



**PERFORMANCE
DRIVEN DESIGN.**
LHBcorp.com

January 14, 2022

Revised January 31, 2022

Revised February 4, 2022

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LAKEWALK TRAIL RENEWAL AND BRIGHTON BEACH RESILIENCY ADDITIONAL SERVICES – AMENDMENT No.1

It has been a privilege to work with you and City staff on the Lakewalk Trail Renewal and Brighton Beach Resiliency project. Our team has enjoyed working so far on the inventory and analysis, predesign concepts, stakeholder engagement, and initial preliminary cost estimates and we are confident that we can deliver final design and construction administration services for an improved trail corridor and parkland setting along Lake Superior that meets both City and community needs. In accordance with our ongoing discussions with you, we have prepared the below summary for an Additional Services Amendment to cover final design, construction document preparation, bidding, and construction administration services.

We understand that the City has secured \$3.1 million of capital funds to pay for a portion of the Lakewalk Trail landscape design improvements and the majority of the Brighton Beach landscape design and shoreline stabilization components. This proposal addresses the following eight (8) project work scope areas that were selected for landscape design and shoreline stabilization improvements, based on the preliminary designs that were generated during the predesign phase and illustrated in the schematic predesign report, dated October 7th, 2021. A copy of the predesign report is attached for additional reference. The design concepts included in the report will serve as the guiding documents for the upcoming work. The eight (8) project work scope areas are as follows:

1. Pause Area 01: Endion Station (pages 16-17)
2. ±620 linear feet of Lakewalk (bituminous trail) and associated boardwalk from Pause Area 01 to Pause Area 02 (pages 17-18)
3. Pause Area 02: Veteran's Memorial (pages 18-19)
4. Pause Area 03: Fitger's Malt Shoppe (pages 22-23)
5. ADA Reroute 1 (pages 52-53)
6. ADA Reroute 2 (pages 53-54)
7. ADA Reroute 3 (pages 54-55)
8. Kitchi Gammi Park + Brighton Beach (pages 60-69)

SCOPE OF SERVICES

Per the City's request during a discussion meeting held on January 26th, 2022, LHB has broken out the scope of services to reflect separate but parallel bid projects for the Lakewalk and Brighton Beach areas. Thus, the Lakewalk landscape design

scope now includes locations 1 through 7, while the Brighton Beach landscape design scope includes location 8 from the above list.

Additionally, per a follow up phone call on February 1st, 2022, LHB was instructed to work with AMI Consulting Engineers to incorporate their scope of services for the Brighton Beach shoreline stabilization and naturalization work, as well as for the FEMA Section_R1 work area, into this proposal with AMI serving as a subconsultant to LHB, Inc. The following four primary work areas are listed below, along with a detailed description for each task:

- **Tasks 1L-6L:** Lakewalk Landscape Design (**LHB**)
- **Tasks 1BB-6BB:** Brighton Beach Landscape Design (**LHB**)
- **Tasks 1C-6C:** Brighton Beach Shoreline Stabilization for Coastal Protection Areas (3) (**AMI**)
- **Tasks 1F-6F:** Brighton Beach Shoreline Stabilization for FEMA Section (**AMI**)

1. **Tasks 1L & 1BB: Site Verification and Coordination with Consulting Partners**

This task includes up to 10 hours for the LHB team to visit the Lakewalk and up to 14 hours to visit Brighton Beach for field verification of existing conditions as well as to field determine the limits between the coastal engineering and landscape architecture work scope areas with City staff and AMI coastal engineer subconsultants. Additionally, these tasks include coordination time to meet with the City engineering department to clarify stormwater design requirements, and discuss any utilities in the work scope areas. Coordination with the railroad authorities for a potential new crossing at the ADA Reroute 3 location and relocating the safety fence at the Lakewalk trail is included under Task 1LHB-L. Task 1LHB-BB addresses coordination for tie-in locations and restoration zones between the proposed Brighton Beach Drive alignment and the Brighton Beach landscape improvement areas.

2. **Task 1C & 1F: Coastal & FEMA Site Investigation and Survey**

Completion of a drone survey of approximately 3,700 linear feet along the Brighton Beach Road shoreline to the extents required for engineering design solutions and permitting applications. Includes drone equipment, mileage, and data post-processing. AMI will utilize topographic and bathymetric survey data previously collected of the existing road, new bike path, and shoreline during earlier phases.

