

Sheridan Park Bluffs Community Discussion

May 19, 2026



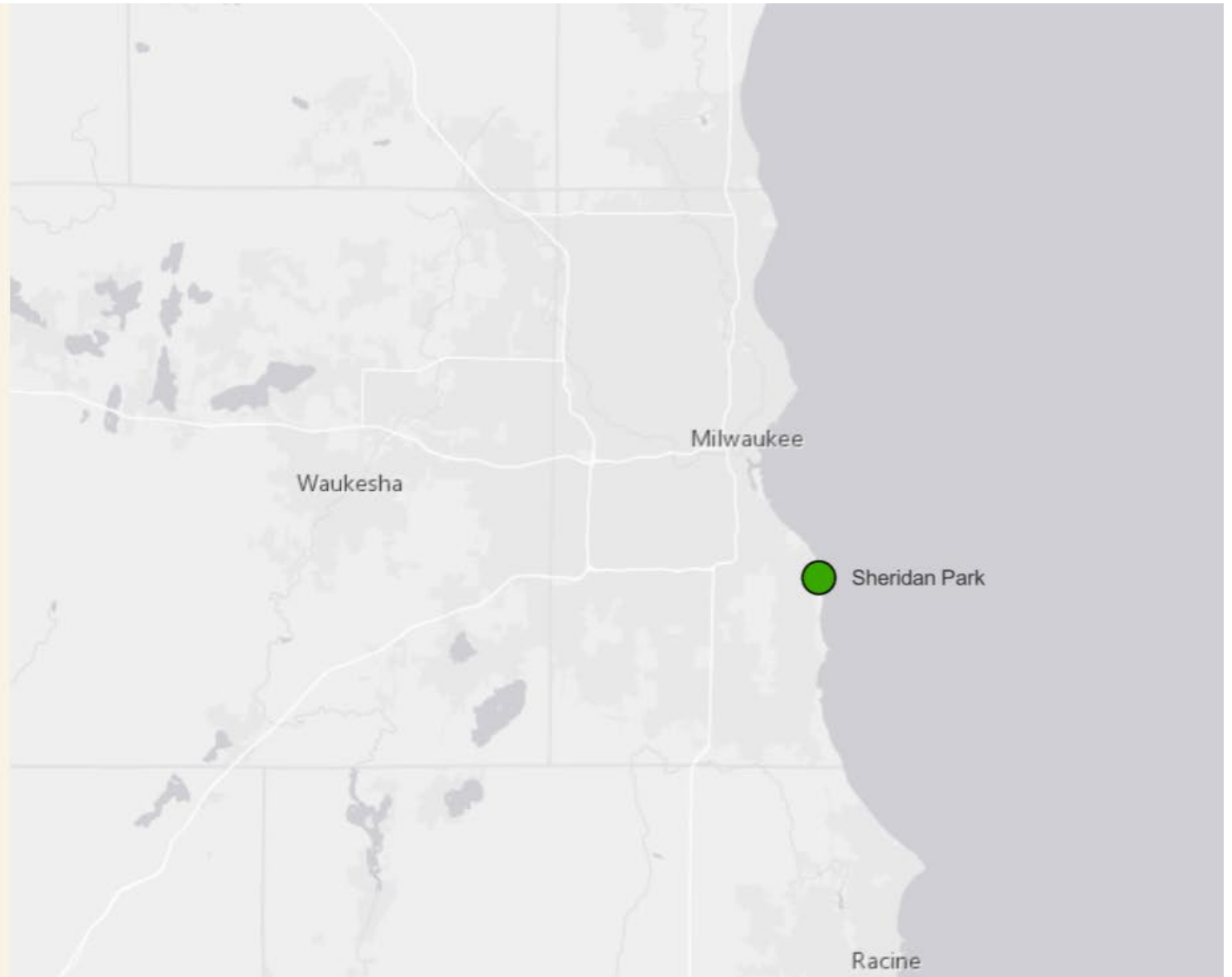
Spring 2024 Milwaukee County Bluffs
Resolution Studio



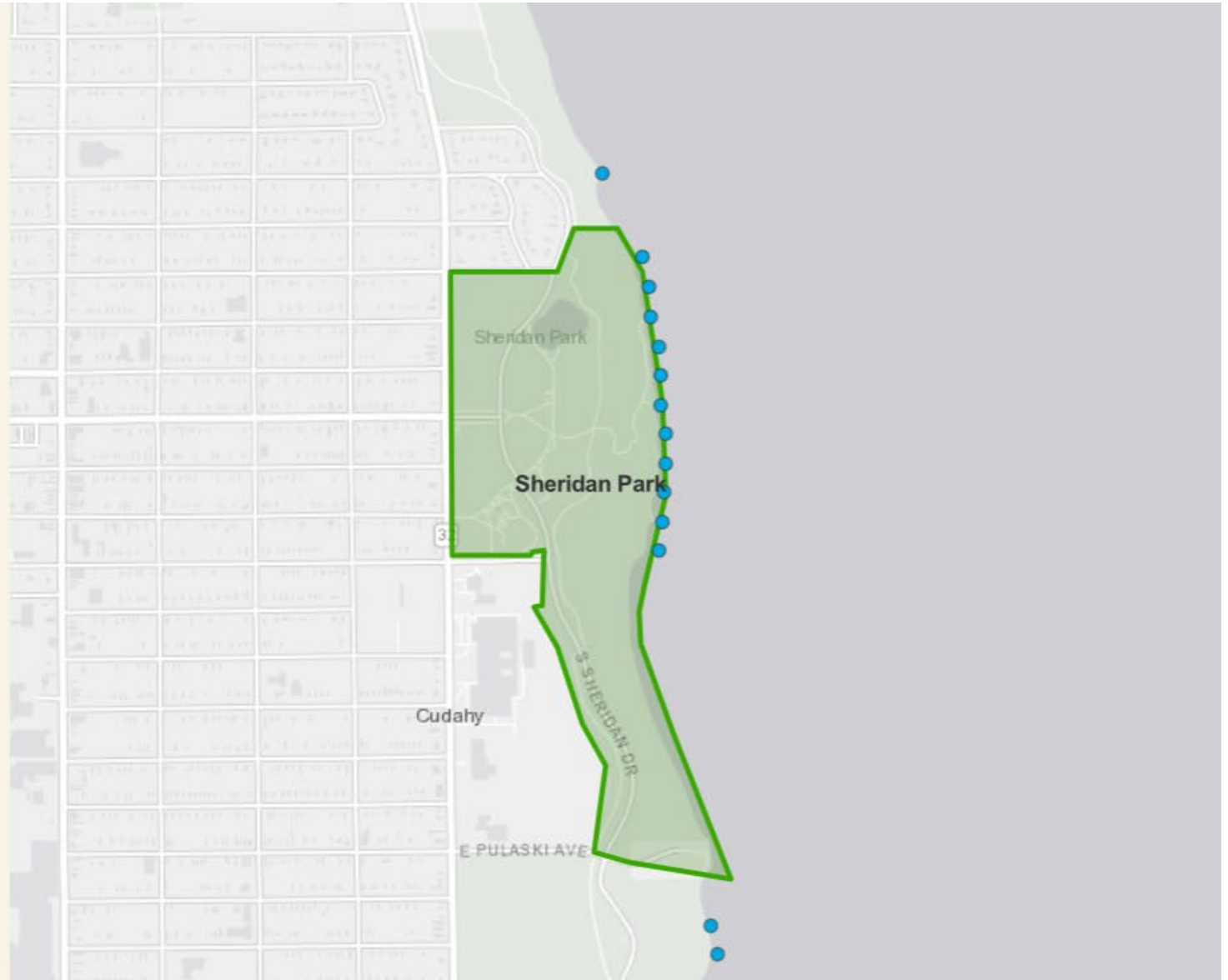
Sheridan Park was founded in 1911 when local businessman Patrick Cudahy donated 40 acres of his land to the city.



