

TOWN OF BEVERLY SHORES

LONG-TERM SHORELINE PROTECTION PLAN
PUBLIC INFORMATION MEETING 1

PRESENTATION AGENDA

1) PROCESS OVERVIEW AND EXPECTATIONS

2) UNDERSTANDING BEVERLY SHORES

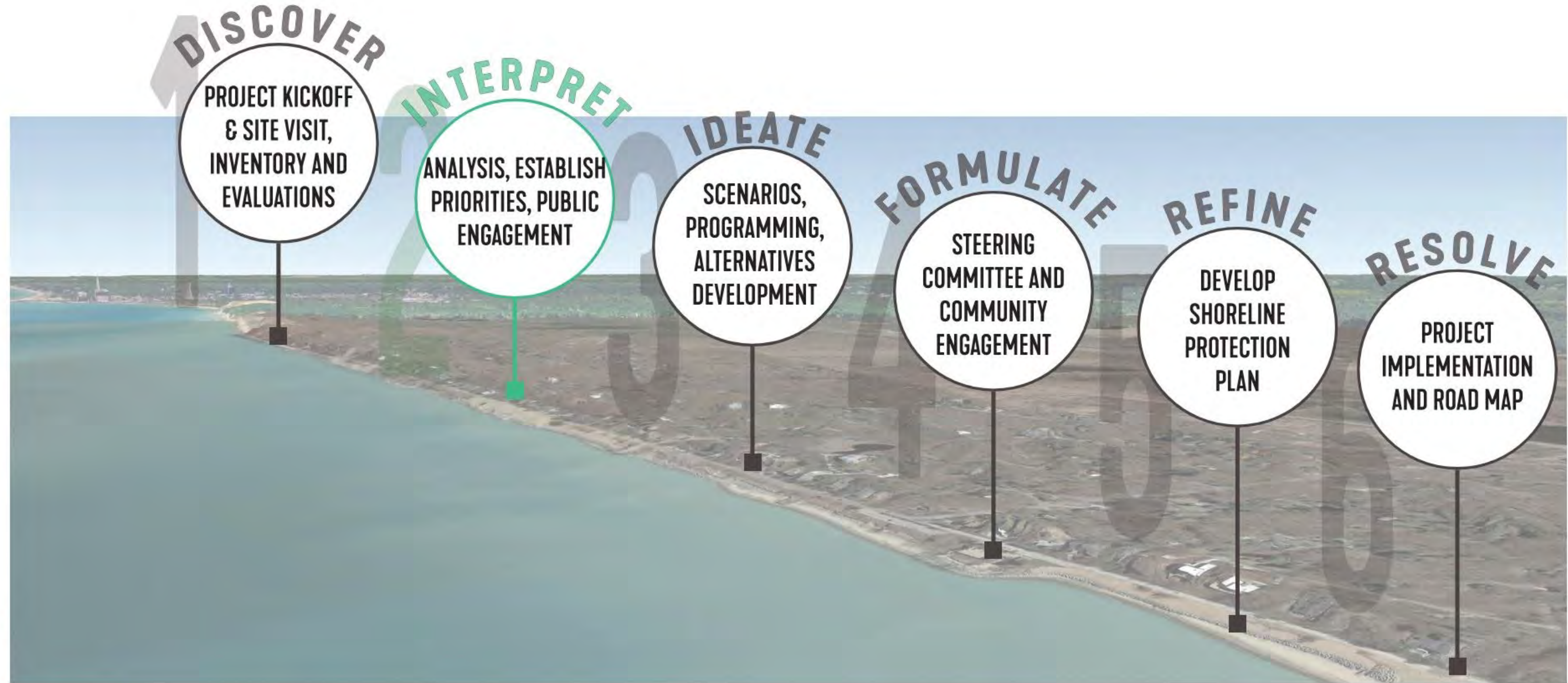
3) ISSUES AND OPPORTUNITIES

4) NEXT STEPS



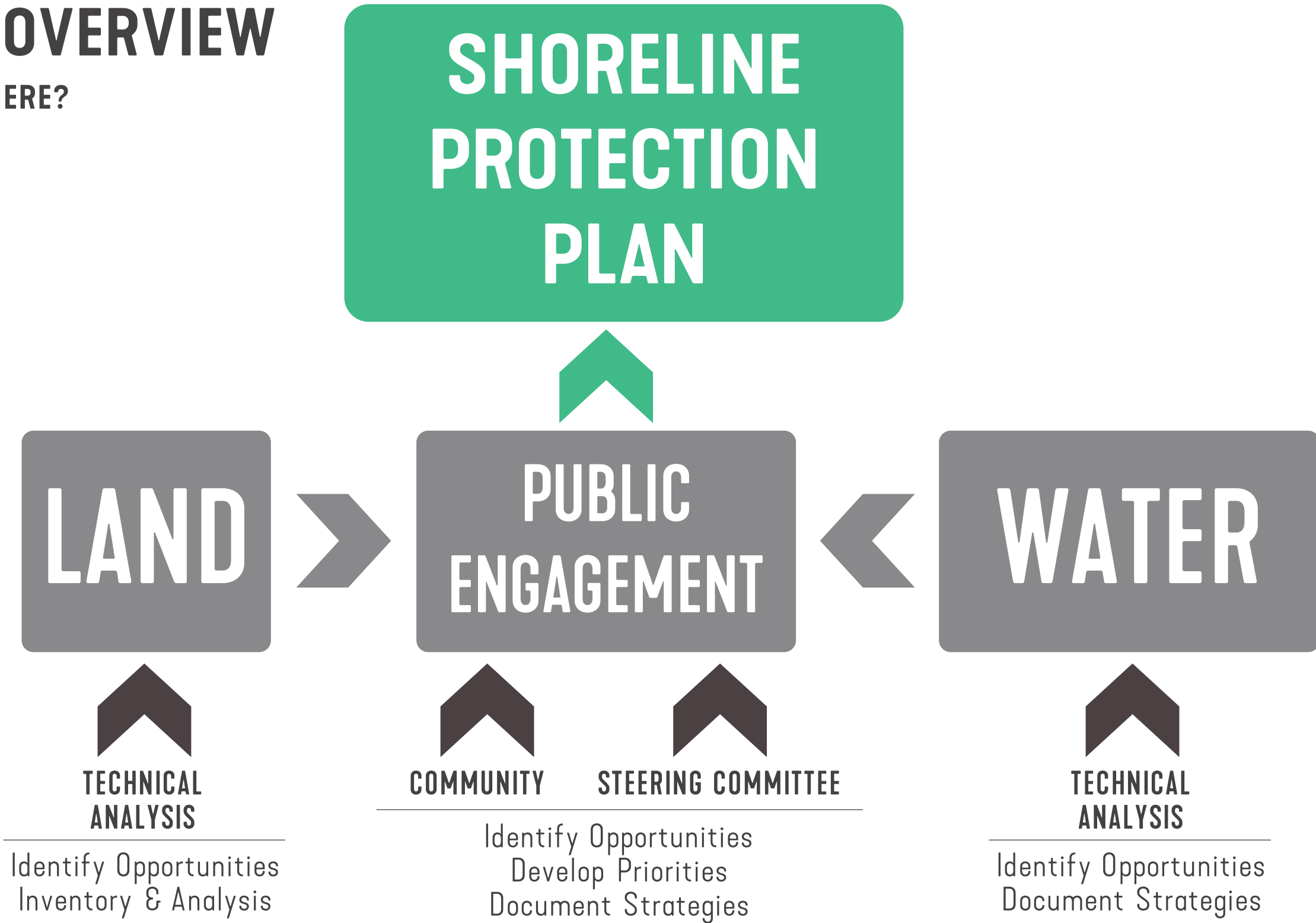
PROCESS OVERVIEW

WHERE WE'RE GOING




PROCESS OVERVIEW

HOW DO WE GET THERE?



EXPECTATIONS

HOW WILL WE MEASURE SUCCESS?

- Design for a long-term resilient shoreline
 - Preserve and enhance community character and uniqueness
 - Establish and maintain a clear and positive collaborative relationship and process between the Town and National Park Service (NPS)
 - Maximize funding eligibility
 - Provide a balanced design framework to model across southern Lake Michigan
- 

EXPECTATIONS

WHAT DO WE HOPE TO ACHIEVE?

- **Holistic coastal resilience strategy in low and high water levels**
- **Variety of public water access and community spaces**
- **Comprehensive stormwater and green infrastructure strategy**
- **Connected native habitat network**
- **Organized pedestrian, traffic and parking strategy**
- **Coordinated materials and aesthetics (i.e. furnishings, signage/wayfinding, structures, hardscape and softscape)**
- **Clarify ownership and operations management**
- **Manage and steer resident desires and pressures**

UNDERSTANDING BEVERLY SHORES

WHAT MAKES THE TOWN UNIQUE?



UNDERSTANDING BEVERLY SHORES

WHAT MAKES YOUR SHORELINE UNIQUE?



UNDERSTANDING BEVERLY SHORES

WHAT MAKES YOUR SHORELINE UNIQUE?



UNDERSTANDING BEVERLY SHORES

WHAT MAKES YOUR SHORELINE SPECIAL?



