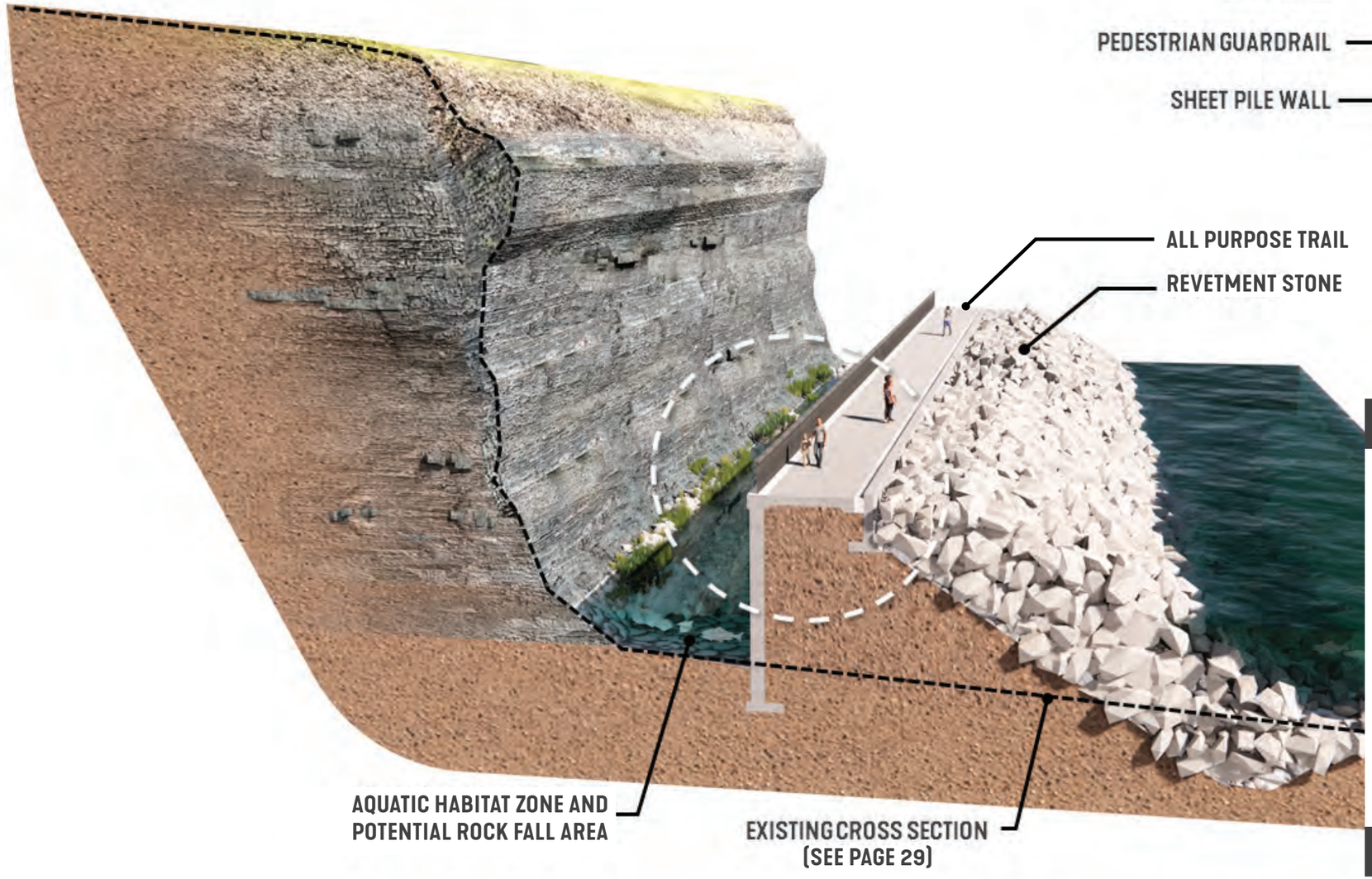
- Cantilever trail where regulatory requirements dictate
- Trail offset from bluff face
- Guardrails located where needed
- Upland runoff managed and redirected
- Water from bluff seeps managed
- Wire mess or cladding applied on bluff face in key areas
- Compatible with lakeward beach creation if desirable

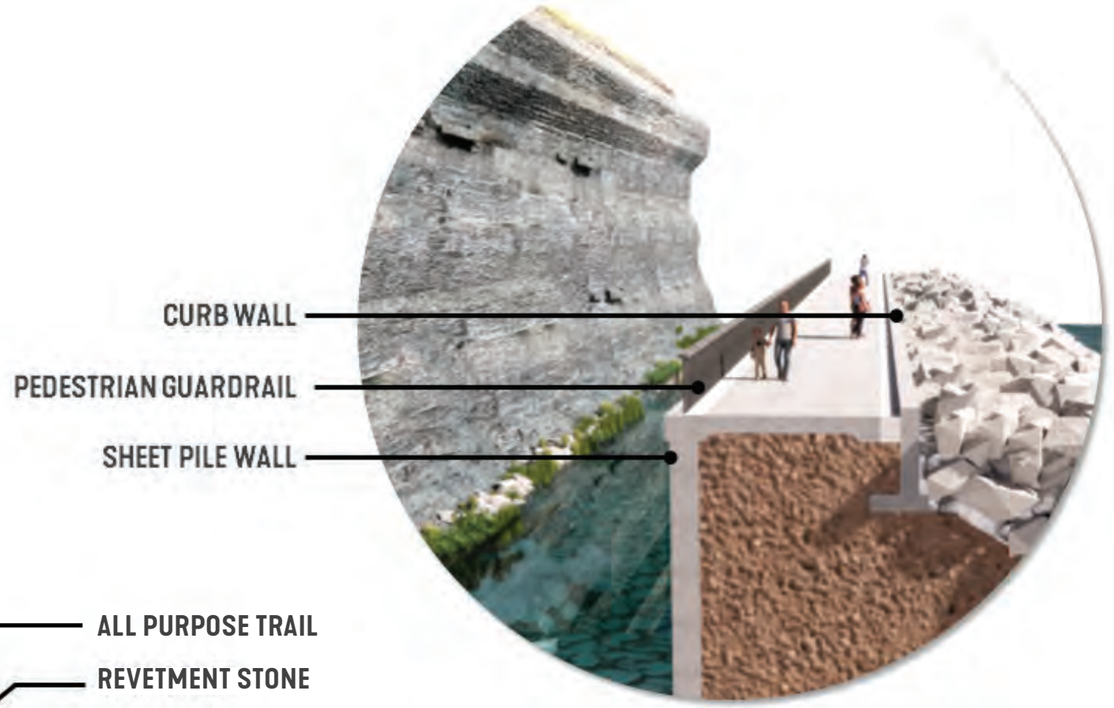
COST / LINEAR FOOT = $8,000

TYPE C

PROPOSED TRAIL CONDITION:

PARALLEL BREAKWATER





TYPE C– PARALLEL BREAKWATER

Shoreline segments where toe protection is the primary objective

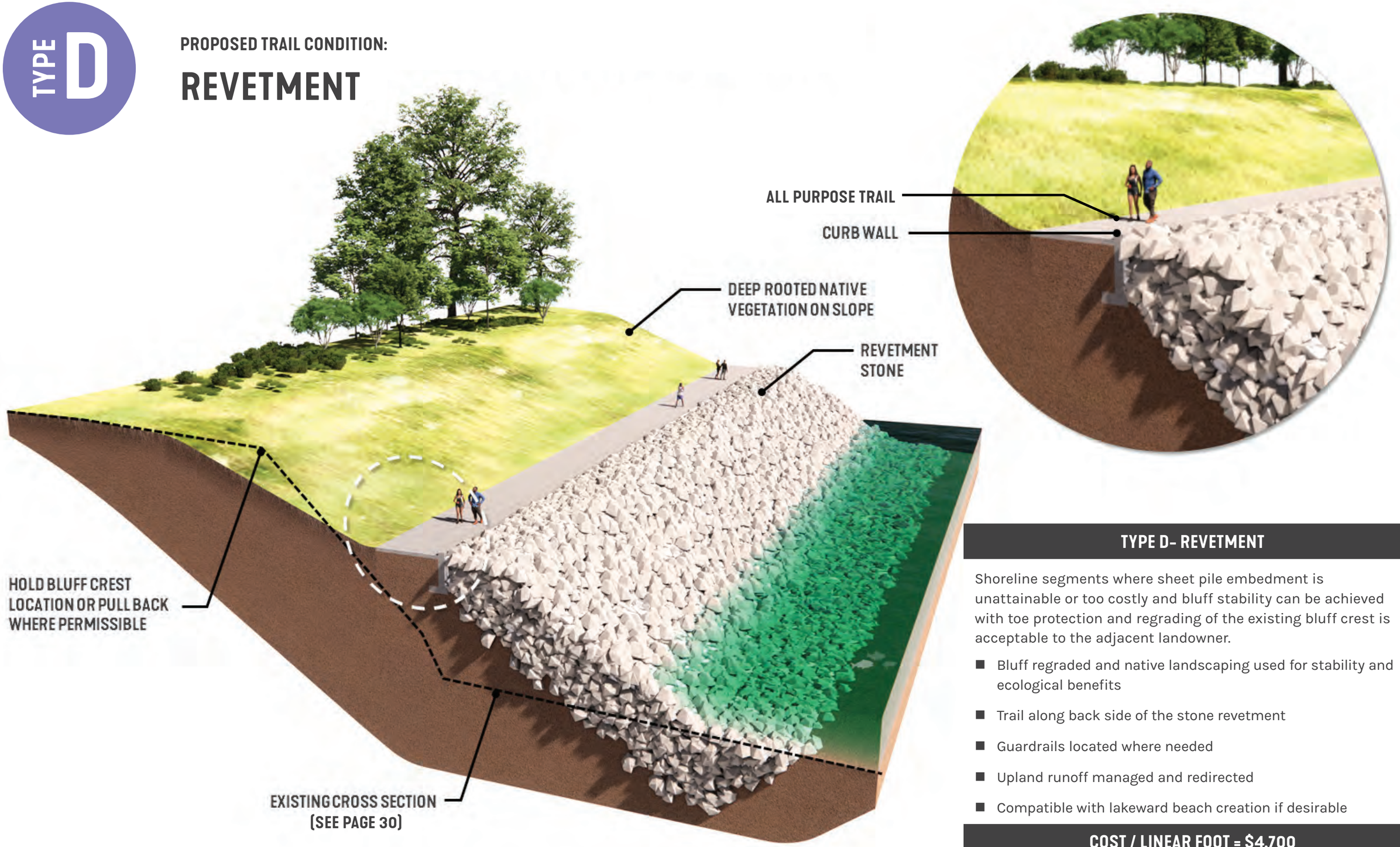
- Bluff face unmodified from existing condition
- Opportunities for habitat between breakwater and bluff face
- Trail offset from bluff face
- Stone revetment, walls, or sheet pile used along edges
- Openings between breakwaters ‘bridged’ for continuous trail and to allow water movement
- Guardrails located where needed
- Upland runoff managed and redirected

COST / LINEAR FOOT = $10,600

TYPE D

PROPOSED TRAIL CONDITION:

REVETMENT



TYPE D- REVETMENT

Shoreline segments where sheet pile embedment is unattainable or too costly and bluff stability can be achieved with toe protection and regrading of the existing bluff crest is acceptable to the adjacent landowner.

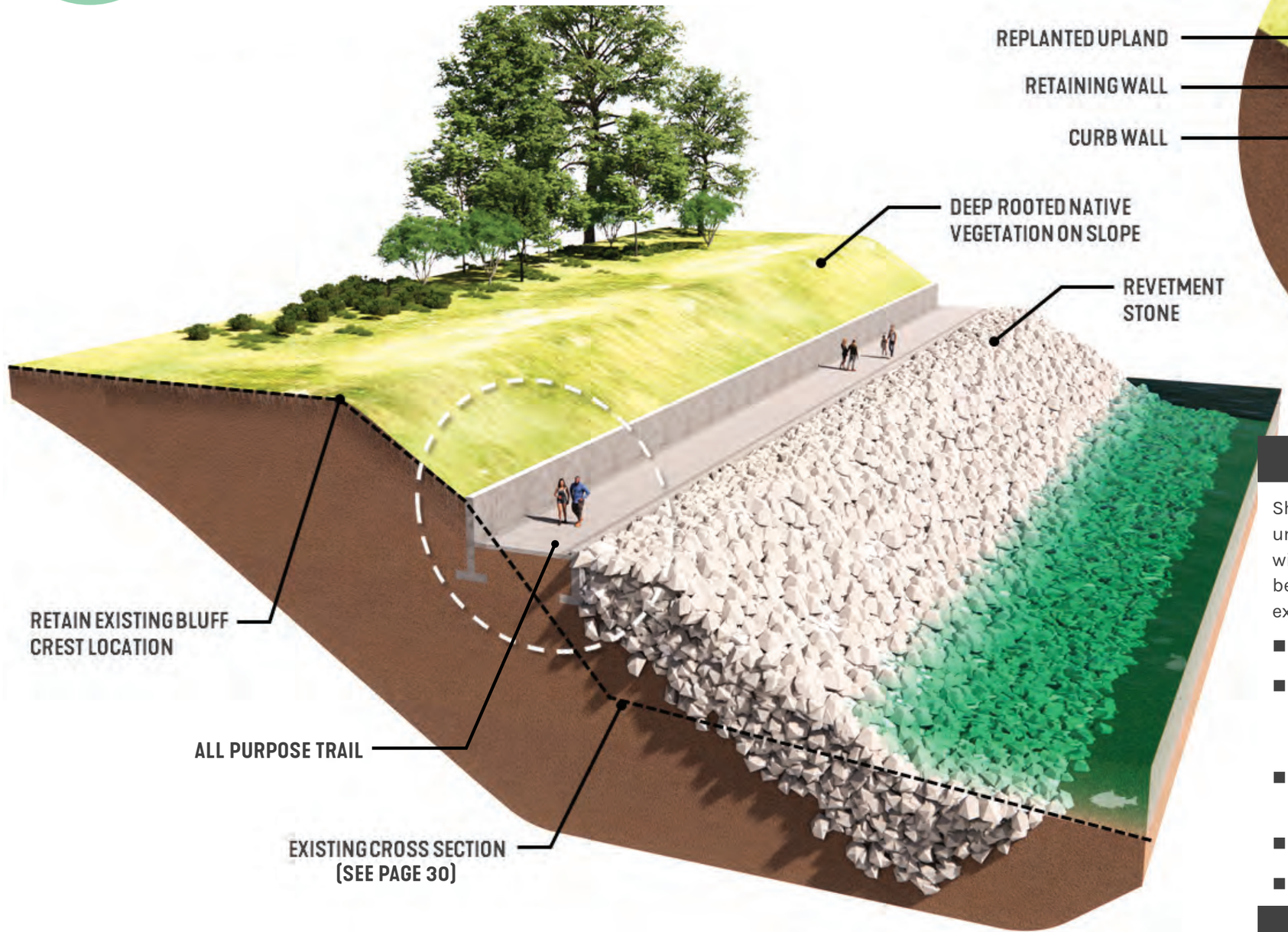
- Bluff regraded and native landscaping used for stability and ecological benefits
- Trail along back side of the stone revetment
- Guardrails located where needed
- Upland runoff managed and redirected
- Compatible with lakeward beach creation if desirable

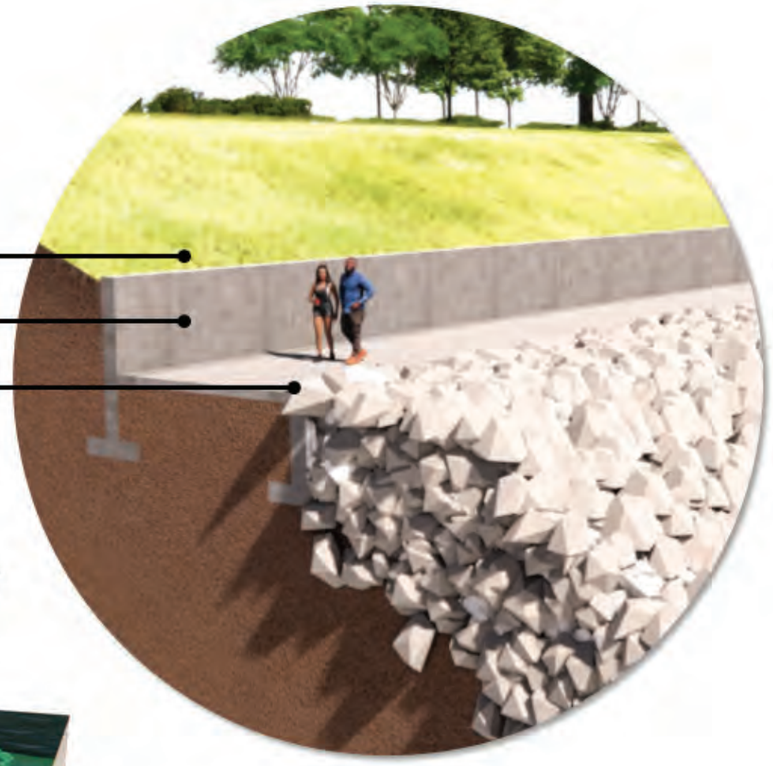
COST / LINEAR FOOT = $4,700

TYPE E

PROPOSED TRAIL CONDITION:

REVETMENT WITH RETAINING WALL





TYPE E- REVETMENT WITH RETAINING WALL

Shoreline segments where sheet pile embedment is unattainable or too costly and bluff stability can be achieved with toe protection and the existing bluff crest position cannot be pulled back due to adjacent landowner receptivity and/or existing upland uses.

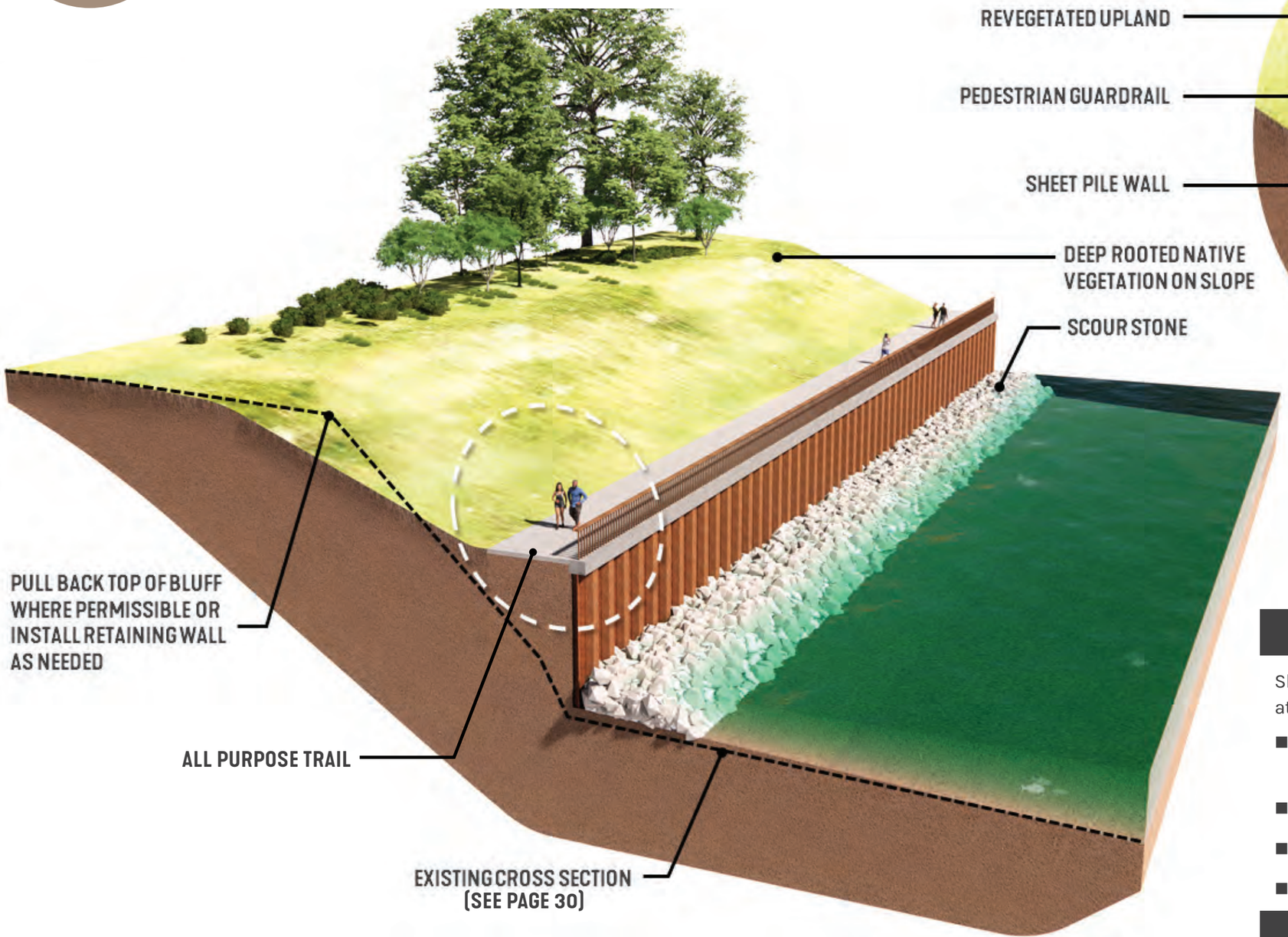
- Existing bluff crest remains in its current position
- Upland retaining wall added with height as needed to achieve stable slope on lower portions of the bluff using native landscaping
- Trail along back side of the stone revetment and adjacent to wall, cantilever trail if required
- Upland runoff managed and redirected
- Compatible with lakeward beach creation if desirable

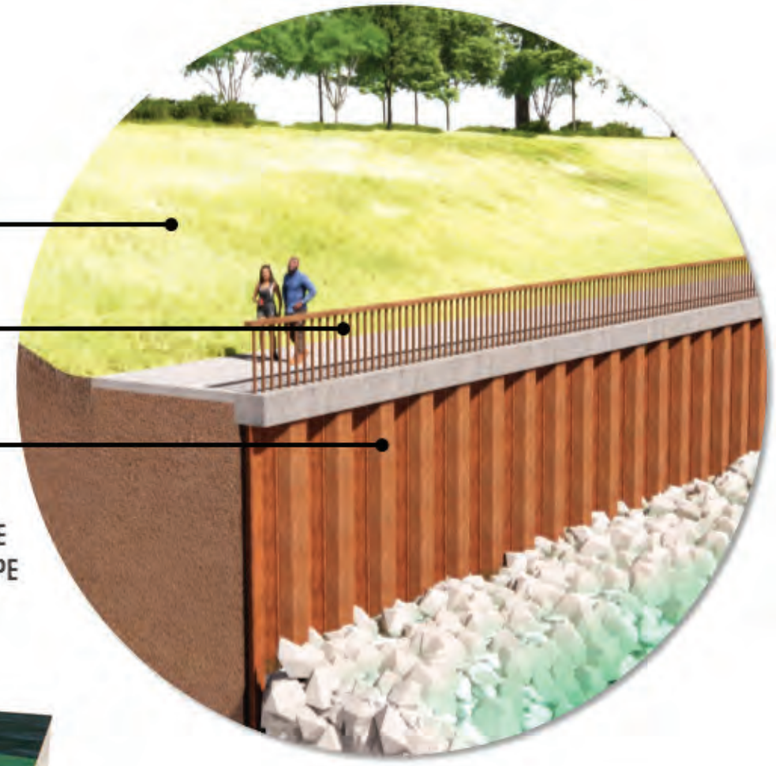
COST / LINEAR FOOT = $5,600

TYPE F

PROPOSED TRAIL CONDITION:

SHEET PILE WALL





TYPE F- SHEET PILE WALL

Shoreline segments where required embedment of sheeting is attainable.

- Regrade the upper bluff, install upland retaining wall as needed, use native landscaping along upland bluff areas
- Guardrails located along lake side of trail
- Upland runoff managed and redirected
- Compatible with lakeward beach creation if desirable

COST / LINEAR FOOT = $5,800

ADD ITEM

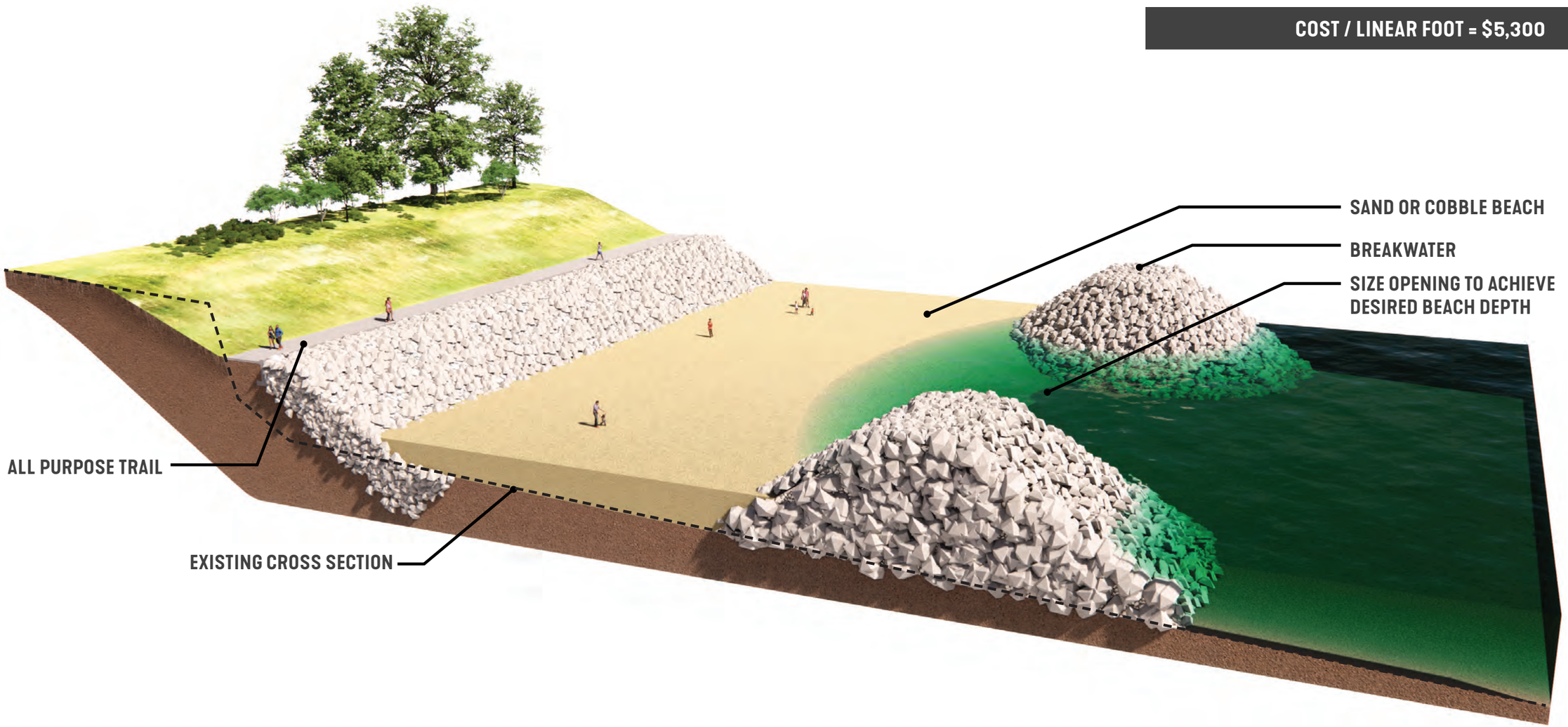
PROPOSED TRAIL CONDITION:

BEACHES

ADD ITEM- BEACH WITH SLOPING BLUFF

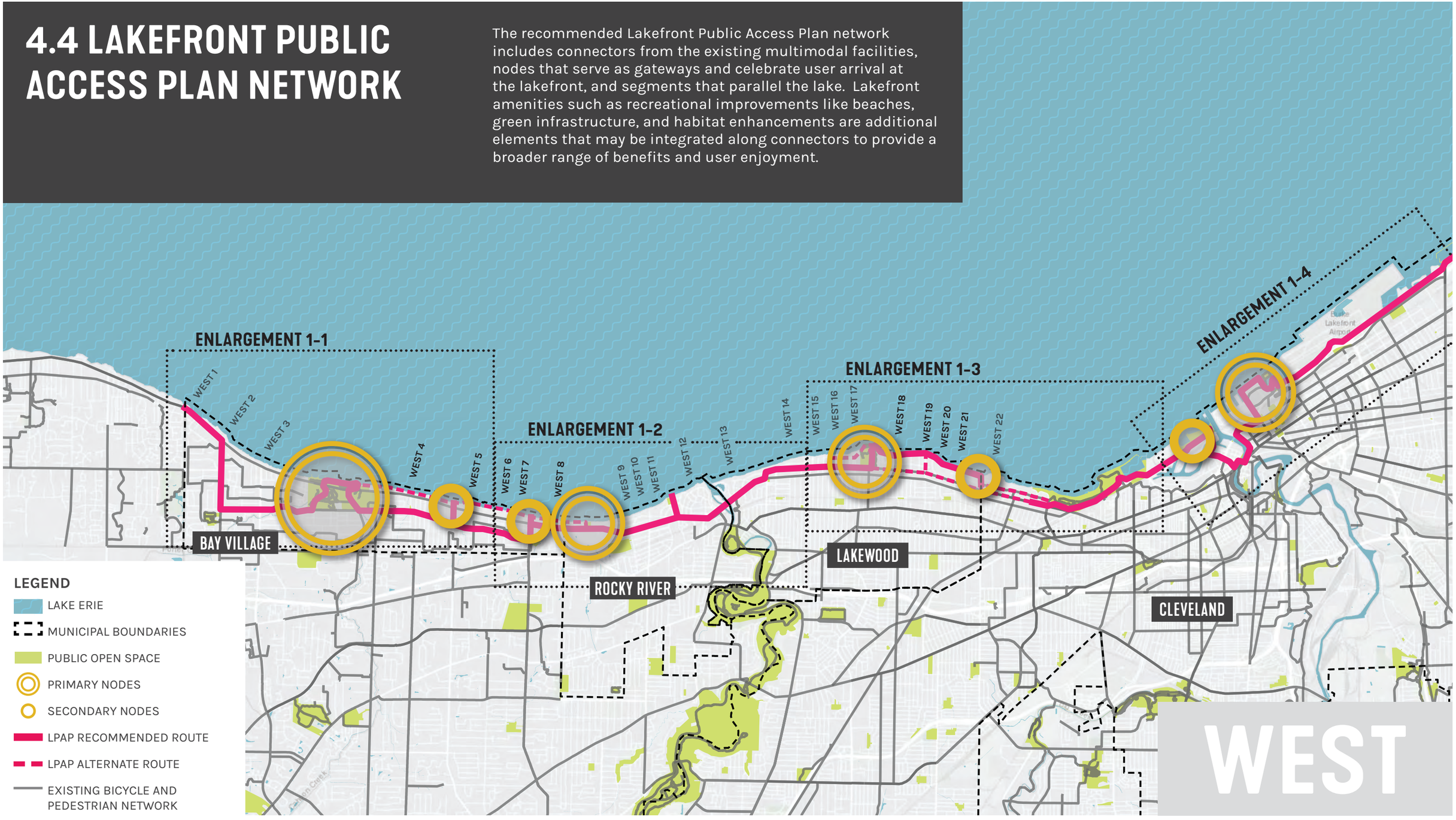
- Construct a new asphalt trail + amenities along the lake edge, restore shoreline
- 12’ Trail + (2) 6’ amenitiy zones can shift within the 36’ wide trail corridor
- Manage stormwater in riparian buffer

COST / LINEAR FOOT = $5,300



4.4 LAKEFRONT PUBLIC ACCESS PLAN NETWORK

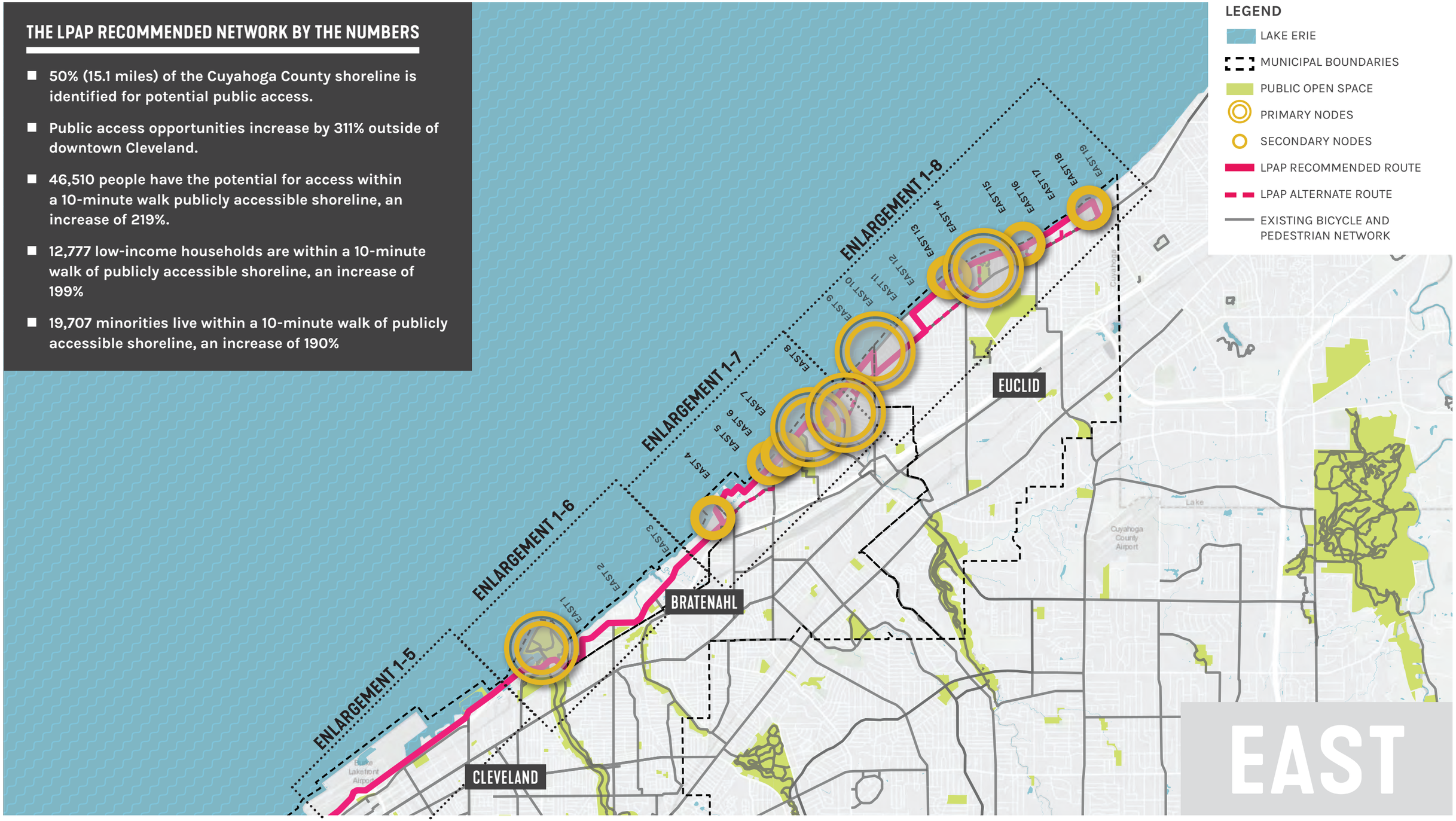
The recommended Lakefront Public Access Plan network includes connectors from the existing multimodal facilities, nodes that serve as gateways and celebrate user arrival at the lakefront, and segments that parallel the lake. Lakefront amenities such as recreational improvements like beaches, green infrastructure, and habitat enhancements are additional elements that may be integrated along connectors to provide a broader range of benefits and user enjoyment.



DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, INCREMEND P, GARMIN, USGS, EPA

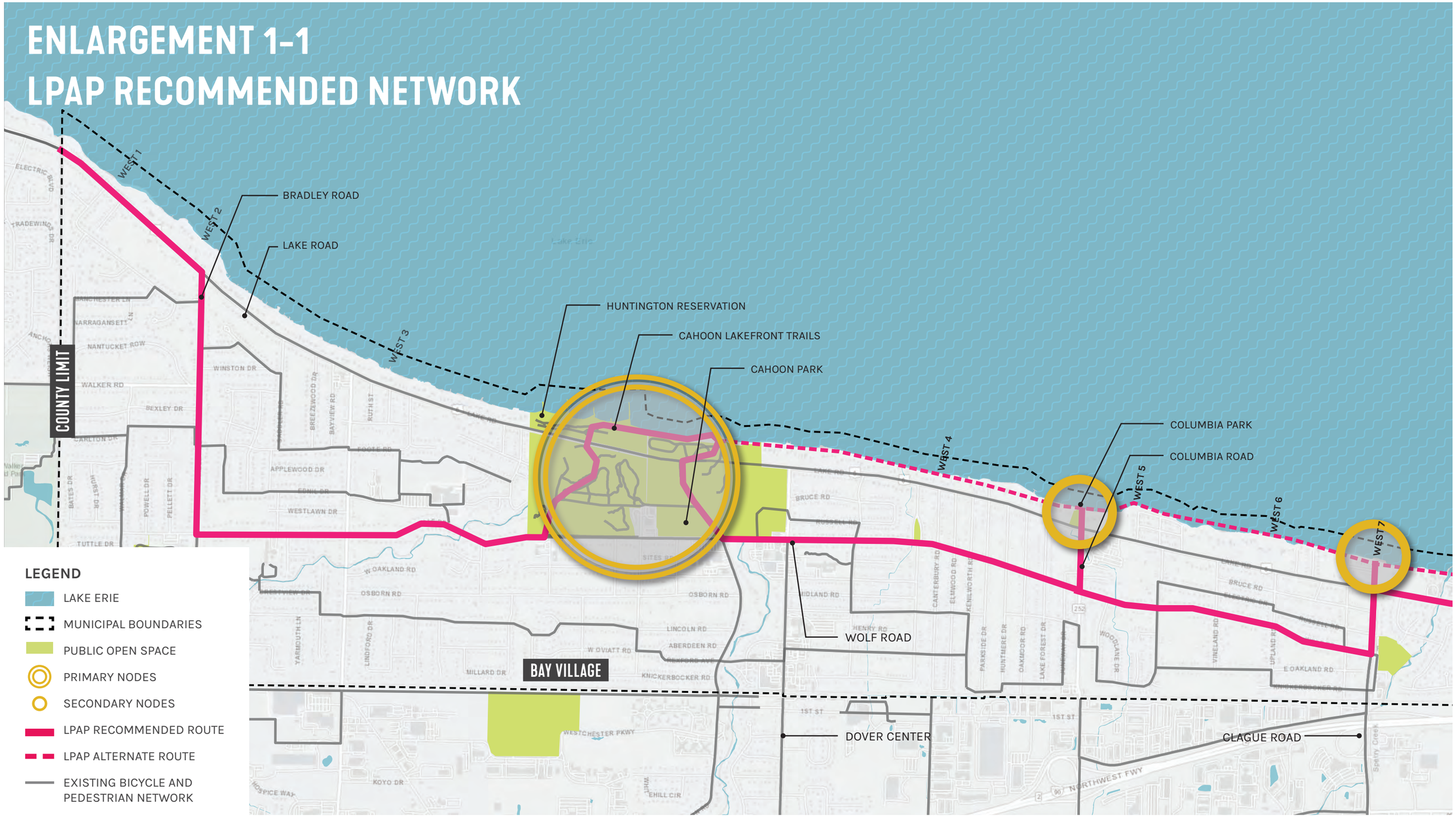
THE LPAP RECOMMENDED NETWORK BY THE NUMBERS

- 50% (15.1 miles) of the Cuyahoga County shoreline is identified for potential public access.
- Public access opportunities increase by 311% outside of downtown Cleveland.
- 46,510 people have the potential for access within a 10-minute walk publicly accessible shoreline, an increase of 219%.
- 12,777 low-income households are within a 10-minute walk of publicly accessible shoreline, an increase of 199%
- 19,707 minorities live within a 10-minute walk of publicly accessible shoreline, an increase of 190%



DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, INCREMEND P, GARMIN, USGS, EPA

ENLARGEMENT 1-1
LPAP RECOMMENDED NETWORK



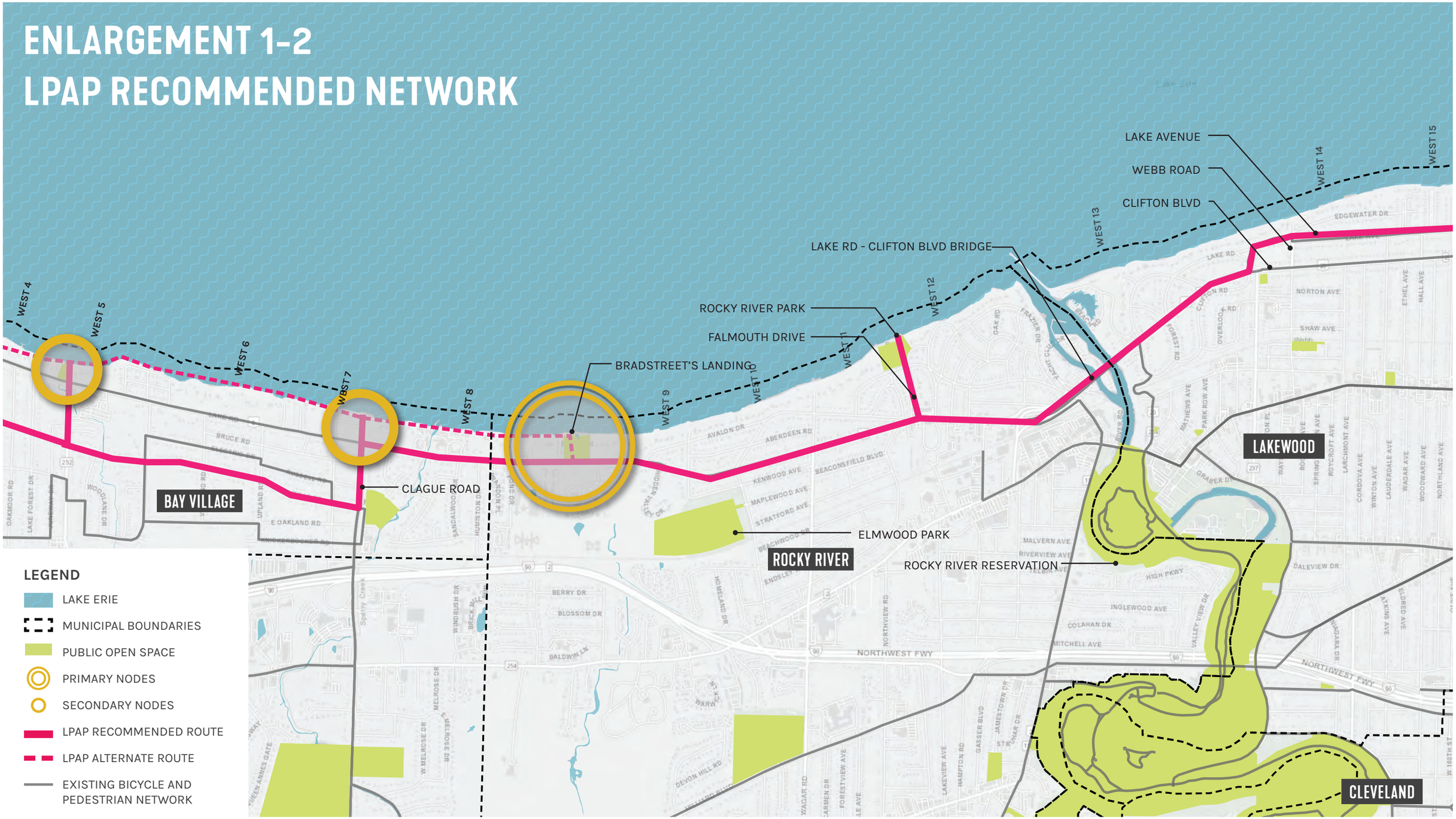
LEGEND

- LAKE ERIE
- MUNICIPAL BOUNDARIES
- PUBLIC OPEN SPACE
- PRIMARY NODES
- SECONDARY NODES
- LPAP RECOMMENDED ROUTE
- LPAP ALTERNATE ROUTE
- EXISTING BICYCLE AND PEDESTRIAN NETWORK

DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, INCREMEND P, GARMIN, USGS, EPA

FEET
0 1,250 2,500 5,000

ENLARGEMENT 1-2
LPAP RECOMMENDED NETWORK



LEGEND

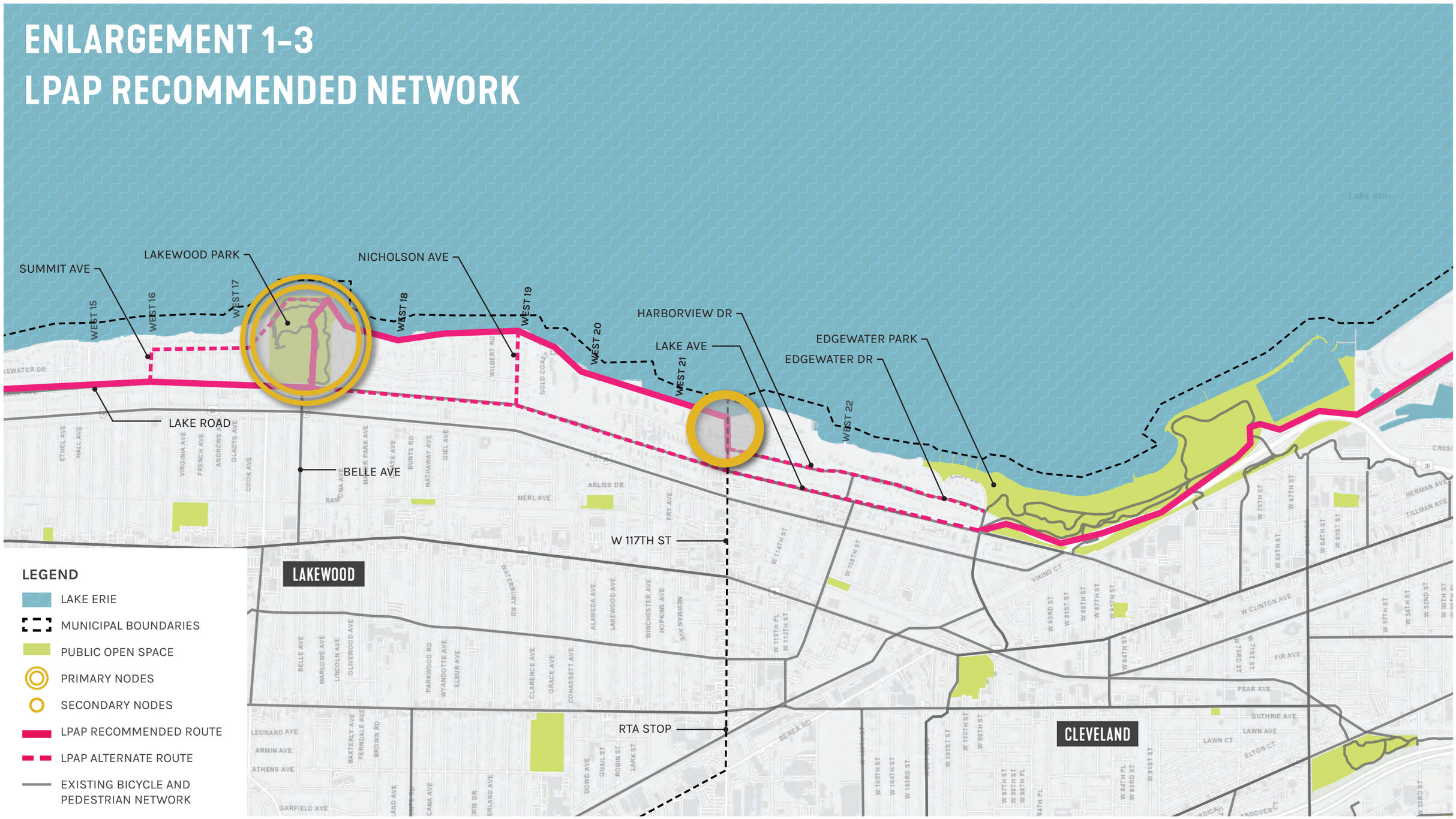
- LAKE ERIE
- MUNICIPAL BOUNDARIES
- PUBLIC OPEN SPACE
- PRIMARY NODES
- SECONDARY NODES
- LPAP RECOMMENDED ROUTE
- LPAP ALTERNATE ROUTE
- EXISTING BICYCLE AND PEDESTRIAN NETWORK

DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, INCREMEND P, GARMIN, USGS, EPA

0 1,250 2,500 5,000 FEET

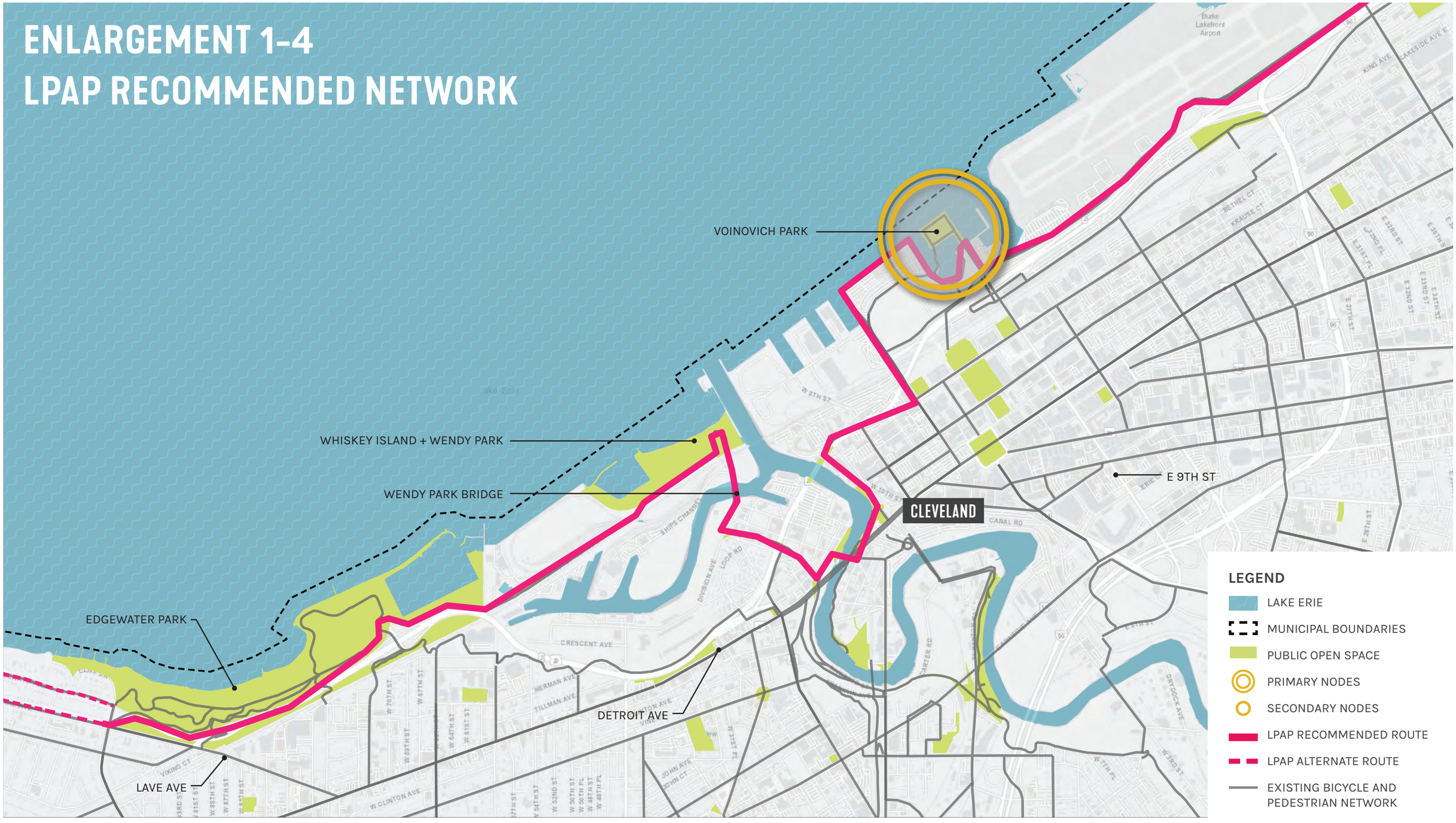
N

ENLARGEMENT 1-3
LPAP RECOMMENDED NETWORK



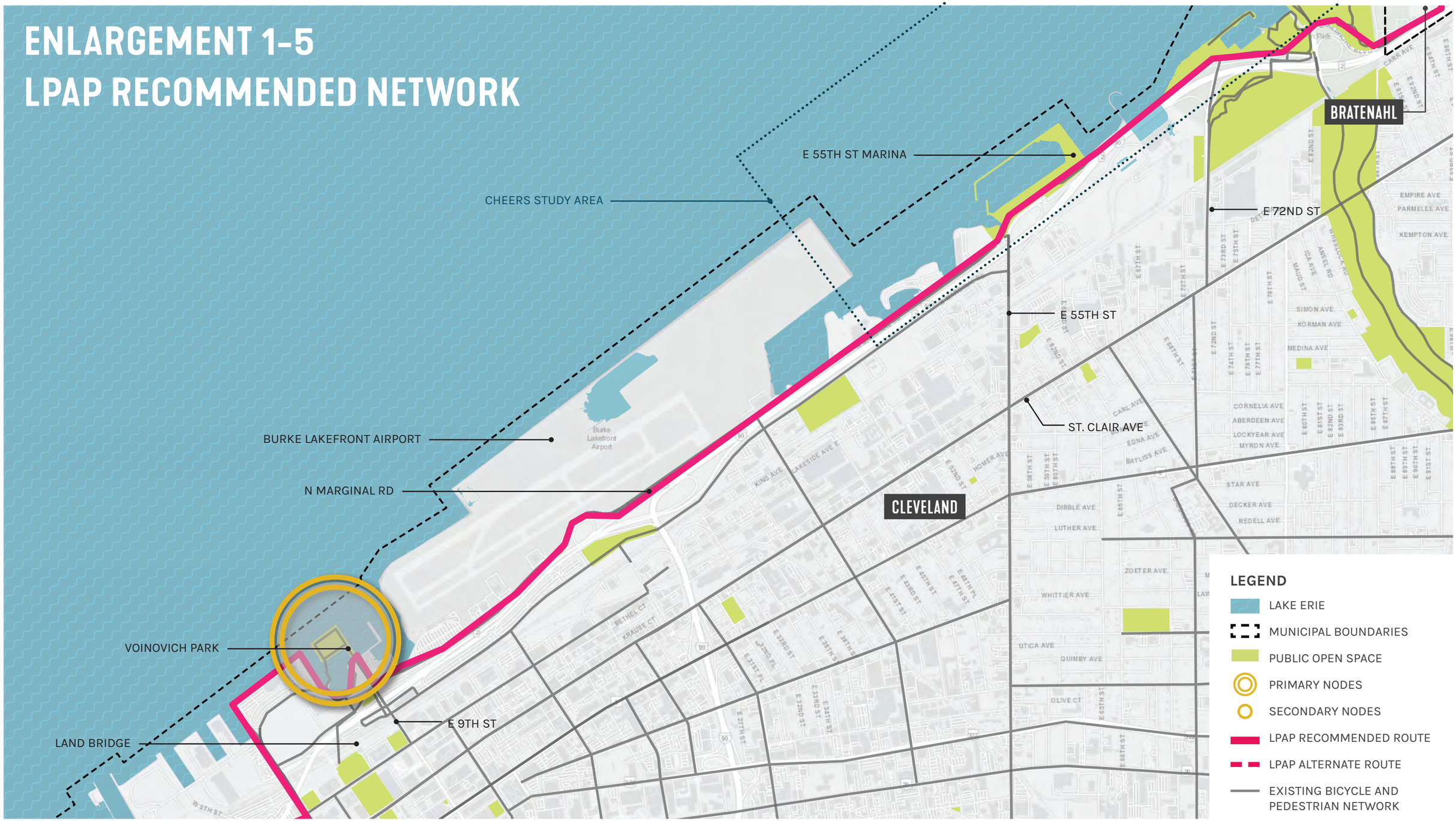
DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, INCREMEND P, GARMIN, USGS, EPA

ENLARGEMENT 1-4
LPAP RECOMMENDED NETWORK



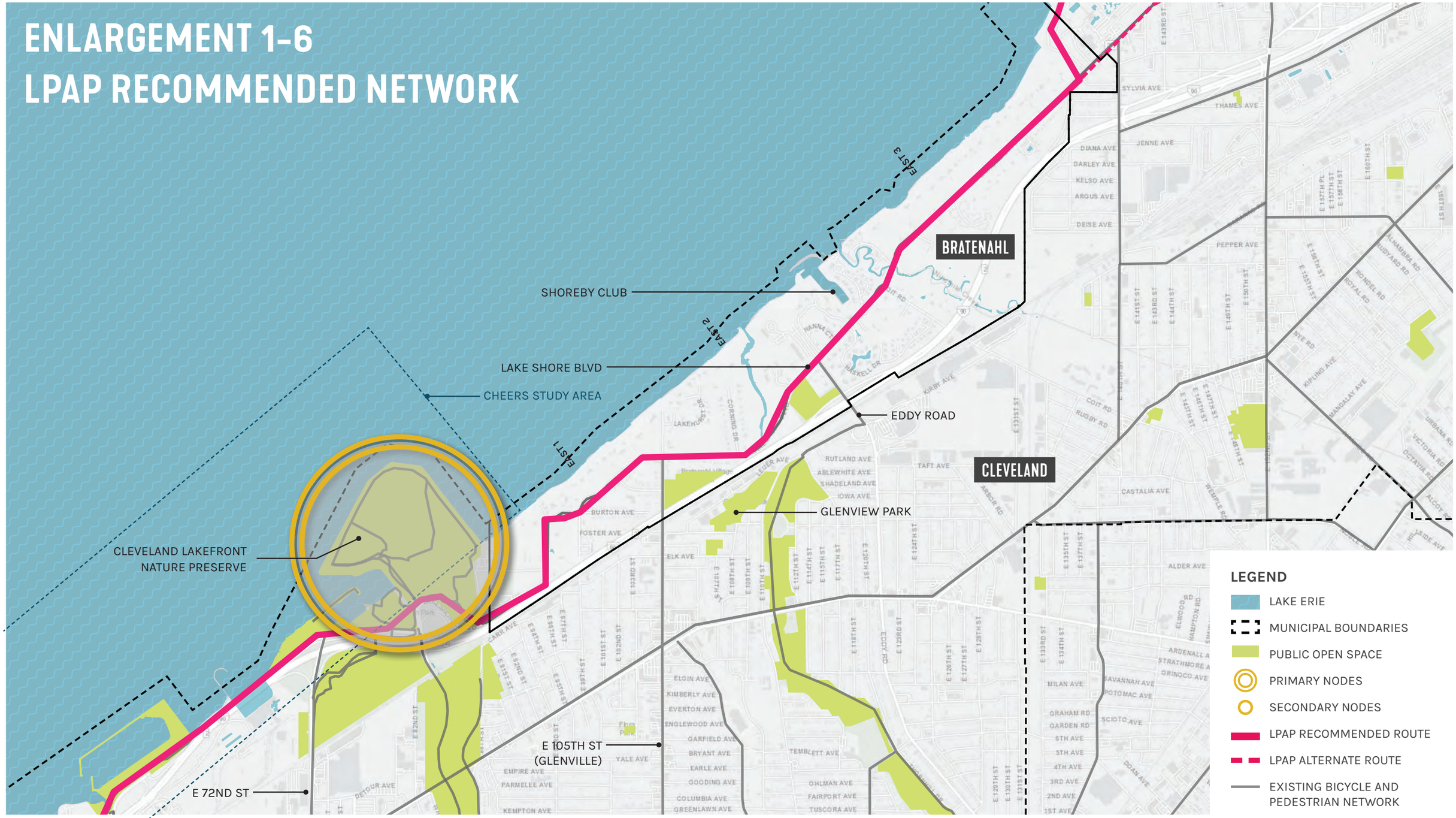
DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, INCREMEND P, GARMIN, USGS, EPA

ENLARGEMENT 1-5
LPAP RECOMMENDED NETWORK



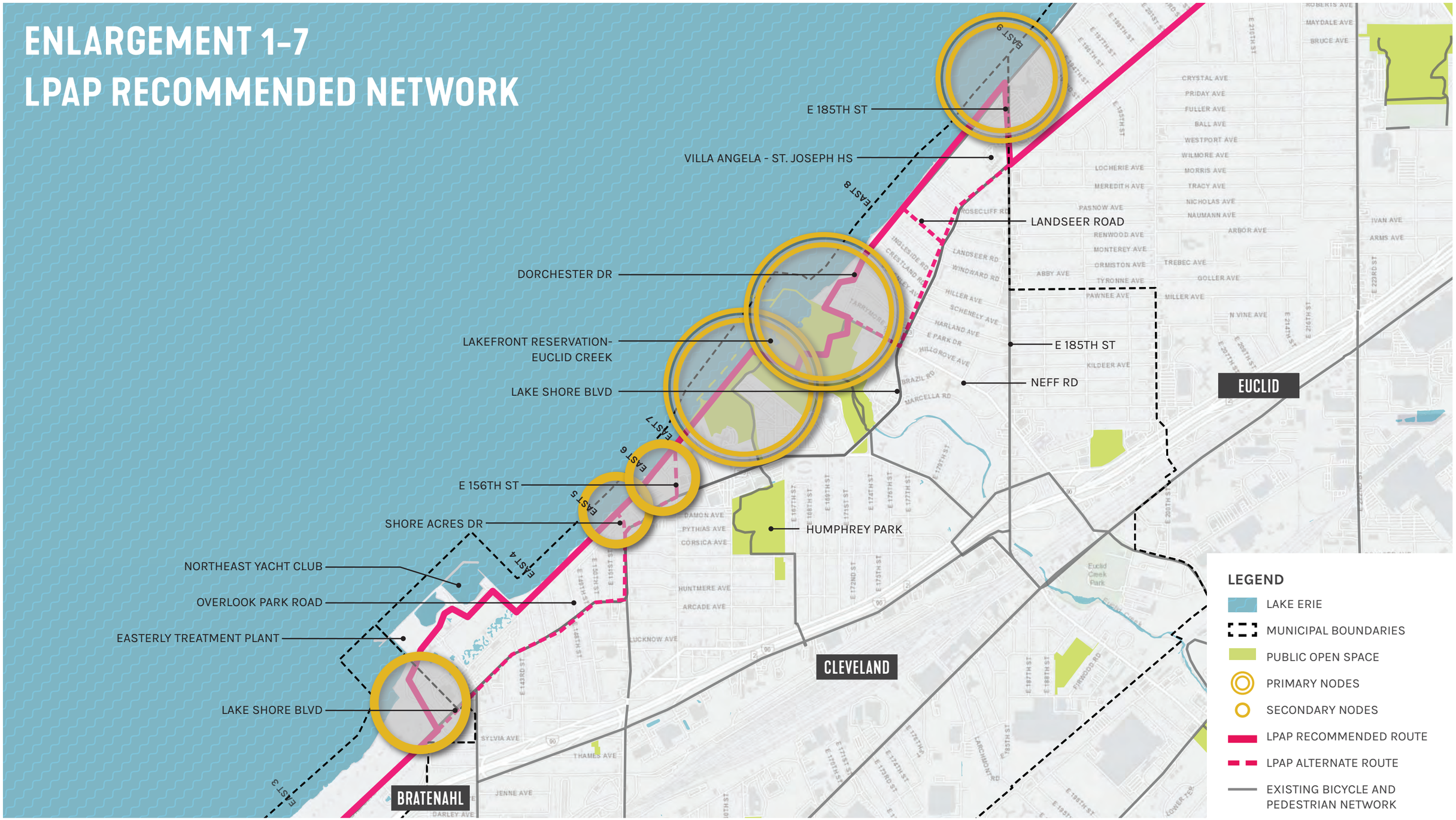
DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, INCREMEND P, GARMIN, USGS, EPA

ENLARGEMENT 1-6
LPAP RECOMMENDED NETWORK



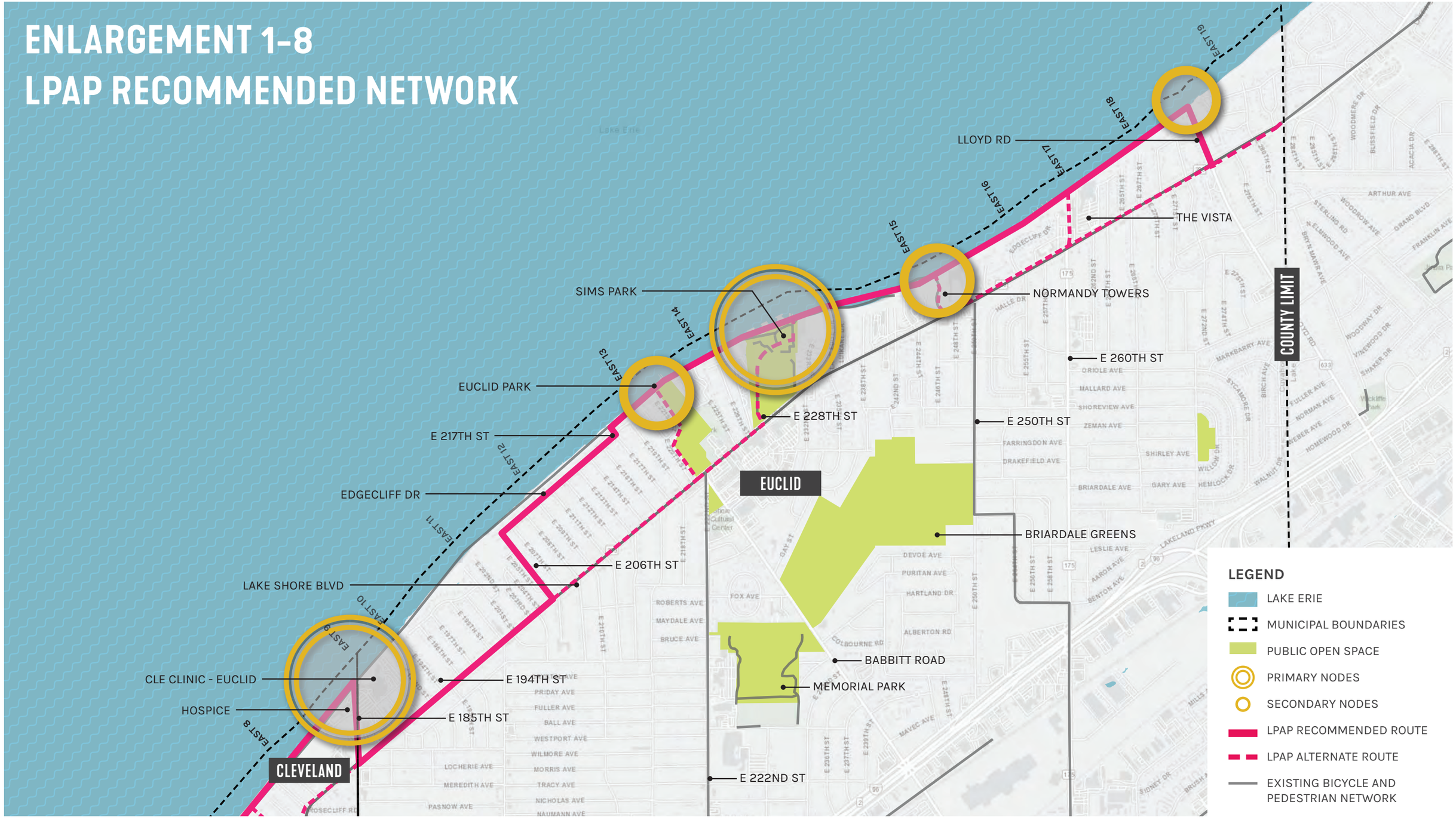
DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, INCREMEND P, GARMIN, USGS, EPA

ENLARGEMENT 1-7
LPAP RECOMMENDED NETWORK



DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, INCREMEND P, GARMIN, USGS, EPA

ENLARGEMENT 1-8
LPAP RECOMMENDED NETWORK



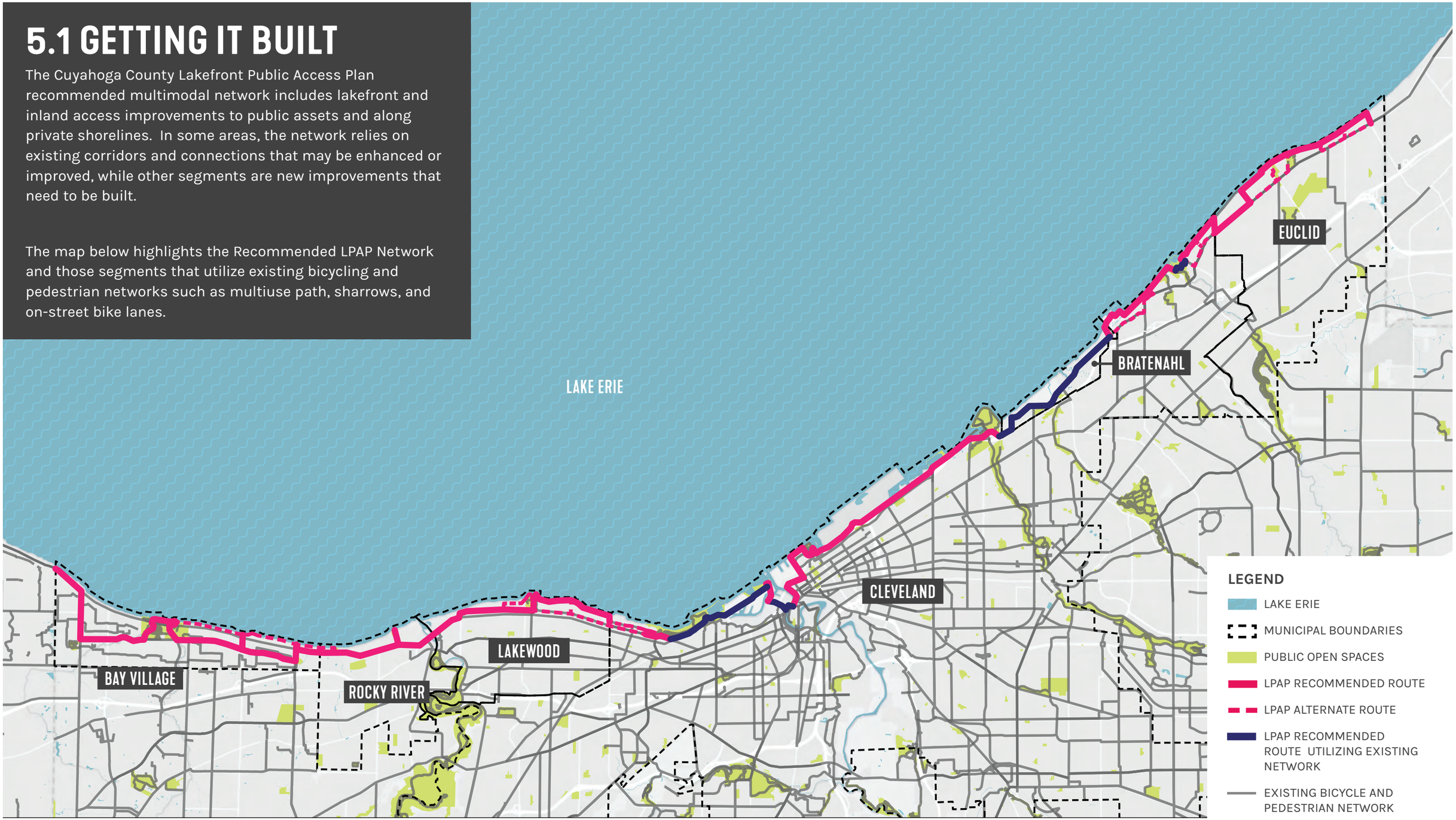
DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, INCREMEND P, GARMIN, USGS, EPA

5.0 IMPLEMENTATION

5.1 GETTING IT BUILT

The Cuyahoga County Lakefront Public Access Plan recommended multimodal network includes lakefront and inland access improvements to public assets and along private shorelines. In some areas, the network relies on existing corridors and connections that may be enhanced or improved, while other segments are new improvements that need to be built.