In 1931, Sheridan Park was integrated into the Milwaukee County Parks System.



Two years later, in 1933, the Civilian Conservation Corps constructed eleven groins in attempt to reduce coastal erosion.



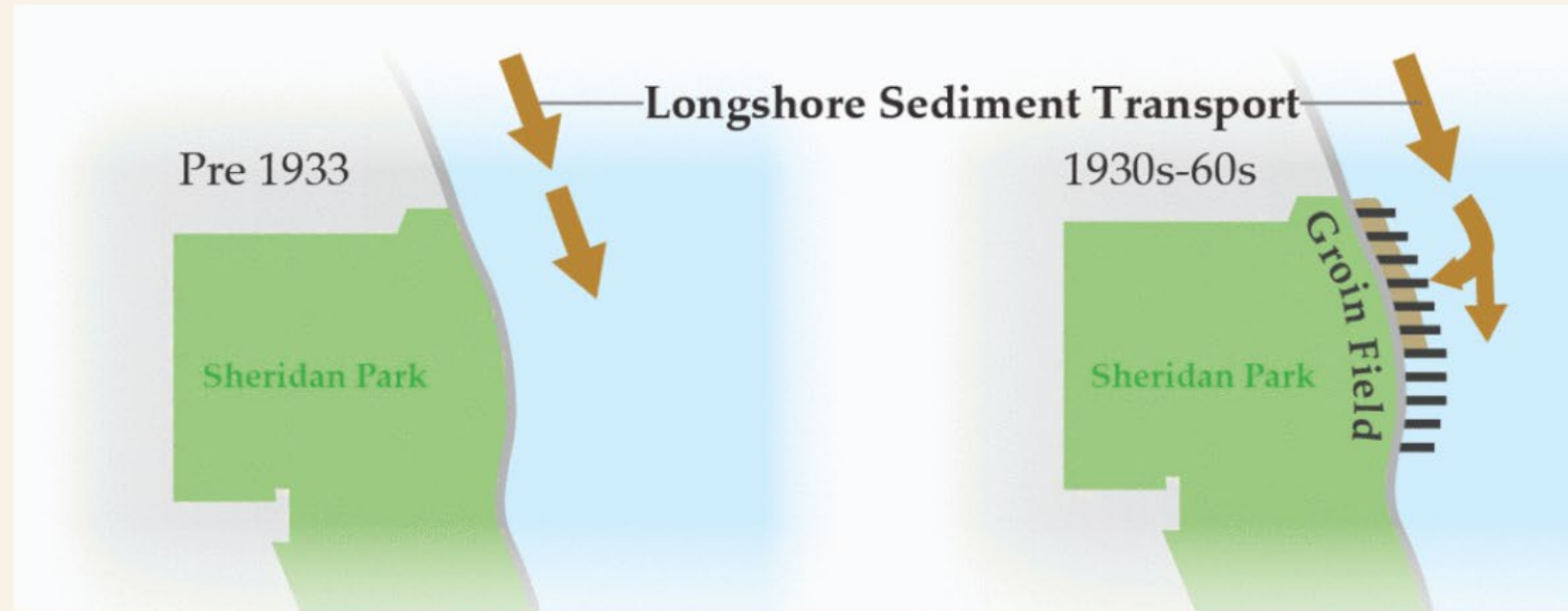
A groin is a shoreline structure which runs perpendicular to the coastline. Groins are designed to trap sediment to protect beaches and bluffs from erosion by maintaining or growing the shore width. Groin fields consist of more than one groin.



1930s - 1960s

For the next thirty years until the 1960s, the beach width within the groin field for the most part almost doubled and peaked in 1963 at around 100 feet wide.

The increase is thanks to the groins which trap sediment facilitated by longshore sediment transport (LST). LST is the movement of sediment by wave action along the coast. Off the coast of Sheridan Park, waves primarily drive LST from north to south.





However, the groin field interrupts longshore sediment transport to down-drift areas such as the shadow and periphery zone.

For this reason, the coast down-drift of the groin field is starved of sediment. In the case of Sheridan Park, a 1000 foot stretch called the "Shadow Zone" immediately south of the groin field eroded rapidly.