UNDERSTANDING BEVERLY SHORES

SHORELINE DISTRICTS



- CRITERIA**
- Shoreline and Upper Land character
 - Upper Land Width
 - Existing Uses
 - Beaches and Ownership
 - Circulation Networks
 - Residents and Users
 - Coastal Vulnerability
 - Sustainability and Stormwater Management

SHORELINE DISTRICTS

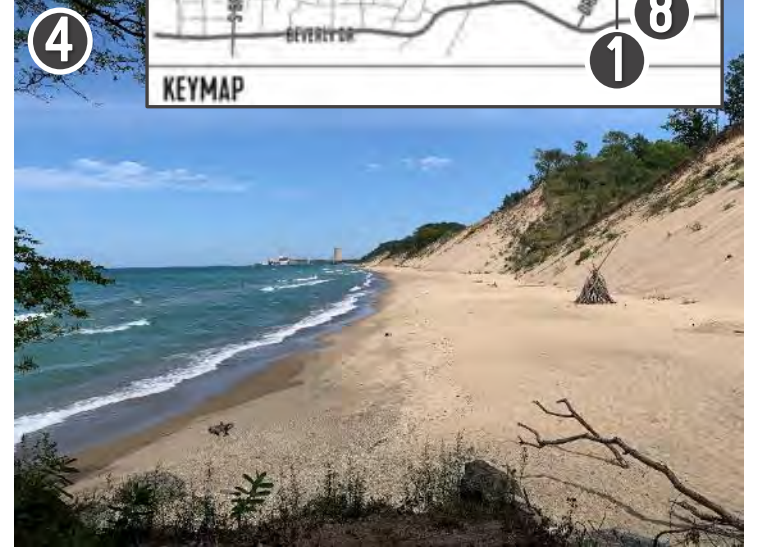
EAST



- Narrow upland
- Lower residential concentration
- Wide NPS land
- High coastal vulnerability

SHORELINE DISTRICTS

EAST



SHORELINE DISTRICTS

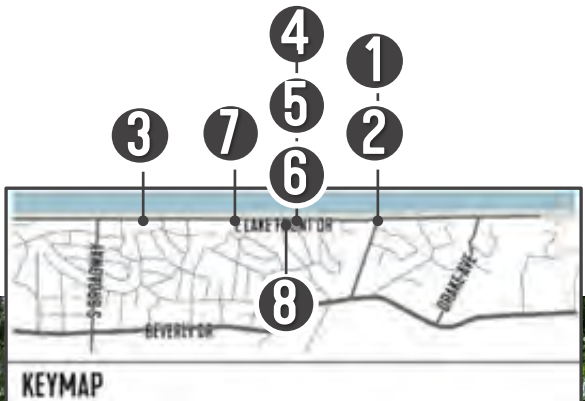
MIDDLE



- Highest concentration of residents
- Wide upland
- Between direct connections to US 12
- Moderate coastal vulnerability

SHORELINE DISTRICTS

MIDDLE



SHORELINE DISTRICTS

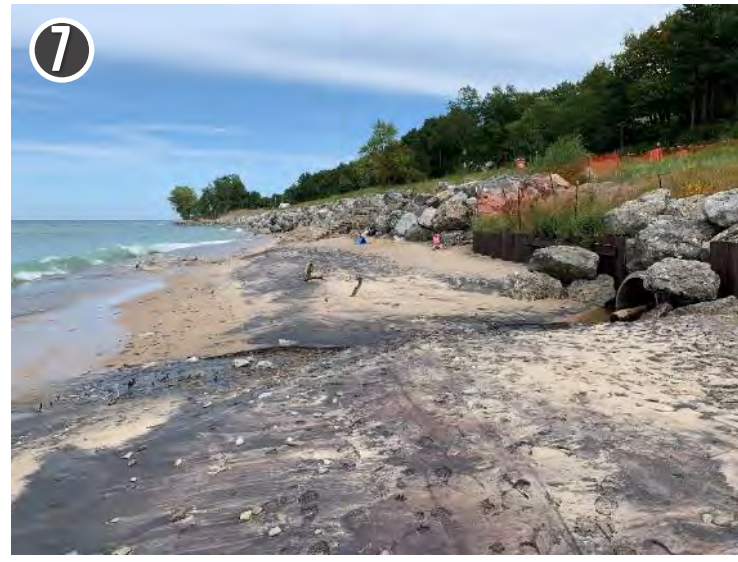
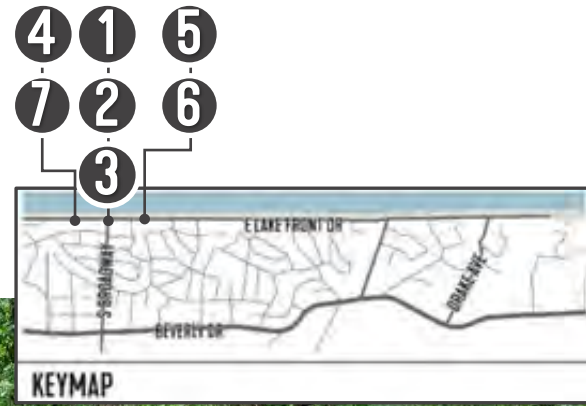
WEST



- Major regional arrive point
- National Park Service Infrastructure
- Largest beach
- Derby Creek Ditch

SHORELINE DISTRICTS

WEST



ISSUES AND OPPORTUNITIES

EVALUATING THE PAST AND FUTURE

INFRASTRUCTURE | BEACHES & UPLAND SPACE



ECOLOGY | ECOLOGY & HABITAT



- Target areas of concentrated invasives
- Develop network of habitat corridors and patches
- Utilize coastal protection techniques that improve habitat when possible
- Develop beach access routes that minimize impact to vegetation

ECOLOGY | STORMWATER



- Improved stormwater management along E Lakefront Dr
- Utilize existing roadway profile and upland space for targeted improvement areas
- Improve water quality through Derby Creek
- Manage erosion from lake & runoff
- Address existing exposed outfalls

A WORK IN PROGRESS

AN ADAPTIVELY STABLE SHORELINE



A WORK IN PROGRESS

AN ADAPTIVELY STABLE SHORELINE



WHAT IS COASTAL VULNERABILITY?

USGS defines **Coastal Vulnerability** as an assessment of a coastal system's susceptibility to change and its natural ability to adapt to changing environmental conditions. It yields a relative measure of the system's natural vulnerability to the effects of coastal hazards including water level variation, wave height, coastal slope, shoreline change, etc.

Coastal vulnerability is often used to support:

- emergency preparedness,
- ecosystem restoration,
- planning where and how to develop coastal areas



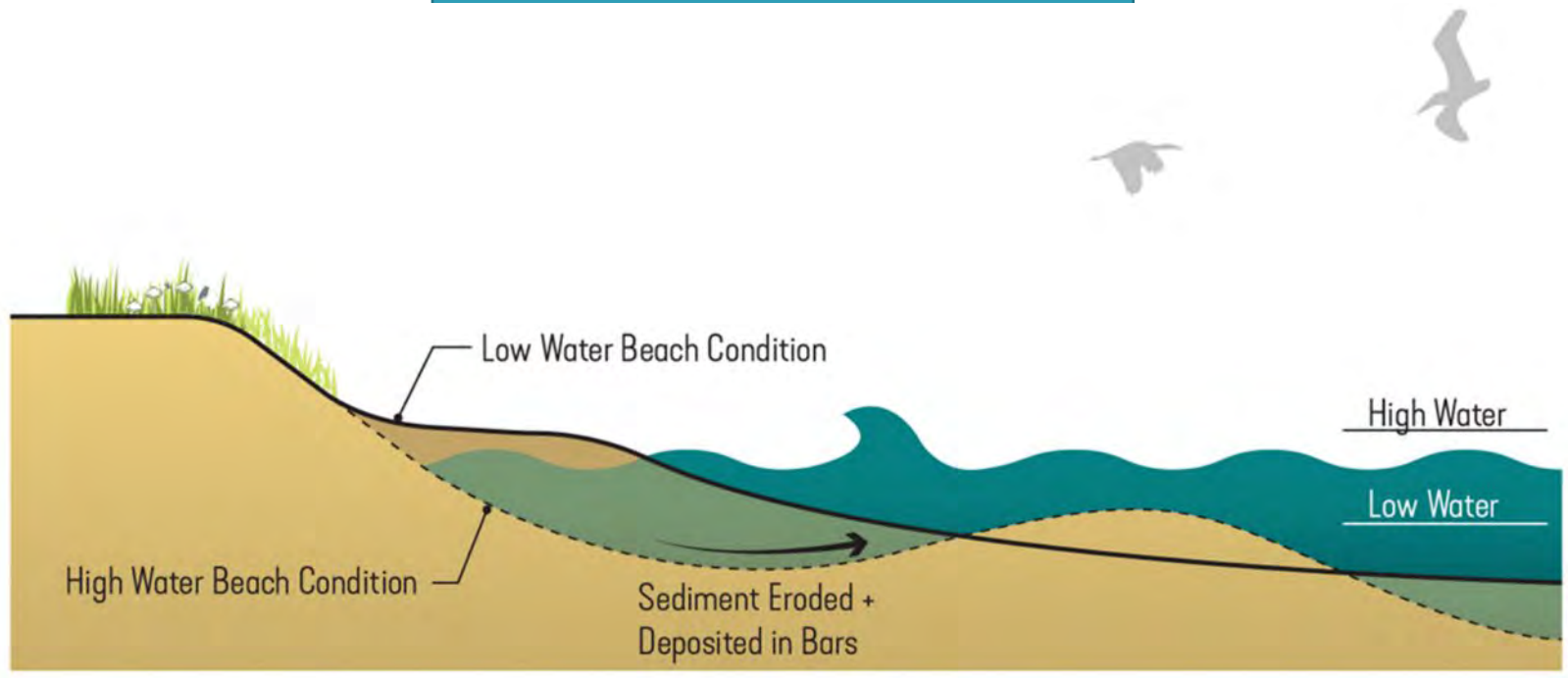
COASTAL VULNERABILITY – EVALUATION CRITERIA