The map below highlights the Recommended LPAP Network and those segments that utilize existing bicycling and pedestrian networks such as multiuse path, sharrows, and on-street bike lanes.



DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, GARMIN, USGS, EPA, NPS, NOACA

The anticipated costs for constructing the lakefront trail segments along privately-owned property are summarized below. Investments in public infrastructure that are part of the recommended route are not included in this summary as costs for those elements vary dramatically based on the level of improvements being considered and are part of a broader study being advanced by NOACA.

Implementing the recommendations outlined within the Lakefront Public Access Plan as it relates to the lakefront trails segments includes two primary steps. First is engaging private lakefront landowners to confirm interest in participating in a public-private partnership toward expanding public access in exchange for shoreline protection. Second is finding the funds to continue to advance planning and design and ultimately construction of the improvements.

Lakefront segment costs include the following assumptions:

- 2% for utility coordination and improvements
- 6% for construction mobilization
- 20% contingency
- 12% for design and permitting
- Green Infrastructure: $75,000 allowance for each location with potential for stormwater treatment
- Ecology and Habitat Opportunities: $250,000 allowance for enhancements at each key ecological location
- Node costs include the following assumptions:
- Primary Node allowance of $600,000 includes access (switchback ramp), signage, site furnishing, and landscaping.
- Secondary Node allowance of $350,000 includes access (stairs or switchback ramp), basic signage and site furnishings.

Segment		Construction Total	Design and Permitting
4	EAST	$ 8,796,000	$ 1,055,520
5	EAST	$ 7,615,000	$ 913,800
6	EAST	$ 8,134,000	$ 976,080
7	EAST	$ 3,292,000	$ 395,040
8	EAST	$ 13,278,000	$ 1,593,360
13	EAST	$ 3,345,000	$ 401,400
14	EAST	$ 5,902,000	$ 708,240
15	EAST	$ 3,276,000	$ 393,120
16	EAST	$ 8,357,000	$ 1,002,840
17	EAST	$ 3,699,000	$ 443,880
18	EAST	$ 11,200,000	$ 1,344,000
4	WEST	$ 47,334,000	$ 5,680,080
5	WEST	$ 8,706,000	$ 1,044,720
6	WEST	$ 24,912,000	$ 2,989,440
7	WEST	$ 5,491,000	$ 658,920
8	WEST	$ 28,643,000	$ 3,437,160
18	WEST	$ 27,392,000	$ 3,287,040
19	WEST	$ 4,314,000	$ 517,680
20	WEST	$ 14,554,000	$ 1,746,480
21	WEST	$ 15,527,000	$ 1,863,240

	Primary Nodes	Secondary Nodes	Total Cost	Design and Permitting
West	3	3	$ 3,420,000	$ 410,400
East	4	6	$ 5,400,000	$ 648,000
Downtown	2	1	$ 1,860,000	$ 223,200

COST OPINION FOR THE IMPLEMENTATION OF ALL

EAST SEGMENTS

CONSTRUCTION: $76,894,000

DESIGN AND PERMITTING: $9,227,280

COST OPINION FOR THE IMPLEMENTATION OF ALL

WEST SEGMENTS

CONSTRUCTION: $176,873,000

DESIGN AND PERMITTING: $21,224,760

COST OPINION FOR THE IMPLEMENTATION OF ALL

NODES

CONSTRUCTION: $10,680,000

DESIGN AND PERMITTING: $1,281,600

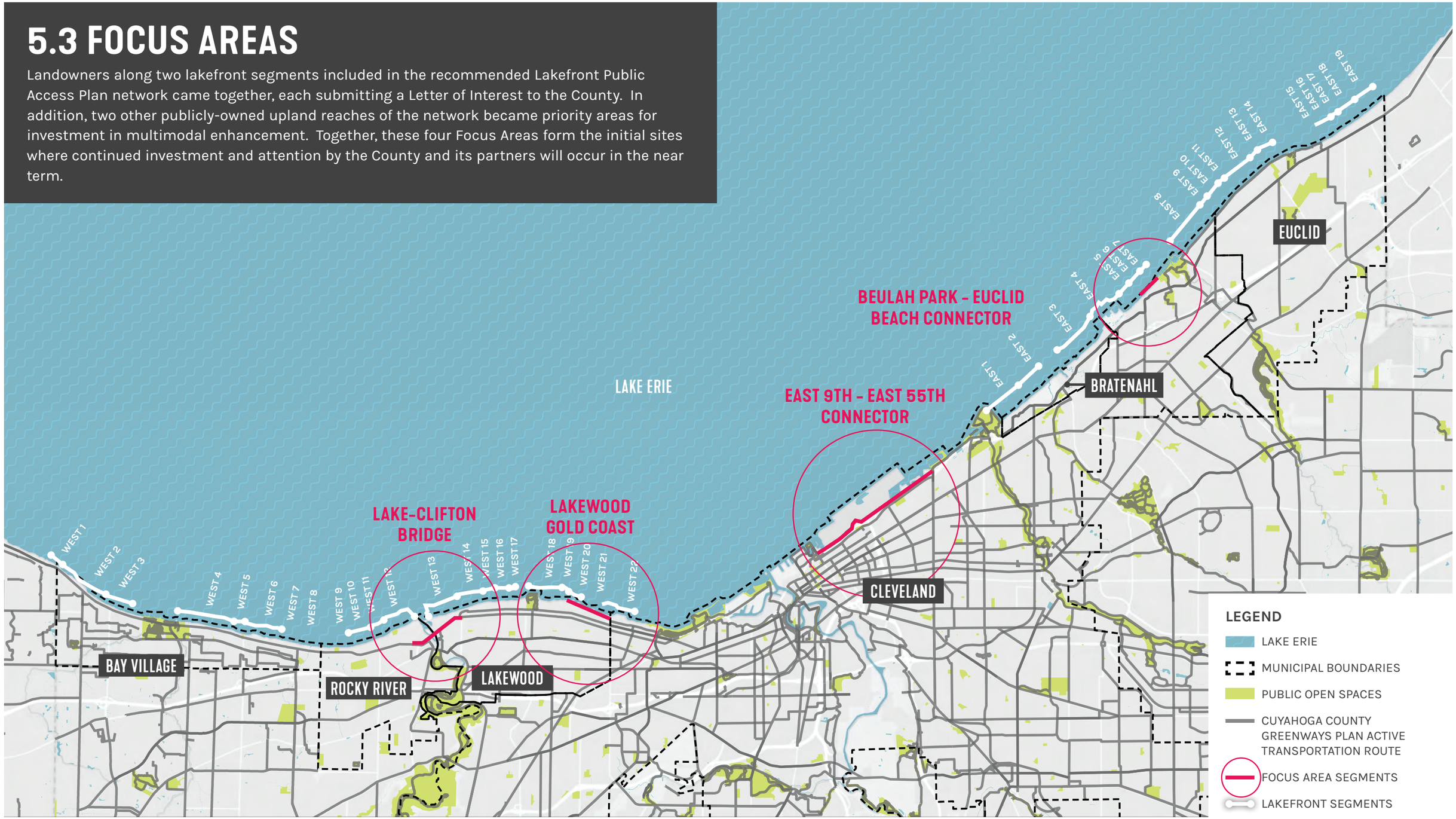
5.2 LAKEFRONT SEGMENT IMPLEMENTATION

Of the approximately 3824 privately-owned lakefront properties within Cuyahoga County, 276 of the landowners responded to a survey about partnering with the County. The majority of those responding, 68%, expressed a willingness to consider potential public-private partnerships. While this initial response was overwhelmingly positive, much work remains to explore landowner receptivity along recommended segments.

Focus Areas include portions of the Lakefront Public Access Plan route where there is alignment between key project criteria, community leadership support for investing in public lakefront access, and landowner receptivity (where required). For privately owned lakefront segments that make up part of the recommended network, submitting a Letter of Interest is the first step toward partnering with the County and advancing discussions that lead to greater specificity on the design and construction of lakefront improvements. The Letter of Interest is a non-binding statement that helps the County identify clusters of interested landowners and helps justify continued investment in planning and design to move a project toward implementation. As projects advance, formal binding agreements with landowners are needed to submit alongside regulatory permits and environmental review documents to secure the approvals needed to construct improvements.

5.3 FOCUS AREAS

Landowners along two lakefront segments included in the recommended Lakefront Public Access Plan network came together, each submitting a Letter of Interest to the County. In addition, two other publicly-owned upland reaches of the network became priority areas for investment in multimodal enhancement. Together, these four Focus Areas form the initial sites where continued investment and attention by the County and its partners will occur in the near term.

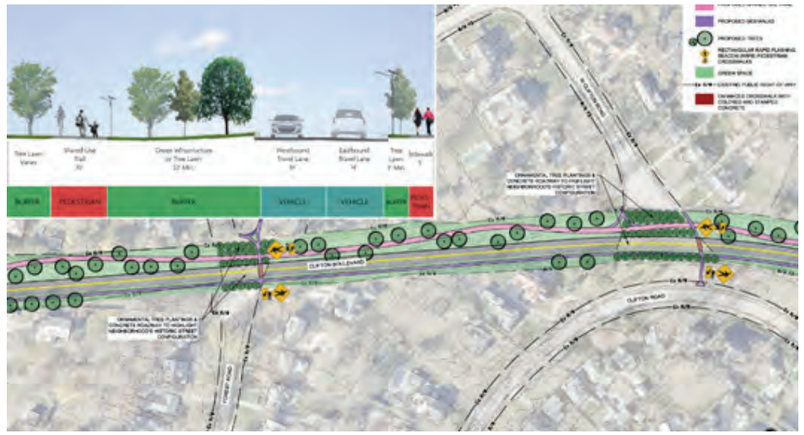


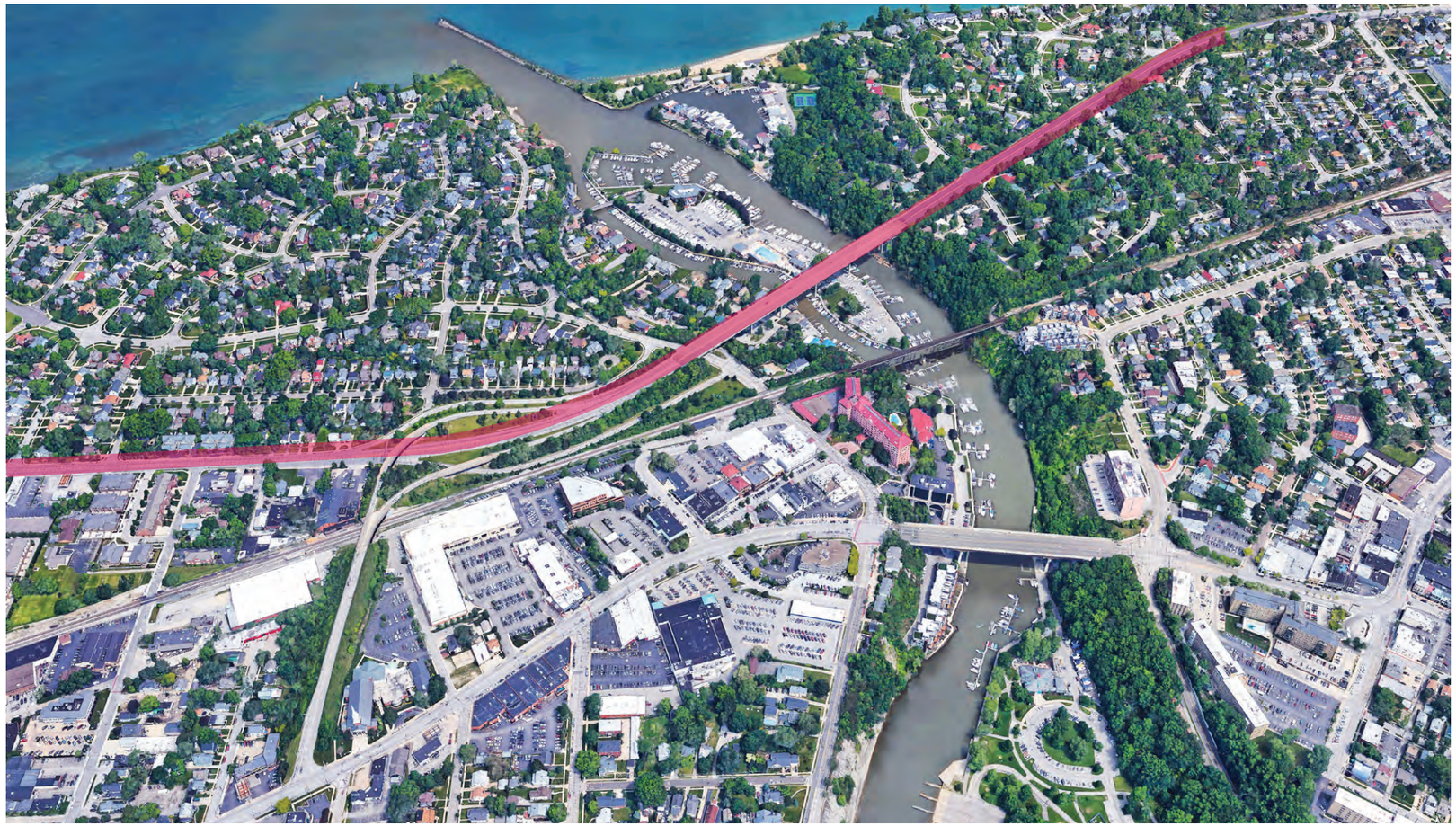
DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, GARMIN, USGS, EPA, NPS, NOACA

LAKE-CLIFTON BRIDGE

In 2020, a planning study investigated improving infrastructure for bicyclists and pedestrians along Lake Erie, between the Cities of Lakewood and Rocky River. Studies have shown direct personal and economic health benefits for communities with higher active transportation facilities, but currently, a lack of accommodations for bikes and pedestrians along Clifton Boulevard creates an unsafe and uncomfortable environment, discouraging use along this lakefront segment.

- **Access: 1.2 miles**
- **Budget: $9-10M**
- **Status: Conceptual Alternatives (Complete); Preliminary Design & Engineering (2022-2023); Construction (2023-2024); Funding Identification (Ongoing)**





LAKEWOOD GOLD COAST

Identified as lakefront segments West 20 and West 21, this 3800 ft of privately owned shoreline includes a mix of high-rise apartments and condominiums. Valued at over $225M, structures along this segment of shoreline sit within as few as 15 ft from the top of a 50-60 ft bluff. Individual landowner investments that attempt to mitigate shoreline erosion have occurred over the last 30 years. Initial discussions suggest landowners will spend an additional $4-$8M within the next year or two in an attempt to mitigate risks associated with erosion.

- **Access: 3800 feet (0.70 miles)**
- **Budget: $25-35M**
- **Status: Site Investigations (Complete); Master Plan (2022); Preliminary Design & Engineering (2022-2023); Permitting (2023-2024); Final Design & Engineering (TBD); Construction (TBD); Funding Identification (Ongoing)**

EAST 9TH – EAST 55TH CONNECTOR

This critical connector serves a link between downtown Cleveland and destinations like the First Energy Stadium and the Rock and Roll Hall of Fame, nearby employment centers like University Circle, and significant upcoming investments in advancing recommendations within the CHEERS project.

- **Access: 2.7 miles**
- **Budget: $11M**
- **Status: Design & Engineering (2022-2023); Construction (2023-2026) Funding Identification (Ongoing)**

BEULAH PARK – EUCLID BEACH CONNECTOR

Identified as lakefront segments East 6 and East 7, this 2300 ft of privately owned lakefront contains segments that were among the most highly rated when evaluated against the key criteria. Fueled by extensive and active erosion that is an imminent threat to lakefront homes, landowners along this stretch were the first to submit Letters of Interest to the County. Once built, the BP-EB Connector will expand public lakefront access from the Metroparks' Lakefront Reservation west along the neighborhoods of Beulah Park, Villa Beach and a small portion of Shore Acres.

- **Access: 2300 feet (0.44 miles)**
- **Budget: $11M**
- **Status: Site Investigations (Complete); Preliminary and Final Design & Engineering (Ongoing); Permitting (2022); Construction (2023-2026); Funding Identification (Ongoing)**

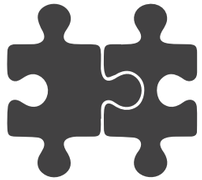
5.4 ATTRACTING FUNDS

Recommendations and opportunities identified in the Lakefront Public Access Plan support a broad range of goals: expanding equitable lakefront access, enhancing the natural environment through the integration of green infrastructure, supporting economic investment, and creating places for people to access and enjoy the lake are all important outcomes. Sharing the value of these investments and the recommendations within this plan are key to sustaining momentum that is necessary to implement it and attract funding and investment from partners at the local, state, and federal levels.

During development of the Lakefront Public Access Plan, $9.4M in grant funding was identified and applied for through a variety of different programs (see the Appendix for a summary of potential funding programs). Additional investment, both by the County and other local partners and through future grant applications, will be necessary. Some key strategies to consider to both help sustain project momentum and attract additional investment from grant funding sources are summarized on this page.

MAXIMIZE THE LOCAL FUNDS

Funds allocated by the County and other local partners should be used to match grants whenever possible. Stretching local dollars will be important and leveraging state and federal resources can double or triple what is invested locally.



MATCH PROGRAMS

State and federal grant program funds can be used to match one another. Non-profit funds and local funds can match both state and federal programs. Aligning timelines for expending grant funds can take effort but is an important management consideration.

CELEBRATE SUCCESS, SHARE MOMENTUM

Plans are necessary but become stagnant quickly. Building improvements incrementally will be both necessary and important. Walking on a new pier or portion of lakefront trail will help build and sustain momentum. Securing a significant grant is a reason to celebrate. Showing progress on Focus Areas is important. Success begets success.

CONSISTENCY

Being upfront and sharing a consistent message about project details and the status of things is key, particularly when working to build and maintain partnerships with private landowners. Trust is essential and having consistent faces present in discussions and maintaining open, clear communication is critical to achieving the Lakefront Public Access Plan.

APPENDIX B

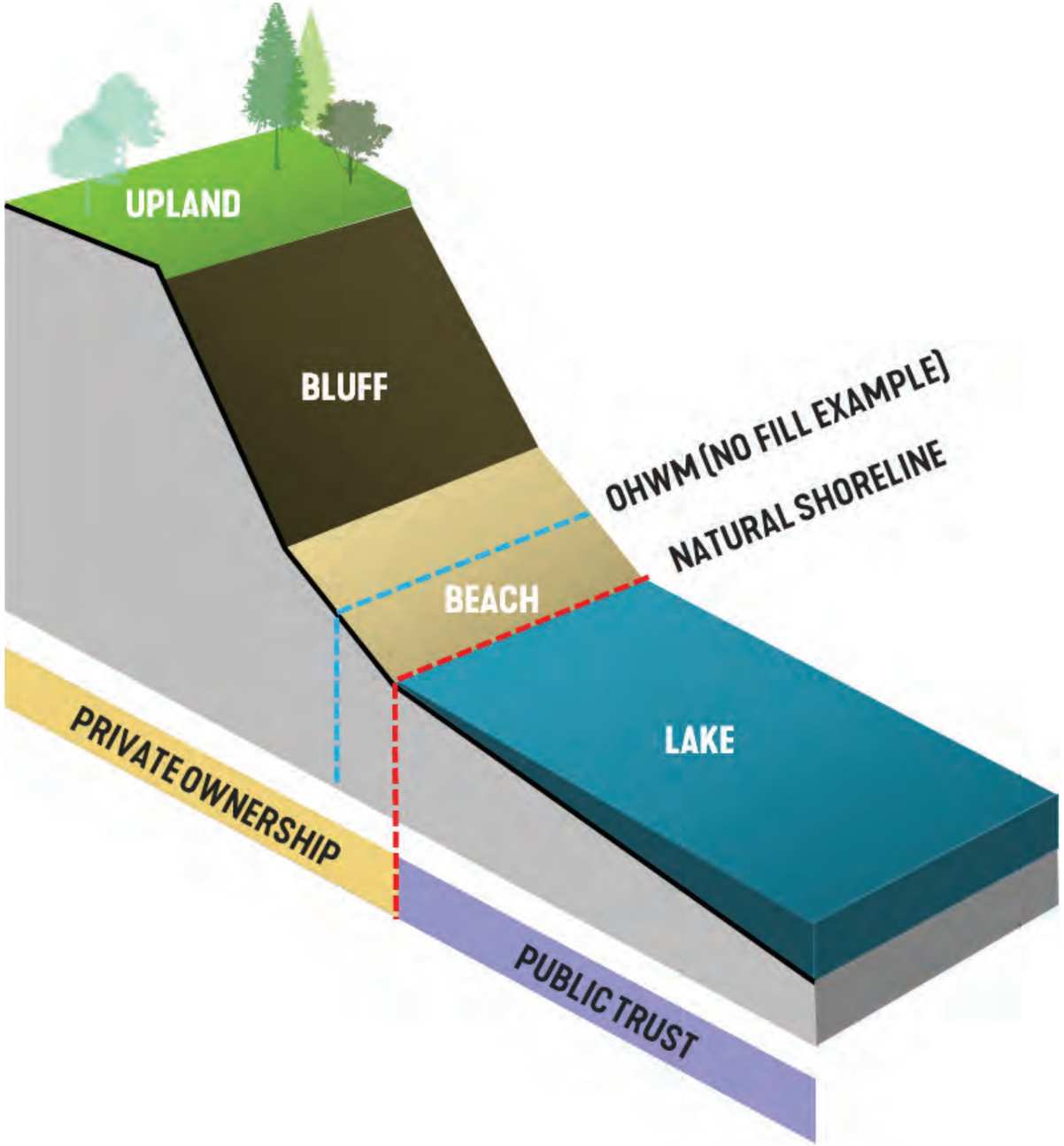
REGULATORY REVIEW AND APPROVALS

State and federal reviews and approvals associated with shoreline improvements are key considerations and influencers of project implementation timelines. Unlike the well-known and relatively quick-to-secure permits needed for upland projects, waterfront projects entail lengthy permit and environmental review timelines. Lead state and federal agencies for shoreline improvements include the Ohio Department of Natural Resources (ODNR), US Army Corps of Engineers (USACE), and the Ohio Environmental Protection Agency (O EPA). A variety of different branches from within these agencies, as well as other entities like US Fish & Wildlife and the Ohio Historic Preservation Office, will be involved in reviewing specific aspects of waterfront projects as well.

The development of waterfront improvement plans, permits, and supplemental documents for submittal to state and federal agencies will require time. As design refinements are advanced, pre-application consultation with lead agency staff is highly encouraged; this can help expedite formal submittal review processes and eliminate the need for costly revisions. Regulatory review and approval timeframes vary based on project complexity and agency workload. While temporary permits may support development of simple shoreline projects and allow construction to proceed within months, projects that don't fit these requirements can expect a 10-14 month permit cycle. It is also important to note that state and federal water resource permits typically are valid for five years from date of issuance, although extensions may be granted in certain situations. Execution of these projects will require coordination to be completed efficiently. Critical approvals associated with implementation of the recommended shoreline segments, as well as two key regulatory boundaries, are summarized below.

Ordinary High-Water Mark (OHWM): The elevation along a bank or shoreline up to which the presence and action the water is so continuous as to leave an identifiable mark either by erosion, destruction of terrestrial vegetation, or other easily recognizable characteristic. For Lake Erie, the OHWM is established at the elevation of 573.4 International Great Lakes Datum of 1985 (IGLD 85). The US Army Corps of Engineers recognizes this boundary as their jurisdictional review limit. A primary consideration in USACE project evaluation is the volume and impact of fill material placed below the OHWM.

Natural Shoreline: In simple non-legal terms, the Natural Shoreline is perhaps best described as the location of the land at the water's edge in 1989 had humankind not modified or protected the shoreline in some way. From a permit review and approval perspective, the State of Ohio defines the Natural Shoreline as the boundary between public and private upland ownership. Elements placed or built lakeward of the Natural Shoreline typically require a Submerged Lands Lease that defines the purpose of the structure, lease term, and lease rate. These elements must also be considered water dependent from a use standpoint to be authorized by the State. While there are many nuances based on when the fill along the lake was placed, in general fill placed after the mid-1950s must be water dependent to be authorized by the State. Examples of water dependent structures include shoreline revetments, breakwaters and piers. Examples of improvements that do not meet the water dependency criteria include parking lots and trails. Non-water dependent elements can be authorized in conjunction with an authorized water dependent structure (i.e. a walkway on top of a breakwater), however, regulatory reviewers seek to minimize the footprint of structures impacting the lakebed; therefore, increasing the footprint of an authorized structure to accommodate a non-water dependent use is typically not allowed. Fill placed along the lake after the 1950s without a permit is considered to be unauthorized and is often required to be removed as part of lakefront development projects. Determination of the location of the Natural Shoreline is identified by a qualified surveyor and includes reviewing historical documents and imagery. The State of Ohio Department of Natural Resources reviews and approves of the Natural Shoreline position on a case-by-case basis making this an important first step in advancing lakefront projects.



Section 106 National Historic Preservation Act: The Ohio Historic Preservation Office is required to review the project as part of the Section 404 permit approval process. Desktop reviews of the existing site and nearby environs may suffice where cultural and historic features are not present. Physical investigations to clear the area of buried artifacts may be needed and will be determined through future consultation as plans are refined.

Clean Water Act Section 404/Section 10: The Clean Water Act requires an Individual Permit to allow for development of key water-related improvements. This process involves developing preliminary plans for proposed improvements, preparing permit application materials, evaluating water resource impacts with respect to the OHWM, a public review and comment period which includes commentary from other agencies including US Fish & Wildlife, and technical review of project details.

Clean Water Act Section 401 Water Quality Certification: Section 401 of the Clean Water Act requires that a Water Quality Certificate be issued by Ohio EPA for discharges of fill material into wetlands and other Waters of the United States. Section 401 reviews are typically done in conjunction with USACE Section 404 permitting processes.

National Environmental Policy Act: An Environmental Assessment will be required as part of the National Environmental Policy Act (NEPA) review process for key water- related improvements. The NEPA process typically runs in tandem with the Section 404 process.

Shore Structure Permit: This permit authorizes the construction of coastal structures such as revetments, beaches, piers, creek mouth modifications, and launch ramps. The Ohio Department of Natural Resources reviews proposed improvements to confirm plans are based on sound coastal engineering including appropriateness for the intended function, effectiveness, and durability while minimizing impacts lakeward of the Natural Shoreline.

State Submerged Lands Lease: The lease is a mechanism by which the State of Ohio authorizes the development or improvement of facilities impacting the lakebed of Lake Erie. Annual lease fees vary based on the type of improvement and are typically negligible for projects that focus on public access and do not charge user fees. Shoreline protection including nearshore habitat, beach nourishment, and public access improvements that impact the lakebed all require new lease agreements with the State. Leases are reviewed by the Ohio Department of Natural Resources and executed by the Governor and are signed after all other approvals identified within this section are secured.

AN EXAMPLE OF AN INVITING PUBLIC WATERFRONT FEATURING MULTIMODAL ACCESS

6.0 APPENDICES

APPENDIX A

GLOSSARY OF TERMS

BLUFF CLADDING – applications to the face of a vertical bluff that are intended to slow or stop erosion cause by exposure to wind, runoff, and precipitation.

BMPs – best management practices which include structural or vegetative practices to reduce, prevent, or clean water that runs off from upland areas or is discharged from other features such as pipes with the goal of reducing pollution.

BREAKWATER – an offshore structure intended to reduce wave energy reaching the shoreline and can support beach formation between the shoreline and breakwater. Breakwater height (above or below the water) and length are determined based on the desired outcome and these structures are often built of stone and/or precast concrete armor units.

CANTILEVER – a horizontal structure that is support on one side and overhangs on the other. An example is a walkway or deck is supported by land or a SHORE PROTECTION STRUCTURE on one side and by piles (posts) on the other.

ECOLOGICAL ENHANCEMENT – strategies that increase or improve habitat for plants and animals. This may include direct investments in habitat or indirect investments in improving water quality that result in improved habitat.

EQUITABLE ACCESS – at an individual level, supporting access that is fair and just, allowing all persons regardless of age, ability, race, and income the ability to enjoy and access the lakefront. More broadly within Cuyahoga County, this means prioritizing investment in areas along the lakefront with higher-than-average population of historically disinvested communities based on the facets of race and income.

GREEN INFRASTRUCTURE – includes investment in both engineered and natural systems to reduce or treat stormwater while delivering supplemental environmental, ecological, social, or economic benefits.

LANDOWNER RECEPTIVITY – willingness or interest from a private landowner in participating in a PUBLIC-PRIVATE PARTNERSHIP.

LETTER OF INTEREST – a non-binding letter submitted to Cuyahoga County indicating LANDOWNER RECEPTIVITY to exploring a PUBLIC-PRIVATE PARTNERSHIP where lakefront public access is offered in exchange for SHORELINE PROTECTION. This is the first step in the process with future agreements offering greater specificity.

MULTIMODAL TRANSPORTATION – for this project, providing trails and other improvements to roads and infrastructure that supports use by pedestrians and/or those on bicycles bikes.

PUBLIC-PRIVATE PARTNERSHIP – collaboration between a governmental entity and private landowners in which both parties benefit. An example of this could be a private landowner allowing public access along their shoreline in exchange for government funding of SHORELINE PROTECTION that helps mitigate erosion and preserves existing homes or other privately owned improvements.

REVETMENT - sloping structure used along shorelines to absorb and reflect wave energy to mitigate coastal erosion. Typical revetment materials include stone or concrete armor units.