Bluff North of the Sheridan Groins

The bluff north of the groins is also experiencing erosion. The green line in this photo is the 2013 beach limits. The aerial is from 2024. It is possible that the 54" storm sewer and outfall are acting as a groin, and creating a shadow zone parallel to Sheridan Drive.



April 2026 Storm

Winds from the east caused trees on the crest of the bluff to fall west, landward. This caused the soil under those root systems to fall.



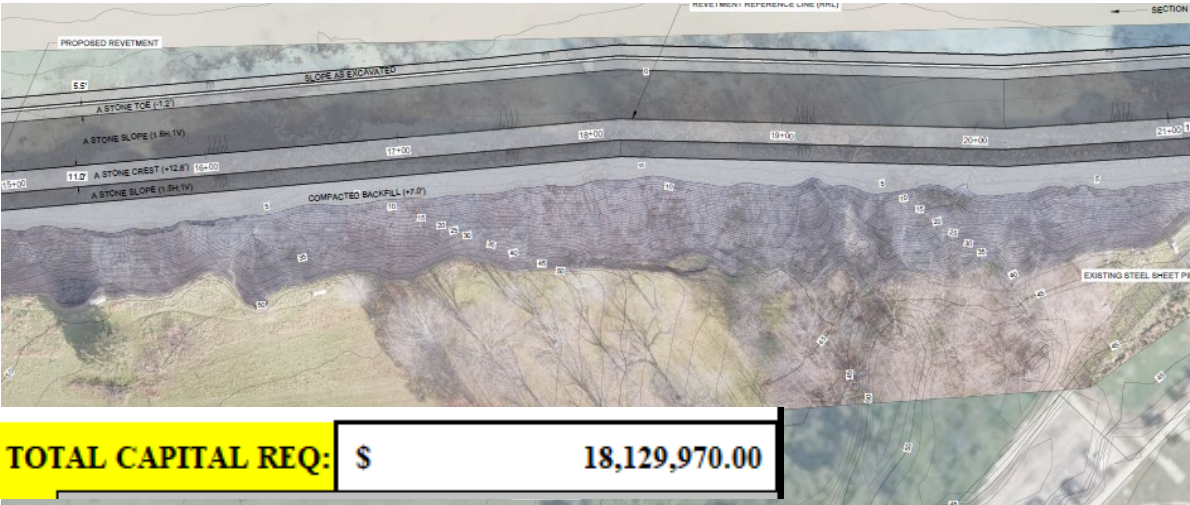
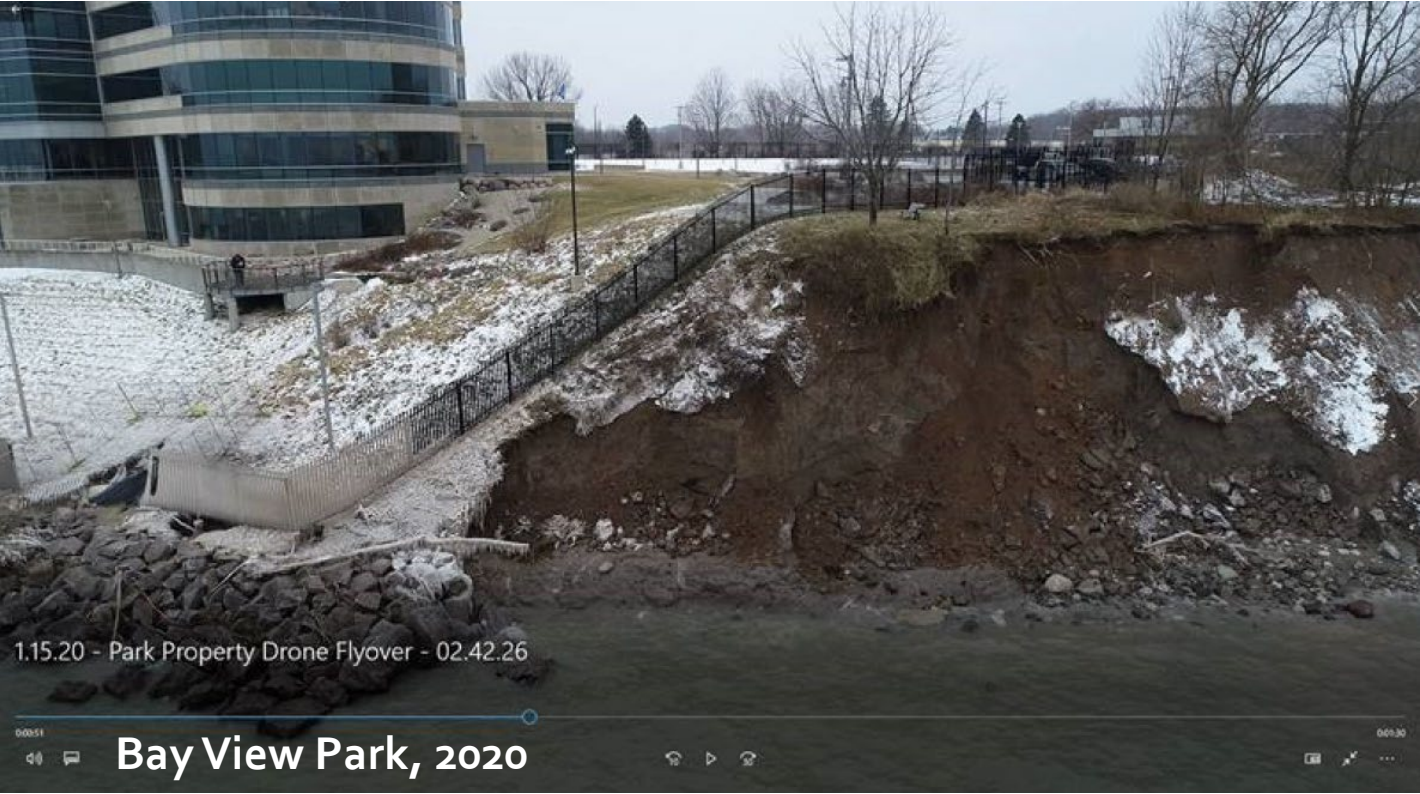
History of Coastline Damages

- Past declared storm disasters in 2008, 2010, and 2020. FEMA funding is not available for bluff projects, even though storm disasters are declared.
- Continuous coastline impacts cause degradation to bluffs.