SENSITIVITY



Sensitive shorelines sustain a negative impact when impacted by Coastal Hazards

ADAPTIVE CAPACITY

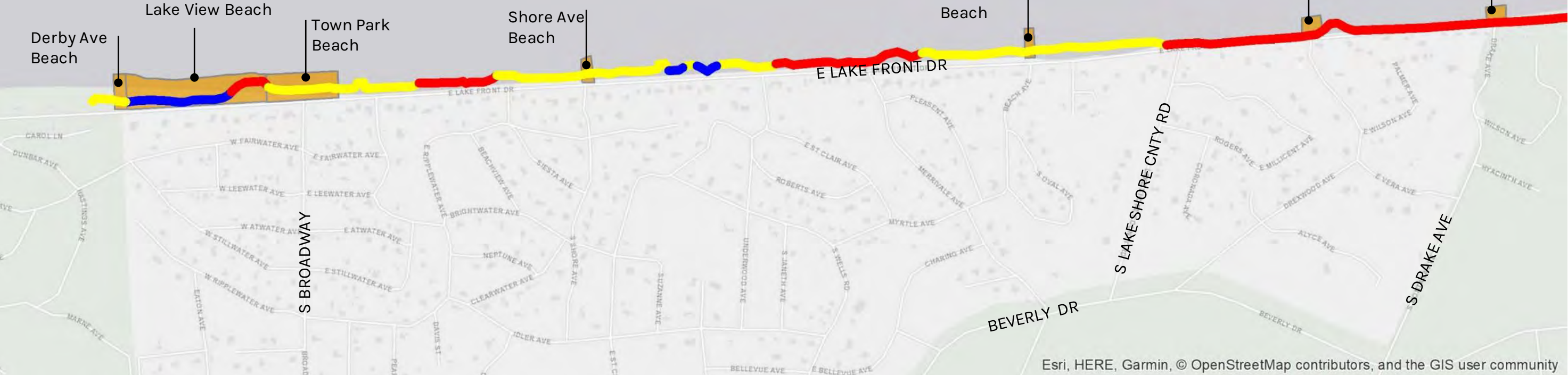


Shorelines with **Adaptive Capacity** adjust to Coastal Hazards

COMPARATIVE COASTAL VULNERABILITY RATING
(LOW, MODERATE OR HIGH)

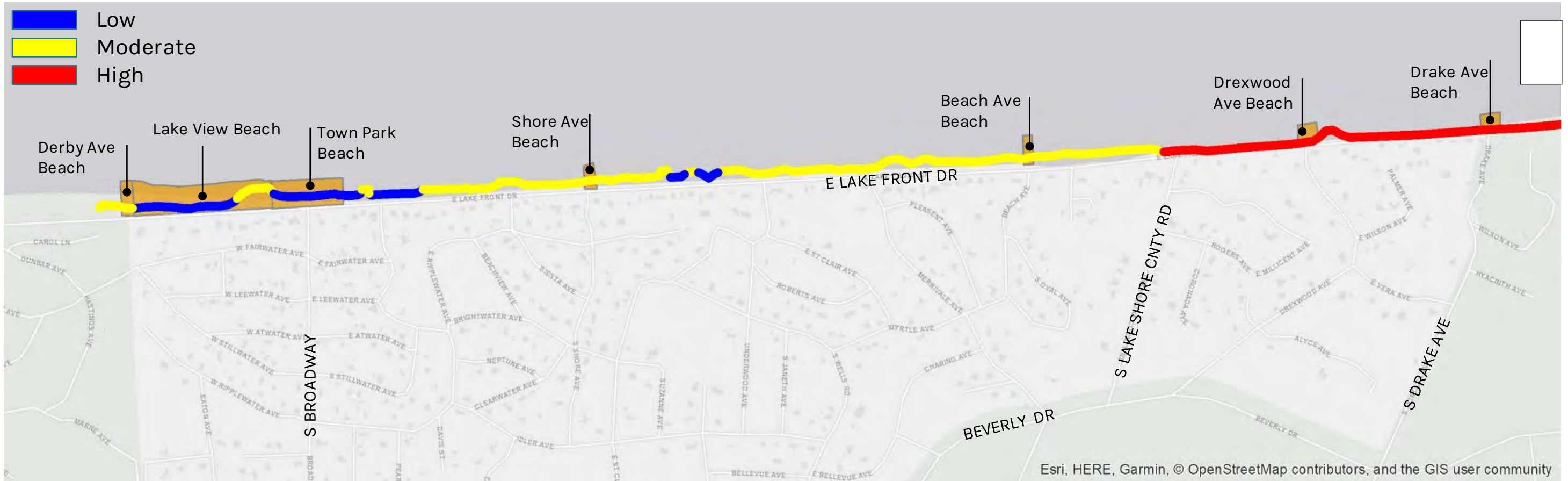
OVERALL VULNERABILITY

- Low
- Moderate
- High



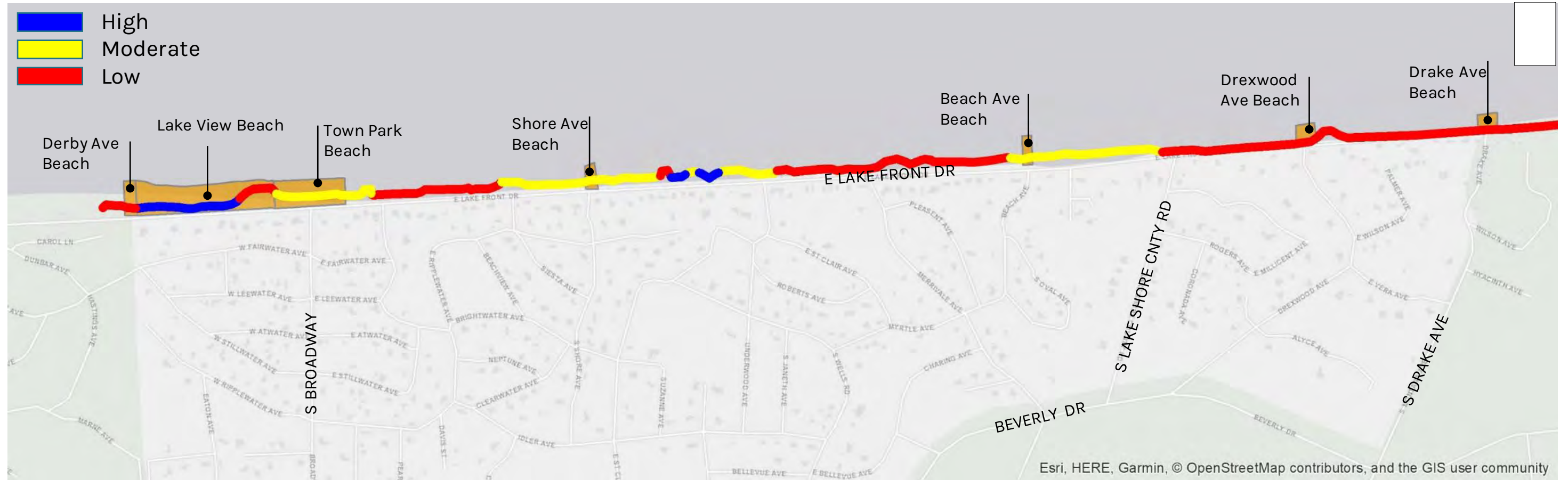
Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community

SENSITIVITY



- As the Town looks towards future improvements how can we maintain or reduce the sensitivity of the shoreline/bluff?
- Reinforcing existing revetments, re-establishing beaches, improving bluff toe protection

ADAPTIVE CAPACITY



- As the Town looks towards future improvements how can we maintain or increase the adaptive capacity of the shoreline/bluff?
- Reinforcing existing revetments, creating gravel beaches, providing offshore wave protection