SCOUR STONE – stone placed in front of structures such as bridge abutments or along vertical walls or structures to protect the lakebed from eroding and the structure becoming unstable.

SEEPS – movement of water below ground and through the face of a slope or bluff.

SHEET PILE – sections of sheet material, frequently steel, with interlocking edges that are driven into the ground/lakebed and used to retain land and protect shorelines from erosion.

SHORELINE PROTECTION – structures placed along a shoreline that are intended to reduce erosion resulting from waves and ice. See REVETMENT, SHEET PILE, and BREAKWATER definitions for types of SHORE PROTECTION.

SHORELINE STABILIZATION – the installation of SHORELINE PROTECTION STRUCTURES to mitigate erosion along a shoreline.

STORMWATER – surface water from precipitation that runs off land and other surface features such as paved areas or lawn.

TOE STONE – see SCOUR STONE.

APPENDIX B

POTENTIAL FUNDING SOURCES

PROGRAM	IMPLEMENTATION STEP			FUNDS AVAILABLE	SOURCE	MATCH	APP DUE DATE	AWARD DATE	NOTES
	PLANNING	DESIGN & ENGINEERING	CONSTRUCTION						
Congestion Mitigation and Air Quality Fund (CMAQ)		X	X	Varies	Federal	20% Match	Spring 2021 (every other year)	2021 (every other year)	Bicycle / Pedestrian infrastructure must not be exclusively for recreation.
ODNR Recreational Trails Program (RTP)		X	X	Up to $150,000	Federal	20% Match	February	January (following yr)	Trails and trailhead facility development
ODNR Clean Ohio Trails Fund (COTF)		X	X	Up to $500,000	State	25% Match	February	January (following yr)	Trails and trailhead facility development
OEPA - Recycle Ohio Grant - Scrap Tire Grant			X	Up to $300,000	State	1:1 Match	December	Spring	Projects that may support beneficial reuse of ground tire rubber and asphalt shingles - trails, etc.
ODNR Paddling Enhancement Grant		X	X	Varies, approximately $50,000	State	No Match Req'd	March 1	August	Support paddlecraft access and improvements
ODNR Land & Water Conservation Fund (LWCF)		X	X	$50,000 - $500,000	Federal	1:1 Match	November	July	Development and rehab of recreational areas in alignment with Ohio SCORP priorities
ODNR Natureworks		X	X	Up to $150,000	State	25% Match	June	January	Development and rehab of recreational areas in alignment with Ohio SCORP priorities
ODNR Coastal Management Assistance Grant Program (CMAG)	X	X	X	$50,000 - $150,000	Federal	1:1 Match	October (pre-application)	July	Funding for all phases of project development and aspects including water quality, recreational access, and ecological enhancements
National Coastal Resilience Fund	X	X	X	$125,000 - $250,000	Federal	No Min Match	April (pre-application)	October	Expand and enhance reslience and ecological benefits.
FEMA Building Resilient Infrastructure and Communities (BRIC)		X	X	Varies, multi-million dollar projects typical	Federal	25% Match	Fall	18-24 months pending reviews	Proactive investment toward coastal resilience/protection
FEMA Hazard Mitigation Grant Program (HMGP)	X	X	X	Varies, multi-million dollar projects typical	Federal	25% Match	Fall, Annually	Spring, Annually	Risk Mitigation associated with flooding and coastal hazards.
LWCF Outdoor Legacy Partnership Program	X	X	X	Up to $500,000	Federal (NPS)	1:1 non-Federal, including in-kind donations	November, Annually	July, Annually	Recreation improvements including trails
Army Corps of Engineers Planning Assistance to States (PAS)	X			Varies	Federal	1:1 Match	Ongoing	Month After Submittal	Technical assistance in site investigations and planning prior to permits
OEPA WRRSP (Water Resource Restoration Sponsor Program)		X	X	Varies, $500,000 typical	State	No Match Req'd	August	October (preliminary)	Restoration or protection of targeted aquatic resources
Lake Erie Protection Fund		X	X	<$50,000	State	No Match Req'd	May	July	Water quality related as well as ecological focused projects
Cuyahoga County Casino Revenue Fund		X	X	Varies, multi-million dollar projects typical	County	No Match Req'd	Varies	Varies	Transformative projects that support economic development and community enhancement. Loan and grant
State Capital Community Projects	X	X	X	Varies, $200,000 - $1M Typ.	State	No Match Req'd	Jan/Feb (every other year)	April/May	Projects focused on economic development and community enhancement.
Ohio Water Development Authority	X	X	X	Varies	Revenue Bonds and Notes	No match required.	Rolling	Rolling	Any project / activity qualifying under section 6109.22, 6111.036, or 6111.037 of the Ohio Revised Code.
H2Ohio Fund		X	X	Varies	State	No match required.	TBD	TBD	
OPWC Clean Ohio Conservation Program			X	Varies, up to 5% over appraised value	State	25% match	October, Annually	April, Annually	Competes in NRAC-1 for Cuyahoga County; Construction of eligible improvements on grant-acquired land
Five Star and Urban Waters Restoration Program	X		X	Up to $50,000	Federal	No match required.	January, Annually	September, Annually	Education and community participation is prioritized
Community Development Block Grant (CDBG)			X	Varies by community / entitlements	Federal	No match required.	N/A	Annual allocations recieved February, annually	Eligibility varies by community's Citizen Action Committee
Erosion Emergency Assistance Grant		X	X	Up to $1,000,000	State	No match required.	May	August	Erosion mitigation. May become annual program

APPENDIX C

TRAIL SEGMENT RATING CRITERIA

EASE OF PUBLIC ACCESSIBILITY

DEFINITION

Ability to physically connect a specific stretch of shoreline to existing or planned inland public access points (rights-of-way, parks, etc.).

SCORING METHODOLOGY

Segment where a potential lakefront trail is readily able to be connect to existing points of public access receive the most points. Those segments that could be connected to existing or planned points of public access with limited investment receive a moderate amount of points. Segments that will be difficult to connect to existing or planned public access points receive fewer points.

EVALUATION CRITERIA

1 pt - Specific shoreline segment is accessible to the public investment but currently unplanned investment and irrespective of adjacent shoreline segment investment and irrespective of adjacent shoreline segment

3 pts - Specific shoreline segment will be accessible to the public based on improvements current planned and funded or only currently accessible on one end via current public or common private access point

5 pts - Specific shoreline segment is currently accessible via public park or private open space on both ends

PROXIMITY TO EXISTING PUBLIC LAKEFRONT ACCESS POINTS

DEFINITION

Potential for a specific trail segment to expand access at existing lakefront public access points or provide new access in areas without existing public lakefront access.

SCORING METHODOLOGY

Segments that provide public lakefront access where none exists receive the most points. Segments immediately adjoining existing public lakefront access points receive a moderate number of points. Segments that are near existing public lakefront access point but are not immediately adjacent to them receive the least number of points.

EVALUATION CRITERIA

1 pt – Specific shoreline segment lacks direct connection/link to existing lakefront park & open space but is within a 10-minute walk of existing lakefront access

3 pts - Directly abuts or connects to existing lakefront parks or open space

5 pts - Occurs along stretch where no/limited lakefront access currently exists (greater than 10-minute walk to existing access)

EQUITABLE ACCESS

DEFINITION

Potential for a specific shoreline segment to increase public lakefront access for underserved/invested communities (based on income and race/ethnicity) within the County.

SCORING METHODOLOGY

Specific shoreline segments that would provide public access for communities that already have good access to existing lakefront parks throughout the county will receive fewer points than those that would support access for those with less access to existing lakefront public access points.

EVALUATION CRITERIA (BASED ON CENSUS BLOCK DATA AND WALKING BARRIERS)

1 pt - Specific shoreline segment would provide lakefront access for income levels that currently have more (percentage basis) opportunity to access the lakefront within a 10-minute walk of where they live

1 pt - Specific shoreline segment would provide lakefront access for ethnicities that currently have more (percentage basis) opportunity to access the lakefront within a 10-minute walk of where they live

3 pts – Specific shoreline segment would provide lakefront access for income levels that match the current mix of income level access (percentage basis) within a 10-minute walk of where they live

3 pts – Specific shoreline segment would provide lakefront access for ethnicities that match the current mix of ethnicity level access (percentage basis) within a 10-minute walk of where they live

5 pts – Specific shoreline segment would provide lakefront access for income levels that currently have fewer (percentage basis) opportunities to access the lakefront within a 10-minute walk of where they live

5 pts – Specific shoreline segment would provide lakefront access for ethnicities that currently have fewer (percentage basis) opportunities to access the lakefront within a 10-minute walk of where they live

PRIVATE INVESTMENT ATTRACTION

DEFINITION

Potential for public investment in trail development along a specific stretch of shoreline to support existing, or act as a catalyst for, attracting new private investment / economic development.

SCORING METHODOLOGY

Specific shoreline segments that are unlikely to help support/attract new private investment in redevelopment will receive the least amount of points. Segments that are near ongoing private economic investment toward redevelopment will receive a moderate amount of points. Segments that are in areas where no current private economic investment toward redevelopment is occurring or planned, but where such opportunities are deemed possible due to land use, will receive the most points.

EVALUATION CRITERIA

1 pt – Unlikely to result in supporting / catalyzing new private investment, specifically areas that are exclusively single family residential

3 pts – Potential to support ongoing private economic investment occurring in the region

5 pts – Occurring in an area that is unrelated or disconnected from current private redevelopment initiatives and has land uses and land availability that support such investment

PROTECTS EXISTING PRIVATE ASSETS

DEFINITION

Level to which investment in a specific stretch of shoreline will help retain or protect privately-owned land and improvements along the lakefront that may be subject to loss from shoreline and bluff erosion.

SCORING METHODOLOGY

Specific shoreline segments that are actively eroding and unstable based on high-level visual review and knowledge of local geology and where failure would result in loss of land only receive the fewest points. Segments where failure would result in damage to secondary buildings or structures receive medium points. Segments where failure would result in damage to residential structures or commercial structures receive the most points.

EVALUATION CRITERIA

0 pts – No private ownership

1 pt – Shoreline erosion/bluff failure would result in loss or damage to land only

3 pts – Shoreline erosion/bluff failure would likely result in loss of non-residential or ancillary building or structure

5 pts – Shoreline erosion/bluff failure would likely impact existing primary structure (home, office, etc.)

PROTECTS EXISTING PUBLIC ASSETS

DEFINITION

Level to which investment in a specific stretch of shoreline will help retain or protect existing public improvements (roads, utilities, parks, etc.) along the lakefront that may be subject to loss from shoreline and bluff erosion.

SCORING METHODOLOGY

Specific shoreline segments that are actively eroding and unstable based on high-level visual review and knowledge of local geology and where failure would result in loss of land only receive the fewest points. Segments where failure would result damage or loss of built infrastructure receive the most points.

EVALUATION CRITERIA

0 pts – No public ownership

3 pts – Shoreline erosion/bluff failure would likely result in loss or damage to land only

5 pts – Shoreline erosion/bluff failure would likely impact built infrastructure (road, utilities, etc.)

SHORELINE EROSION/STABILITY

DEFINITION

Degree to which a specific shoreline segment may be eroding and unstable based on high-level visual review and knowledge of local geology and which may be stabilized through shoreline protection investment.

SCORING METHODOLOGY

The greater the percent of shoreline segment eroding and unstable, the higher the points received.

EVALUATION CRITERIA

1 pt - Not actively eroding or unstable along shoreline segment

2 pts - Actively eroding and unstable along <50% or shoreline segment identified as having a low rate of erosion based on visual and local geological condition review

3 pts - Actively eroding and unstable along >50%

4 pts - Actively eroding and unstable along <50% or shoreline identified as having a high rate of erosion based on visual and local geological condition review

5 pts - Actively eroding and unstable along >50%

HABITAT ENHANCEMENT

DEFINITION

Degree to which investment in a specific shoreline segment may support the enhancement and/or creation of habitat (and benefit from potentially attracting funding to help implement the project).

SCORING METHODOLOGY

Segments where habitat opportunities exist receive the most points. Segments where no habitat opportunities exist receive fewer points.

EVALUATION CRITERIA

1 pt – No known ecological resources or little potential for enhancement

5 pts – Ecological resources (mouth of river, wetland) present and connected to shoreline segment and funding or investment being allocated toward it

FLOOD/STORMWATER ENHANCEMENT

DEFINITION

Degree to which investment in a particular segment of shoreline may be integrated with mitigation measures to help address localized flooding or known stormwater infrastructure deficiencies (and benefit from potentially attracting funding to help implement the project).

SCORING METHODOLOGY

Segments where opportunities to mitigate known flooding or enhance water quality by addressing known stormwater management deficiencies receive the most points. Segments where flooding and stormwater concerns do not exist receive fewer points.

EVALUATION CRITERIA

0 pts = No outfall present or outfall >594 EL and >12" diameter

1 pt = Outfall <577 EL or >594 EL and <12" diameter

3 pts = Outfall <594 EL and >24" diameter

5 pts = Outfall <594 EL and <24" diameter

PRIORITY AMENITIES/ACTIVITIES

DEFINITION

Degree to which a specific segment of shoreline supports/expands access to recreational activities and opportunities most desired by the community.

SCORING METHODOLOGY

Segments that are located immediately adjacent to existing parks and that provide top-rated amenities and activities receive the most points. Those that are not directly connected to existing parks with top-rated amenities receive fewer points.

EVALUATION CRITERIA

1 pt – Segment is further than a 10-minute walk from an existing park or open space that offers top-rated activities or amenities

3 pts – Segment is not directly connected but within a 10-minute walk to an existing park or open space that offers top-rated activities or amenities

5 pts – Connects to existing park or open space on one end that offers top-rated activities or amenities as identified by user survey

GREATEST POPULATION SERVED

DEFINITION

Serving the greatest number of people with proximity to a specific segment of shoreline.

SCORING METHODOLOGY

Segments that serve the greatest number of people (population per foot of trail) within a 10-minute walk receive more points.

EVALUATION CRITERIA

1 pt – Population within a 10-minute walk of a shoreline segment and are below the existing average population per foot of shoreline access within the County

3 pts - Population within a 10-minute walk of a shoreline segment and within +/- 10% of the existing average population per foot of shoreline access within the County

5 pts - Population within a 10-minute walk of a shoreline segment and are above the existing average population per foot of shoreline access within the County

UNIQUE NATURAL ASSET

DEFINITION

Degree to which access to a specific segment of shoreline provides access to a special natural area or unique natural feature (ecological resources – river mouth, wetlands, woodlands – Greenprint special*) that is relatively uncommon within the county.

SCORING METHODOLOGY

Segments that provide new access to a unique natural area or feature receive the most points. Segments that expand access to existing natural area or features receive mid-level points. Segments that provide lakefront access without the presence of unique natural assets receive the fewest points.

EVALUATION CRITERIA

0 pts – Provides access to no special or unique lakefront natural assets

5 pts – Segment has a special or unique lakefront natural asset along its length

*The Greenprint is a web-based inventory of priority areas to protect, restoration, and enhance as well as opportunities for the development of trails and other "green" improvements. Mapped features include parks, greenspace corridors, waterways, roadways and trails, as well as other community destinations such as activity center and community centers. It was developed by the Cuyahoga County Planning Commission in 2002 and continues to be a guiding document for planning with natural systems in the area.)

CULTURAL FEATURE/DESTINATION SYMBIOSIS

DEFINITION

Connectedness between specific shoreline segments and existing cultural features and destinations (historic sites, downtowns, museums, etc.) and that may enhance users/visitor experience.

SCORING METHODOLOGY

Segments within a 10-minute walk of regional features/destinations that attract visitors/users from throughout Ohio and the nation receive the most points. Segments within a 10-minute walk of features/destinations that serve mainly local community residents/users receive medium points. Those segments lacking 10-minute proximity receive the fewest points.

EVALUATION CRITERIA

0 pt – No cultural features / destinations within 10-minute walk

3 pts – Within 10-minute walk of local serving destinations (downtown historic sites, civic building such as libraries

5 pts – Within 10-minute walk of regional destination (Hall of Fame, First Energy Stadium, museum, etc.)

TRANSIT-SERVED

DEFINITION

Proximity between specific shoreline segments and regional transit stops that may enhance public access to lakefront improvements.

SCORING METHODOLOGY

Segments within a 10-minute walk of a transit stop receive the most points while segments lacking 10-minute walk proximity receive the fewest.

EVALUATION CRITERIA

0 pt – No bus stops exist within a 10-minute walk

3 pts – Within 10-minute walk of existing transit stop but more than 5-minute walk

5 pts – Less than 5-minute walk

EXISTING ASSET RETENTION

DEFINITION

The likelihood that existing public and/or private buildings or infrastructure improvements can be retained in conjunction with development of specific shoreline segments.

SCORING METHODOLOGY

Segments that are unlikely to require removal or replacement of existing public or private buildings or improvements (excluding land) to construct receive the most points. Segments that likely to require removal or replacement receive fewer points.

EVALUATION CRITERIA

1 pt – Development of shoreline segment requires removal/replacement of existing private or public building/improvement

5 pts – Development of shoreline segment does not require removal/replacement of existing private or public building/improvement

PUBLIC INTEREST IN LAKEFRONT CONNECTIVITY

DEFINITION

Public interest in connecting existing adjacent lakefront public parks and access points to one another (parallel to shoreline).

SCORING METHODOLOGY

Existing public lakefront parks and access points identified by public survey results as being important to connect will receive more points than those deemed as less important to connect.

EVALUTION CRITERIA

1 pt – Below average interest per survey

3 pts – Average interest per survey responses (mean +/-.5 pts)

5 pts – Above average interest per survey responses

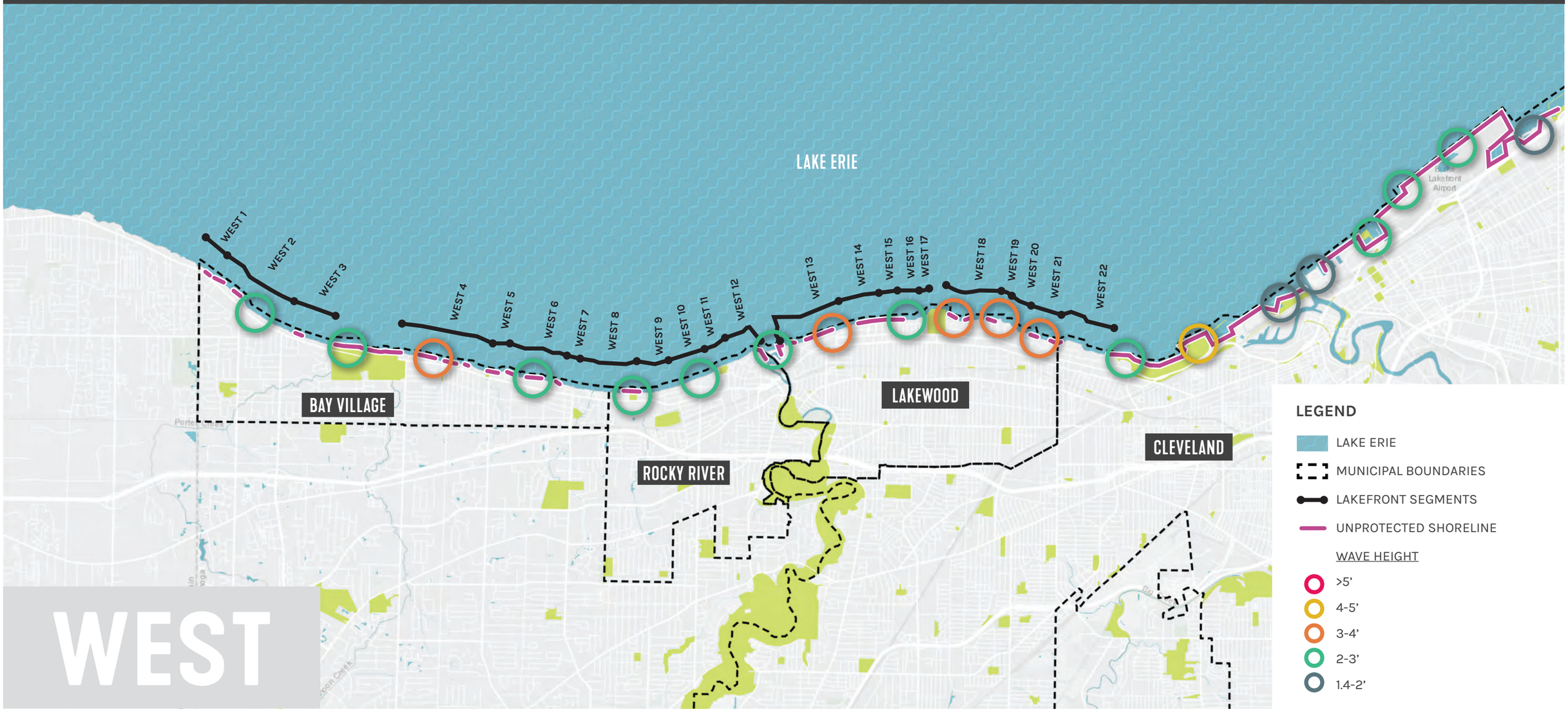
APPENDIX **D**

SITE INVENTORY

COASTAL CONDITIONS

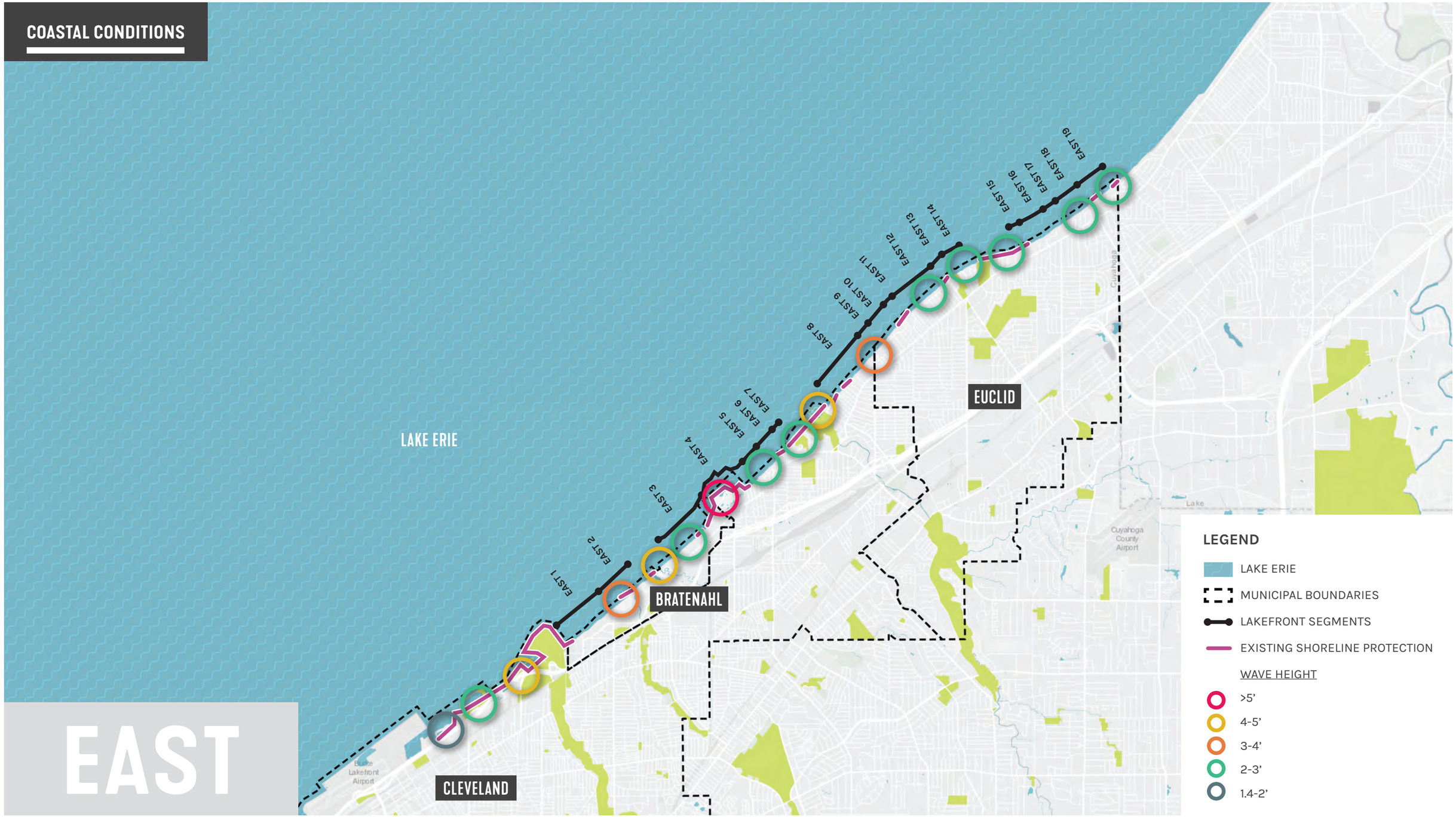
Much of the shoreline throughout the County is eroding. Rates vary based on local geology, with the western portion of the county generally being slower eroding high shale bluffs and the eastern portion generally being lower, more rapidly eroding bluff of mixed sediment. Offshore waves, wind, precipitation, and ice, as well as shoreline orientation, are significant factors as well.

The amount and severity of erosion directly relates to key criteria used to assess shoreline segments. Visual assessment of the shoreline along with FEMA-identified wave heights and the presence, condition and perceived effectiveness of existing shoreline protection measures contribute to segment ratings relative to the evaluative criteria.



DATA SOURCES: SMITHGROUP, CUYAHOGA COUNTY, ESRI, HERE, GARMIN, USGS, EPA, NPS

COASTAL CONDITIONS



EAST

DATA SOURCES: SMITHGROUP, CUYAHOGA COUNTY, ESRI, HERE, GARMIN, USGS, EPA, NPS

EAST

CAHOON PARK, BAY VILLAGE

COLUMBIA PARK, BAY VILLAGE

GOLD COAST, LAKEWOOD

WEST

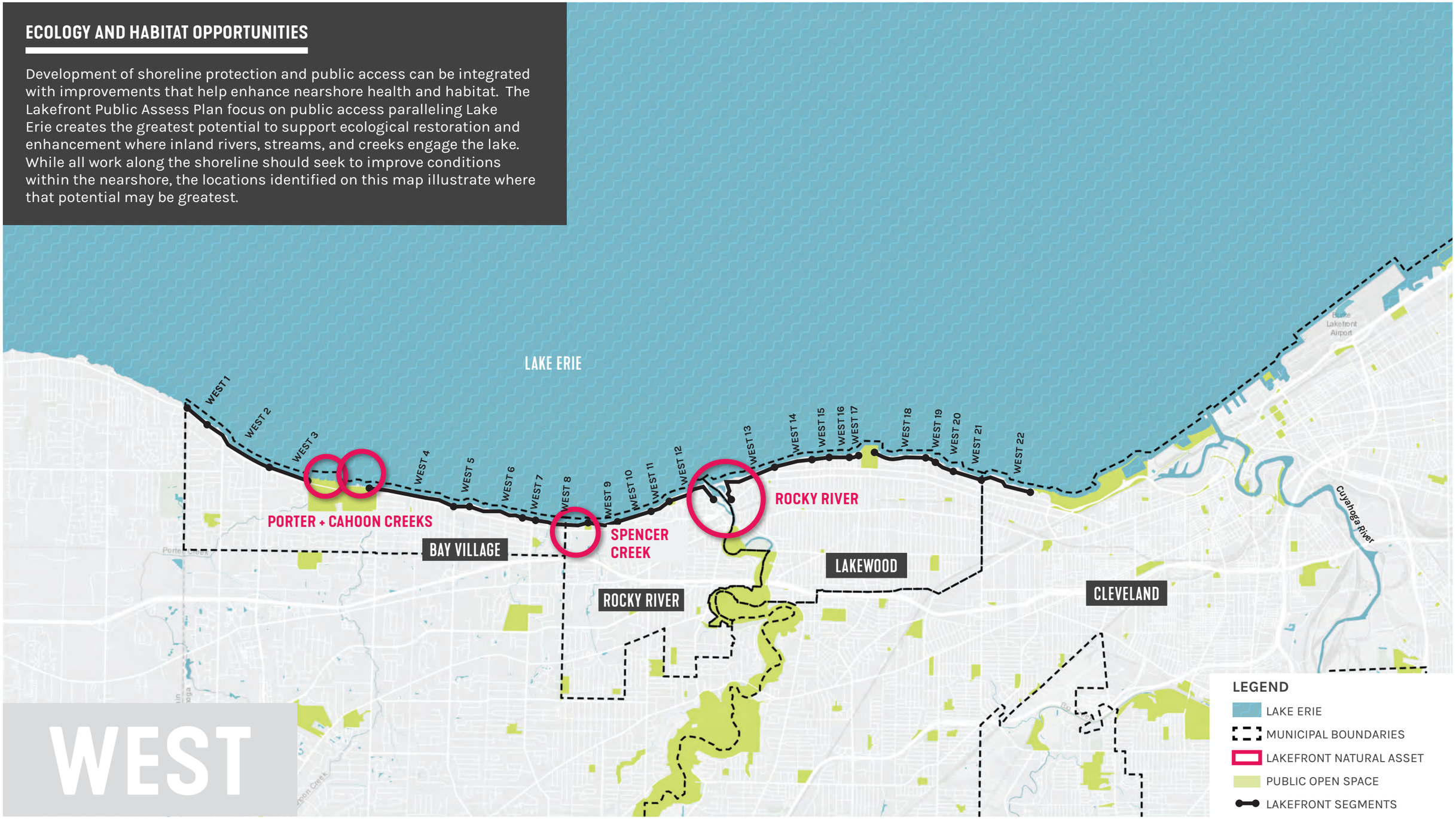
BRATENAHL SHORELINE

BEULAH PARK, CLEVELAND

EUCLID SHORELINE

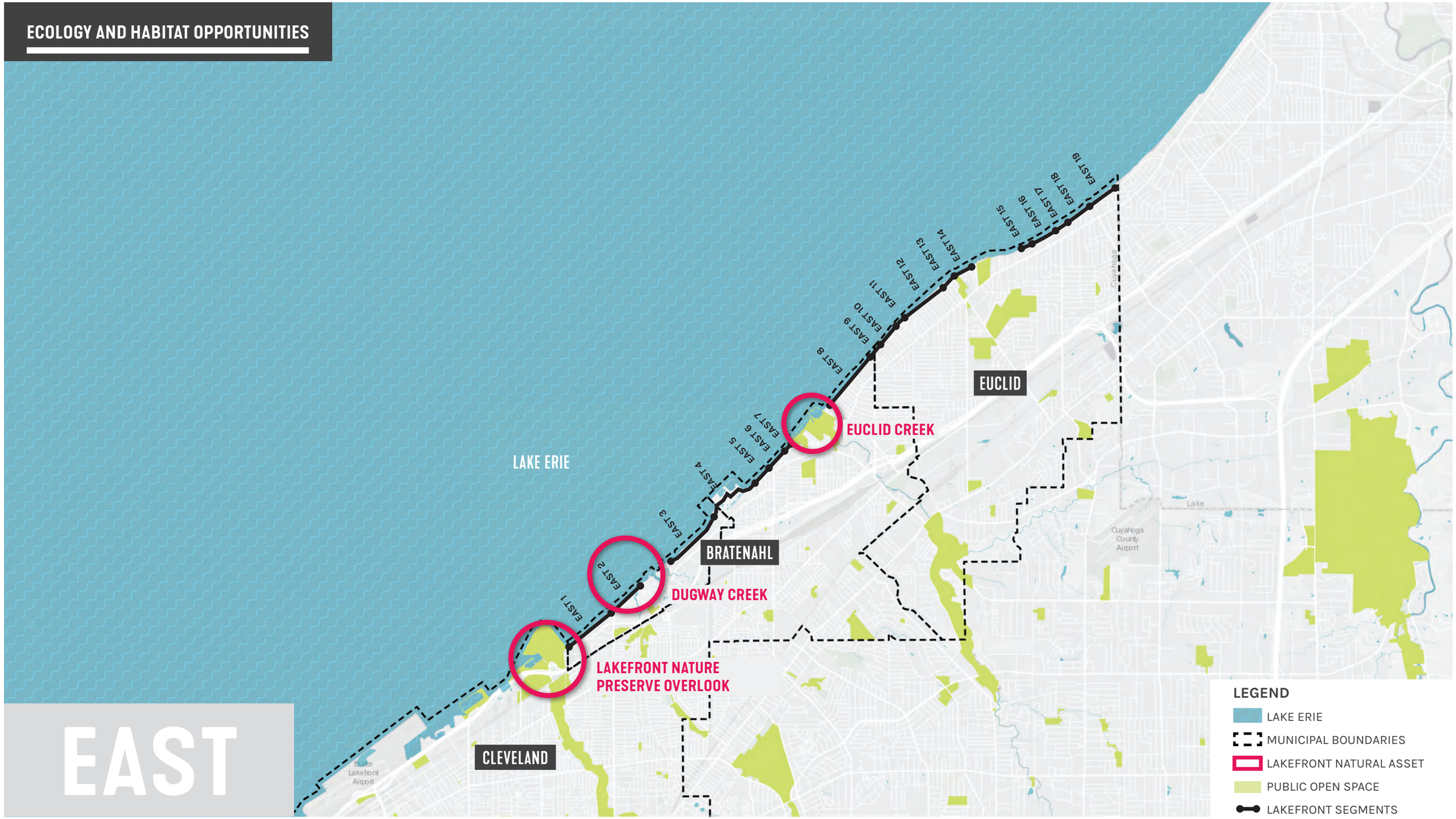
ECOLOGY AND HABITAT OPPORTUNITIES

Development of shoreline protection and public access can be integrated with improvements that help enhance nearshore health and habitat. The Lakefront Public Assess Plan focus on public access paralleling Lake Erie creates the greatest potential to support ecological restoration and enhancement where inland rivers, streams, and creeks engage the lake. While all work along the shoreline should seek to improve conditions within the nearshore, the locations identified on this map illustrate where that potential may be greatest.