3. **Tasks 2L & 2BB: LA Design Development Phase**

The design development phase will consist of moving the schematic designs into the construction documents phase. We anticipate only minor design refinements from the predesign concepts and will focus on further development of spatial dimensions, grading and drainage scenarios, hardscape and softscape material identification, electrical lighting systems and further establishing quality standards for the trail, landscaping and site amenities. The designs shall be completed to a 60% level and all significant design decisions will have been addressed to properly construct the project. Preliminary specifications and an updated professional opinion of costs will also be generated. During this phase for the Lakewalk, we recommend that the City hire a geotechnical consultant to conduct soil borings and provide recommendations for areas where the trail is moving and will be on a new alignment.

4. **Task 2C & 2F: Coastal & FEMA Design Development Phase**

- a. FEMA brings great value to this project and is a crucial stakeholder in how this project progresses. The AMI team has worked with FEMA before and understands the critical nature of following proper communication and documentation and therefore will keep communication open and the documentation well-organized. This will result in a successful project and will also reduce the burden on the City if FEMA conducts an audit in the future.
- b. Using the previously obtained site investigation and survey data, AMI will perform engineering designs for the identified lengths of shoreline per previous conversations. The following design documents will be produced: schematic design drawings (60% plan set), preliminary technical specifications and preliminary cost estimations of the coastal protection features. Up to one meeting will occur between AMI, LHB and the City of Duluth to review the proposed designs.

5. **Tasks 3L & 3BB: LA Design Permitting Assistance**

There are a number of local permits that may be required as part of this project. This task includes time for our team to further determine which permits will be needed and assistance in the preparation of the associated permit applications. At

this time, we anticipate both projects may require a City Planning Site Plan review and associated Stormwater, Grading and Erosion Control approval. In addition, as both projects work scope is within 1,000 feet of Lake Superior, we expect a Shoreland Permit will be required for each location (Lakewalk and Brighton Beach) to comply with the City's Unified Development Code's (UDC) Natural Resources Overlay (NR-O) ordinance. LHB acknowledges that the AMI coastal engineer subconsultant will be responsible for all Department of Natural Resources (DNR) and Army Corps of Engineers (ACOE) permits for work immediately adjacent to Lake Superior, listed below.

6. **Task 3C & 3F: Coastal & FEMA Permitting Assistance**

- a. AMI will complete and submit permit applications for the United States Army Corps of Engineers, Minnesota Department of Natural Resources (MN DNR), and City of Duluth as required for both the coastal protection areas, as well as the FEMA Section_R1 work area. The MN DNR typically requires additional reports and documentation be submitted with the permit, providing engineering support to the proposed design. Up to one virtual meeting with the MN DNR is included.
- b. The Owner will be responsible for permitting fees; however, AMI will initially pay the permitting fees through the permitting agencies to accelerate the permitting process. AMI will invoice the Owner for the permitting fees once all agencies have completed their permit review (note that permitting fees are not included in this proposal, but typically range between \$1,000 and \$3,000 for similar projects).
- c. AMI will also submit all required documentation to support the FEMA process.

7. **Tasks 4L & 4BB: LA Design Final Construction Documents**

Once the detailed designs are complete and based on final review comments or outcomes of the permitting process, LHB will prepare two final construction documents and two technical specifications to a 100% level in preparation for construction bid advertisement. An updated professional opinion of cost will also be generated as part of this task for each bid package.

- The final construction documents for the Lakewalk scope will include seven (7) project work areas and will consist of enlarged plans, profiles, and construction details for each area.
- The final construction documents for the Brighton Beach scope will include one (1) large project work area and will consist of enlarged plans, cross sections, and construction details for the project work area.

Please note: Our team acknowledges that AMI will also be submitting a separate proposal for shoreline stabilization areas along the Lakewalk and therefore those areas are not included in this scope of service for final construction documents.