EXISTING CONDITIONS

WHAT NATURE WANTS TO DO



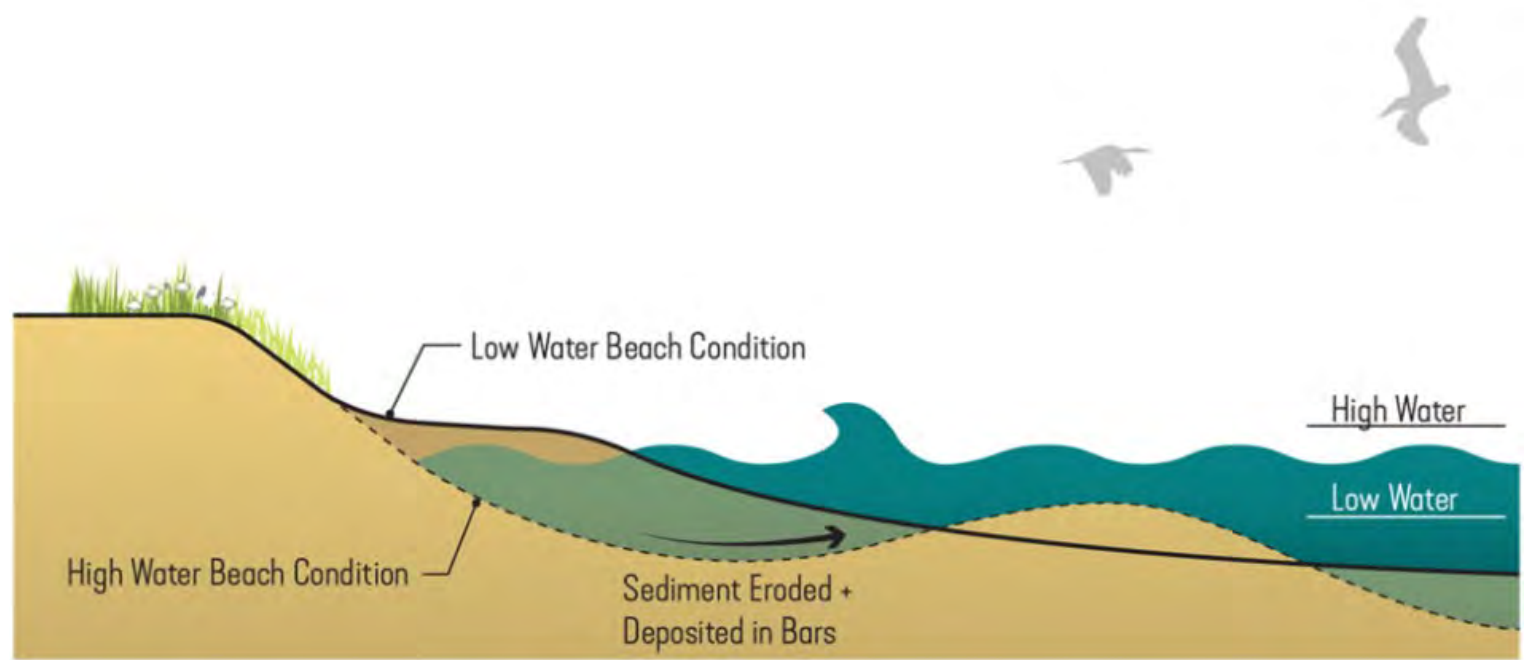
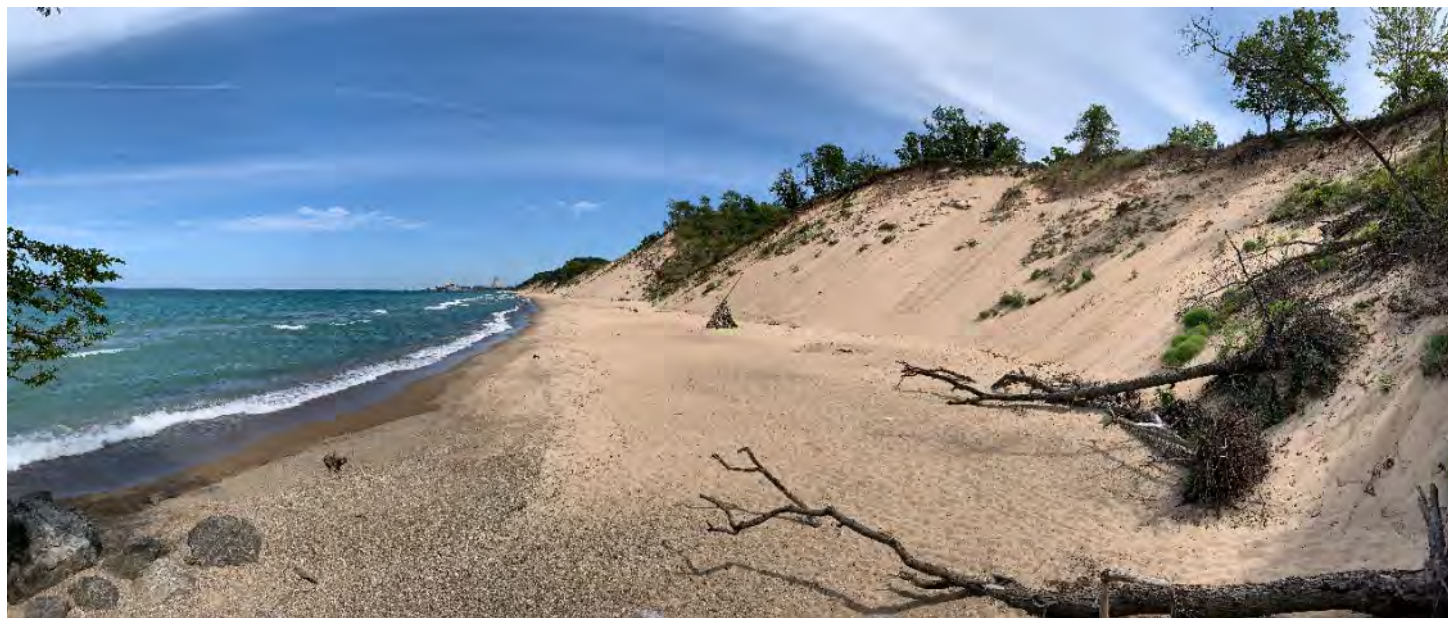
TODAY



STABILITY FAILURE

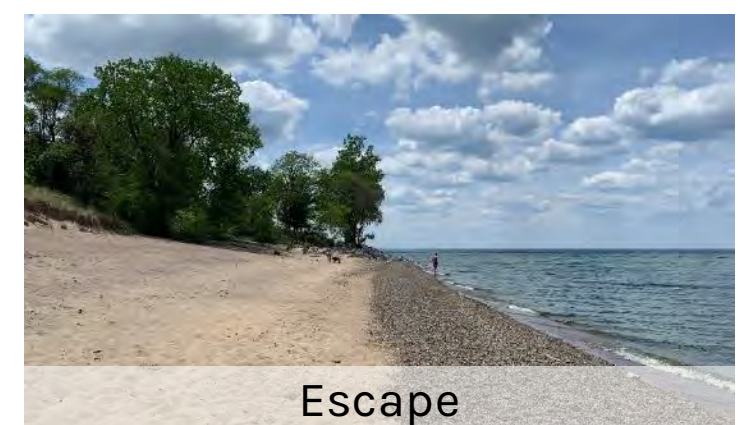
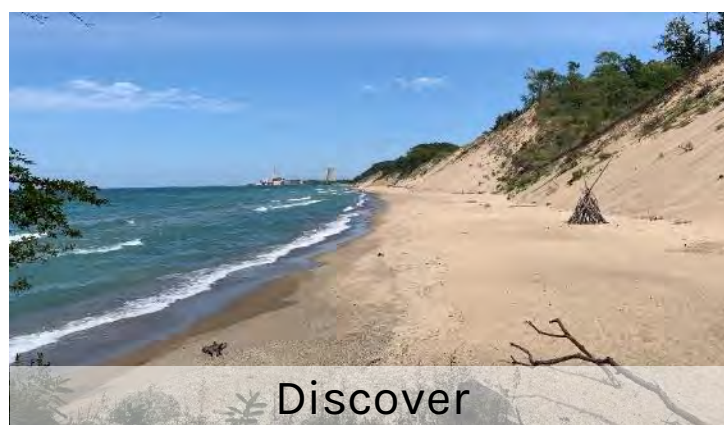
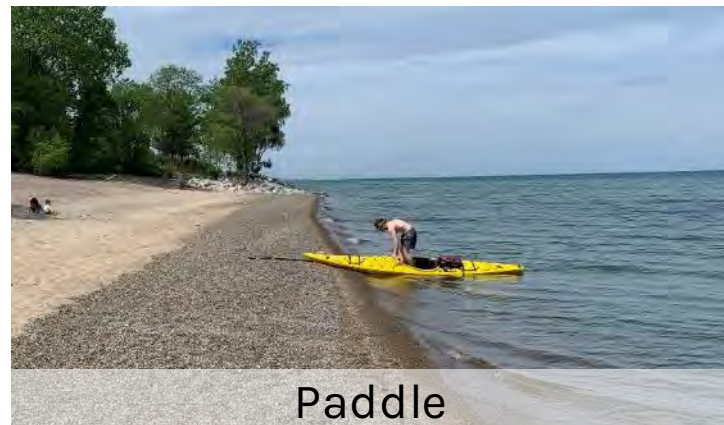
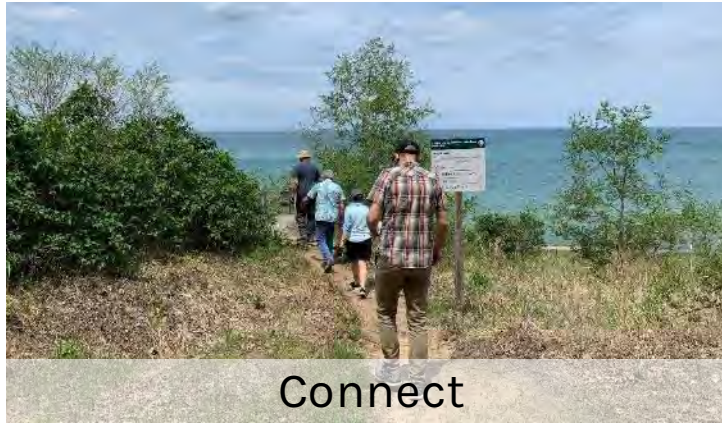