DATA SOURCES: SMITHGROUP, CUYAHOGA COUNTY, ESRI, HERE, INCREMEND P, GARMIN, USGS, EPA

ECOLOGY AND HABITAT OPPORTUNITIES



DATA SOURCES: SMITHGROUP, CUYAHOGA COUNTY, ESRI, HERE, INCREMEND P, GARMIN, USGS, EPA

ECOLOGY AND HABITAT PRECEDENTS

CONSTRUCTED WETLAND FILTERING 4.5 MILLION GALLONS OF STORMWATER RUNOFF

LAKEFRONT BEACH SUPPORTING ENVIRONMENTAL EDUCATION

TREATMENT WETLAND WITH BOARDWALK ACCESS

TREATMENT TRAIN CLEANING RUNOFF

SUBMERGED STRUCTURE CREATES NEARSHORE HABITAT

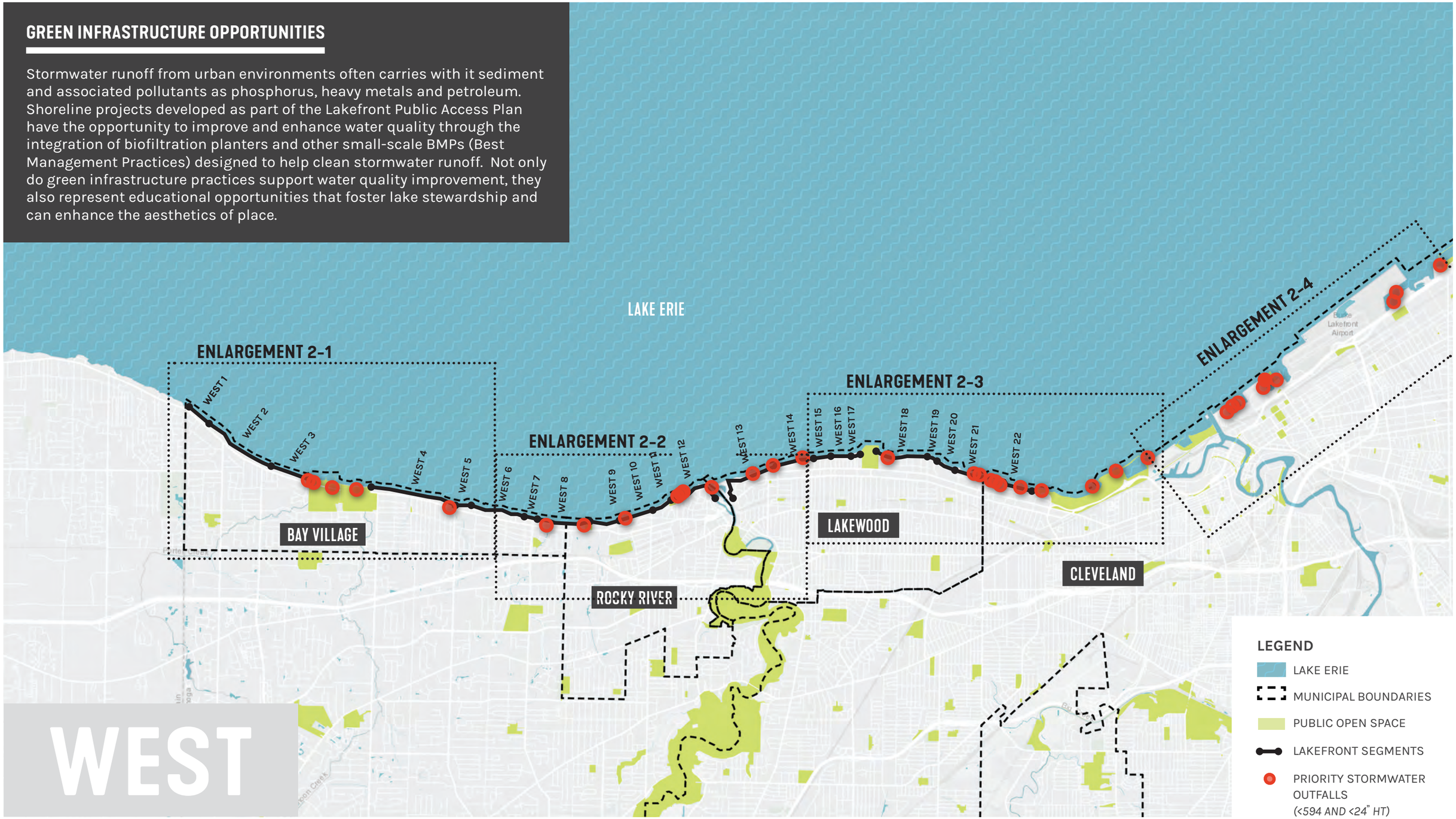
CHANNEL RESTORATION ENHANCING HABITAT AND TREATMENT

COASTAL WETLAND RESTORATION SUPPORTING AQUATIC SPECIES

RECREATION AND RESTORATION CAN COEXIST.

GREEN INFRASTRUCTURE OPPORTUNITIES

Stormwater runoff from urban environments often carries with it sediment and associated pollutants as phosphorus, heavy metals and petroleum. Shoreline projects developed as part of the Lakefront Public Access Plan have the opportunity to improve and enhance water quality through the integration of biofiltration planters and other small-scale BMPs (Best Management Practices) designed to help clean stormwater runoff. Not only do green infrastructure practices support water quality improvement, they also represent educational opportunities that foster lake stewardship and can enhance the aesthetics of place.



DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, INCREMEND P, GARMIN, USGS, EPA

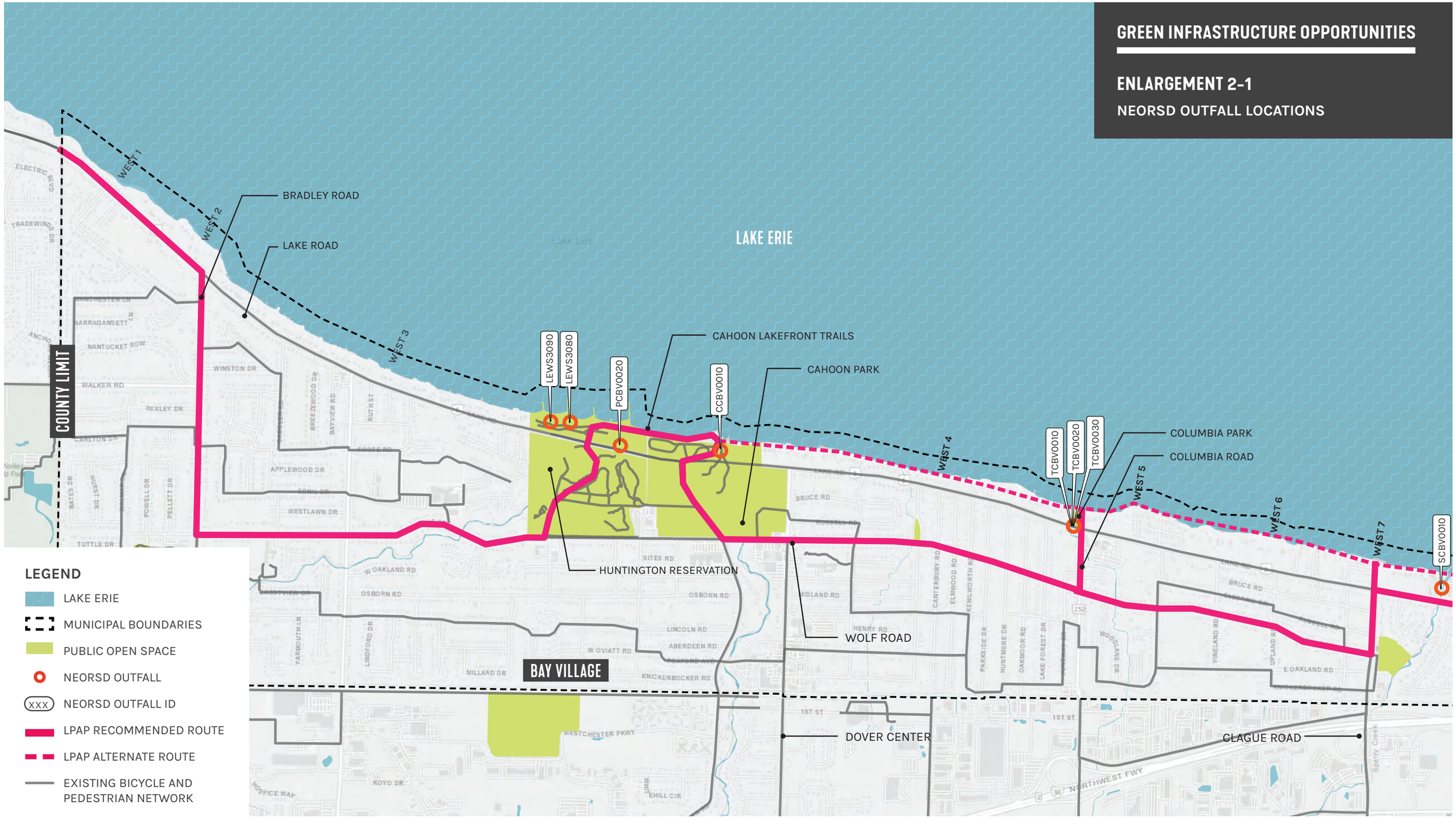
GREEN INFRASTRUCTURE OPPORTUNITIES

DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, INCREMEND P, GARMIN, USGS, EPA

GREEN INFRASTRUCTURE OPPORTUNITIES

ENLARGEMENT 2-1

NEORSD OUTFALL LOCATIONS



LEGEND

- LAKE ERIE
- MUNICIPAL BOUNDARIES
- PUBLIC OPEN SPACE
- NEORSD OUTFALL
- XXX NEORSD OUTFALL ID
- LPAP RECOMMENDED ROUTE
- LPAP ALTERNATE ROUTE
- EXISTING BICYCLE AND PEDESTRIAN NETWORK

DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, INCREMEND P, GARMIN, USGS, EPA

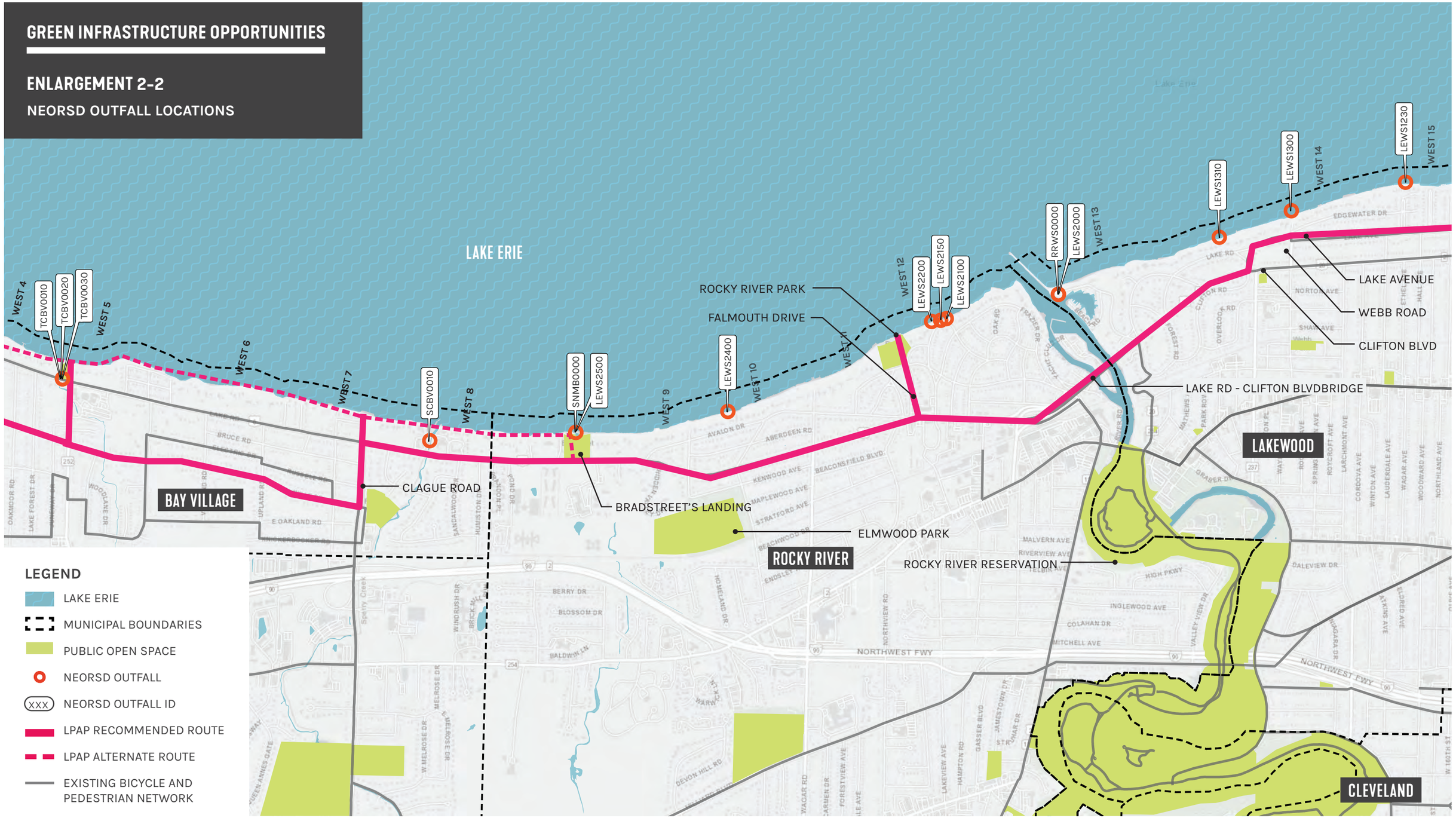
0 1,250 2,500 5,000 FEET

N

GREEN INFRASTRUCTURE OPPORTUNITIES

ENLARGEMENT 2-2

NEORSD OUTFALL LOCATIONS



LEGEND

- LAKE ERIE
- MUNICIPAL BOUNDARIES
- PUBLIC OPEN SPACE
- NEORSD OUTFALL
- XXX NEORSD OUTFALL ID
- LPAP RECOMMENDED ROUTE
- LPAP ALTERNATE ROUTE
- EXISTING BICYCLE AND PEDESTRIAN NETWORK

0 1,250 2,500 5,000 FEET

N

DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, INCREMEND P, GARMIN, USGS, EPA

GREEN INFRASTRUCTURE OPPORTUNITIES

ENLARGEMENT 2-3

NEORSD OUTFALL LOCATIONS

LEGEND

- LAKE ERIE
- MUNICIPAL BOUNDARIES
- PUBLIC OPEN SPACE
- NEORSD OUTFALL
- XXX NEORSD OUTFALL ID
- LPAP RECOMMENDED ROUTE
- LPAP ALTERNATE ROUTE
- EXISTING BICYCLE AND PEDESTRIAN NETWORK

DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, INCREMEND P, GARMIN, USGS, EPA

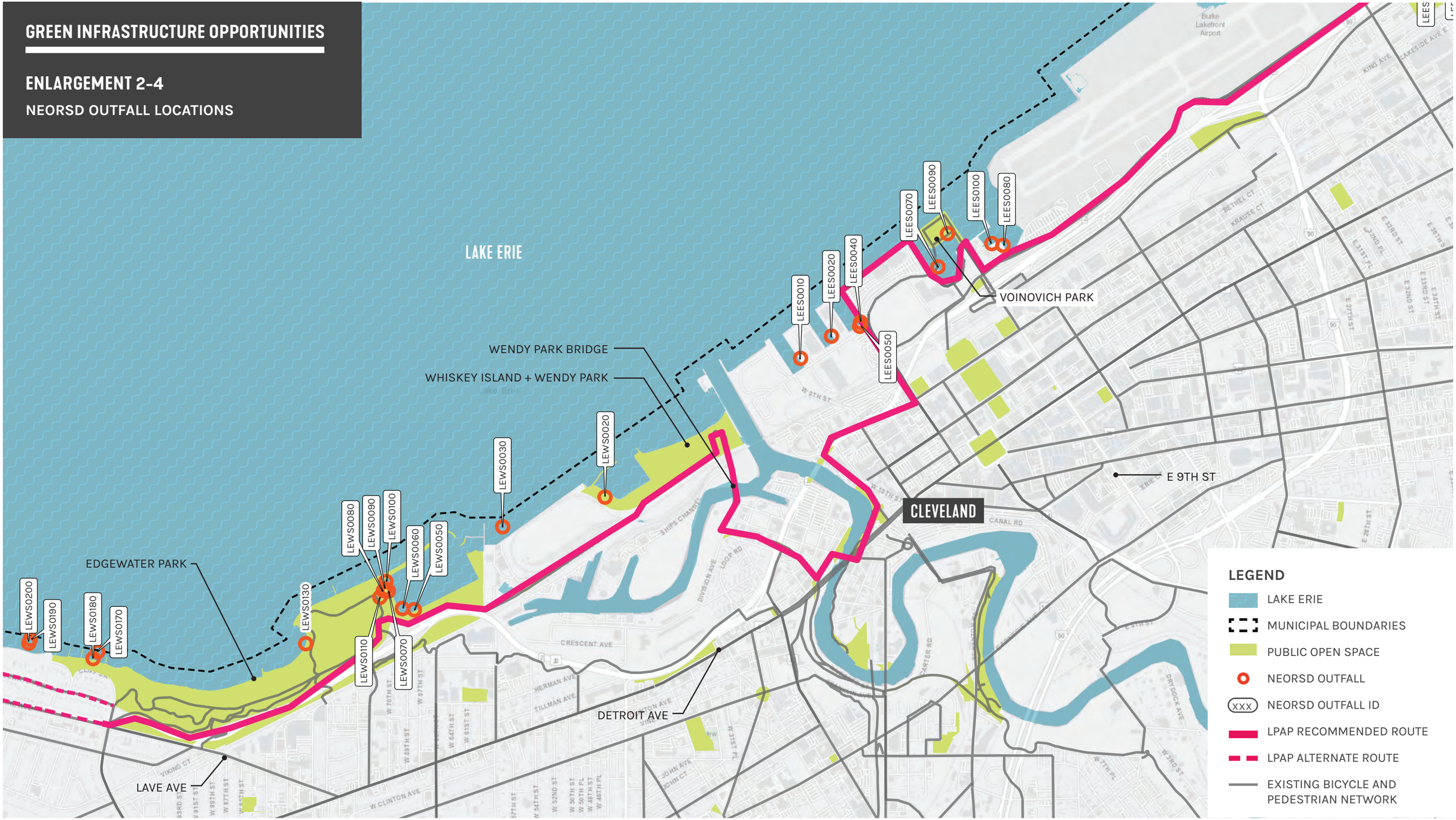
0 1,250 2,500 5,000 FEET

N

GREEN INFRASTRUCTURE OPPORTUNITIES

ENLARGEMENT 2-4

NEORSD OUTFALL LOCATIONS

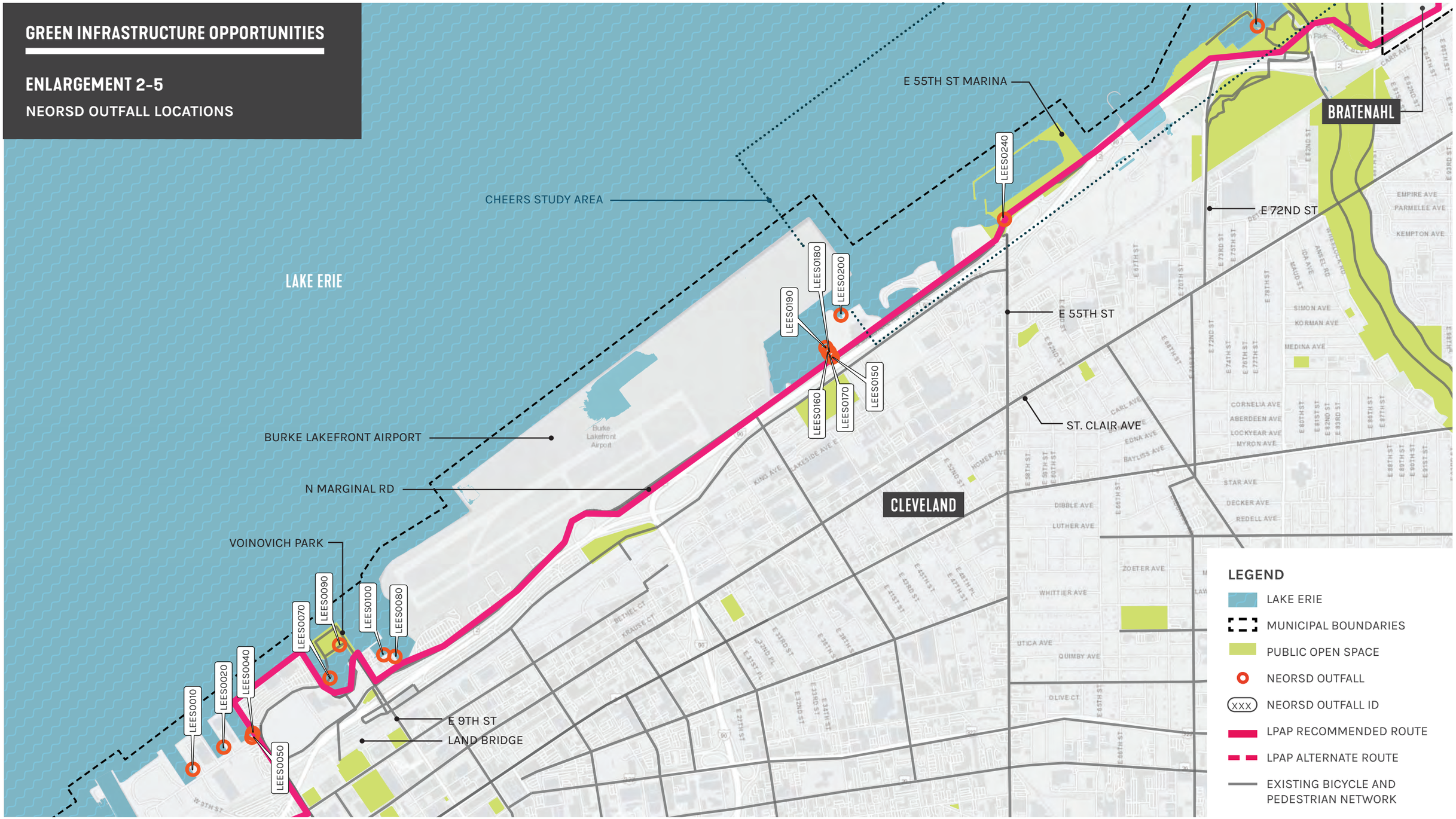


DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, INCREMENT P, GARMIN, USGS, EPA

GREEN INFRASTRUCTURE OPPORTUNITIES

ENLARGEMENT 2-5

NEORSD OUTFALL LOCATIONS



DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, INCREMEND P, GARMIN, USGS, EPA

GREEN INFRASTRUCTURE OPPORTUNITIES

ENLARGEMENT 2-6

NEORSD OUTFALL LOCATIONS

LEGEND

- LAKE ERIE
- MUNICIPAL BOUNDARIES
- PUBLIC OPEN SPACE
- NEORSD OUTFALL
- XXX NEORSD OUTFALL ID
- LPAP RECOMMENDED ROUTE
- LPAP ALTERNATE ROUTE
- EXISTING BICYCLE AND PEDESTRIAN NETWORK

DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, INCREMENT P, GARMIN, USGS, EPA

0 1,250 2,500 5,000 FEET

N

GREEN INFRASTRUCTURE OPPORTUNITIES

ENLARGEMENT 2-7

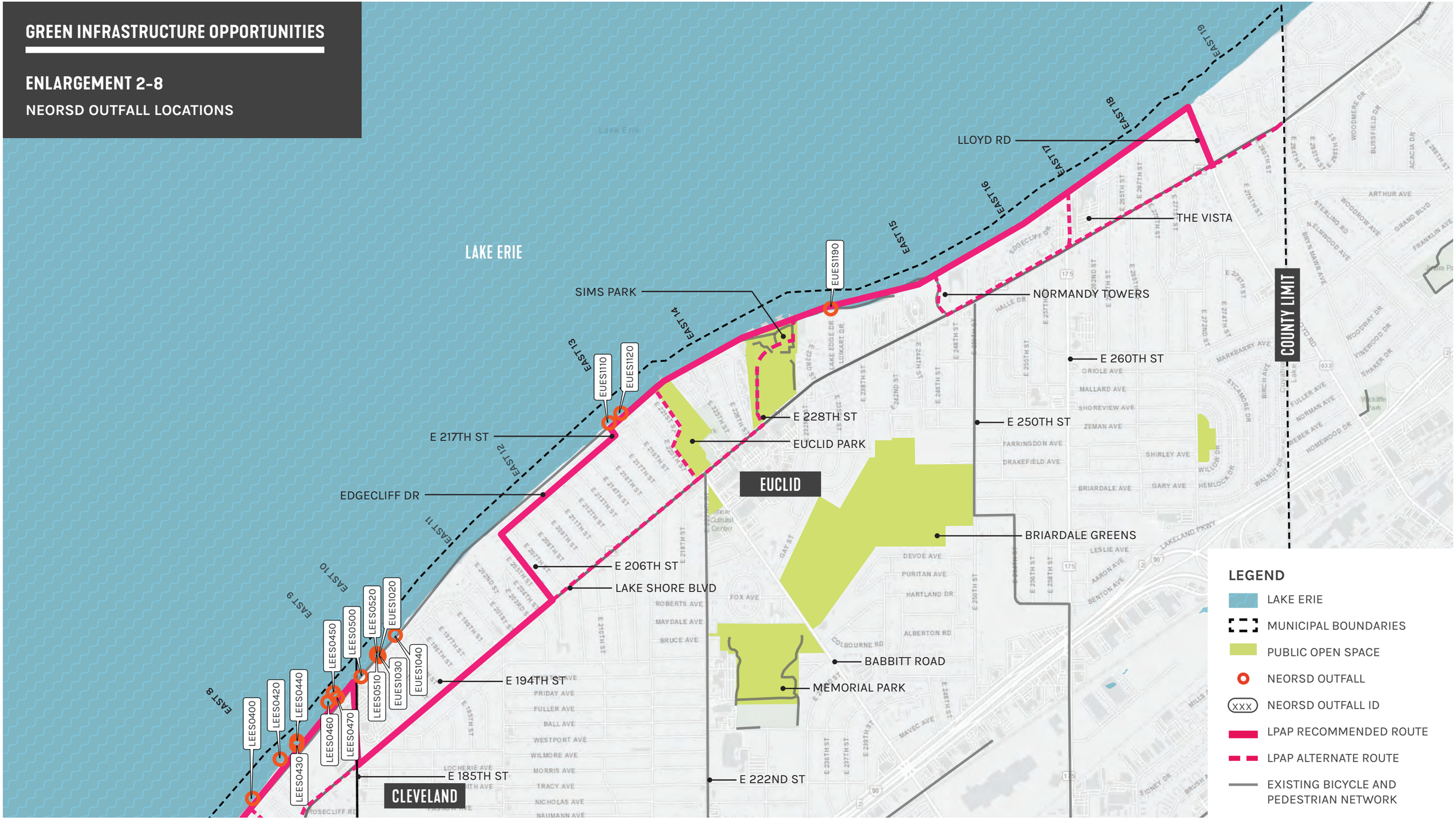
NEORSD OUTFALL LOCATIONS

DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, INCREMEND P, GARMIN, USGS, EPA

GREEN INFRASTRUCTURE OPPORTUNITIES

ENLARGEMENT 2-8

NEORSD OUTFALL LOCATIONS



LEGEND

- LAKE ERIE
- MUNICIPAL BOUNDARIES
- PUBLIC OPEN SPACE
- NEORSD OUTFALL
- XXX NEORSD OUTFALL ID
- LPAP RECOMMENDED ROUTE
- LPAP ALTERNATE ROUTE
- EXISTING BICYCLE AND PEDESTRIAN NETWORK

DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, INCREMEND P, GARMIN, USGS, EPA

0 1,250 2,500 5,000 FEET

GREEN INFRASTRUCTURE PRECEDENTS

STORMWATER MANAGEMENT AND HABITAT ARE ATTRACTIVE AND PROMOTE INVESTMENT

SMALL BIOFILTRATION PLANTERS CAN HAVE A BIG IMPACT

PERMEABLE PAVERS

UPLAND TREATMENT CELL LEADING TO RIVER

INTEGRATE NOT ISOLATE

CLEAN RUNOFF FROM BRIDGES AND CREATE AN AMENITY

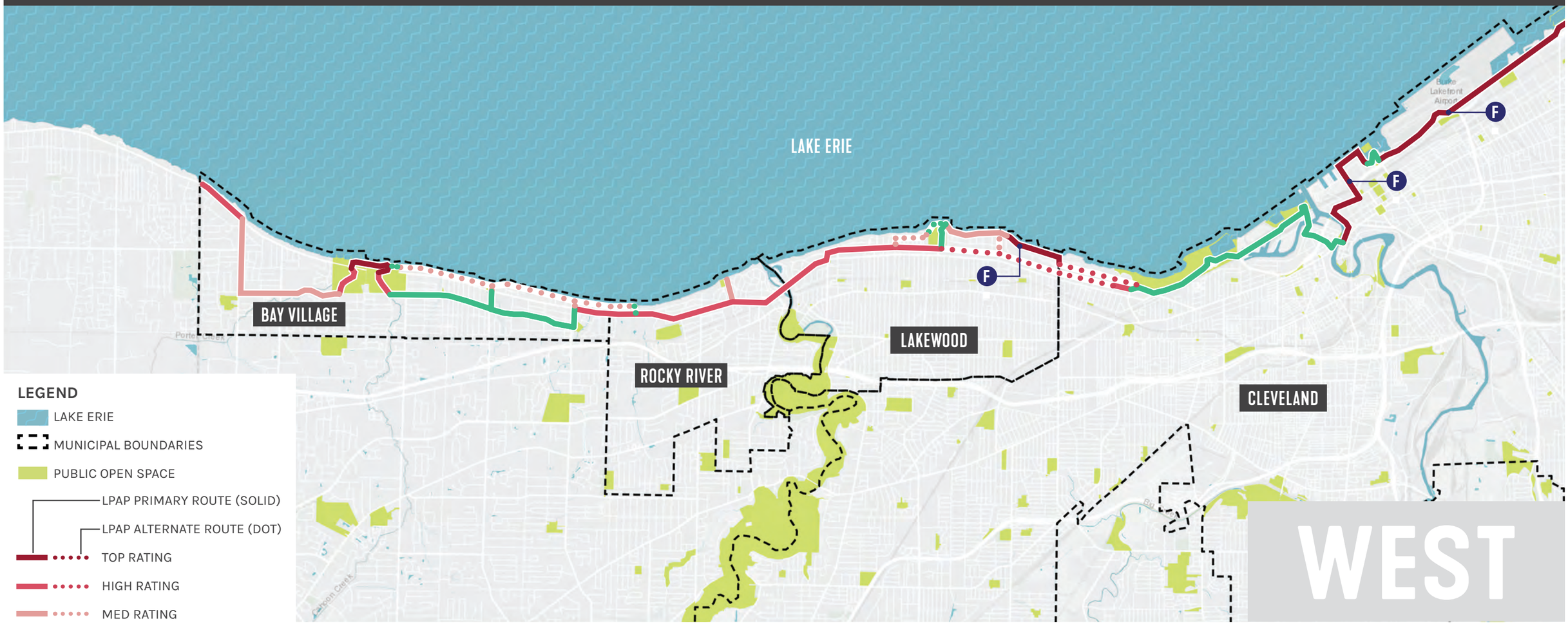
APPENDIX E

NETWORK FEASIBILITY + DESIRABILITY

LPAP network implementation will occur incrementally as segments are built within existing public assets (parks, rights-of-way, etc.) and along privately owned segments of lakefront. While priorities for the private shoreline segments have been identified, each segment (private or public) also comes with varying degrees of ease or complexity to implement (feasibility) and importance in terms of providing immediate, direct public access at the Lake Erie shoreline (desirability).

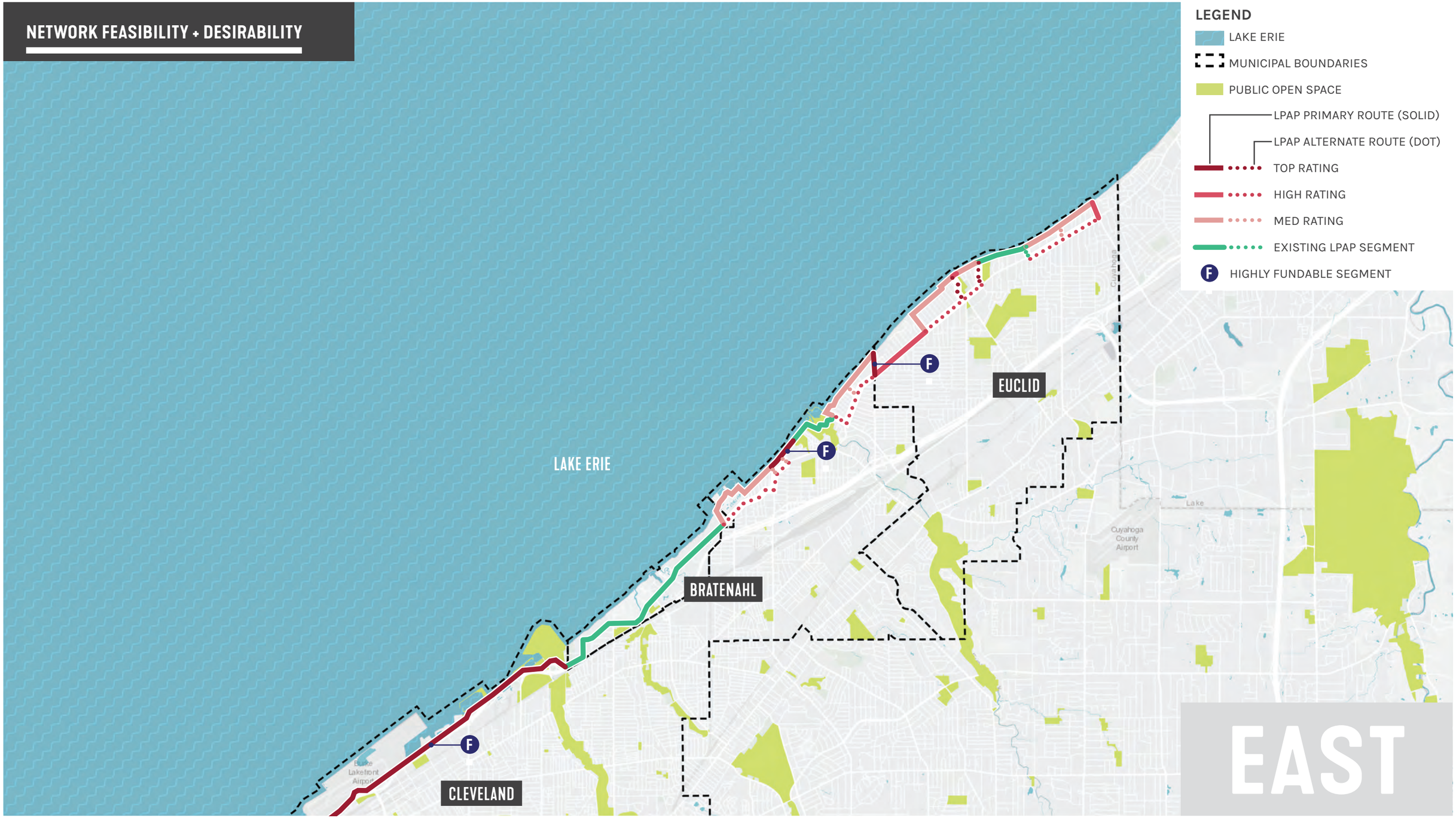
The LPAP network was broken into discrete segments and each segment was evaluated and ranked. Those 1) previously studied to improve or develop new multimodal access; 2) are publicly-owned assets, or have agreements in place to support implementation efforts; and 3) offer direct public access along or to the lake are highest rated when considering feasibility and desirability facets alone. In contrast, segments that have not been previously studied, have no or only preliminary agreements in place to allow for project implementation, and are not along the lake or afford direct connects to it, are ranked lower.