8. **Task 4C & 4F: Coastal & FEMA Design Final Construction Documents**

- a. AMI will perform final construction documents (100% plan set and technical specifications). Meetings and coordination will occur between AMI, LHB and the City of Duluth as necessary to review the proposed designs. AMI will provide detailed construction estimates for the coastal engineering designs to accompany LHB's final construction documents.
- b. For the FEMA Section, construction documentation and record keeping portion of this project will be led by both Ryan Dagger and Zac Morris. Their combined knowledge and understanding of FEMA processes will ensure the project is well-documented. One of our goals is to ensure the City is protected if ever audited by FEMA. We will work closely with the City to better understand lessons learned from the City's previous experience with FEMA, and to understand their internal process with FEMA currently. AMI will work closely with the City to strengthen the project documentation efforts.

9. **Tasks 5L & 5BB: LA Design Bidding Assistance and Construction Administration**

LHB will provide the City with the following services during the bidding period and throughout the construction phases for both the Lakewalk and Brighton Beach projects.

- A. Provide bidding phase services to include answering contractor questions, issuing addenda, and facilitating two separate pre-bid meetings during the bidding period.

- B. Assist City with reviewing Lakewalk and Brighton Beach bids and selecting Contractors.
- C. Facilitate two separate pre-construction meetings with selected Contractor and subcontractors.
- D. Provide on-site weekly observation and weekly construction meetings throughout the duration of the Lakewalk project (assumes a 12-week construction period).
- E. Provide on-site weekly observation and weekly construction meetings throughout the duration of the Brighton Beach project (assumes a 16-week construction period).
- F. LHB will provide construction administration services, including preparing Architect's Supplemental Information (ASI), Proposal Requests (PR), Observation Reports (OR), and Change Orders (CO) as necessary, review and approve contractor pay request applications, and prepare final site review and punch lists upon substantial completion for both projects.
- G. Provide additional periodic on-site construction coordination for up to 6 hours a week for an assumed 12-week construction period for the Lakewalk scope of work (72 hours). This includes one licensed LHB professional for 50% of the time and one LHB designer/technician for 50% time who is knowledgeable on the project. This LHB staff person will provide additional on-site support and coordination for phasing of the work, field verification of site elements, clarify field questions, and will serve as the City's representative in the field.
- H. Provide additional periodic on-site construction coordination for up to 6 hours a week for an assumed 16-week construction period for the Brighton Beach scope of work (96 hours). This includes one licensed LHB professional for 50% of the time and one LHB designer/technician for 50% time who is knowledgeable on the project. This LHB staff person will provide additional on-site support and coordination for phasing of the work, field verification of site elements, clarify field questions, and will serve as the City's representative in the field.
- I. LHB will provide record drawings after the construction is complete for both the Lakewalk and Brighton Beach project areas for the City's records.

10. **Task 5C & 5F: Coastal & FEMA Bidding Services and Special Inspections**

- a. AMI will assist LHB with preparing bid documents per FEMA requirements. AMI will attend the Brighton Beach pre-bid meeting and be available to answer any questions related to the coastal engineering work. AMI will provide LHB with updated construction documents following any addendums.
- b. AMI will work with the awarded Contractor by sharing stripped down CAD files.
- c. If questions arise on-site with respect to the Coastal components of Work, LHB personnel will notify AMI's Project Manager immediately to resolve questions quickly and efficiently. Depending on the question, AMI will assist LHB with submitting a request for information (RFI) or issue an engineer's supplemental information (ESI) to the Contractor.
- d. During the construction phases, AMI recommends up to eight (8) 2-hour site visits (two site visits per week for 4 weeks) to inspect critical components of the FEMA Section_R1 work area shoreline stabilization design. AMI would document any discrepancies and inform the Contractor to make the required changes at no cost to the City.
- e. In addition, AMI recommends up to twenty-four (24) 4-hour site visits (three sites per week for 8 weeks) to inspect critical components of the overall shoreline stabilization design. AMI would document any discrepancies and inform the Contractor to make required changes at no cost to the City.

11. **Tasks 6L & 6BB: Design Project Management and Meetings**

These tasks include project management during the final design and construction document preparation tasks, and consists of external and internal team communication including ongoing coordination with the subconsultant (AMI), establishing the schedule, arranging meetings, and monitoring the project budgets. LHB will also facilitate weekly City coordination and design review meetings for an assumed 12-week design period to ensure the design intents are being adhered to and that decisions are being made in a timely manner. Lastly, this task includes one combined presentation to City Council or the Parks Commission for the Lakewalk and Brighton Beach projects' information.