STABILITY FAILURE



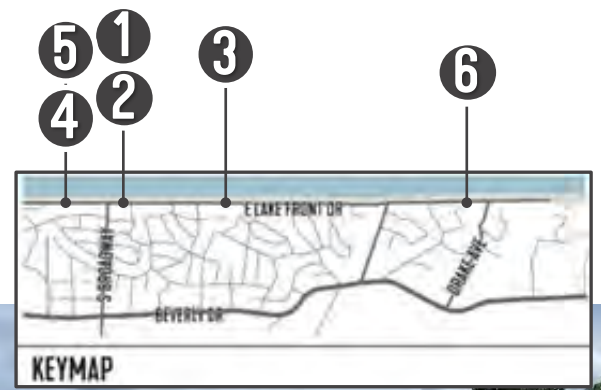
EXISTING CONDITIONS

WHAT PEOPLE WANT TO DO



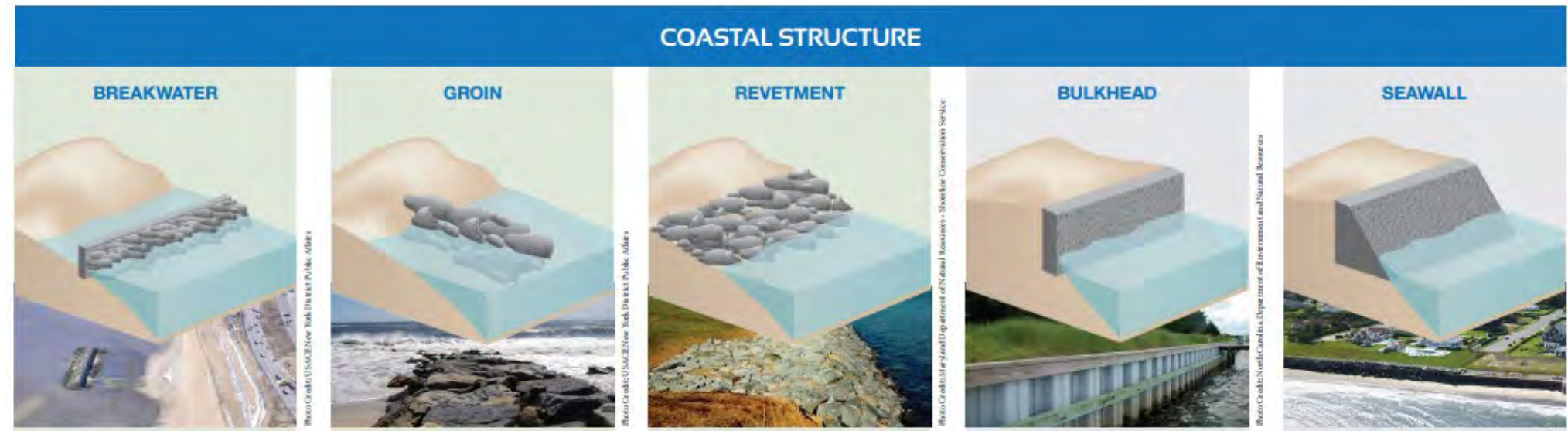
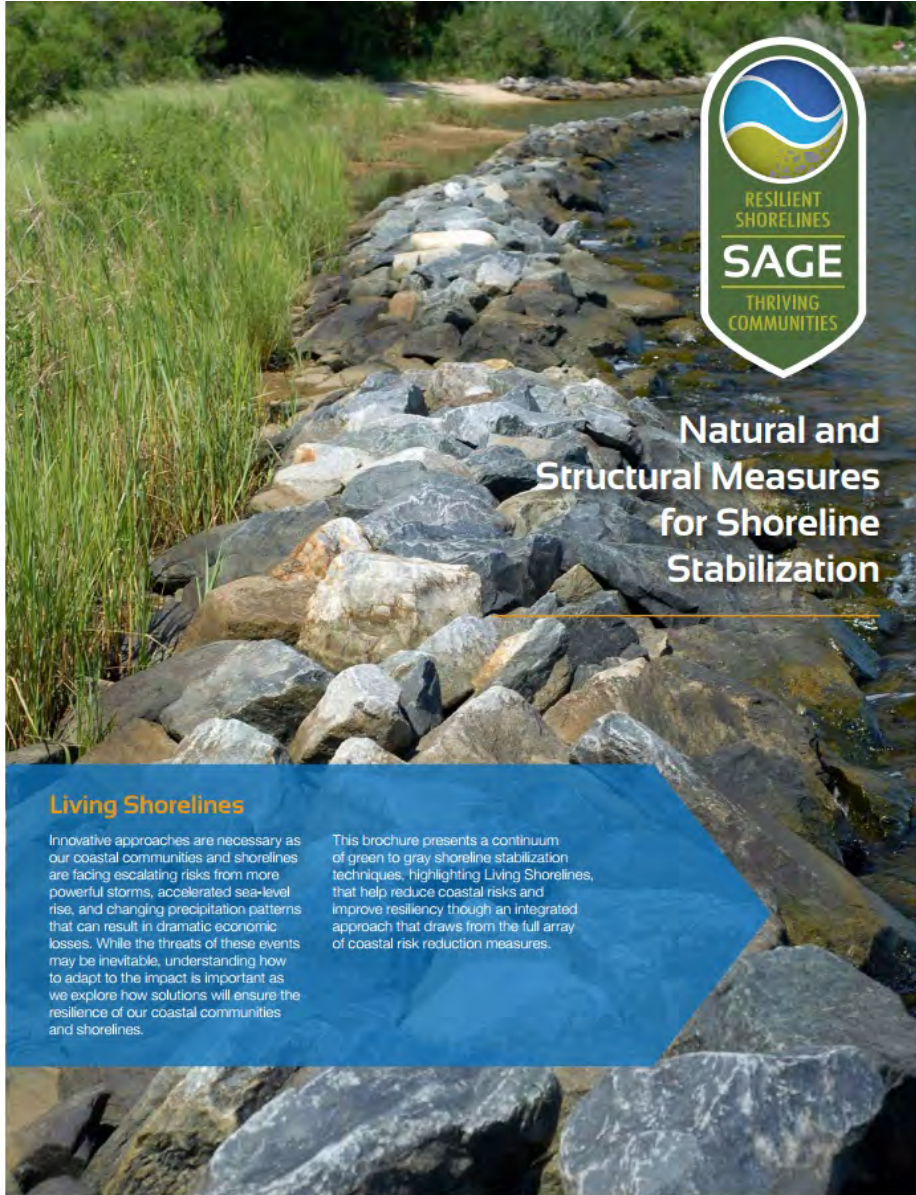
EXISTING CONDITIONS

A COASTAL BALANCING ACT



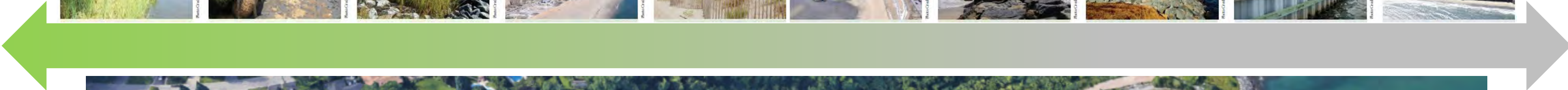
WHAT COULD BE

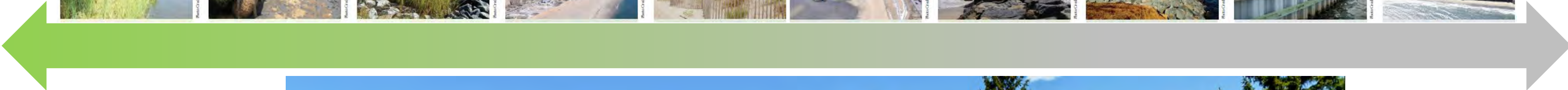
TYOLOGIES FOR CONSIDERATION





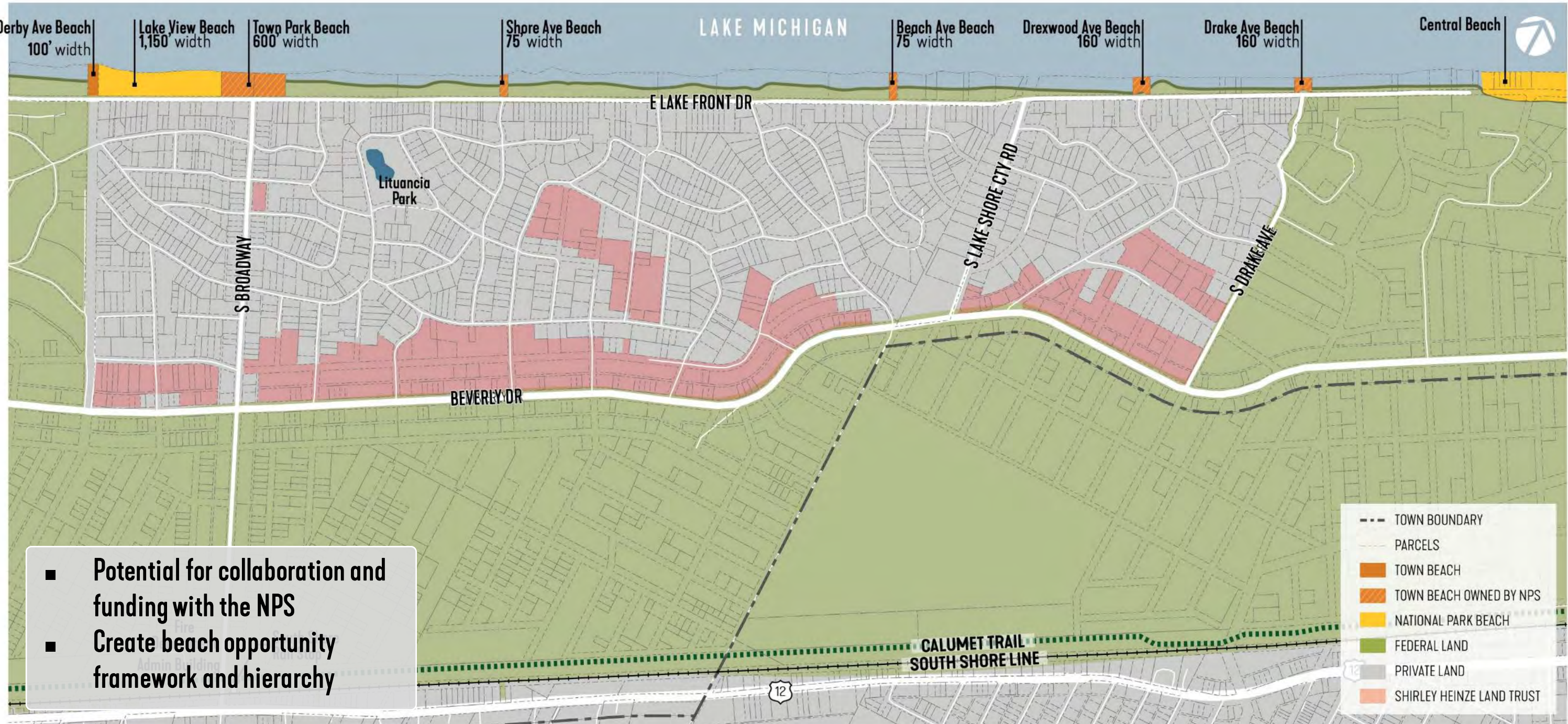






BEACHES

WHO MANAGES THE BEACHES?