Feasibility and desirability are key prioritization considerations; however, implementation viability is often directly related to how likely a specific project is to garner outside funding. Likely sources of LPAP funding fall into four broad grant categories: 1) recreation; 2) mobility; 3) risk and resilience; and 4) economic development. Highly fundable segments, those likely to garner funding from three or more funding categories, are designated in the graphic below as these locations serve as logical starting points for implementation efforts by leveraging the County's available resources toward immediate impact.



DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, INCREMEND P, GARMIN, USGS, EPA

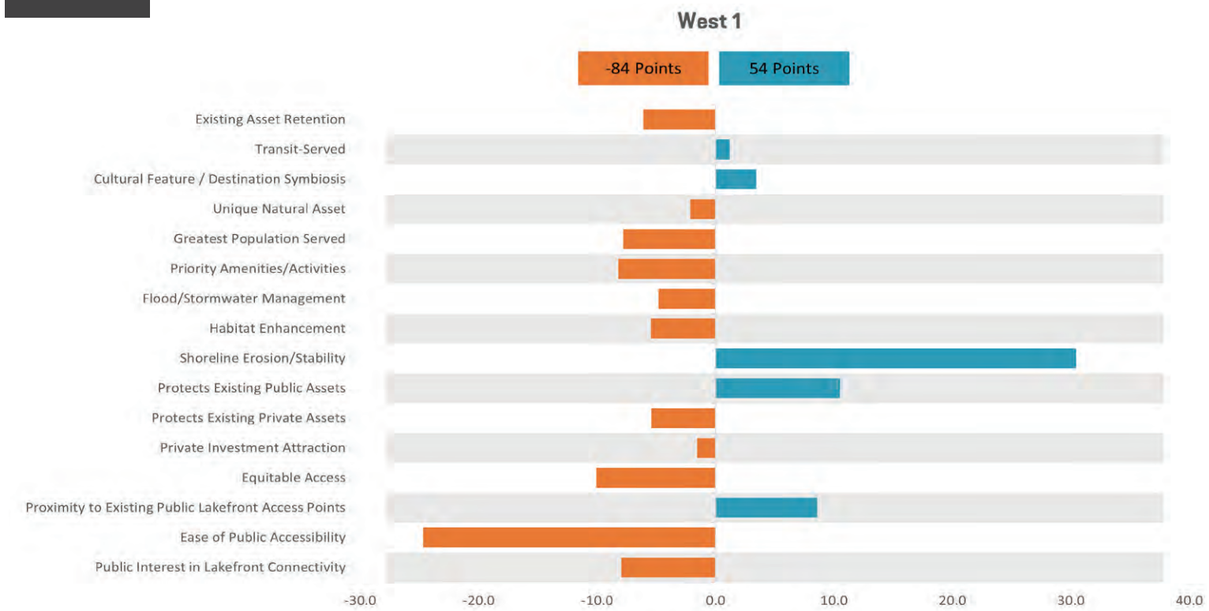
NETWORK FEASIBILITY + DESIRABILITY

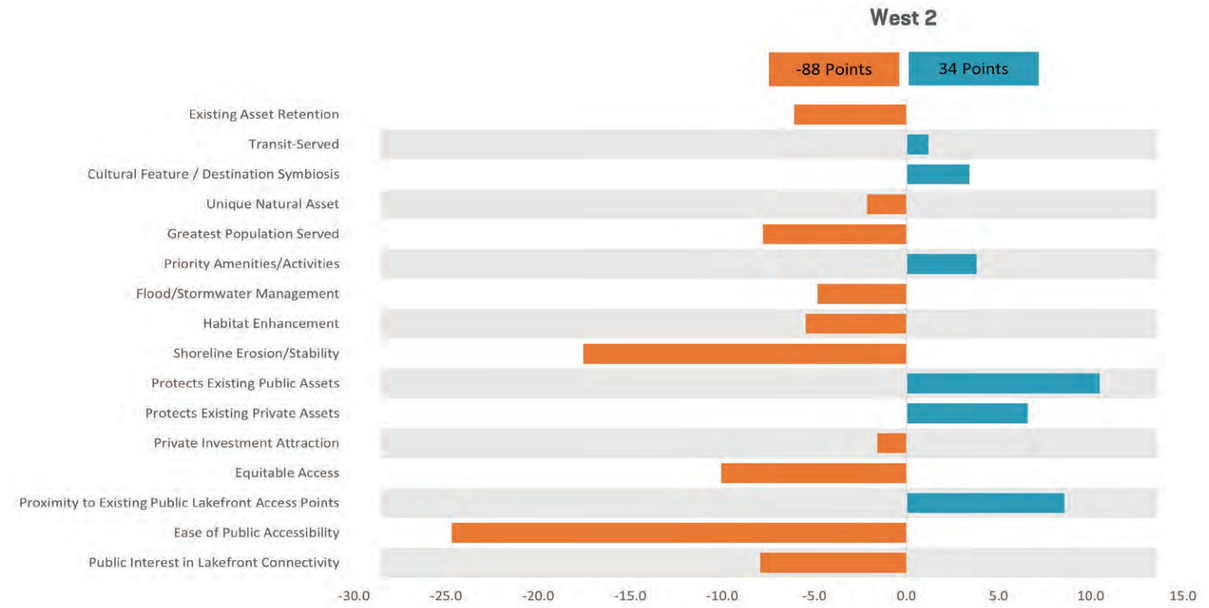


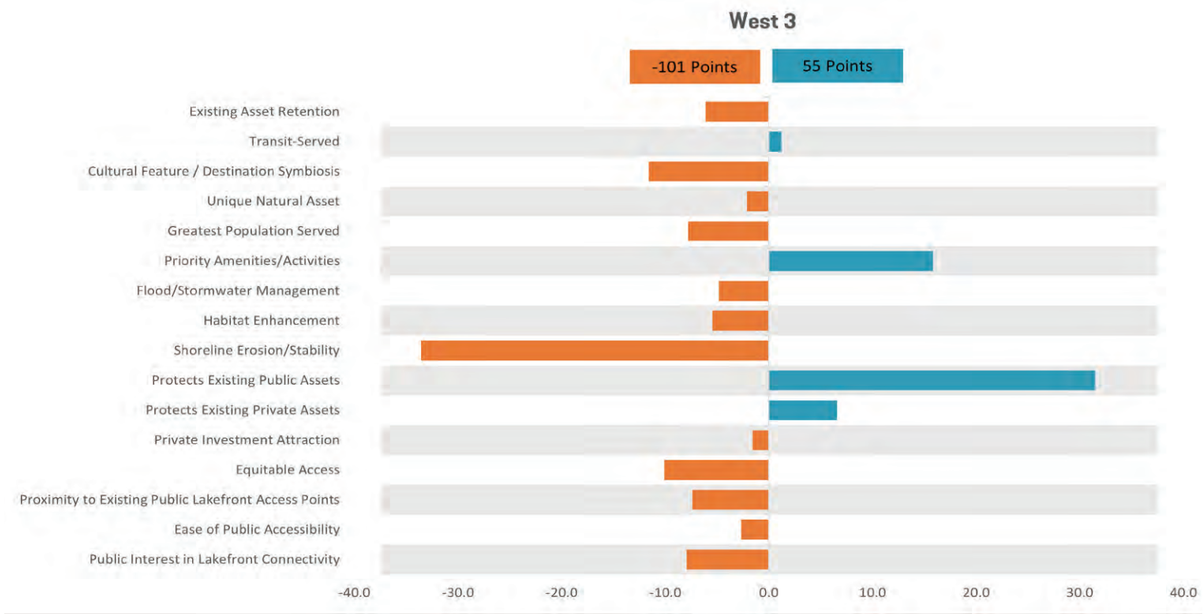
DATA SOURCES: CUYAHOGA COUNTY, ESRI, HERE, INCREMEND P, GARMIN, USGS, EPA

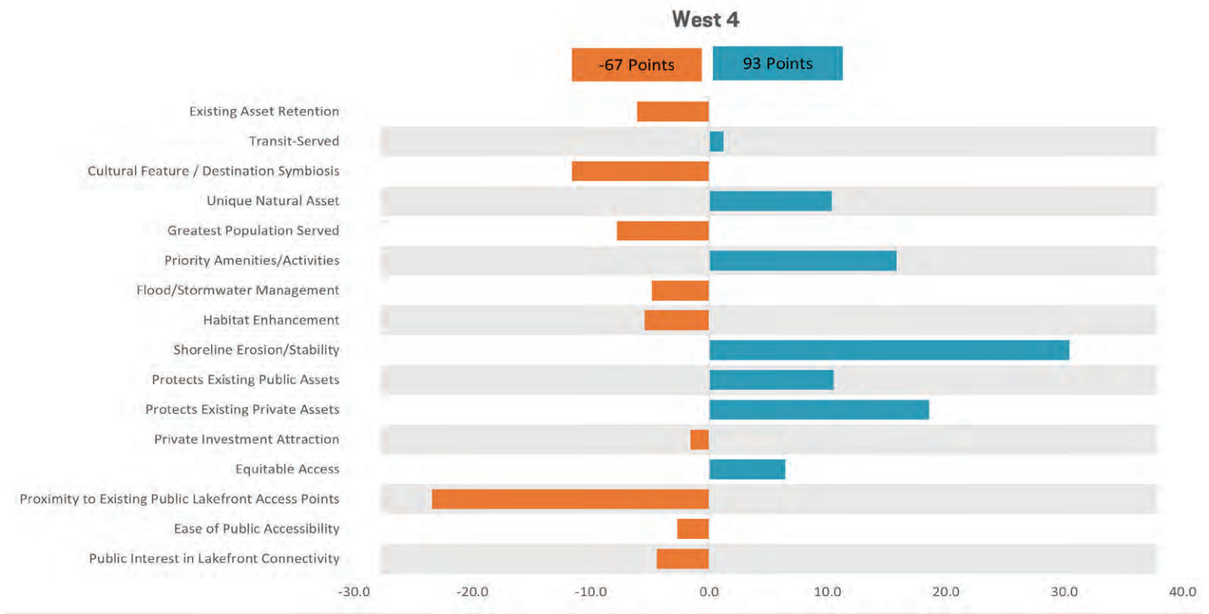
APPENDIX F

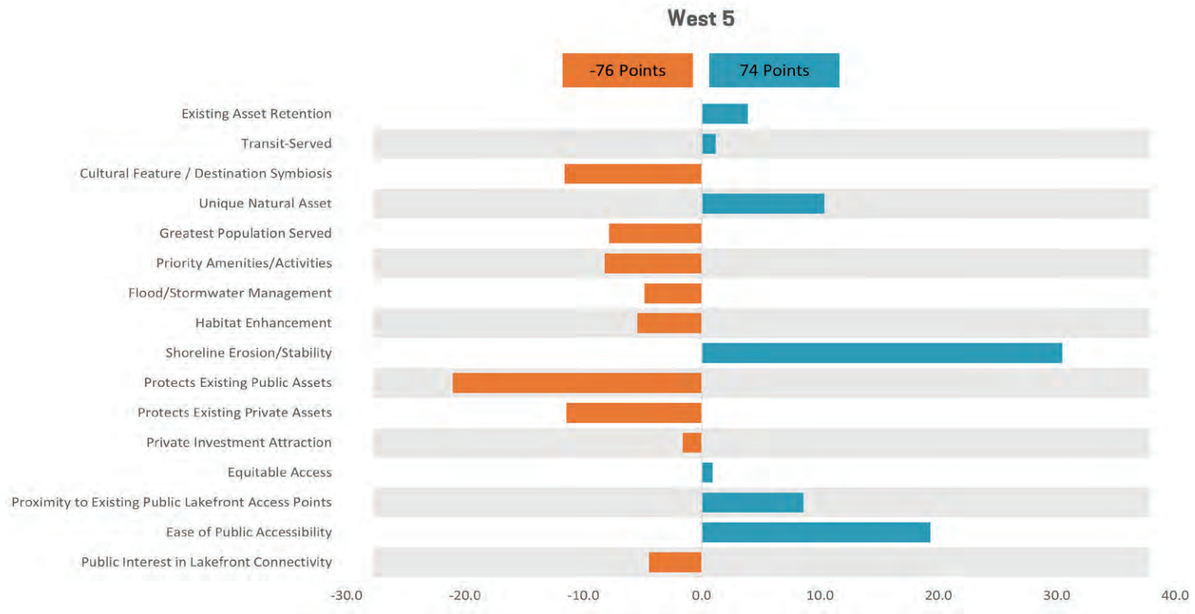
INDIVIDUAL SEGMENT SCORES

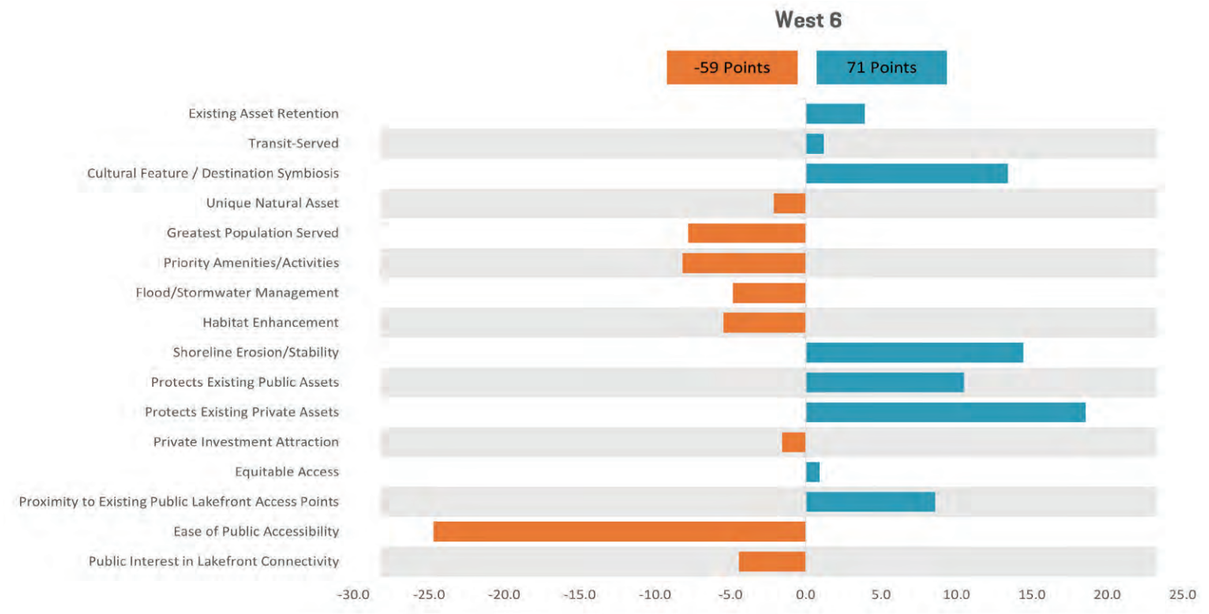


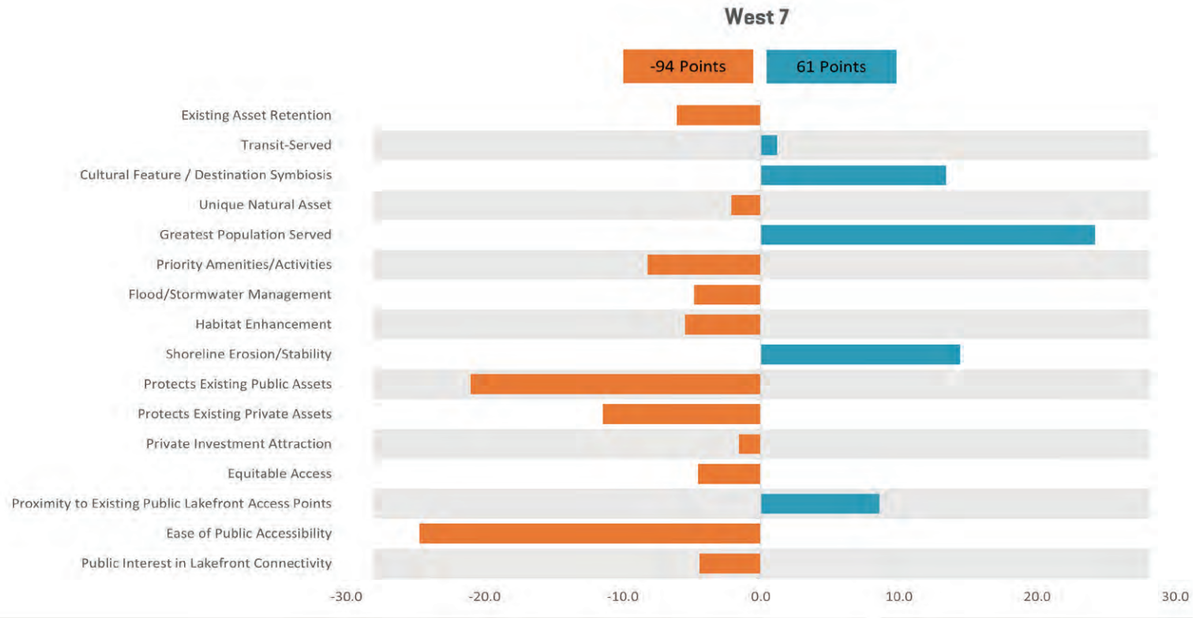


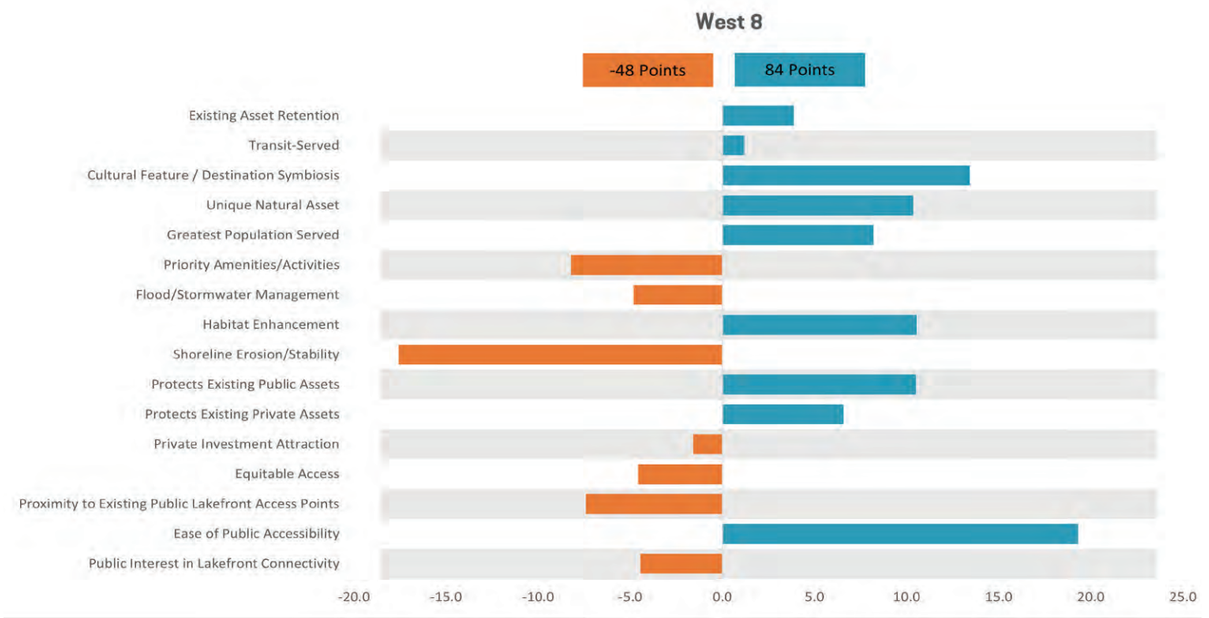


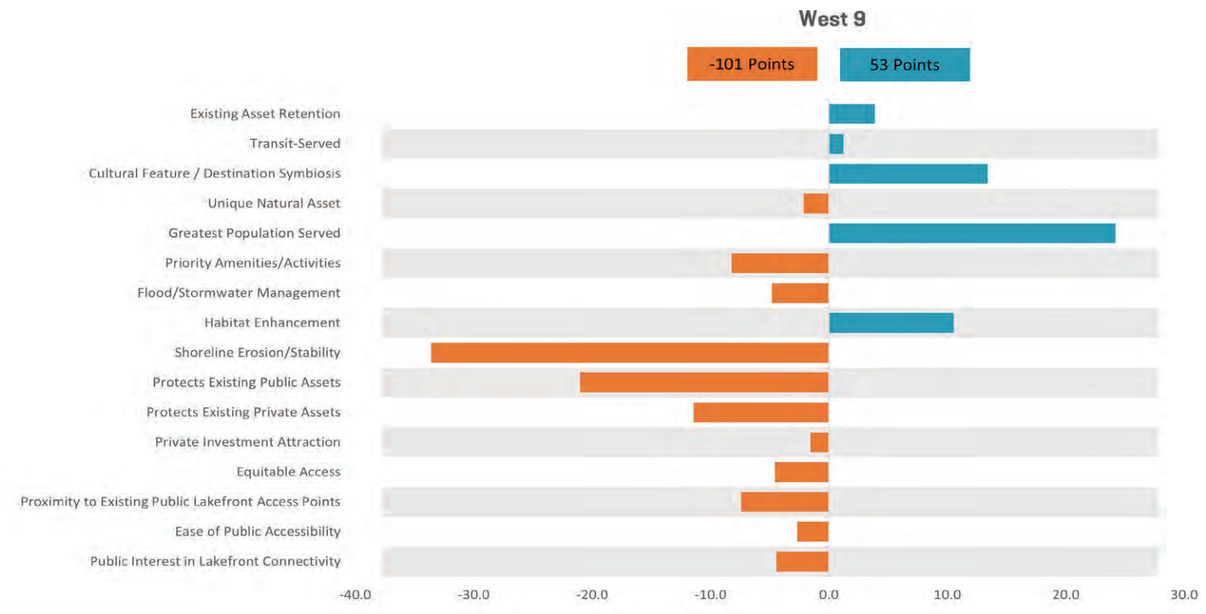



West 5
-76 Points
74 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-30.0
-20.0
-10.0
0.0
10.0
20.0
30.0
40.0


West 6
-59 Points
71 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-30.0
-25.0
-20.0
-15.0
-10.0
-5.0
0.0
5.0
10.0
15.0
20.0
25.0


West 7
-94 Points
61 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-30.0
-20.0
-10.0
0.0
10.0
20.0
30.0


West 8
-48 Points
84 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-20.0
-15.0
-10.0
-5.0
0.0
5.0
10.0
15.0
20.0
25.0


West 9
-101 Points
53 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-40.0
-30.0
-20.0
-10.0
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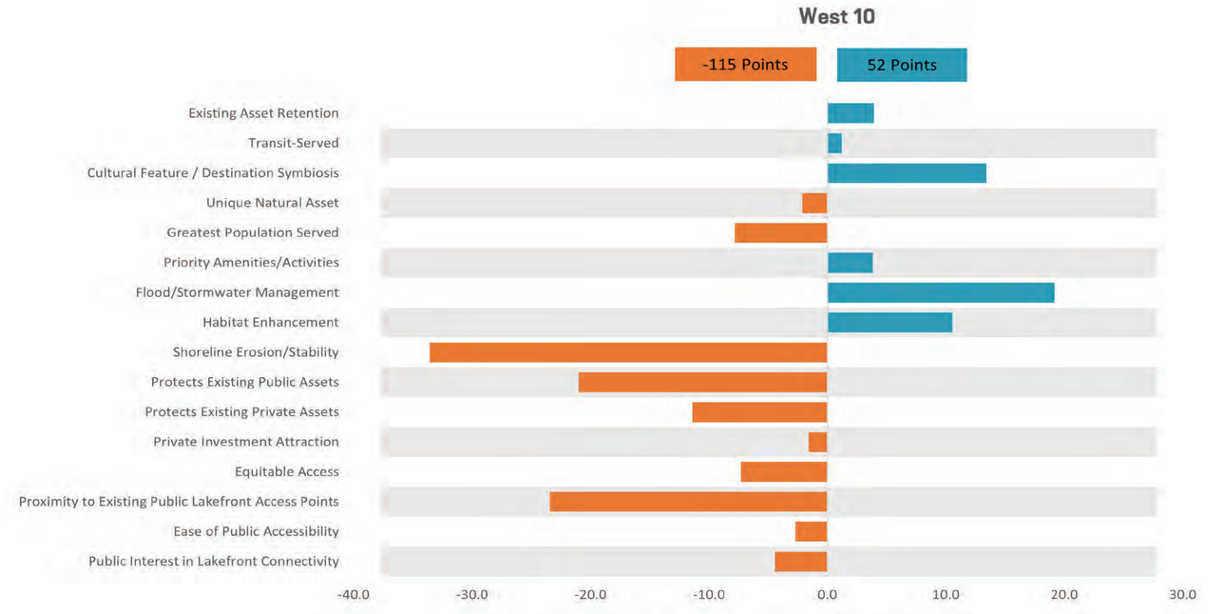
20.0
30.0


West 10
-115 Points
52 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-40.0
-30.0
-20.0
-10.0
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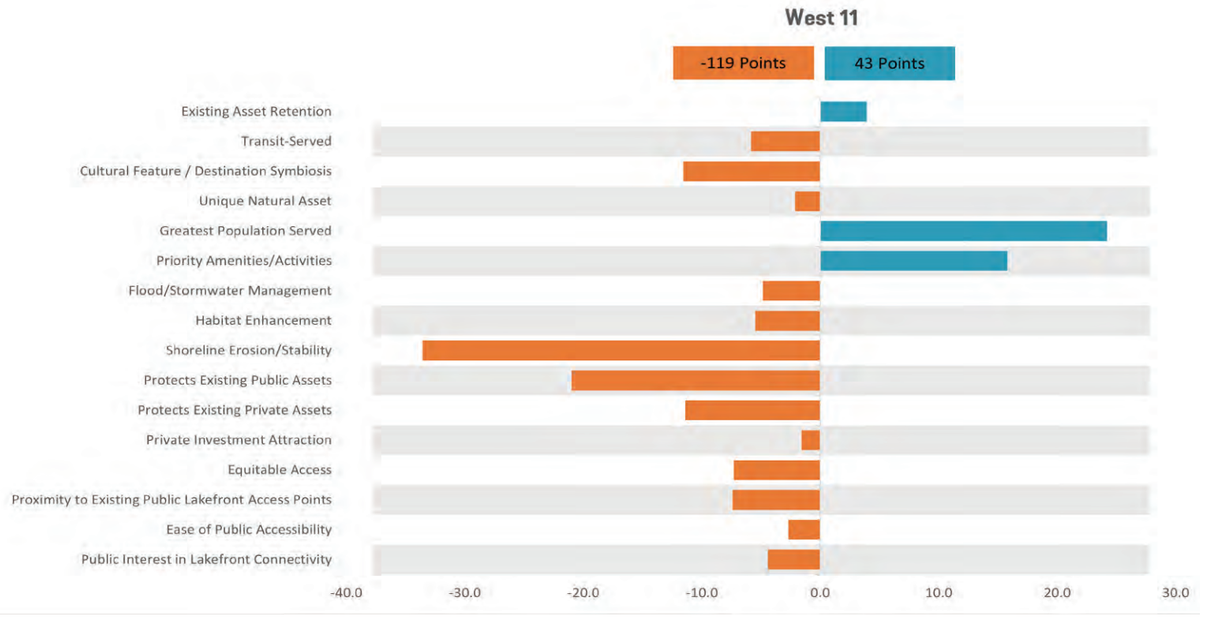
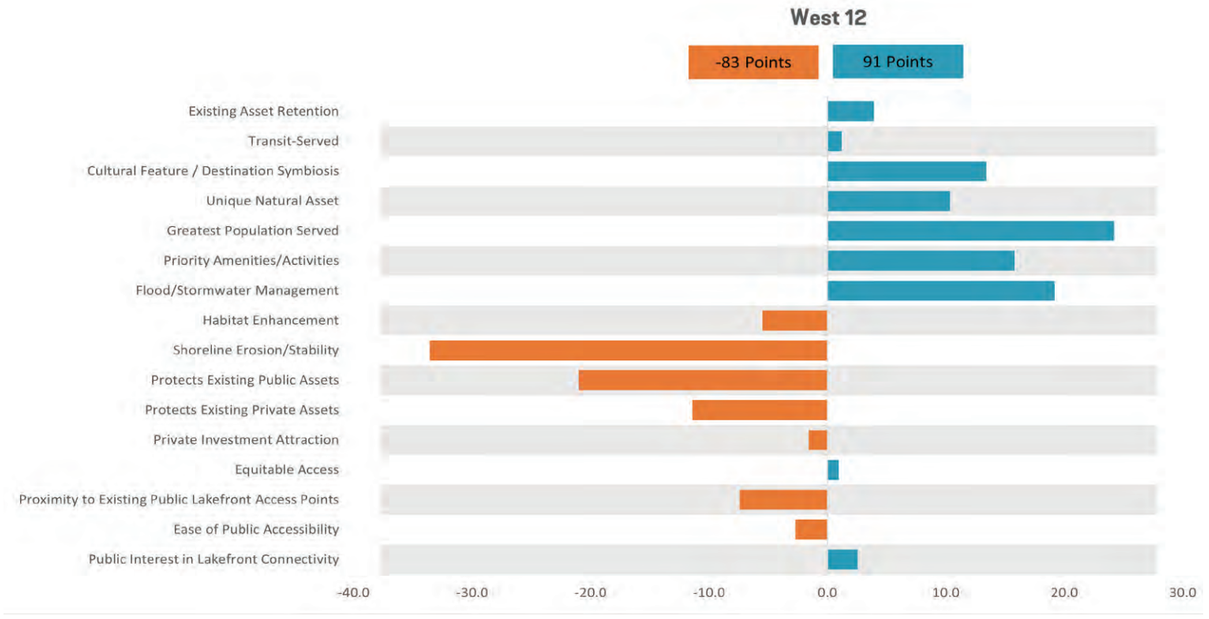
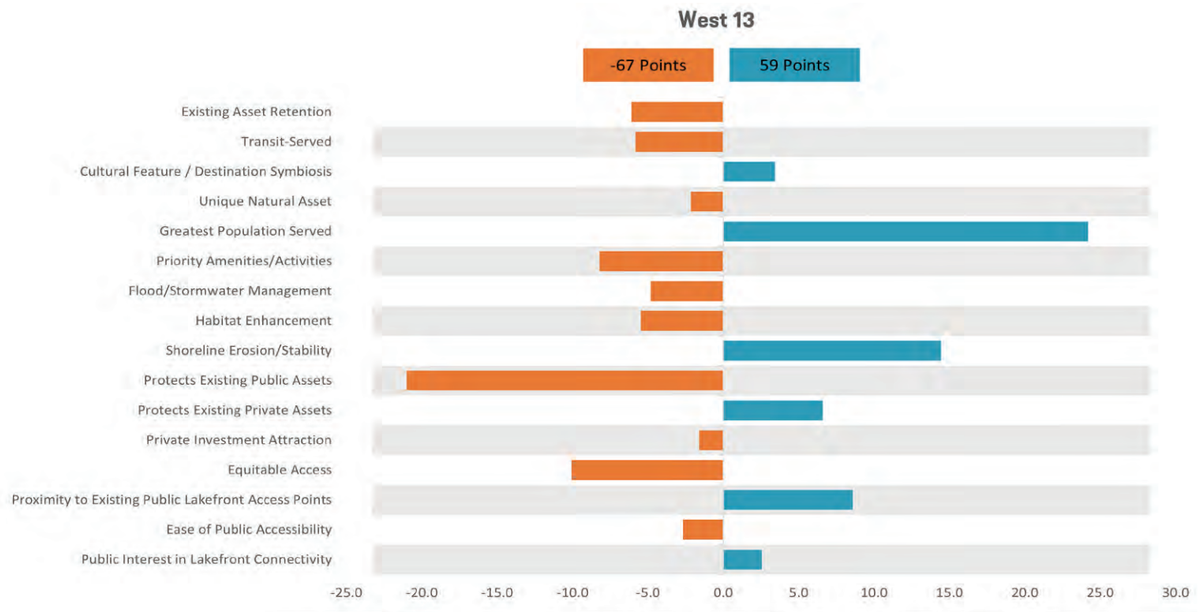
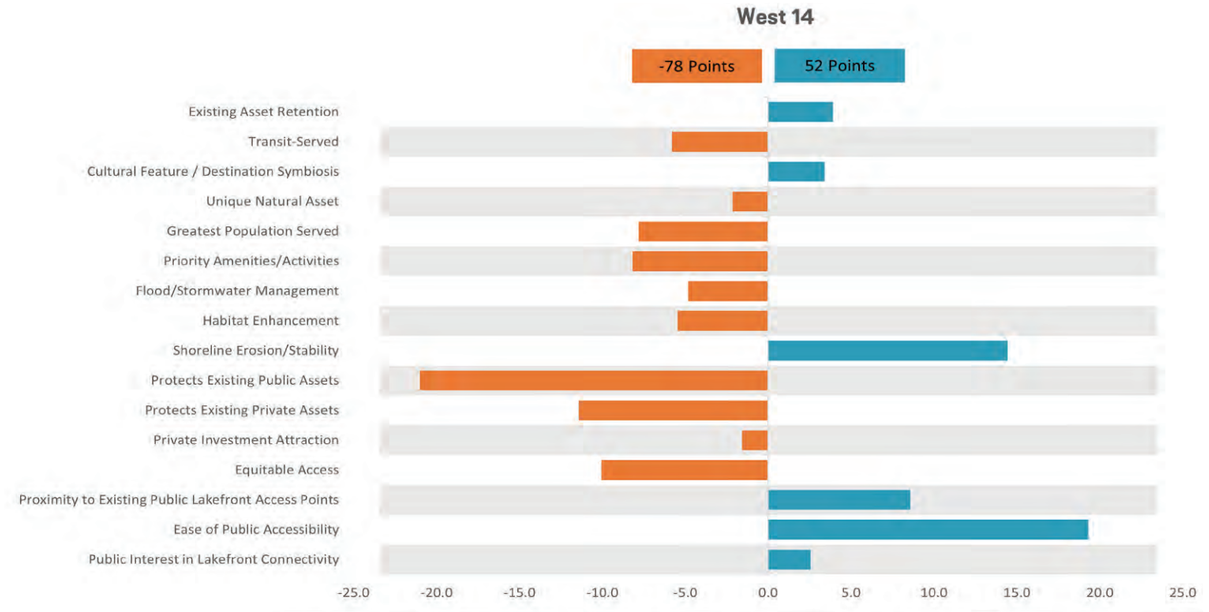
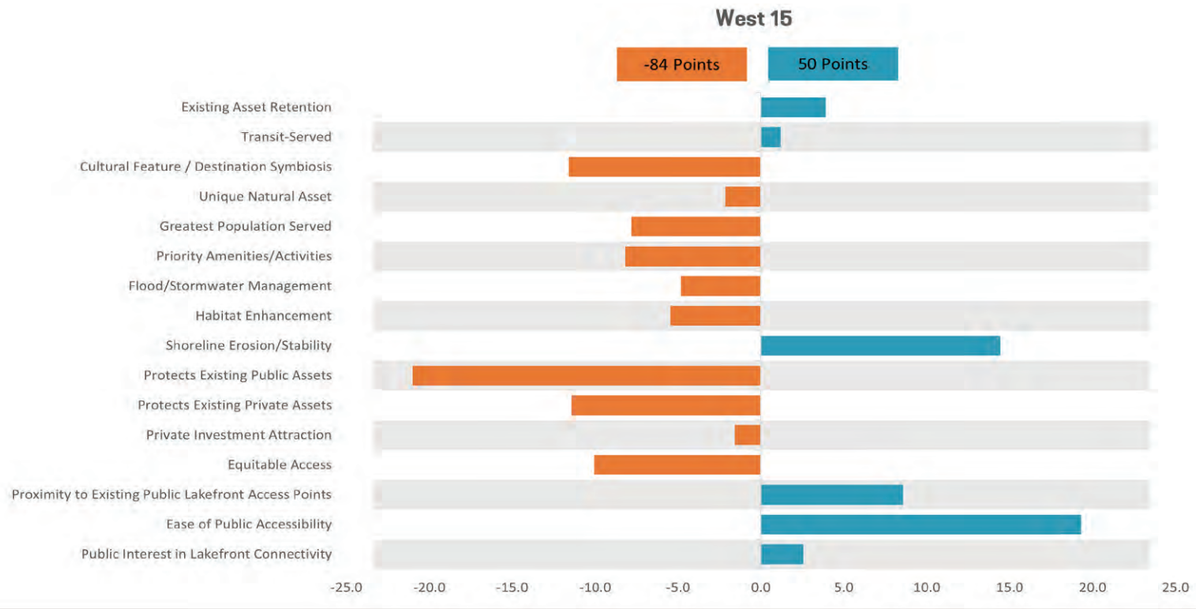
10.0
20.0
30.0