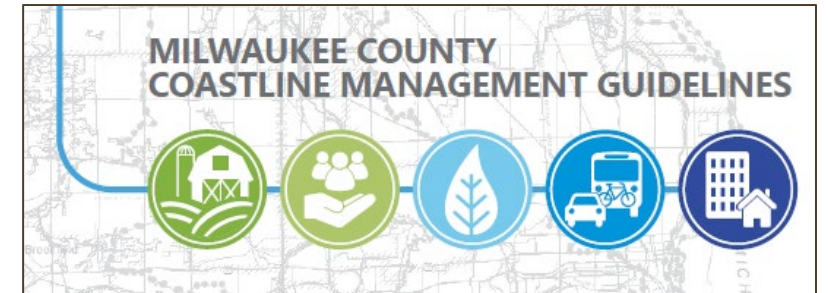
Warnimont Park



2026 TOTAL CAPITAL REQ:	\$	18,129,970.00
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2019 Grant Funding - WI Coastal Management Program Grant

- File 19-342 authorized grant funding
 - Coastal Asset Inventory
 - Coastal Management Guidelines



- *Protect Milwaukee County's financial investment in County-owned assets within the Lake Michigan Coastline Management Zone.*
- *Protect the ecology, resources, and natural character of County-owned lands within the Lake Michigan Coastline Management Zone.*
- *Provide efficiency and consistency when reviewing proposals for a scope of work to be completed within the Lake Michigan Coastline Management Zone.*



Asset Inventory

- 477 Assets inventoried.
 - 13% of assets identified were classified as being in poor condition.
 - 22% assets were deemed highly vulnerable.
 - The assets with the highest risk were the beaches, groins, and parking lots.
 - Different infiltration basins, revetments, and parking lots in the vicinity of McKinley Marina all appeared in the top 40 most at risk.
- The total Milwaukee County coastal asset valuation is estimated at \$2,927,425,276 with approximately 50% of the cost attributed to bluff stabilization needs.

FINAL

Milwaukee County Coastal Resources Inventory



Prepared by

Milwaukee County, Environmental Services Unit

In Partnership with Wisconsin Coastal Management Program
and
GZA Environmental, Inc.

Milwaukee County Project 5741-19805

Coastal Resilience Grant No. 017.CR08



OCTOBER 7, 2020

Asset Inventory Evaluations

Asset Type	Sub Asset Type	Number of Assets	Value Type	Value Cost	Value Source	Sub Asset Valuation Total
Athletic Courts	Stand-alone volleyball courts	1	Replacement	\$5,000/each	Capital Planning	\$5,000
	Tennis Courts	1	Replacement	\$115k/each		
	Track	1	Replacement	\$100k/each		
Athletic Fields	Soccer	4	Replacement	\$1,800/each		
	Multi-Use	2	Replacement	\$1,800/each		
	Archery	1	Replacement	\$1,800/each		

Bluffs:

Vulnerability Assessment:

Metric	High	Medium	Low	Weight
Distance from Shore	<100 ft	100-350 ft	>350 ft	25%
Shoreline Protection	Rated Poor or None	Rated Fair	Rated Good	25%
Recession Sum (5 years) ⁴	> 1 ft	0.5-1 ft	< 0.5ft	30%
Change in Soil Volume	>7,500 ft ³	0 – 7,500 ft ³	<0 ft ³	20%

Table 8. Vulnerability Metrics for Bluffs.

(A) Condition Value x (B) Vulnerability Value = Resiliency Rating

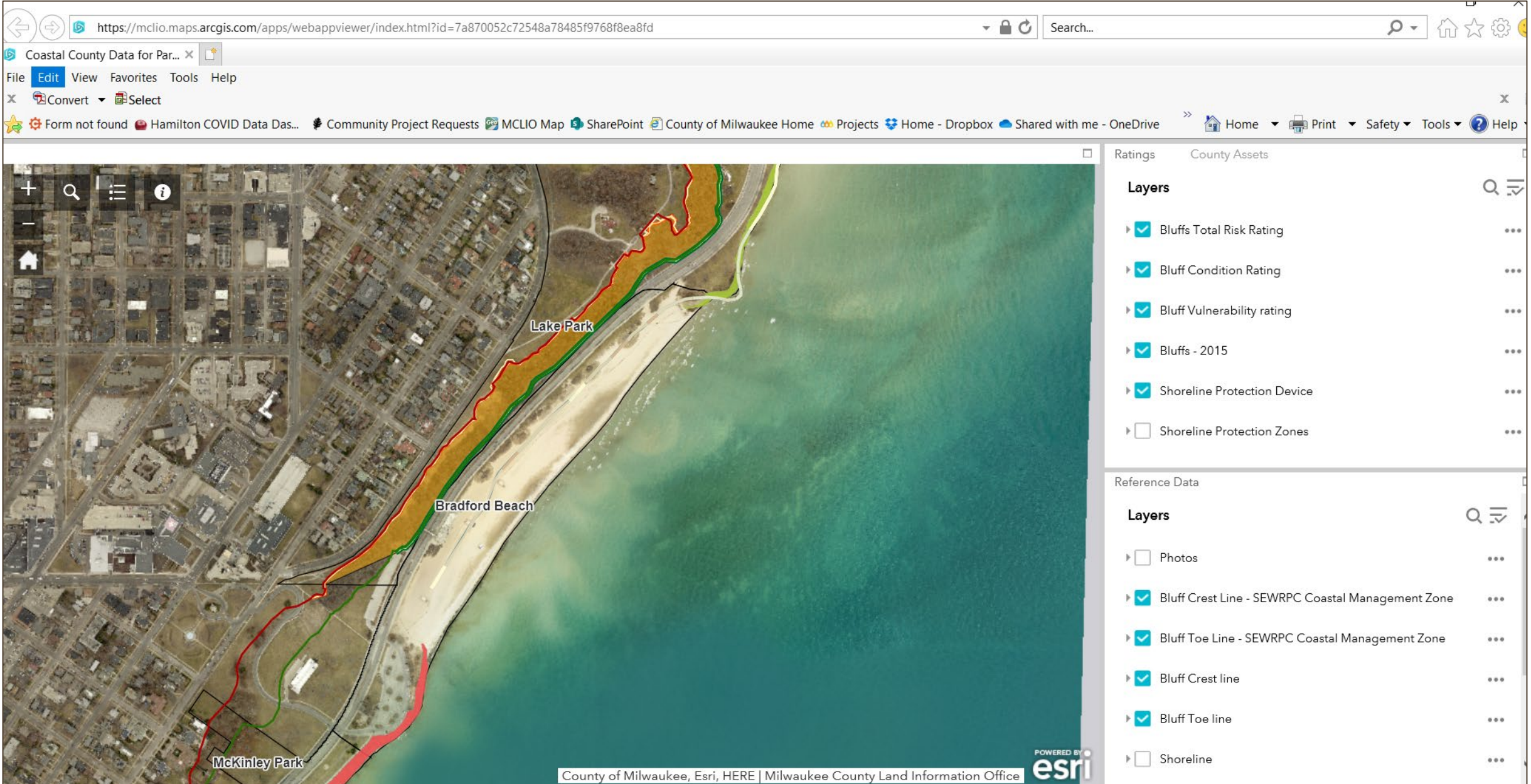
Where (A) and (B) are the weighting factors with high and poor scoring a 1, medium or fair scoring a 2, and low and good scoring a 3. NA conditions were considered a 3 for resiliency calculations.