ECOLOGY | STORMWATER

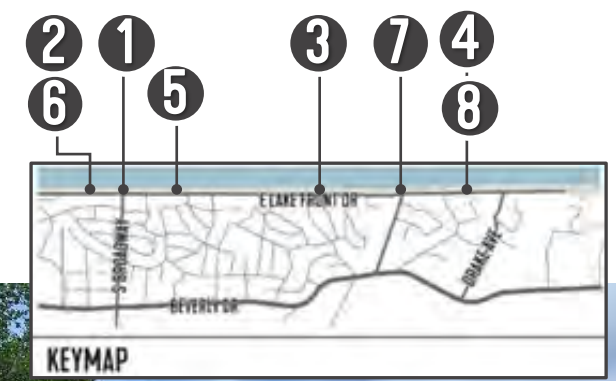


- Improved stormwater management along E Lakefront Dr
- Utilize existing roadway profile and upland space for targeted improvement areas
- Improve water quality through Derby Creek
- Manage erosion from lake & runoff
- Address existing exposed outfalls

LOW VULNERABILITY	WATERSHED BOUNDARY
MODERATE VULNERABILITY	DRAINAGE FLOW PATTERN
HIGH VULNERABILITY	OPPORTUNITIES
EXISTING STORM INLET	STORMWATER IMPROVEMENT AREA
EXISTING OUTFALL	ENHANCED CULVERT

STORMWATER

EXISTING CONDITIONS



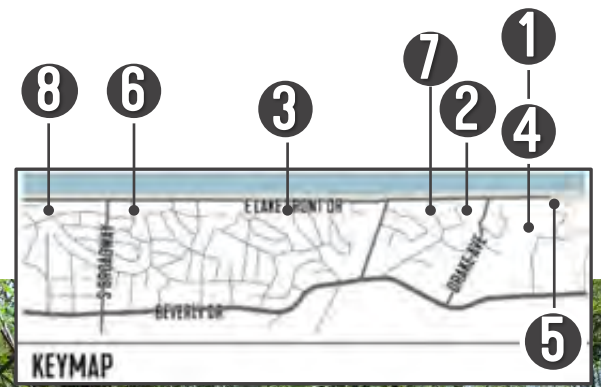
ECOLOGY | ECOLOGY & HABITAT



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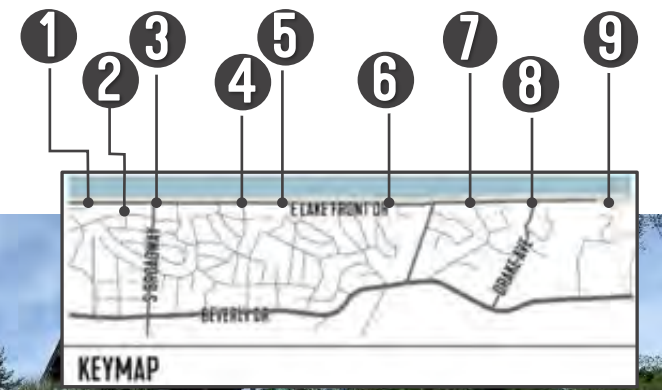
ECOLOGY AND HABITAT

EXISTING CONDITIONS



BEACHES

OPPORTUNITIES ANALYSIS



1 | DERBY AVE BEACH



2 | LAKE VIEW BEACH



3 | TOWN PARK BEACH



4 | SHORE AVE BEACH



5 | INFORMAL BEACH



6 | BEACH AVE BEACH



7 | DREXWOOD AVE BEACH



8 | DRAKE AVE BEACH

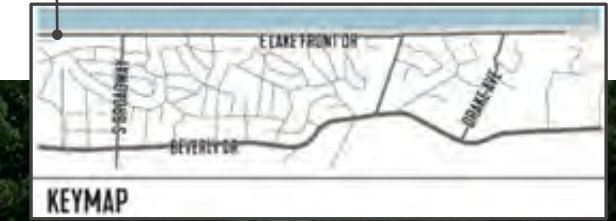


9 | CENTRAL BEACH

BEACHES | DERBY AVE ①

OPPORTUNITIES ANALYSIS

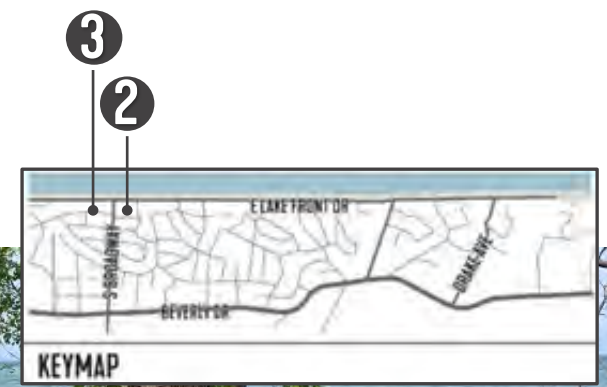
①



- A WAYFINDING/INTERPRETIVE SIGNAGE**
- B UPLAND STORMWATER TREATMENT**
 - Improved stormwater biofiltration
 - Provide upland migratory bird habitat
- C AQUATIC HABITAT ZONE**
- D IMPROVED BEACH CONNECTION**

BEACHES | LAKE VIEW / TOWN PARK 2 3

OPPORTUNITIES ANALYSIS



(2) Town Park | Upland



(3) Lake View | Upland



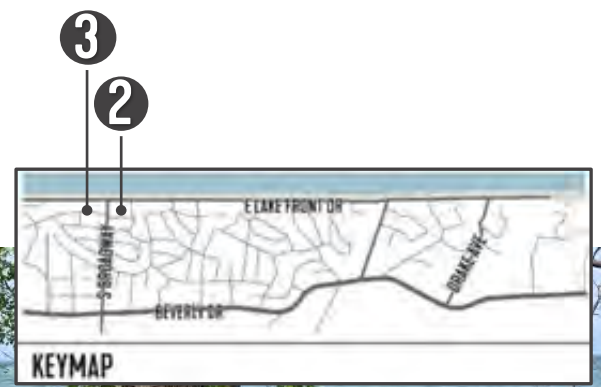
(2) Town Park | Beach



(3) Lake View | Beach

BEACHES | LAKE VIEW/TOWN PARK 2 3

OPPORTUNITIES ANALYSIS



2

- Stormwater treatment
- Target areas to re-establish native vegetation
- Upgraded beach access and amenities
- Wayfinding/interpretive signage

(2) Town Park | Upland



3

- Updated site amenities & wayfinding
- Selective vegetative clearing and overlook enhancement
- Upgraded beach access

(3) Lake View | Upland



2

- Shoreline stabilization & outflow improvements
- Seasonal kayak/small craft storage
- Improved native vegetation

(2) Town Park | Beach



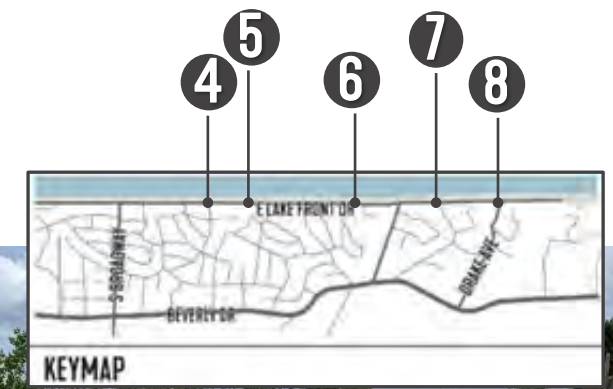
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- Shoreline stabilization
- Selective vegetative clearing

(3) Lak View | Beach

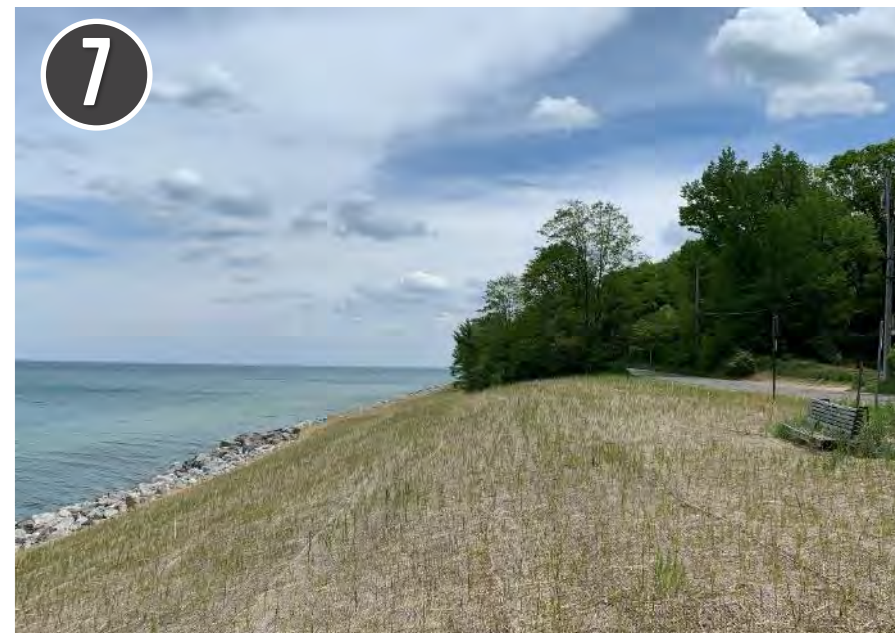
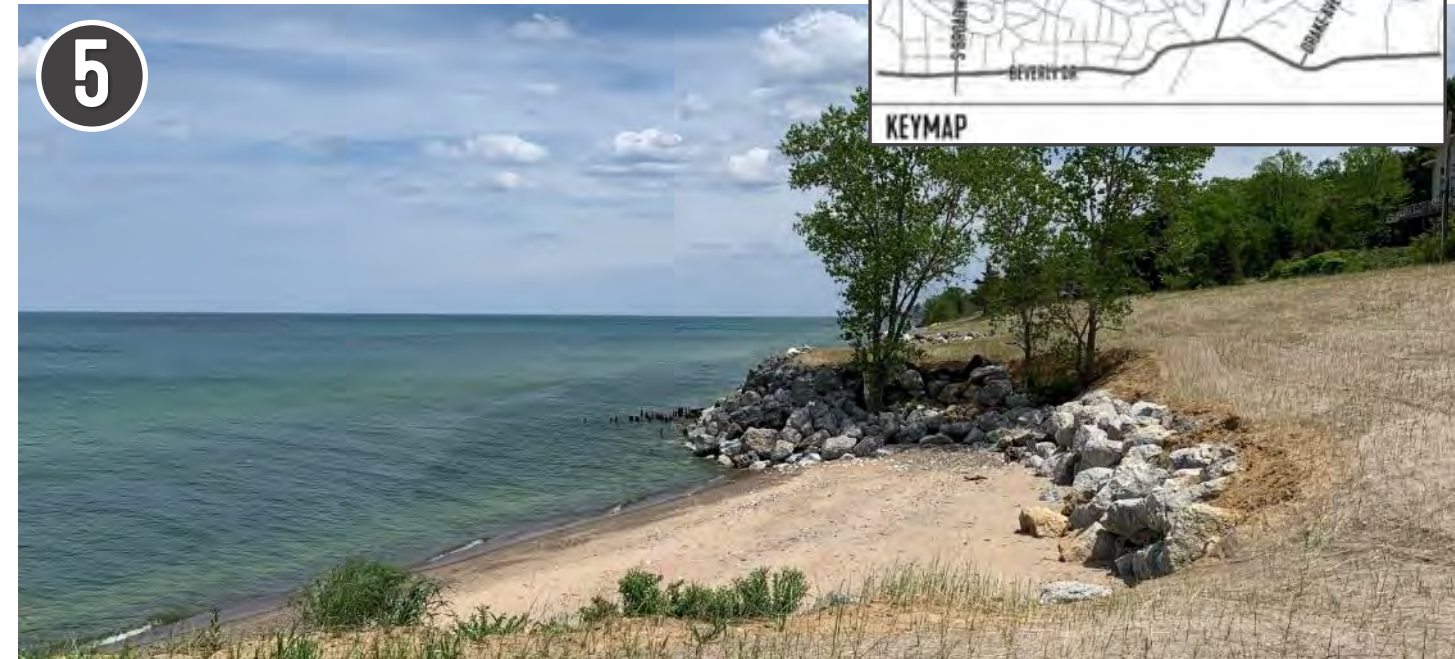
BEACHES | POCKET BEACHES 4 5 6 7 8