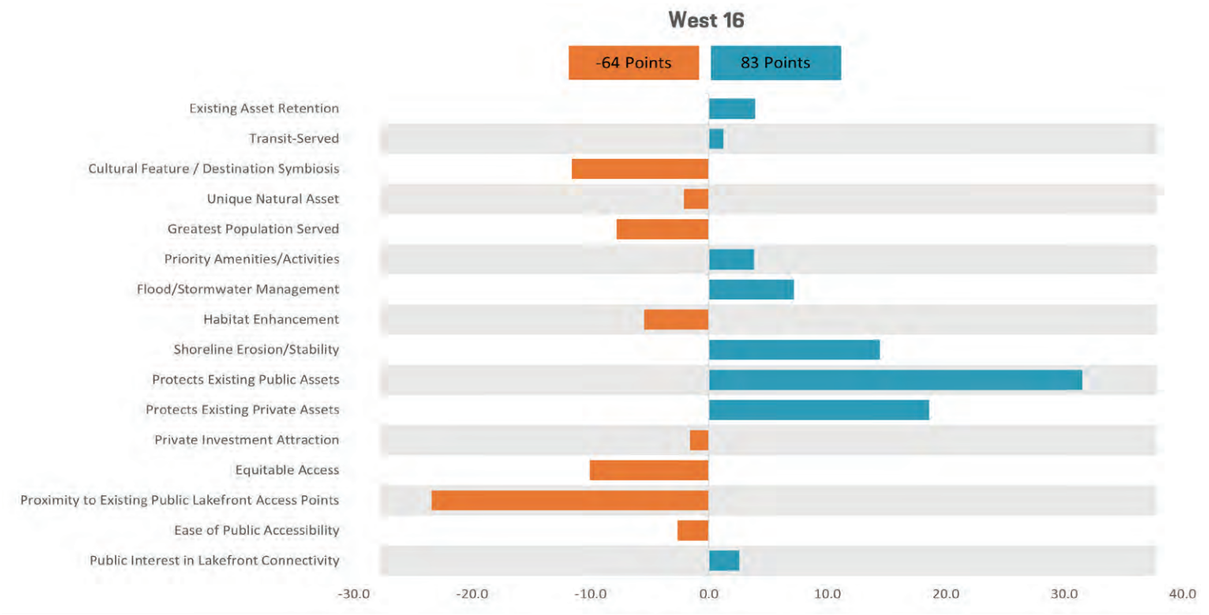

West 11
-119 Points
43 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-40.0
-30.0
-20.0
-10.0
0.0
10.0
20.0
30.0

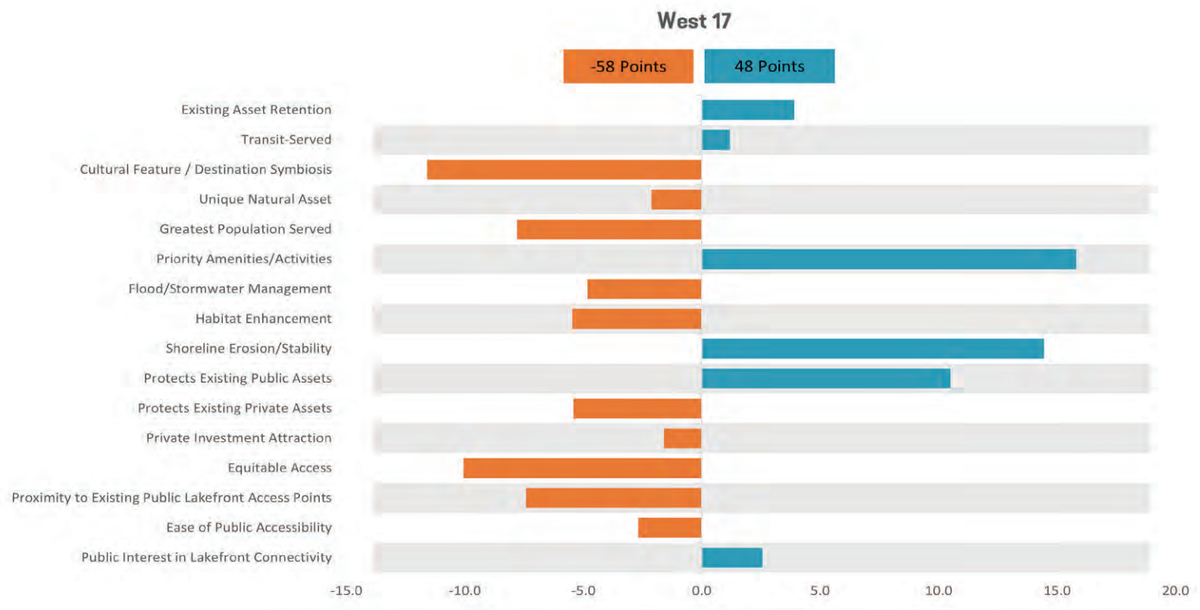

West 12
-83 Points
91 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-40.0
-30.0
-20.0
-10.0
0.0
10.0
20.0
30.0

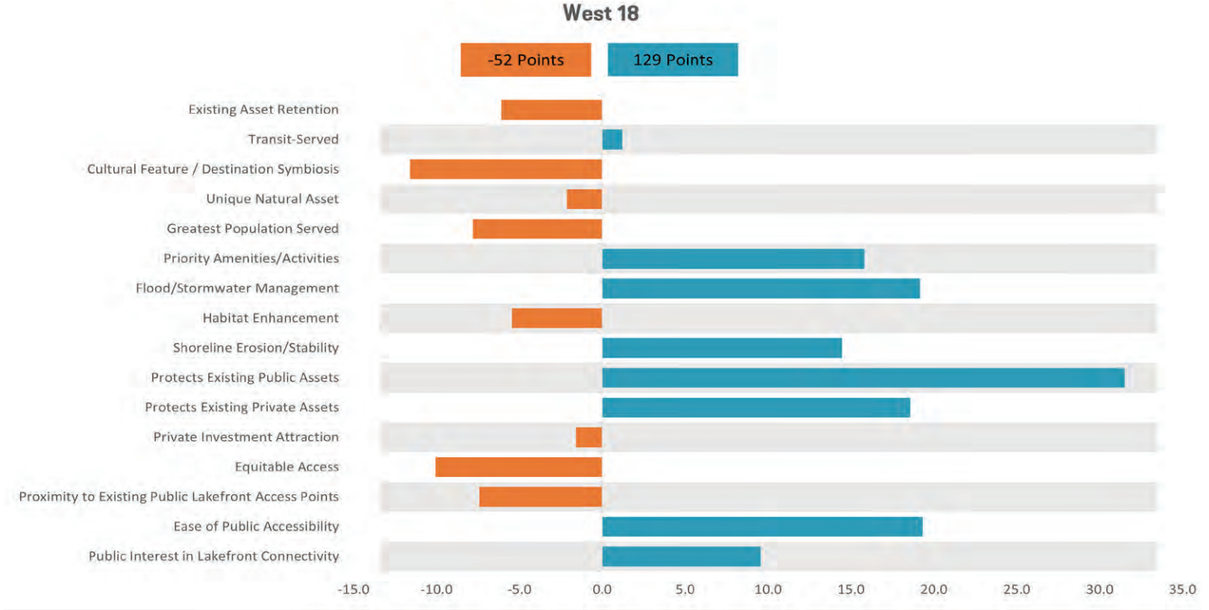

West 13
-67 Points
59 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-25.0 -20.0 -15.0 -10.0 -5.0 0.0 5.0 10.0 15.0 20.0 25.0 30.0

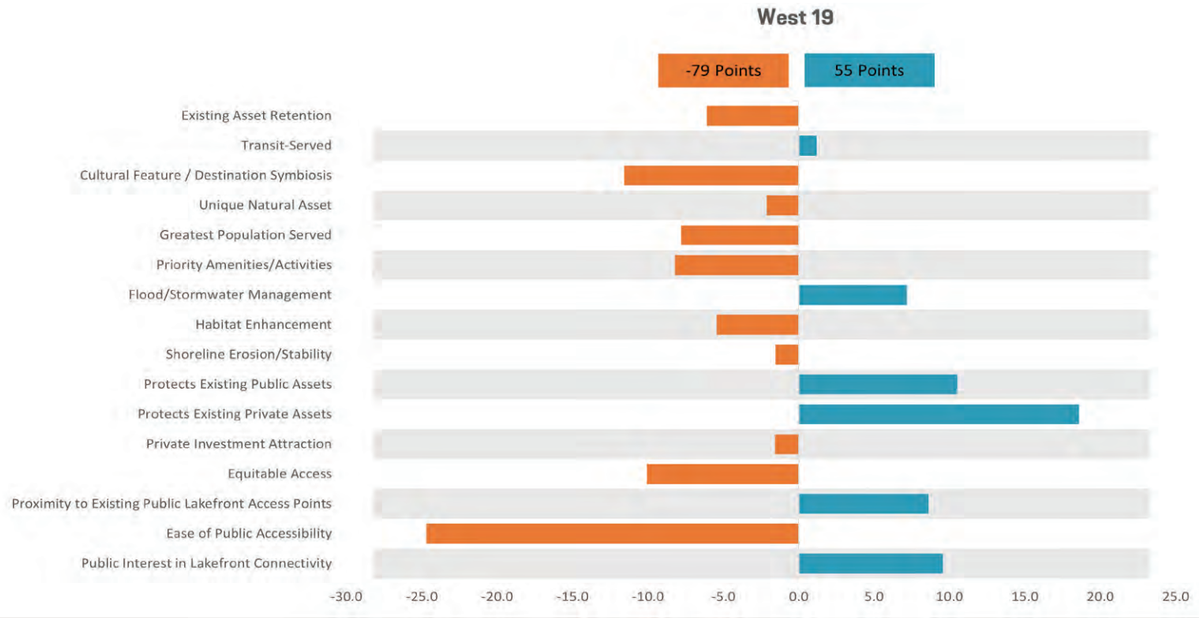

West 14
-78 Points
52 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-25.0 -20.0 -15.0 -10.0 -5.0 0.0 5.0 10.0 15.0 20.0 25.0

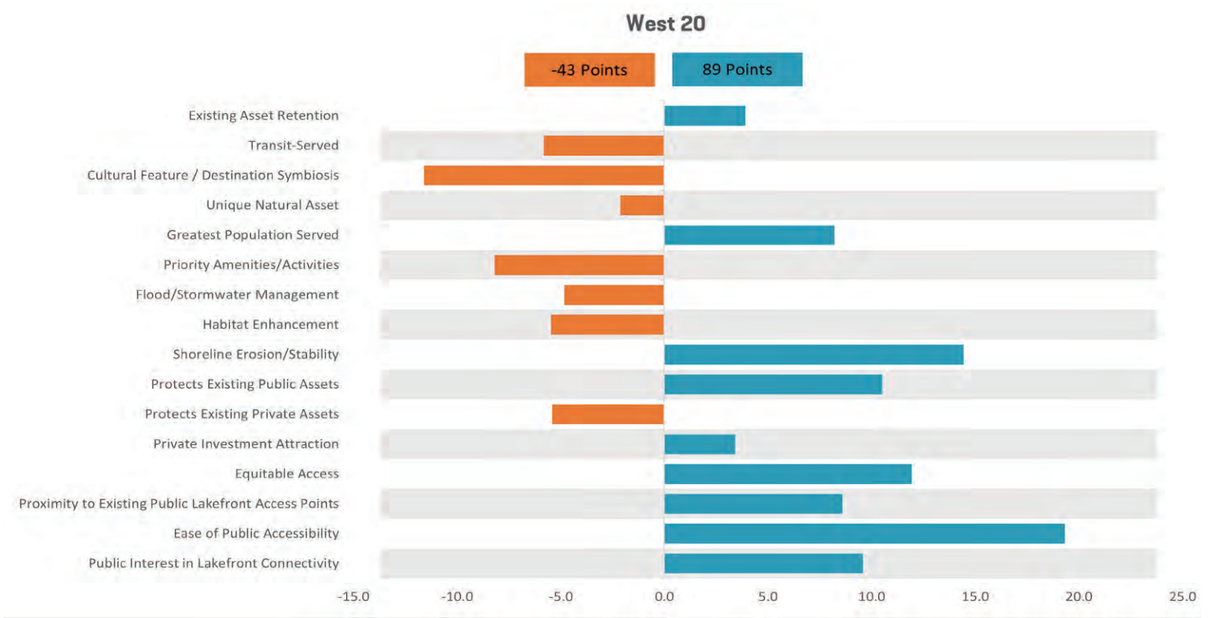

West 15
-84 Points
50 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-25.0 -20.0 -15.0 -10.0 -5.0 0.0 5.0 10.0 15.0 20.0 25.0

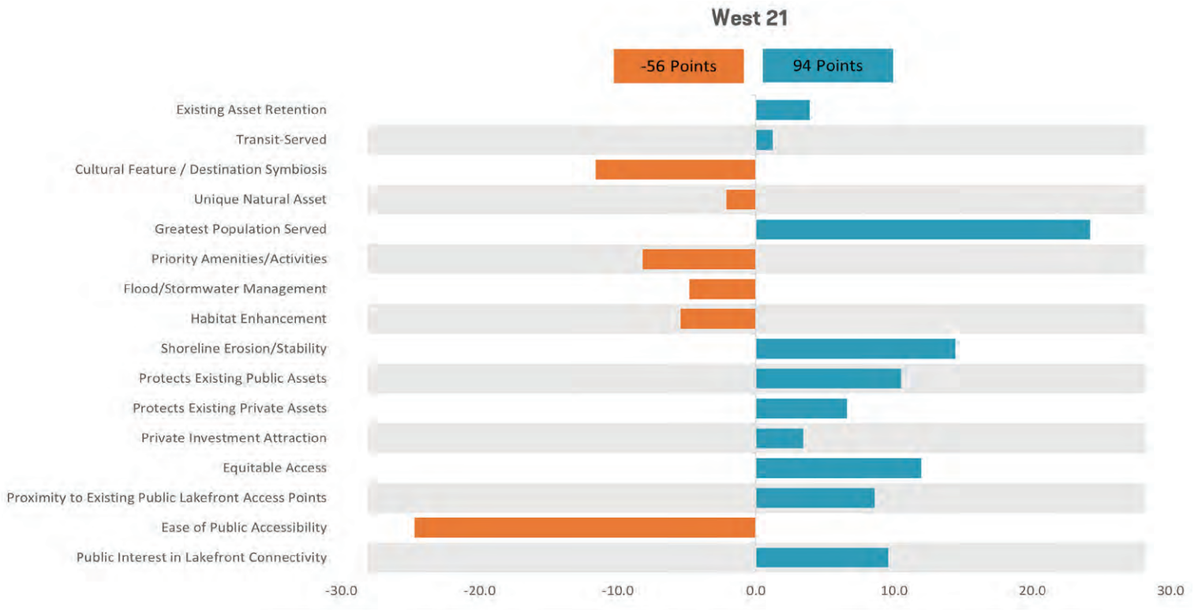

West 16
-64 Points
83 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-30.0 -20.0 -10.0 0.0 10.0 20.0 30.0 40.0

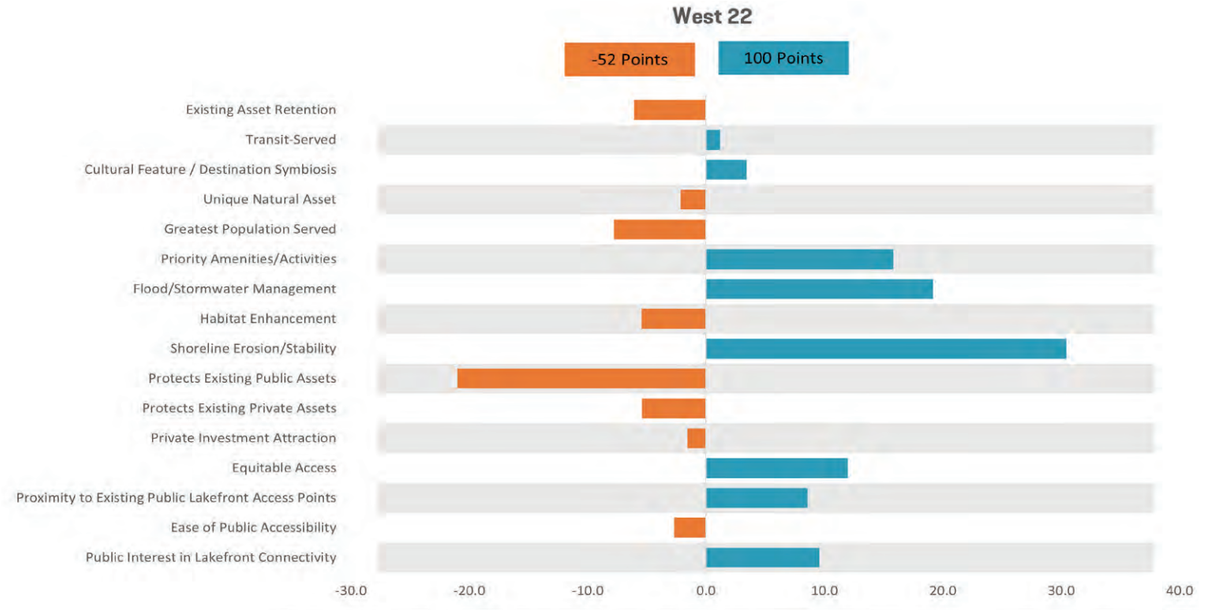

West 17
-58 Points
48 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-15.0
-10.0
-5.0
0.0
5.0
10.0
15.0
20.0

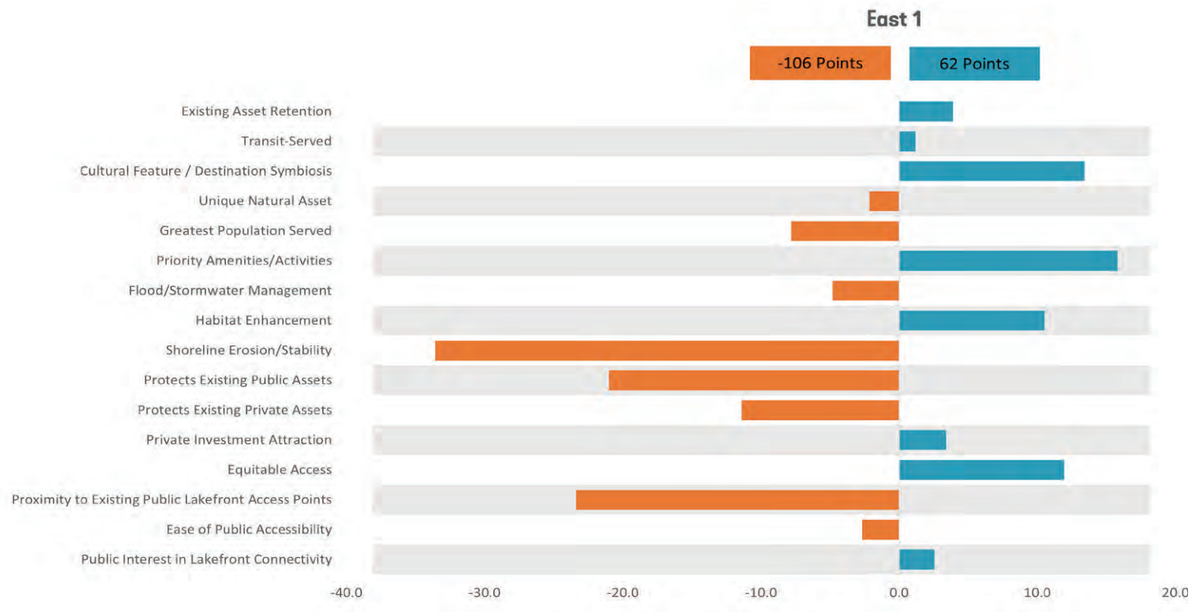

West 18
-52 Points
129 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-15.0
-10.0
-5.0
0.0
5.0
10.0
15.0
20.0
25.0
30.0
35.0

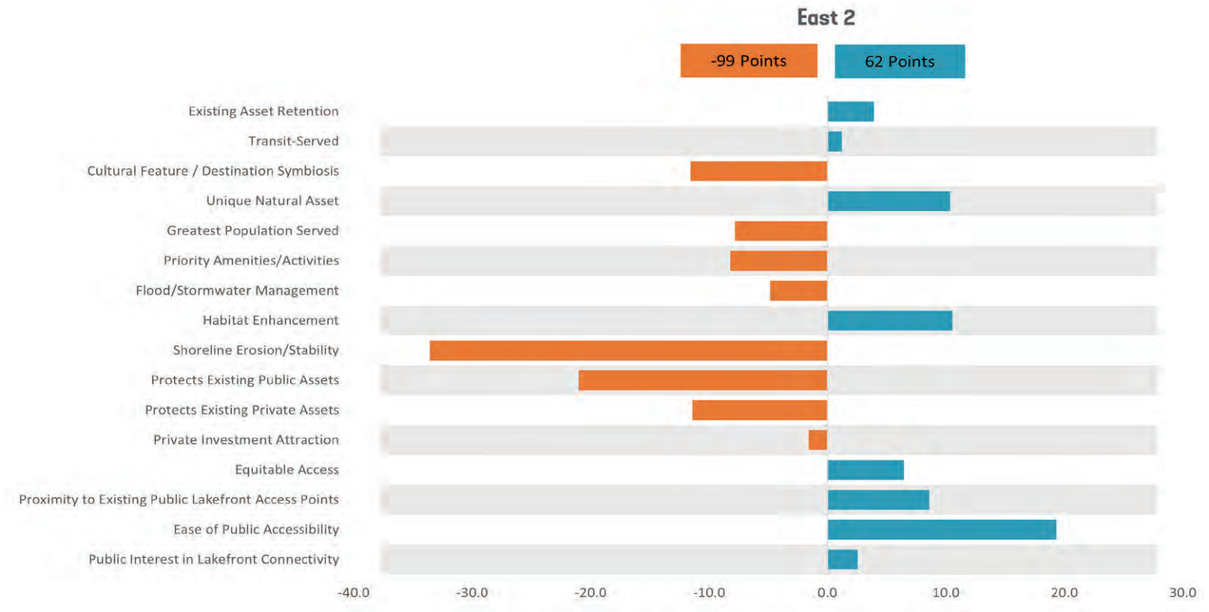

West 19
-79 Points
55 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-30.0
-25.0
-20.0
-15.0
-10.0
-5.0
0.0
5.0
10.0
15.0
20.0
25.0

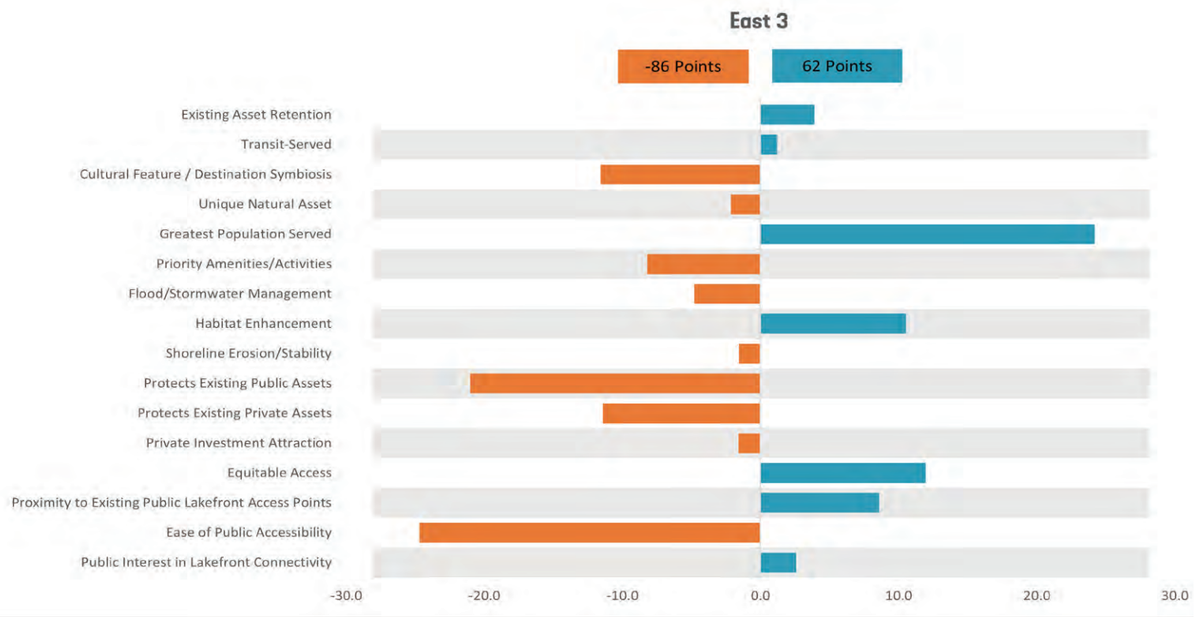

West 20
-43 Points
89 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-15.0
-10.0
-5.0
0.0
5.0
10.0
15.0
20.0
25.0

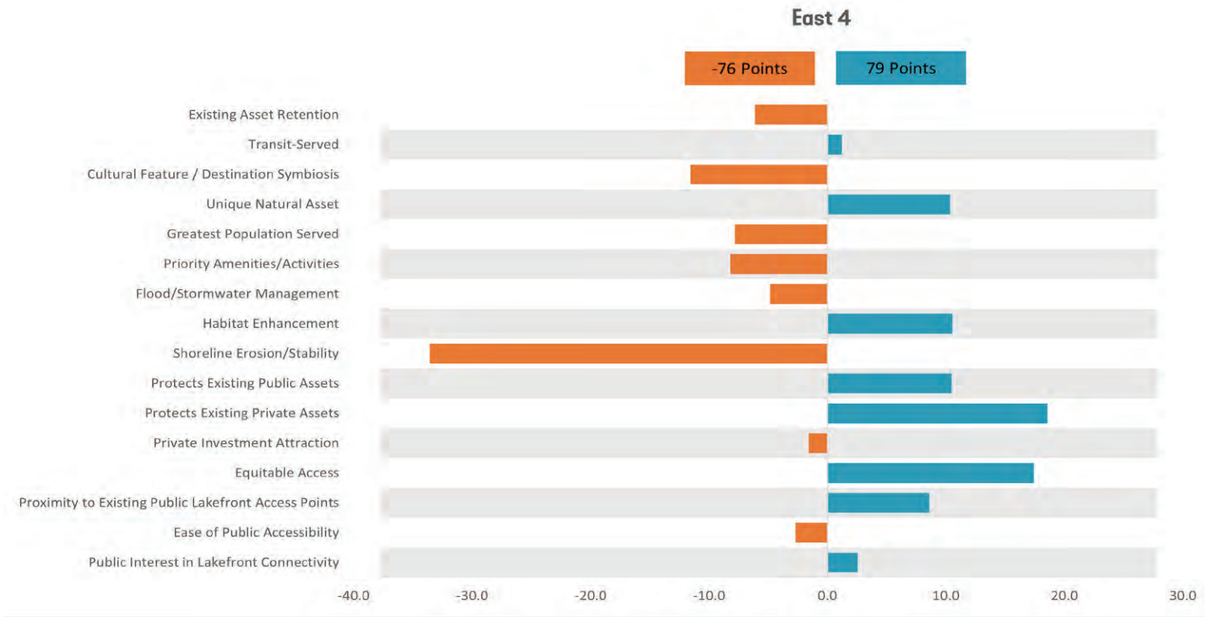

West 21
-56 Points
94 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-30.0
-20.0
-10.0
0.0
10.0
20.0
30.0

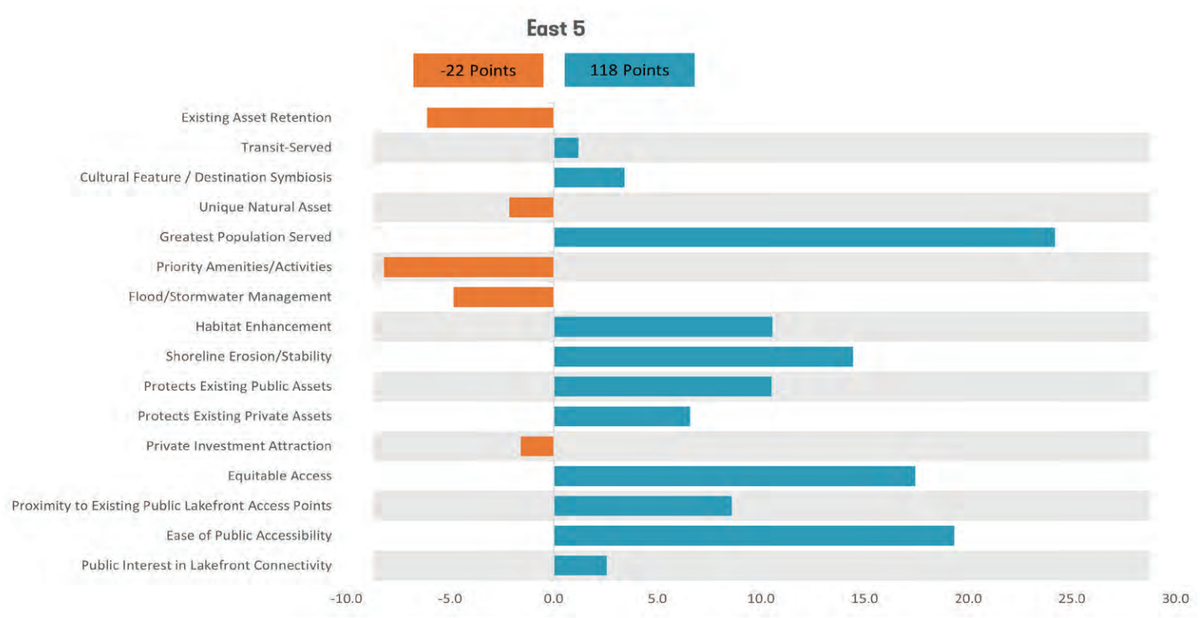

West 22
-52 Points
100 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-30.0
-20.0
-10.0
0.0
10.0
20.0
30.0
40.0