12. **Tasks 6C & 6F: Coastal & FEMA Project Management and Meetings**

These tasks include project management from the subconsultant team during the final design and construction document preparation tasks and include internal and external communication. AMI will support LHB and the City by attending design meetings when needed, and will be in ongoing coordination with LHB to ensure the project is staying on schedule and on budget.

ITEMS EXCLUDED FROM THIS PROPOSAL (Can be included for an additional fee)

The LHB/AMI team are excluding these services to reduce consultant fees where appropriate:

1. Coastal engineering designs and inspections for areas designated only for grading
2. Shoreline evolution analysis'
3. Environmental studies and wetland delineations
4. Construction management services (outside of special inspections)
5. Bathymetric and legal/boundary surveys
6. Construction staking and survey control
7. Coastal protection as-built drawings for Brighton Beach
8. 3D renderings
9. Permitting fees
10. Detailed Hydrologic and Hydraulic Analyses
11. Bedrock material testing (AMI will make conservative assumptions in lieu of rock testing)

ASSUMPTIONS

1. Construction documents will be compiled as two separate lump sum bid projects. The Lakewalk lump sum project will include seven work scope areas and the Brighton Beach lump sum project will include one large project work area for both landscape design and shoreline stabilization work. Bid alternates may be provided on either project.
2. The City will advertise and distribute the bid documents and provide the front-end general conditions and agreement forms required for all bidding packages.
3. The recommended Geotechnical Report will be provided by the City. We can assist the City with the solicitation of geotechnical site investigation, recommendations and report.
4. We assume that the survey data provided by the City is complete and accurate to the degree required for this project.
5. No services have been included for preparation of any City Variance, Conditional Use or Special Use permits. Additionally, we assume all DNR public waters and/or ACOE permits for work along the embankment will be handled by the Coastal engineer consultant.
6. LHB's stormwater and engineering design services are limited to the proposed multi-use trail, amenities, and landscaping improvements at each work scope area site as described in this proposal. The design of the proposed stormwater outfall from the City and MnDOT I-35 corridor near the Veteran's Memorial area is excluded.
7. It is assumed that the Contractors will be responsible for all construction layout and construction survey required.
8. The City will contract separately for construction materials and soils testing services during construction.
9. AMI will only provide shoreline protection designs for the provided areas (reference attached aerial maps).
10. This proposal includes up to one virtual meeting with the MN DNR to review the design drawings for permitting assistance.
11. AMI will attend three on-site meetings with selected Contractor during construction.
12. AMI will attend up to 24 site visits for the general shoreline stabilization work and up to 8 site visits for the FEMA_R1 work area during construction.
13. If changes are needed to this scope, LHB will work with you to determine the actual hours needed before beginning this work to provide an accurate estimate of time and fee required.

SCHEDULE

We understand that the City would like to advertise the project late winter/early spring. We anticipate a minimum 12-week design period to complete the construction documents for bid (excluding City review periods). LHB, AMI, and the City will need to work together efficiently to meet that timeline. Construction is anticipated to take place during the 2022 season.

PROPOSED FEE

LHB proposes an hourly not to exceed fee (by tasks) of Two Hundred Ninety-Nine Thousand, Eight Hundred Sixty-Four Dollars (\$299,864.00) to complete all of the tasks listed above including reimbursable expenses. The fee is divided as follows and an itemized breakdown is also attached:

Lakewalk Landscape Design

Task 1L: Verify & Coord with Consulting Partners.....	\$3,900
Task 2L: Design Development.....	\$29,863
Task 3L: Permit Assistance.....	\$3,891
Task 4L: Final Design & CDs... ..	\$45,628
Task 5L: Bidding & CA.....	\$21,836
Task 6L: Design PM & Meetings.....	\$3,502
Lakewalk Subtotal.....	\$108,620

Brighton Beach Landscape Design

Task 1BB: Verify & Coord with Consulting Partners....	\$4,951
Task 2BB: Design Development.....	\$13,322
Task 3BB: Permit Assistance.....	\$3,891
Task 4BB: Final Design & CDs.....	\$72,956
Task 5BB: Bidding & CA.....	\$34,318
Task 6BB: Design PM & Meetings.....	\$5,086
Brighton Beach Subtotal.....	\$134,524