OPPORTUNITIES ANALYSIS



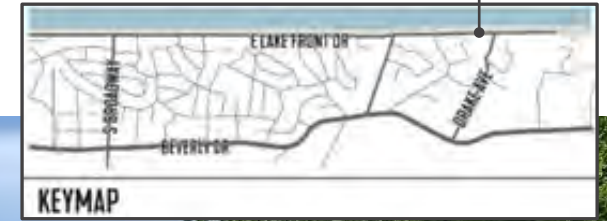
4

- Alternative beach types
- Restore and enhance public water access and activities
- Overlooks, wayfinding, and public amenities
- Green infrastructure and habitat restoration
- Shared upland amenities



BEACHES | EAST END 8

OPPORTUNITIES ANALYSIS



- Soften road edge condition
- Larger stormwater mitigation strategy
- Improve overall aesthetics and enhance pedestrian experience
- Habitat connection

EAST END STUDY

BERNAL'S LANDSCAPING PROPOSAL



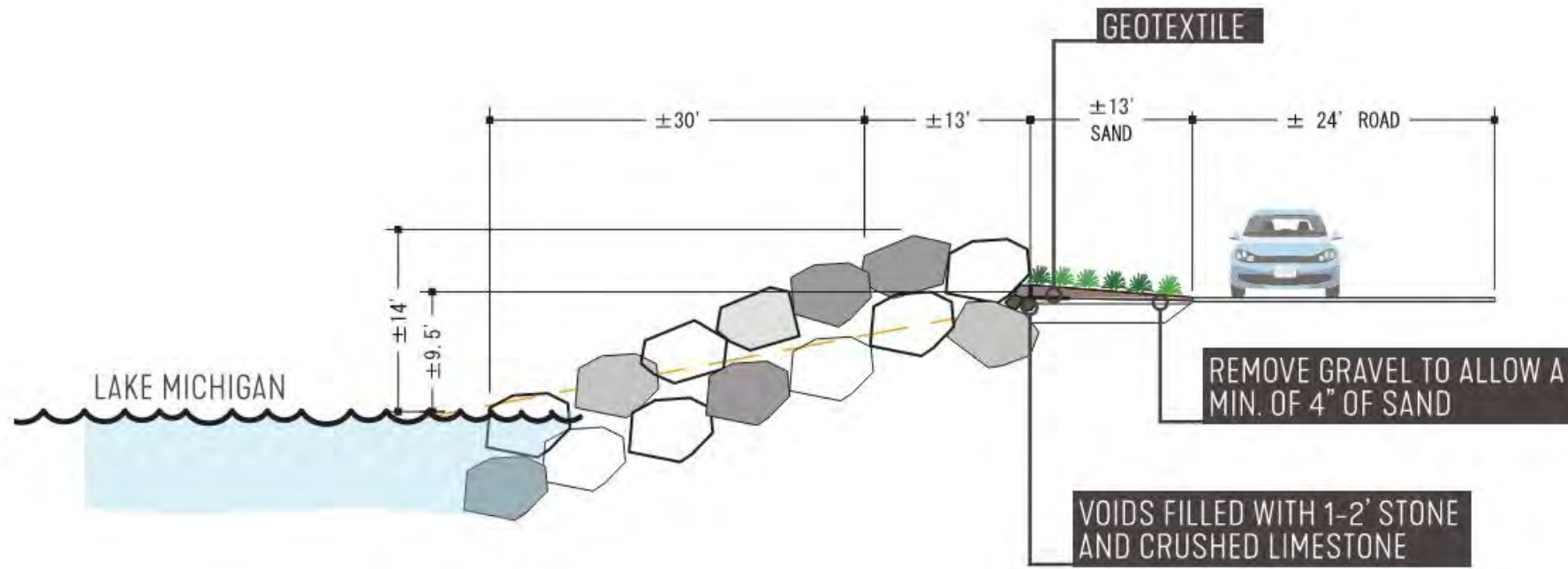
CRITERIA

RANKING (1st-3rd)

CRITERIA	1st	2nd	3rd
Capital Cost	1st	2nd	3rd
Durability	1st	2nd	3rd
Maintenance	1st	2nd	3rd
Stormwater	1st	2nd	3rd
Car Deterrent	1st	2nd	3rd
Aesthetics	1st	2nd	3rd
Habitat	1st	2nd	3rd
Establishment Timing	1st	2nd	3rd

3

OVERALL RANK



EAST END STUDY

ROCKY DUNESCAPE



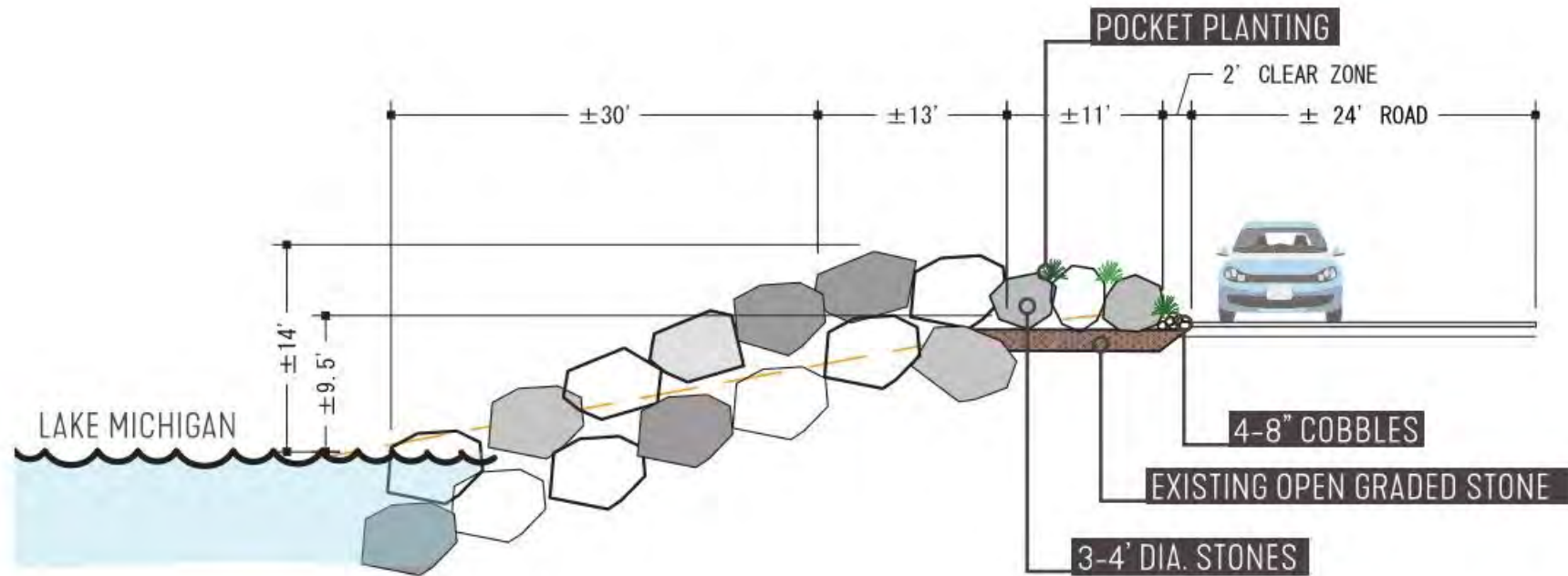
CRITERIA

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Establishment Timing	1st	2nd	3rd