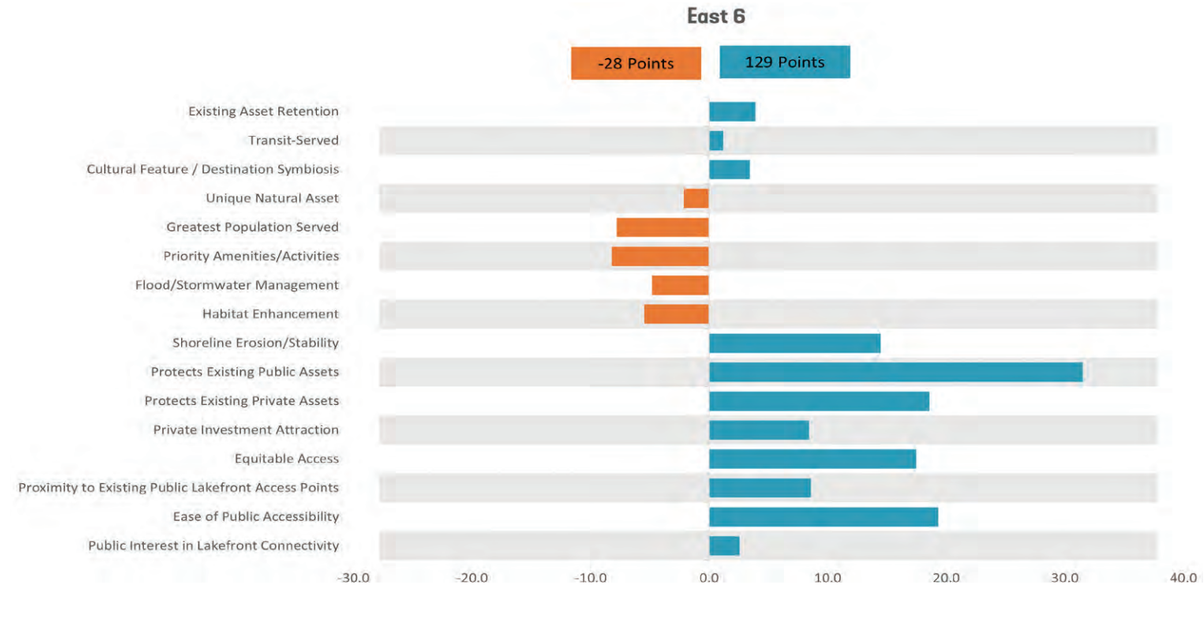

East 1
-106 Points
62 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-40.0
-30.0
-20.0
-10.0
0.0
10.0
20.0

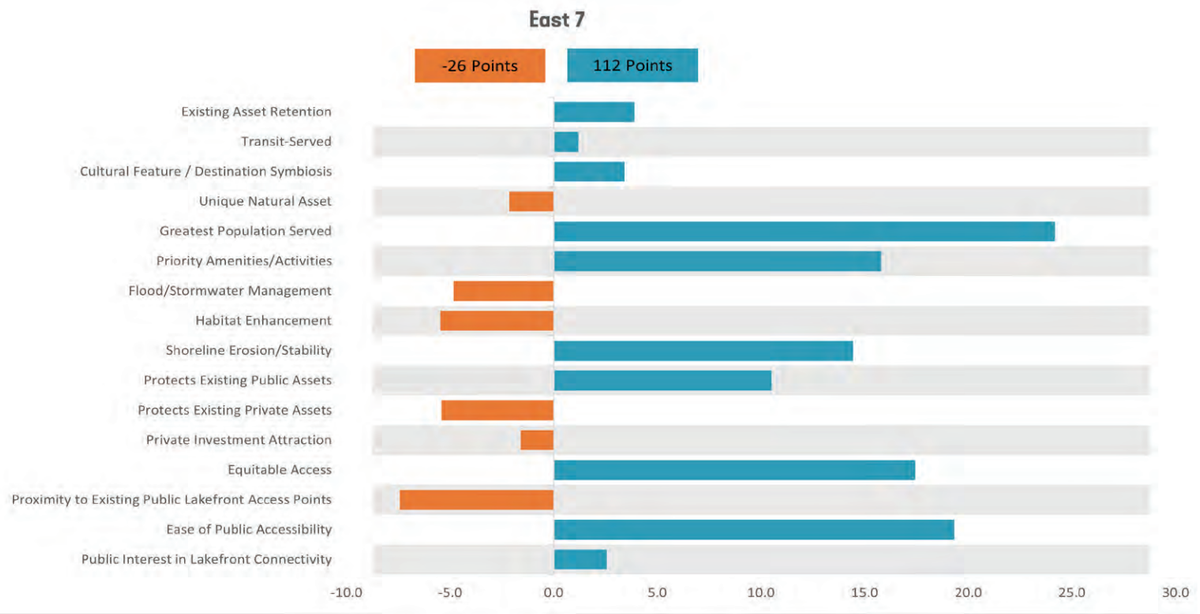

East 2
-99 Points
62 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-40.0
-30.0
-20.0
-10.0
0.0
10.0
20.0
30.0

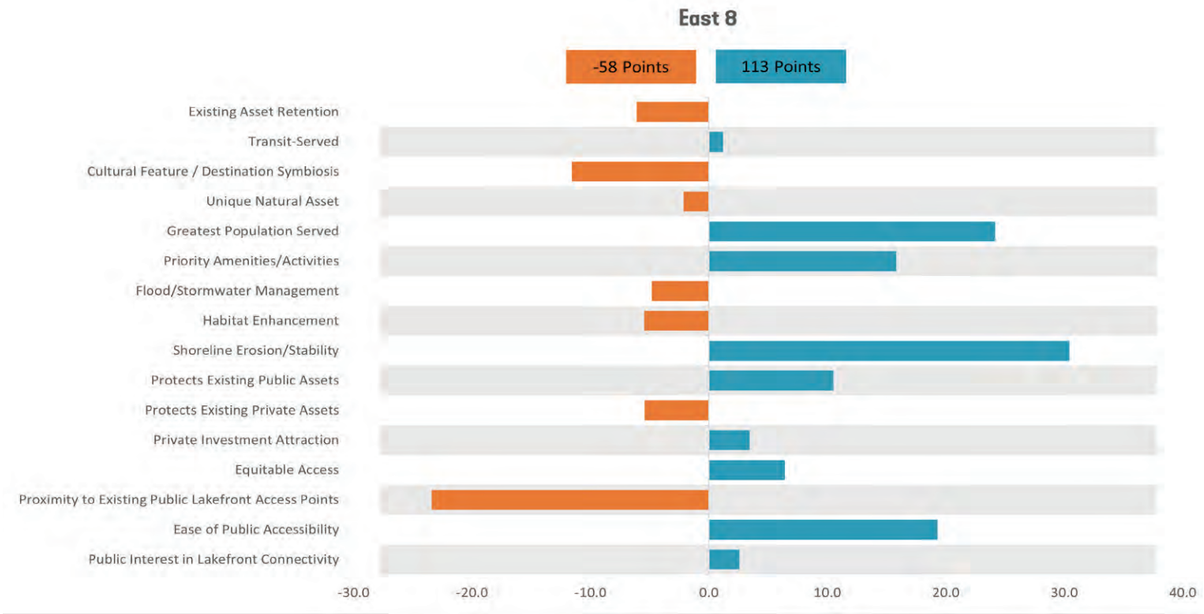

East 3
-86 Points
62 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-30.0
-20.0
-10.0
0.0
10.0
20.0
30.0

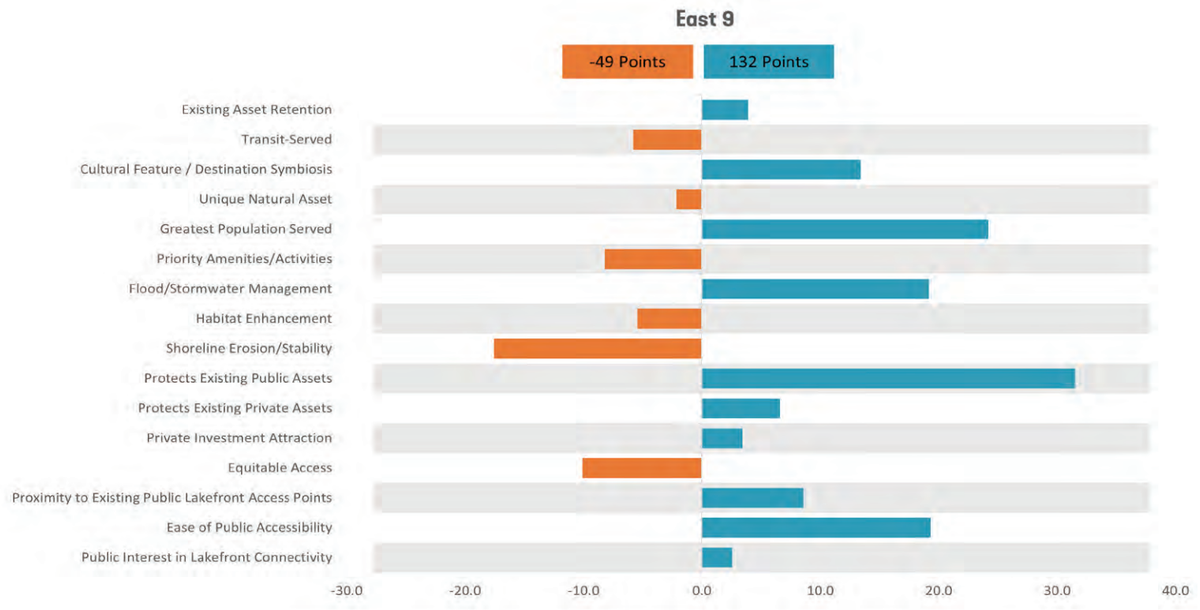

East 4
-76 Points
79 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-40.0
-30.0
-20.0
-10.0
0.0
10.0
20.0
30.0


East 5
-22 Points
118 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-10.0
-5.0
0.0
5.0
10.0
15.0
20.0
25.0
30.0


East 6
-28 Points
129 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-30.0
-20.0
-10.0
0.0
10.0
20.0
30.0
40.0


East 7
-26 Points
112 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-10.0
-5.0
0.0
5.0
10.0
15.0
20.0
25.0
30.0


East 8
-58 Points
113 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-30.0
-20.0
-10.0
0.0
10.0
20.0
30.0
40.0


East 9
-49 Points
132 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-30.0
-20.0
-10.0
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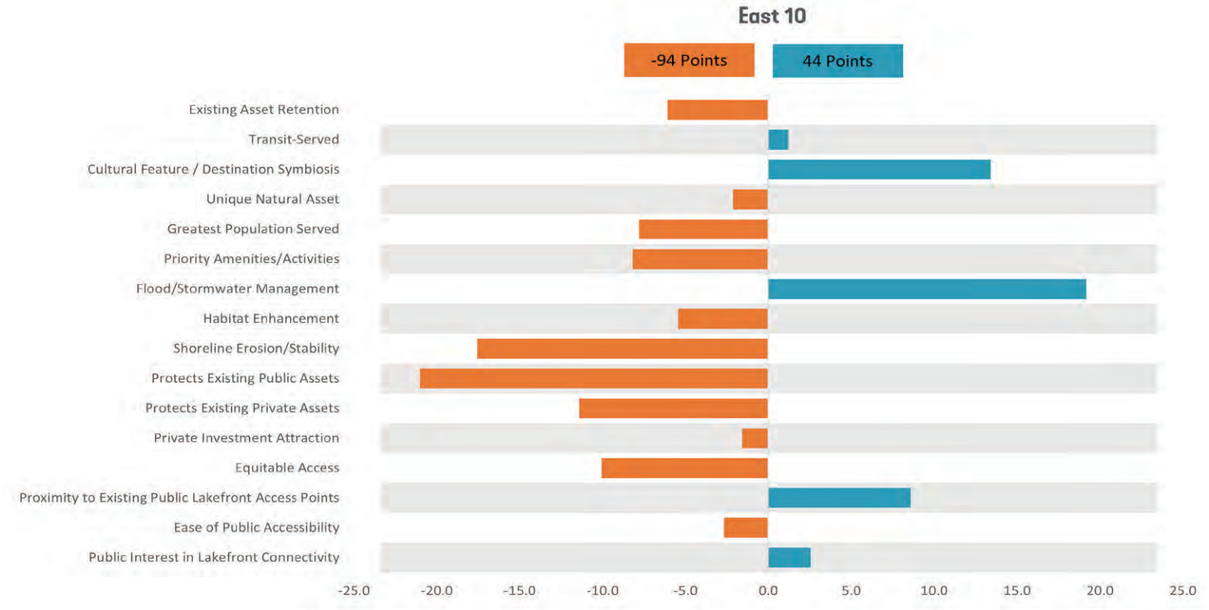
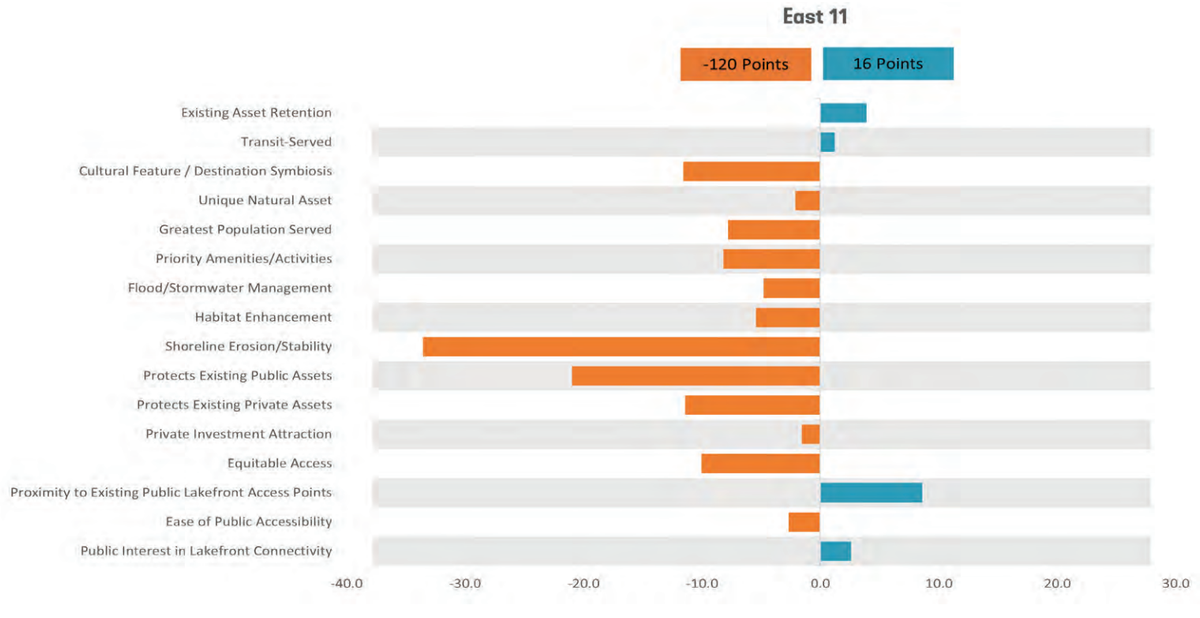
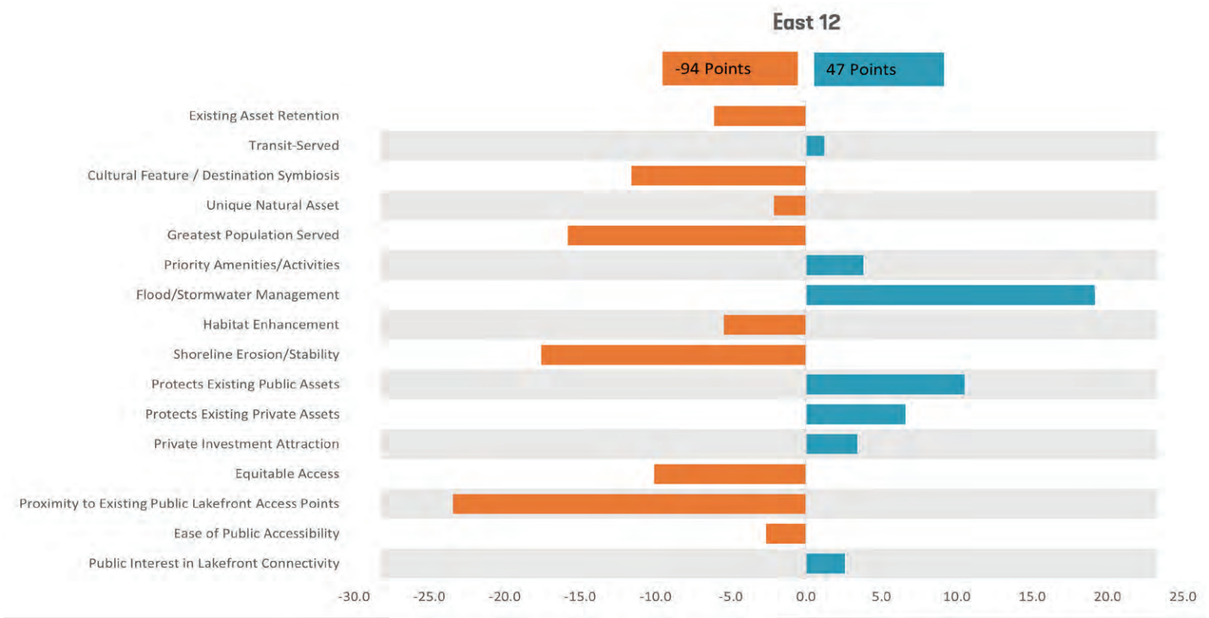
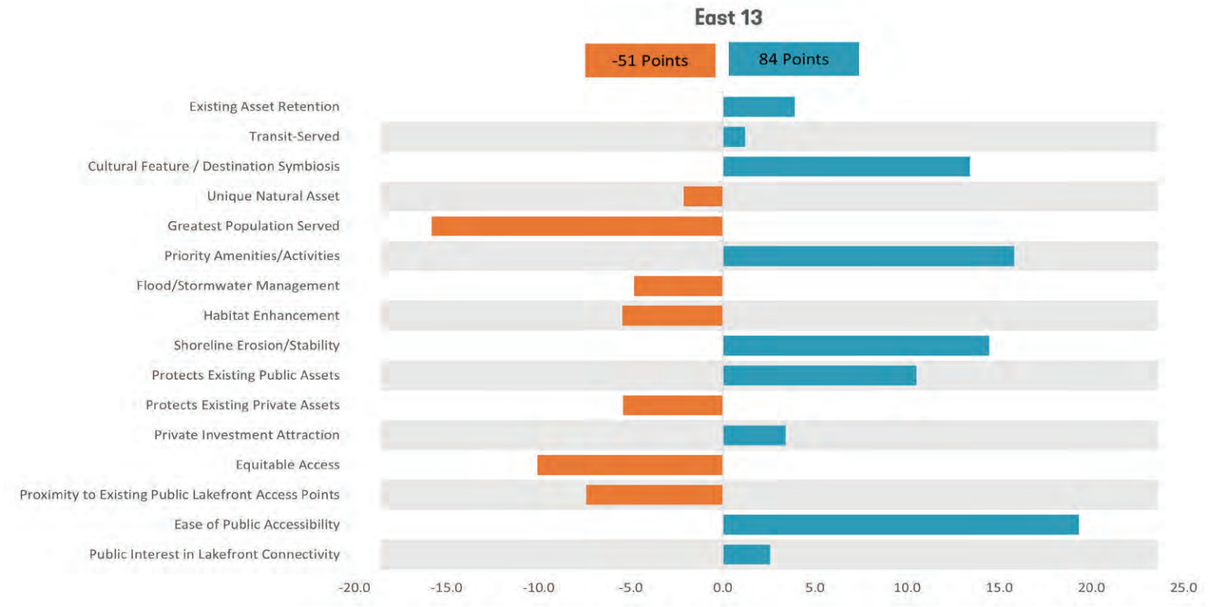
10.0
20.0
30.0
40.0

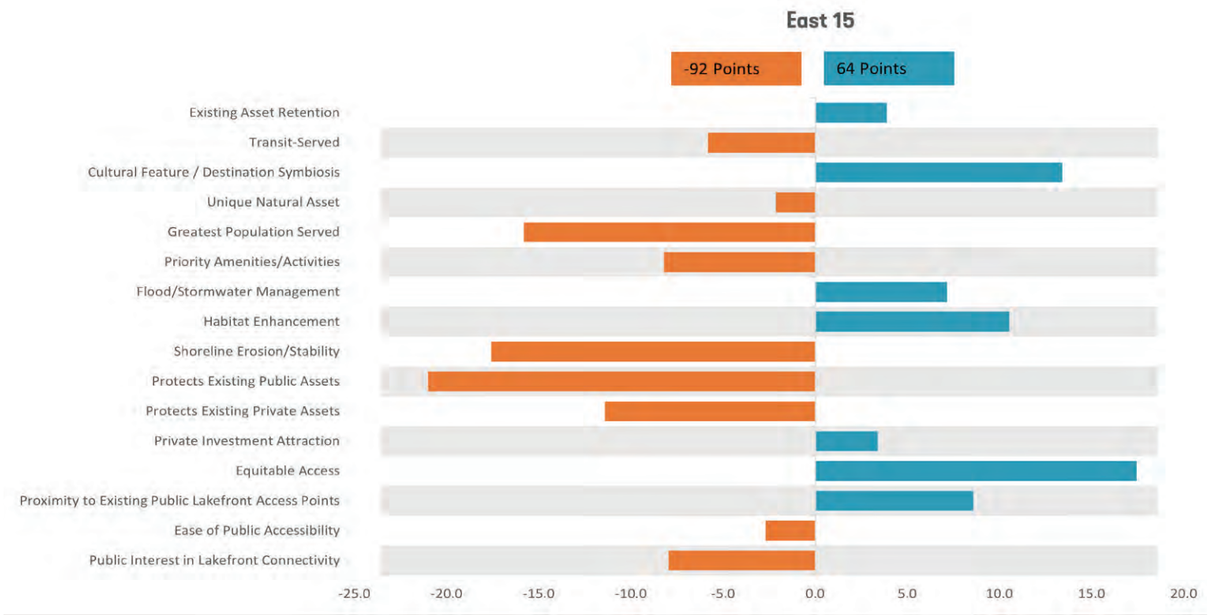

East 10
-94 Points
44 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-25.0
-20.0
-15.0
-10.0
-5.0
0.0
5.0
10.0
15.0
20.0
25.0

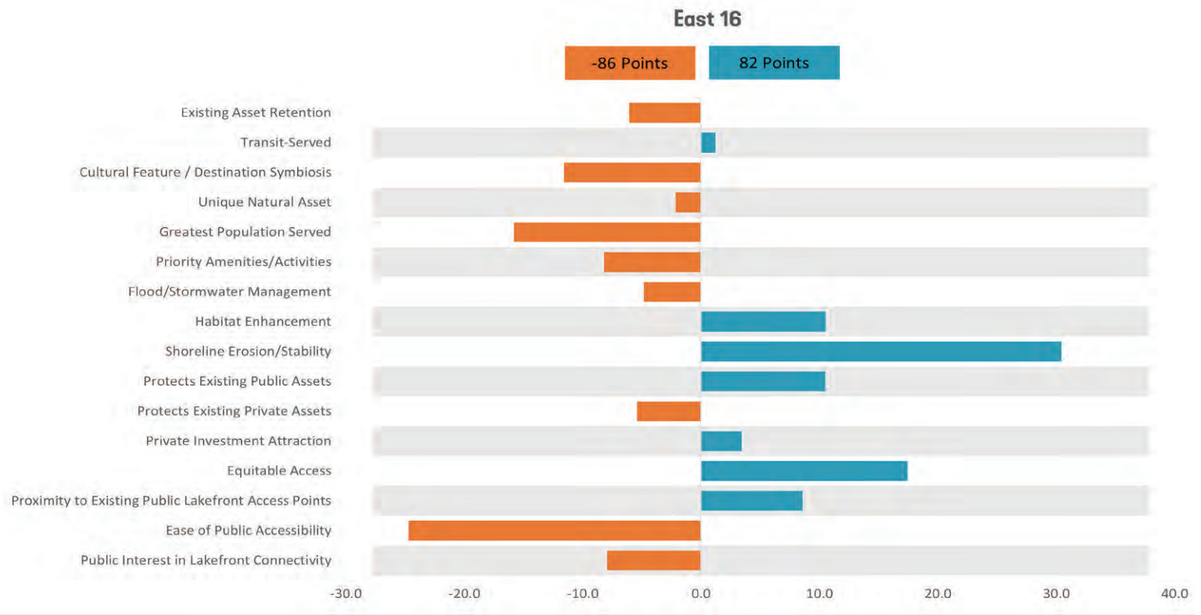

East 11
-120 Points
16 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-40.0
-30.0
-20.0
-10.0
0.0
10.0
20.0
30.0

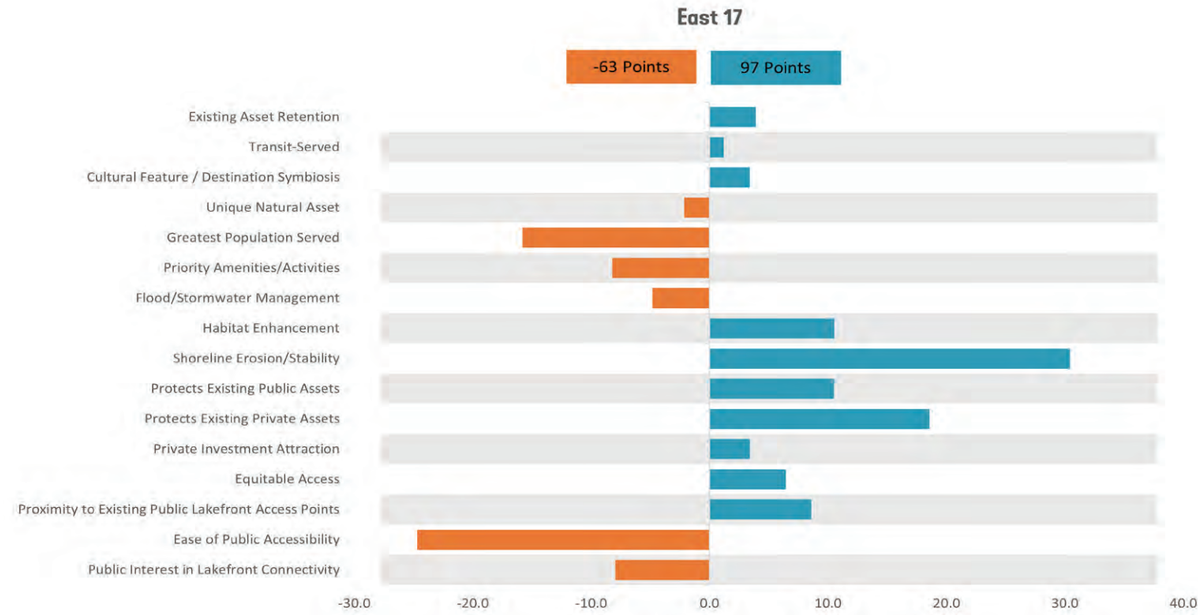

East 12
-94 Points
47 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-30.0
-25.0
-20.0
-15.0
-10.0
-5.0
0.0
5.0
10.0
15.0
20.0
25.0

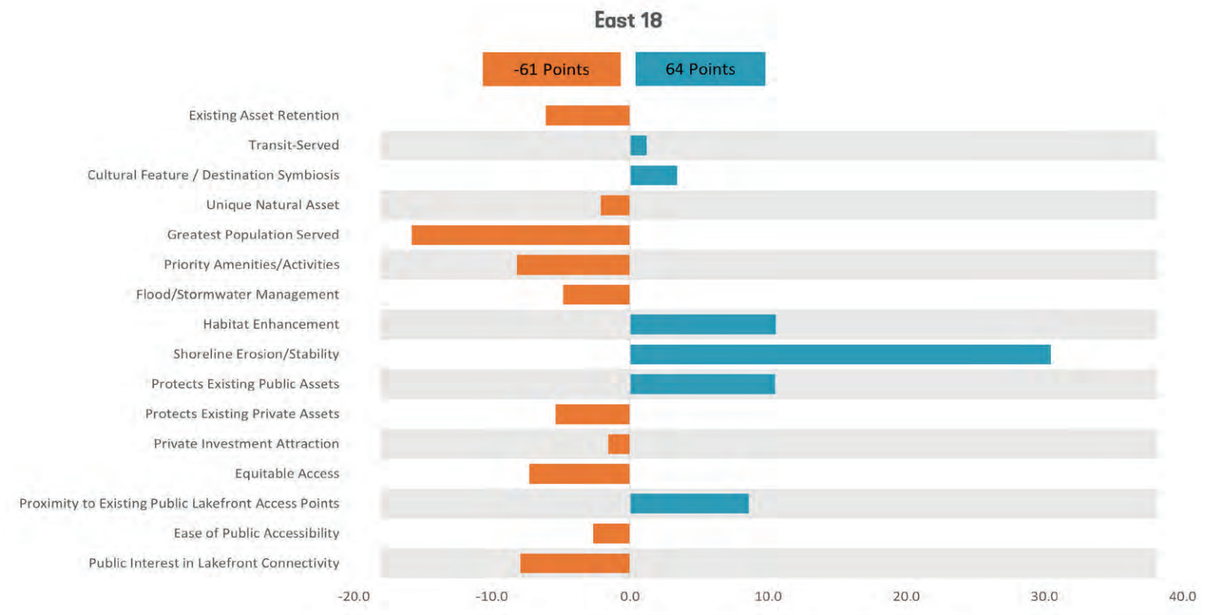

East 13
-51 Points
84 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-20.0
-15.0
-10.0
-5.0
0.0
5.0
10.0
15.0
20.0
25.0

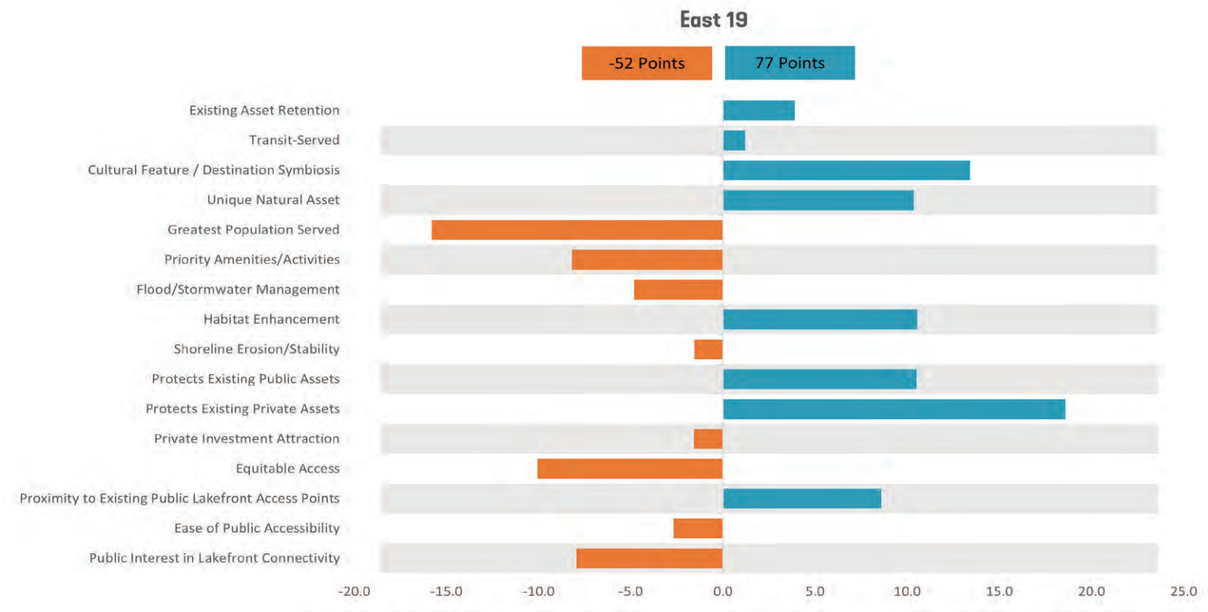

East 14
-107 Points
72 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-30.0
-20.0
-10.0
0.0
10.0
20.0
30.0
40.0


East 15
-92 Points
64 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-25.0
-20.0
-15.0
-10.0
-5.0
0.0
5.0
10.0
15.0
20.0


East 16
-86 Points
82 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-30.0
-20.0
-10.0
0.0
10.0
20.0
30.0
40.0


East 17
-63 Points
97 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-30.0
-20.0
-10.0
0.0
10.0
20.0
30.0
40.0


East 18
-61 Points
64 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-20.0
-10.0
0.0
10.0
20.0
30.0
40.0


East 19
-52 Points
77 Points
Existing Asset Retention
Transit-Served
Cultural Feature / Destination Symbiosis
Unique Natural Asset
Greatest Population Served
Priority Amenities/Activities
Flood/Stormwater Management
Habitat Enhancement
Shoreline Erosion/Stability
Protects Existing Public Assets
Protects Existing Private Assets
Private Investment Attraction
Equitable Access
Proximity to Existing Public Lakefront Access Points
Ease of Public Accessibility
Public Interest in Lakefront Connectivity
-20.0
-15.0
-10.0
-5.0
0.0
5.0
10.0
15.0
20.0
25.0

SMITHGROUP