LHB Subtotal Fee.....\$243,144

Brighton Shoreline Stabilization – Coastal Areas

Task 1C: Site Investigation & Survey.....	\$420
Task 2C: Design Development.....	\$8,835
Task 3C: Permit Assistance.....	\$3,200
Task 4C: Final Design & CDs... ..	\$7,545
Task 5C: Bidding & Special Inspection.....	\$12,820
Task 6C: Design PM & Meetings.....	\$810
Brighton Coastal Areas Subtotal.....	\$33,630

Brighton Shoreline Stabilization – FEMA Section

Task 1F: Site Investigation & Survey.....	\$420
Task 2F: Design Development.....	\$8,595
Task 3F: Permit Assistance.....	\$3,200
Task 4F: Final Design & CDs... ..	\$4,745
Task 5F: Bidding & Special Inspection.....	\$4,420
Task 6F: Design PM & Meetings.....	\$810
Brighton FEMA Section Subtotal.....	\$22,190

AMI Subtotal Fee.....\$55,820

Other direct costs \$900

Total Proposal Cost\$299,864

TERMS AND CONDITIONS

We appreciate the opportunity to continue providing services for this project. Upon review if you have any questions concerning this Amendment proposal or would like to meet to review, please do not hesitate to call.

LHB, INC.



HEIDI S. BRINGMAN, PLA
Senior Landscape Architect/Project Manager



BRAD SCOTT, PE
Civil Department Lead/Project Principal

c: LHB Project No. 210260

LHB		LAKEWALK AND BRIGHTON BEACH FINAL DESIGN & CONSTRUCTION PHASE DULUTH PARKS & RECREATION													
		LHB STAFF							AMI STAFF						
Work Plan	Description	Project Principal	Project Manager	Project LA	Civil Engineer	Elec Engineer	LA/C/E Technician	Admin Support	Project Principal	FEMA & QC	Project Manager	Permitting & Drafting	Coastal Engineer I	Total Labor Costs	
		Brad Scott	Heidi Bringman	Rachel Johnson	Megan Goplin	Mark Vincent	JV/PB AL	Linda Nelson	Chad Scott	Zac Morris	Ryan Dagger	Afton Douville	Jared Munch		
Task		\$ 180	\$ 153	\$ 102	\$ 142	\$ 163	\$ 98	\$ 85	\$ 235	\$ 155	\$ 125	\$ 100	\$ 105	(\$)	
1L	Lakewalk - Site Verification & Coordination with Consulting Partners	2	6	9	12	0	0	0						\$ 3,900.00	
1BB	Brighton Beach - Site Verification & Coord. with Consulting Partners	1	9	11	16	0	0	0						\$ 4,951.00	
1C	Brighton Beach - Coastal Site Investigation & Survey								0	0	0	0	4	\$ 420.00	
1F	Brighton Beach - FEMA Site Investigation & Survey								0	0	0	0	4	\$ 420.00	
2L	Lakewalk - LA Design Development	1	24	106	70	11	70	0						\$ 29,863.00	
2BB	Brighton Beach - LA Design Development	1	14	24	34	0	38	0						\$ 13,322.00	
2C	Brighton Beach - Coastal Design Development								1	4	12	112	16	\$ 8,835.00	
2F	Brighton Beach - FEMA Design Development								1	4	12	118	8	\$ 8,595.00	
3L	Lakewalk - Permit Assistance	1	9	14	5	0	2	0						\$ 3,891.00	
3BB	Brighton Beach - Permit Assistance	1	9	14	5	0	2	0						\$ 3,891.00	
3C	Brighton Beach - Coastal Permit Assistance								0	0	0	32	0	\$ 3,200.00	
3F	Brighton Beach - FEMA Permit Assistance								0	0	0	32	0	\$ 3,200.00	
4L	Lakewalk - Prepare Final CDs	9	51	116	80	16	186	14						\$ 45,628.00	
4BB	Brighton Beach - Prepare Final CDs	11	72	180	124	0	224	24						\$ 72,956.00	
4C	Brighton Beach - Coastal Final CDs								1	2	8	60	0	\$ 7,545.00	
4F	Brighton Beach - FEMA Final CDs								1	2	8	32	0	\$ 4,745.00	
5L	Lakewalk - Bidding Assistance & Construction Administration	1	33	64	23	5	56	6						\$ 21,836.00	
5BB	Brighton Beach - Bidding Assistance & Construction Administration	1	62	89	39	0	92	12						\$ 34,318.00	
5C	Brighton Beach - Coastal Bidding Assistance & Special Inspections								0	4	40	72	0	\$ 12,820.00	
5F	Brighton Beach - FEMA Bidding Assistance & Special Inspections								0	4	24	8	0	\$ 4,420.00	
6L	Lakewalk Design PM+ Meetings	1	12	9	4	0	0	0						\$ 3,502.00	
6BB	Brighton Beach Overall Design PM + Meetings	3	16	15	4	0	0	0						\$ 5,086.00	
6C	Brighton Beach Coastal PM + Meetings								0	2	4	0	0	\$ 810.00	
6F	Brighton Beach FEMA PM + Meetings								0	2	4	0	0	\$ 810.00	
TOTAL HOURS		33	317	651	416	32	670	56	4	24	112	466	32		
OTHER DIRECT COSTS (ODC)												SUMMARY			
Description	Cost	This proposal has been prepared by LHB Inc. Date: February 3, 2022 Submitted By: Heidi Bringman										Labor Cost \$ 298,964			
Survey Equipment												Other Direct Costs \$ 900			
Travel (mileage at \$0.565/mile)	\$ 500.00														
Mail / Delivery	\$ 50.00														
Supplies/ Printing at Cost	\$ 350.00														
Total ODC	\$ 900.00														
TOTAL PROPOSAL COST \$ 299,864															