Assets were grouped into three levels of priority, based on risk score:

- High Priority: Risk score below 4.5
- Medium Priority: Risk score between 4.5 and 6.74
- Lower Priority: Risk score 6.75 and above.

Shoreline Recession & Bluff Failure	High
Coastal Flooding	Moderate
Shore Protection Damage	Moderate
Beach Loss	Moderate
Beach Impairment	High
Port, Harbor, & Marina Damage	Moderate
Port, Harbor, & Marina Navigation Impairment	Moderate

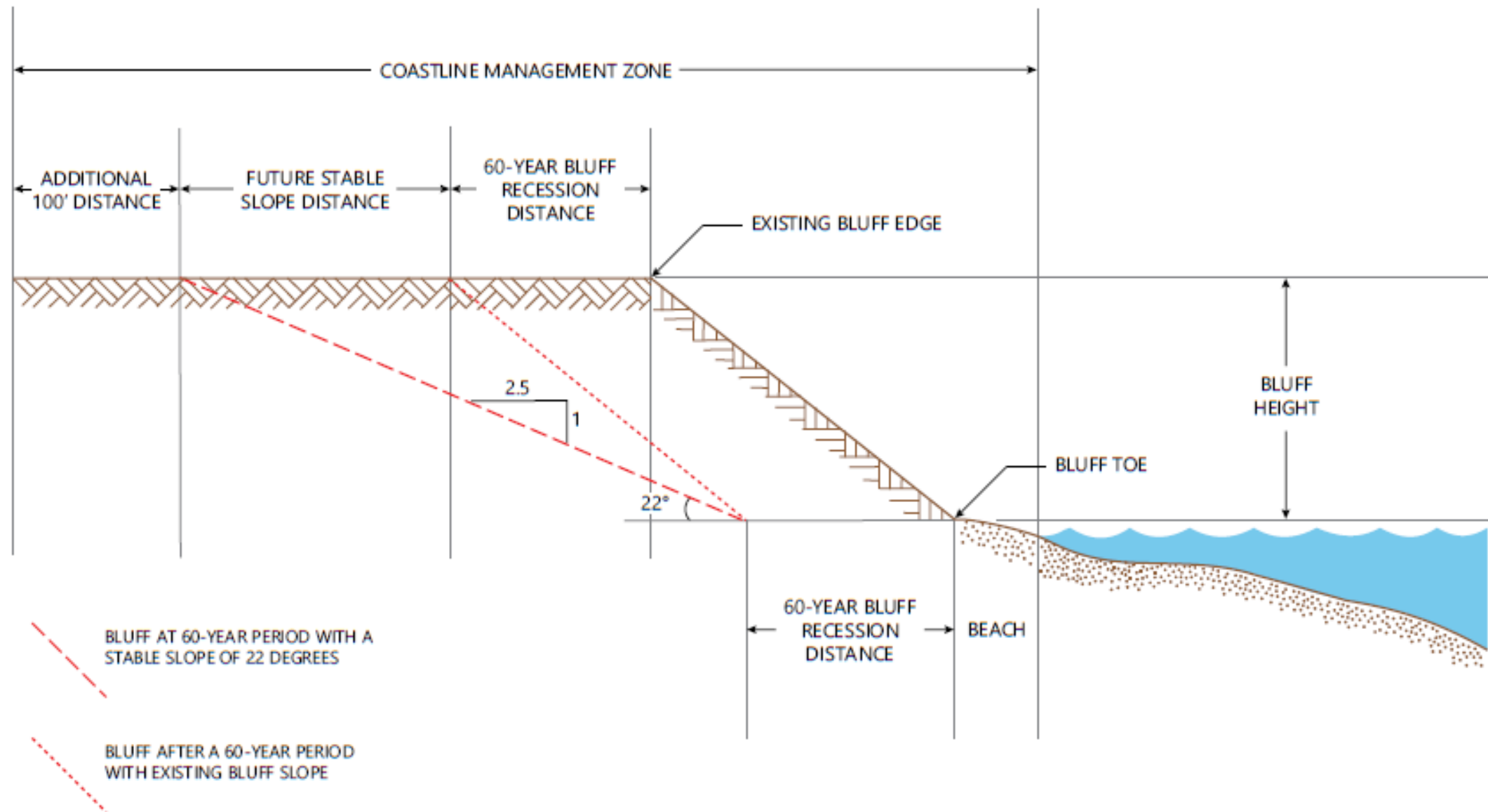
GIS Web App Data Tool



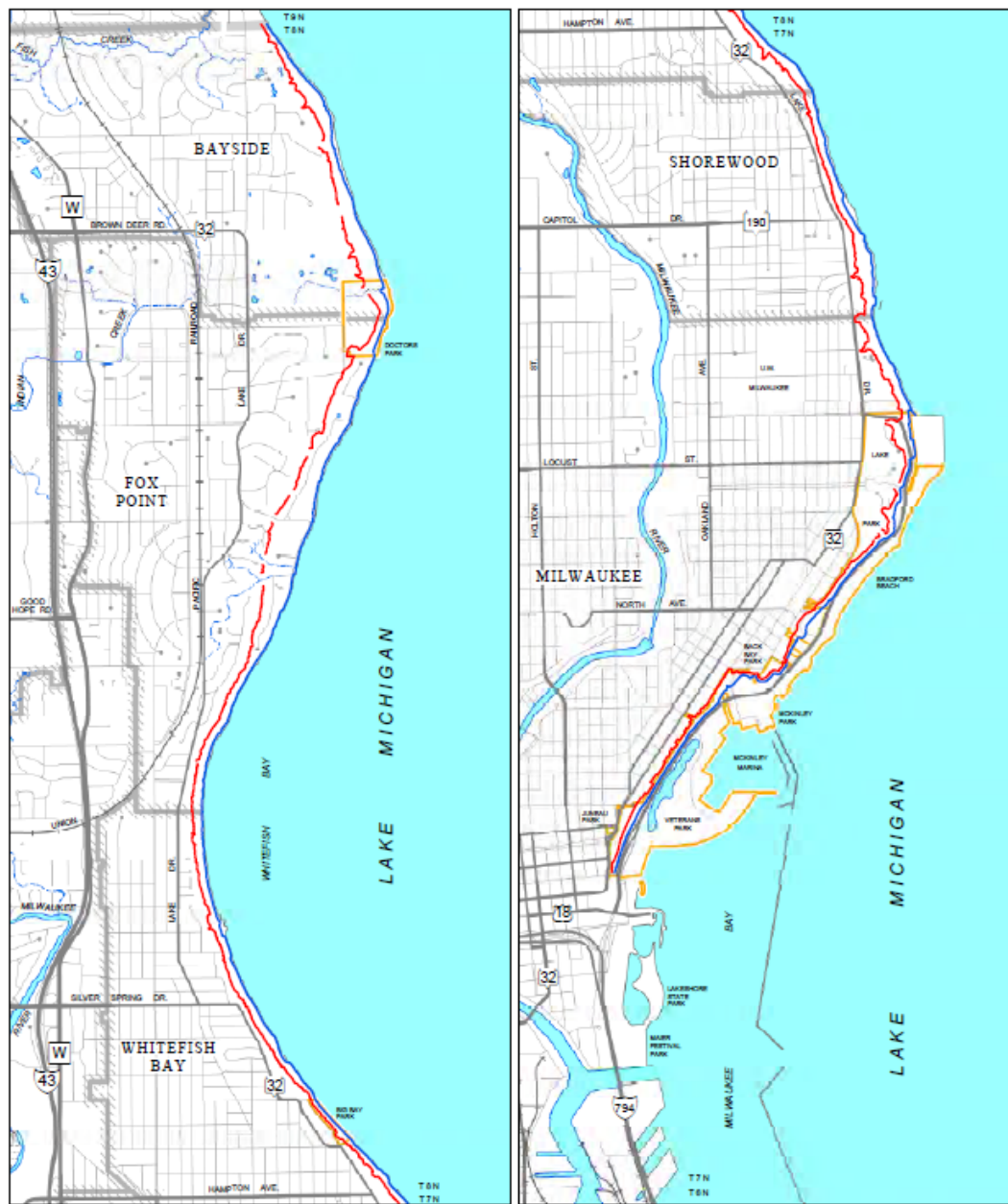
Coastline Management Zone (CMZ)

- Based on recommendations for bluff setbacks published by the University of Wisconsin Sea Grant Institute in 2008.
- **Projected 60-year bluff recession distance from the current bluff toe** (*calculated using a minimum recession rate of one foot per year — unless information revealed during the site analysis necessitates using a greater recession rate per year*)
- **Future stable slope distance** (*calculated from the existing bluff toe to the future stable bluff crest using the ratio of a one-foot vertical rise to a 2.5-foot horizontal run*)