2

OVERALL RANK



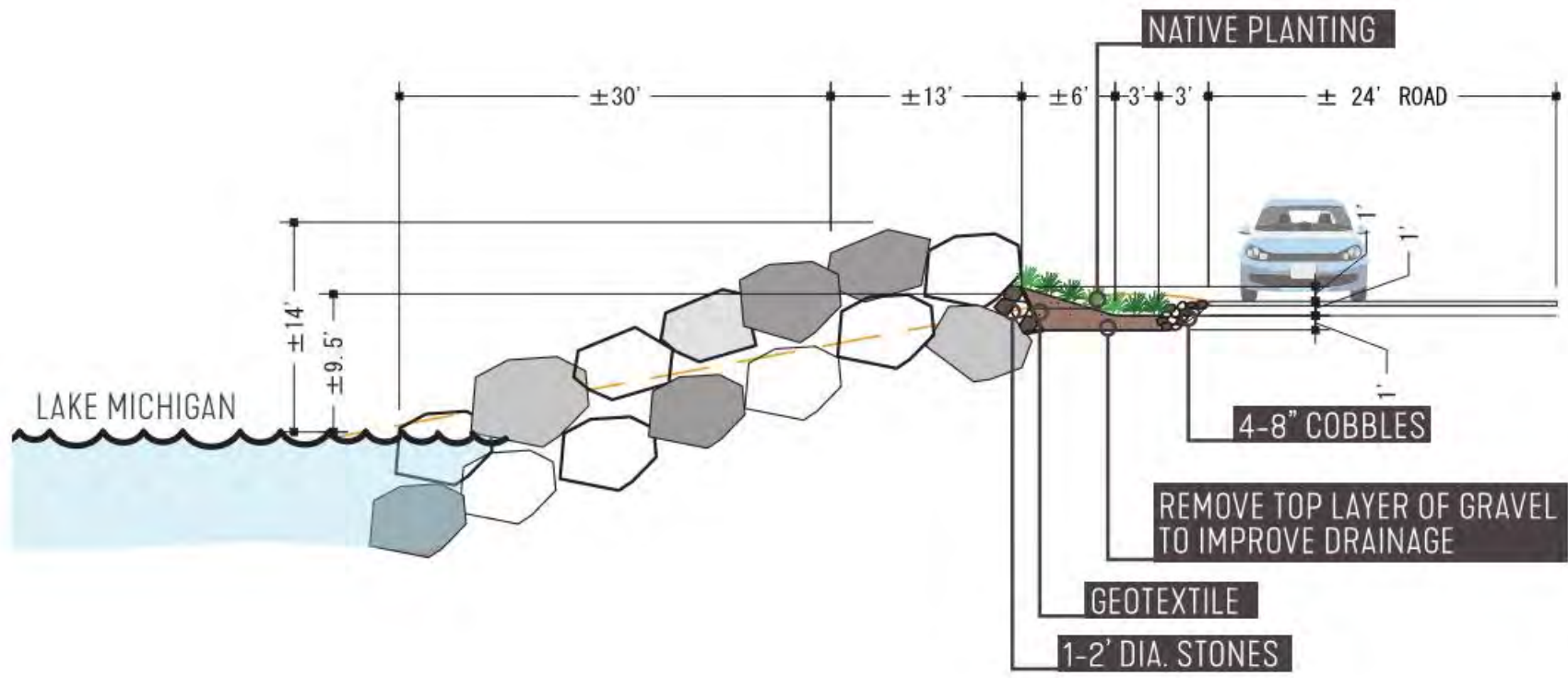
EAST END STUDY

SWALE



CRITERIA	RANKING [1st-3rd]		
Capital Cost	1st	2nd	3rd
Durability	1st	2nd	3rd
Maintenance	1st	2nd	3rd
Stormwater	1st	2nd	3rd
Car Deterrent	1st	2nd	3rd
Aesthetics	1st	2nd	3rd
Habitat	1st	2nd	3rd
Establishment Timing	1st	2nd	3rd

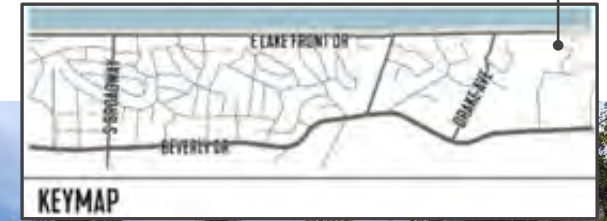
1
OVERALL RANK



BEACHES | CENTRAL 9

OPPORTUNITIES ANALYSIS

- Adjacent regional connection, i.e. Central Beach, Mt Baldy, Michigan City
- Larger beach offers unique recreation and gathering opportunities
- Additional visitor amenities
- Space to accommodate natural process



OPPORTUNITIES

WHAT DO YOU WANT MORE OF?



1| Swimming



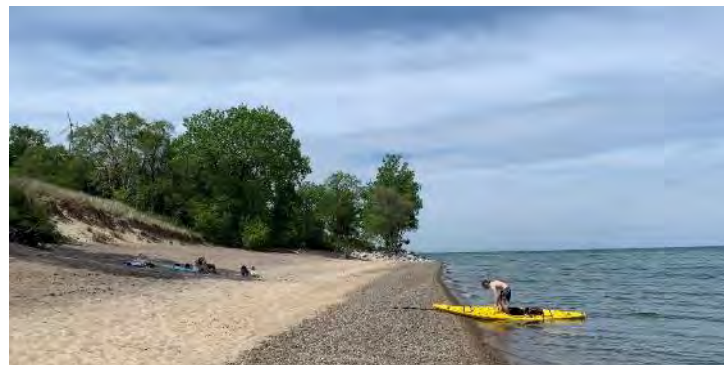
2| Social Gathering



3| ADA Access



4| Biking



5| Paddle Craft



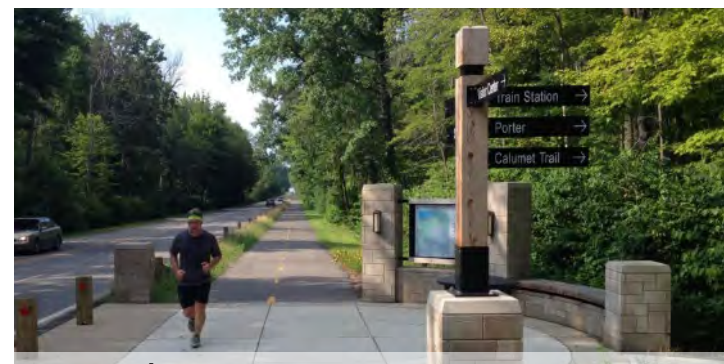
6| Nature Viewing



7| Parking



8| Hiking/Walking Trails



9| Wayfinding/Signage



10| Overlooks/Seating



11| Visitor Amenities



12| Native Landscape

Photo Credits: South Shore CVA | Go Valley Kids | Pend Oreille Co. Library District | Chez moi | Visit St. Augustine

GRANTS AND FUNDING OPPORTUNITIES

TRACKING FOR PLANNING AND CONSTRUCTION OPPORTUNITIES

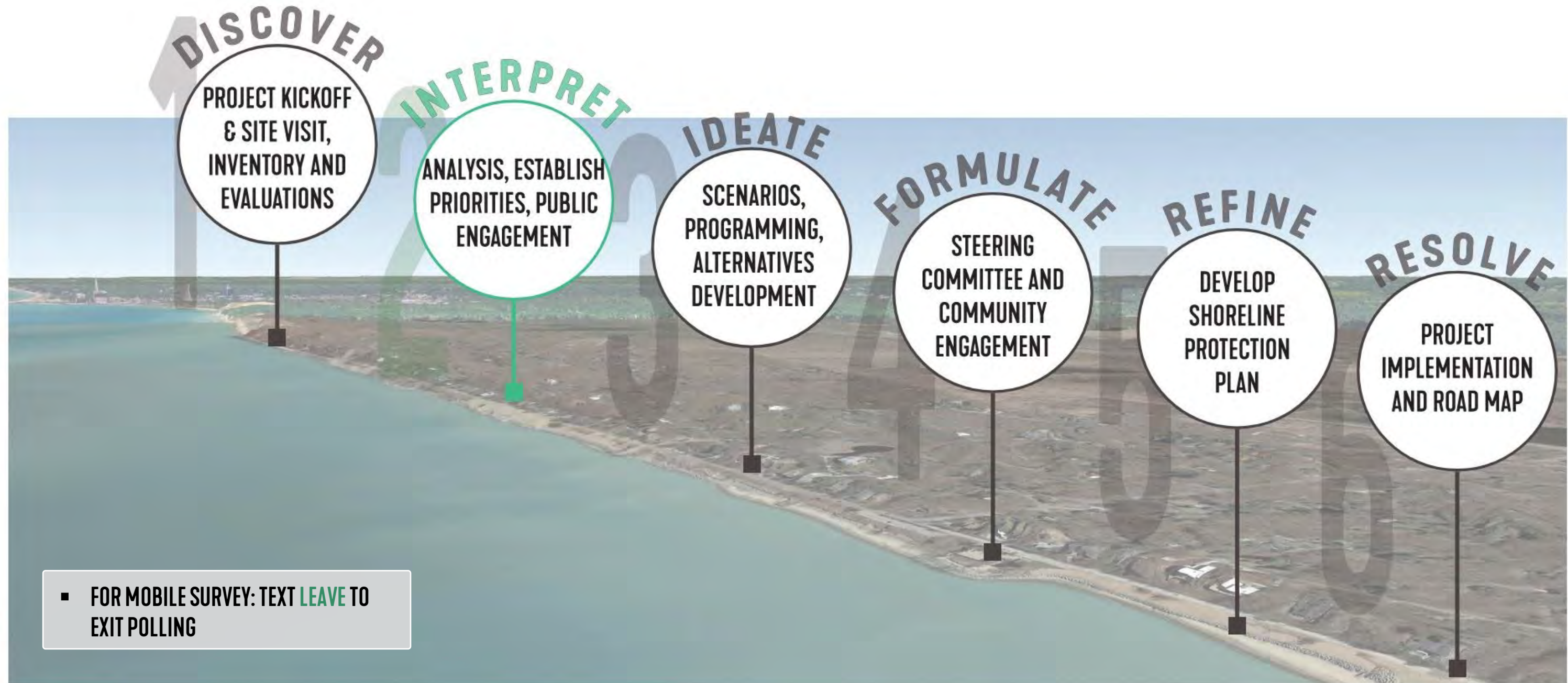


NEXT STEPS

For more information go to: beverlyshoresindiana.org

Take this survey again or share it:

<https://PollEv.com/surveys/qce490XuCJyjOBFsMCNYL/respond>



- FOR MOBILE SURVEY: TEXT LEAVE TO EXIT POLLING

A sunset scene over a body of water with reeds in the foreground. The sun is low on the horizon, creating a bright reflection on the water. The sky is a mix of orange and yellow. The reeds are dark silhouettes against the lighter background.

THANK YOU!

PUBLIC INFORMATION MEETING 1