- **Setback distance of 100** (*provides for uncertainties related to future recession rates, stable slope angles, the effect of nearby shore protection structures, fluctuations in Lake Michigan water levels, and other factors*)

Figure 3.1
Coastline Management Zone: 2020



Map 2.8
Approximate Bluff Crest and Bluff Toe Locations Along the Milwaukee County Lake Michigan Coastline



BLUFF CREST
BLUFF TOE
COASTLINE MANAGEMENT STUDY AREA

Note: Based on 2015 Lidar Topo but aligned in various locations to data provided to SEWRPC by Wisconsin Coastal Management Program

Source: University of Wisconsin Sea Grant Institute, Milwaukee County, and SEWRPC

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Milwaukee County Parks Bluffs Assessment



Background

Data

Analysis

Resiliency & Risk Map

Comparison Tool

Project Areas

Project Prioritization

LAKE MICHIGAN BLUFF REPAIRS



Spring 2024 Milwaukee County Bluffs
Resolution Studio



PROJECT TASKS

- Data Collection: Analyzed current bluff conditions
- Resiliency Assessment: Applied custom ranking methodology
- Risk Quantification: Calculated (financial) risk impact on land and structures
- Project Prioritization: Ranked shoreline by risk and project cost
- Mitigation Planning: Proposed strategies and designs for high-priority areas



Milwaukee County Parks Bluffs Assessment



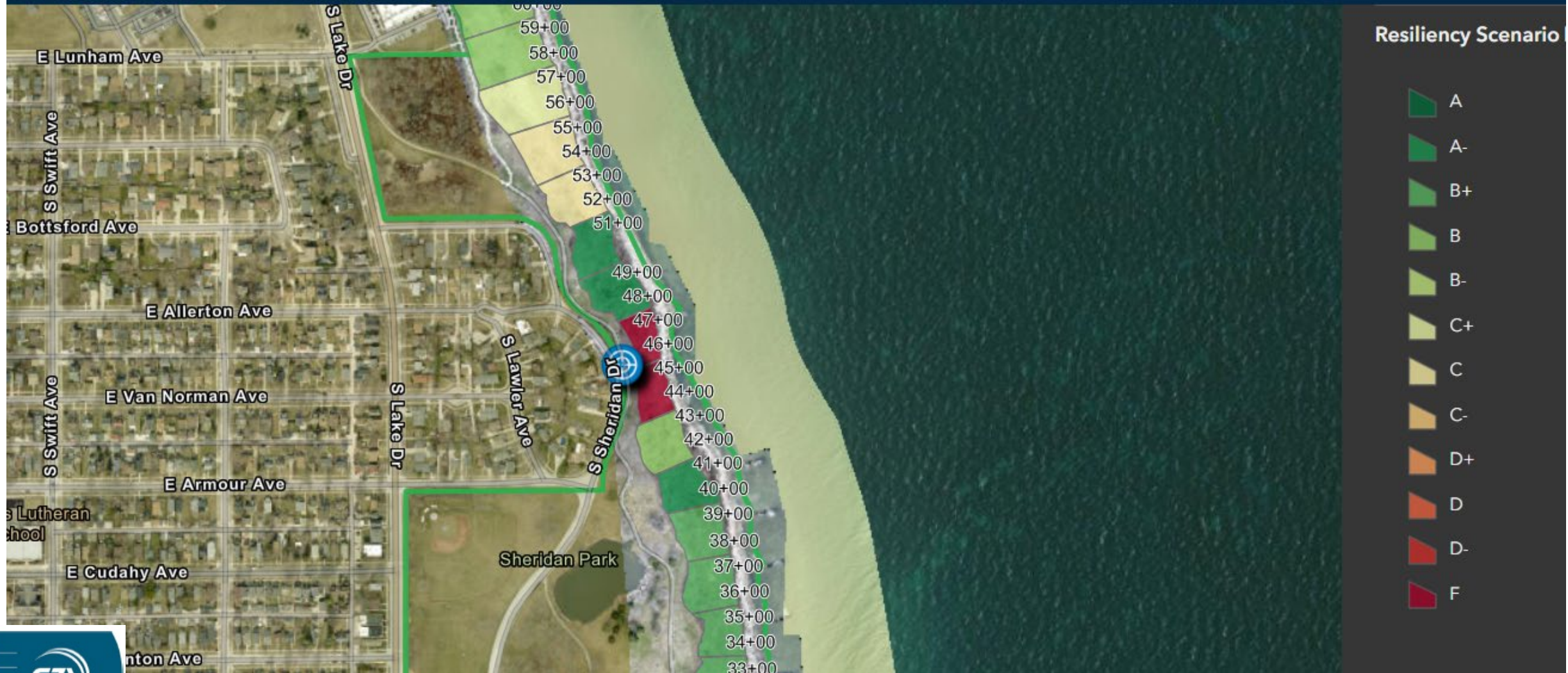
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Milwaukee County Parks Bluffs Assessment



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Project Prioritization

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McKinley

Juneau/Vets

Cupertino

South Shore

Bay View

Sheridan

Warnimont

Grant

Bender





Concept I: Install New Armor Stone Groins, Repair Existing Groins, and Install Barriers

Project Area 14, Concept I outlines improving shoreline stability by constructing two new armor stone groins and performing maintenance repairs on two existing concrete block groins (structure condition rankings of D- and F). The new and repaired groin beach cells would also be preloaded with sediment dredged from offshore sources to mitigate the potential for detrimental effects south of the project area. Additionally, installation of barriers at the top of the slope are also recommended. This Concept will not actively stabilize the bluff slope due to the presence of groundwater; however, the improved shoreline resiliency should also slow the bluff crest recession to mitigate risk associated with possible future slope movements.



Concept II at Project Area 14 utilizes a buttress fill constructed at the toe of the slope along with an armor stone revetment and riprap slope protection to improve shoreline stability. Like Concept I, a barrier is also recommended at the top of the slope to enhance safety. Compared to Concept I, this concept increases the stability of the slope, while also increasing the stability of the shoreline. However, this alternative may have more of an impact on the lake since the filled lakebed area would be increased. Additional analyses may be required to determine if the new revetment will have an impact on the adjacent groin structures.

Table 7-2. Total Cost Ranges for Project Area Concepts

Park	Project Area and Concept	Shoreline Length (Feet)	Low Estimate	Engineer's Estimate	High Estimate	25-Year Adjusted Estimate
Doctors Park	P1 C1	450	\$930,000	\$1,330,000	\$1,730,000	\$2,080,000
Doctors Park	P1 C2	450	\$890,000	\$1,270,000	\$1,650,000	\$1,990,000
Doctors Park	P2 C1	225	\$710,000	\$1,010,000	\$1,320,000	\$1,580,000
Doctors Park	P2 C2	225	\$1,130,000	\$1,610,000	\$2,090,000	\$2,510,000
Big Bay Park	P3 C1	1200	\$680,000	\$960,000	\$1,250,000	\$1,510,000
Big Bay Park	P3 C2	1200	\$2,210,000	\$3,150,000	\$4,100,000	\$4,920,000
Linnwood	P4 C1	1600	\$4,130,000	\$5,890,000	\$7,660,000	\$9,210,000
Linnwood	P5 C1	250	\$820,000	\$1,170,000	\$1,520,000	\$1,830,000
Linnwood	P5 C2	250	\$980,000	\$1,410,000	\$1,830,000	\$2,200,000
Bradford/ Lake Park	P6 C1	150	\$6,000	\$8,000	\$11,000	\$13,000
Bradford/ Lake Park	P6 C2	150	\$80,000	\$120,000	\$150,000	\$180,000
Bradford/ Lake Park	P7 C1	500	\$160,000	\$230,000	\$300,000	\$360,000
Juneau/ McKinley Park	P8 C1	3000	\$600,000	\$860,000	\$1,120,000	\$1,350,000
Cupertino Park	P9 C1	300	\$20,000	\$30,000	\$40,000	\$50,000
South Shore Park	P10 C1	1600	\$140,000	\$200,000	\$260,000	\$310,000
Bay View Park	P11&12 C1	2375	\$6,590,000	\$9,410,000	\$12,240,000	\$14,710,000
Bay View Park	P11&12 C2	2375	\$5,790,000	\$8,270,000	\$10,750,000	\$12,920,000
Sheridan Park	P14 C1	700	\$1,250,000	\$1,790,000	\$2,330,000	\$2,790,000
Sheridan Park	P14 C2	700	\$2,140,000	\$3,060,000	\$3,980,000	\$4,780,000
Sheridan Park	P15 C1	2250	\$860,000	\$1,220,000	\$1,590,000	\$1,910,000
Sheridan Park	P15 C2	2250	\$8,190,000	\$11,700,000	\$15,210,000	\$18,270,000
Warnimont Park	P16 C1	3100	\$25,730,000	\$36,760,000	\$47,790,000	\$57,420,000
Warnimont Park	P16 C2	3100	\$8,570,000	\$12,250,000	\$15,920,000	\$19,130,000
Warnimont Park	P17 C1	725	\$150,000	\$220,000	\$280,000	\$340,000
Warnimont Park	P18 & 19 C1	900	\$60,000	\$80,000	\$110,000	\$130,000
Grant Park	P20 C1	600	\$1,540,000	\$2,200,000	\$2,860,000	\$3,430,000
Grant Park	P20 C2	600	\$940,000	\$1,340,000	\$1,740,000	\$2,090,000
Grant Park	P21&22 C1	950	\$1,200,000	\$1,720,000	\$2,240,000	\$2,690,000
Grant Park	P21&22 C2	950	\$130,000	\$180,000	\$240,000	\$290,000
Grant Park	P23&24 C1	900	\$1,820,000	\$2,600,000	\$3,380,000	\$4,060,000
Grant Park	P23&24 C2	900	\$1,110,000	\$1,580,000	\$2,060,000	\$2,470,000
Bender Park	P25 C1	250	\$7,000	\$10,000	\$13,000	\$16,000

Table 7-3. Highest Priority Concepts and Project Areas

Priority Rank	Ranking Parameter						
	Least Resilient	Risk per Foot Shoreline	Risk Mitigated/Cost Ratio	Total Risk	Risk Mitigated %	Total Combined Safety Value Improvement	Average Safety Value Improvement per Cell
1	Warnimont, PA16	Warnimont, PA17	Big Bay, PA3, C1	Warnimont, PA16	Bay View, PA11/12, C1	Sheridan, PA15, C1/2	Grant, PA21/22 C1
2	Warnimont, PA17	Warnimont, PA16	Grant, PA21/22, C2	Sheridan, PA15	Doctors, PA2, C1	Grant, PA21/22, C1	Grant, PA20, C1/2
3	Sheridan, PA15	Warnimont, PA18/19	Big Bay, PA3, C2	Warnimont, PA17	Doctors, PA2, C2	Bay View, PA11/12, C1	Bradford, PA6, C2
4	Grant, PA20	Sheridan, PA15	South Shore, PA10, C1	Warnimont, PA18/19	Big Bay, PA3, C1	Grant, PA21/22, C2	Bender, PA25, C1
5	Warnimont, PA18/19	Bender, PA25	Bay View, PA11/12, C1	Bay View, PA11/12	Sheridan, PA14, C2	Grant, PA23/24, C1/2	Grant, PA21/22, C2
6	Grant, PA23/24	Big Bay, PA3	Sheridan, PA15, C1	Big Bay, PA3	Big Bay, PA3, C2	Grant, PA20, C1/2	Grant, PA23/24, C1/2
7	Grant, PA21/22	Grant, PA23/24	Grant, PA20, C2	Grant, PA23/24	Grant, PA20, C1	Bay View, PA11/12, C2	Sheridan, PA15, C1/2
8	Bay View, PA11/12	Sheridan, PA14	Grant, PA23/24, C1	Grant, PA21/22	Warnimont, PA16, C1	Warnimont, PA16, C1/2	Bradford, PA6, C1
9	Doctors, PA2	Grant, PA20	Sheridan, PA16, C2	Sheridan, PA14	Grant, PA20, C2	Sheridan, PA14, C1/2	Sheridan, PA14, C1/2
10	Sheridan, PA14	Grant, PA21/22	Sheridan, PA15, C2	Grant, PA20	Grant, PA23/24, C1	Warnimont, PA18/19, C1	Bay View, PA11/12, C1

Notes:

PA# = Project Area Number

C# = Concept Number

Where are we now? What's Next?

- Using priorities set in the 2024 Bluff Study, in 2025 Parks requested funding for a 2026 capital project to complete a coastal engineering design solution for Sheridan Park, but it was not included in the adopted budget.
- Parks has resubmitted the Sheridan Park Bluff design project for consideration in the 2027 capital budget and remain hopeful it will receive support. This project would produce construction documents for all Sheridan Park Bluffs with a score of “F”.
- In the meantime, Parks has taken precautionary steps by fencing off areas along the bluff, as public safety is a priority, and we will continue to monitor conditions closely while pursuing funding and long-term resiliency solutions.
- Parks will work with partners at the Department of Administrative Services, Architecture and Engineering Division to determine costs for a phased project at Sheridan that would have separate construction for the north and south ends of the park, and related costs.