This proposal has been prepared by LHB Inc.
 Date: February 3, 2022
 Submitted By: Heidi Bringman

LHB - HOURS BY TASK
LAKEWALK LA DESIGN

Work Task	Description	Project Principal	LA Project Manager	Project LA	Civil Engineer	Electrical Engineer	LA/C/E Technician	Admin Support	Total Labor Cost
		Brad Scott	Heidi Bringman	Rachel Johnson	Megan Goplin	Mark Vincent	JV, PB AL	Linda Nelson	
		\$ 180	\$ 153	\$ 102	\$ 142	\$ 163	\$ 98	\$ 85	
Task 1L - Site Verification & Coordination with Consulting Partners		2	6	9	12	0	0	0	\$ 3,900.00
1.01	Site verification visits		2	4	4				\$ 1,282.00
1.02	Stormwater coordination with City engineering	1	1	1	2				\$ 719.00
1.03	RR coordination for trail fence (b/t Pause Areas 1 & 2) & crossing at Reroute 3	1	1	2	4				\$ 1,105.00
1.04	Coordination with coastal engineer for Lakewalk shoreline transition zone		2	2	2				\$ 794.00
Task 2L - Design Development Phase		1	24	106	70	11	70	0	\$ 29,863.00
2.01	Landscape Design for Endion Station Pause Area 1 (P1)		6	24			10		\$ 4,346.00
2.02	Landscape Design for Veteran's Memorial Pause Area 2 (P2)		4	24		6	10		\$ 5,018.00
2.03	Landscape Design for Fitger's Malt Shoppe Pause Area 3 (P3)		10	40		3	20		\$ 8,059.00
2.04	Lakewalk Trail & Boardwalk Design between Pause Area 1 & 2		2	8	16				\$ 3,394.00
2.05	Grading and Alignment Design for ADA Re-Route Area 1 (RR1)			2	16		8		\$ 3,260.00
2.06	Grading and Alignment Design for ADA Re-Route Area 2 (RR2)			2	16		8		\$ 3,260.00
2.07	Grading and Alignment Design for ADA Re-Route Area 3 (RR3)			2	20		10		\$ 4,024.00
2.08	DD Level Professional Opinion of Costs	1	2	4	2	2	4		\$ 1,896.00
Task 3L - Permitting Assistance		1	9	14	5	0	2	0	\$ 3,891.00
3.01	Regulatory review and confirmation of permits/approvals required		4	2	1				\$ 958.00
3.02	Prepare site plan & stormwater review submittal package		1	2	4		2		\$ 1,121.00
3.03	Prepare shoreland permit submittal package		2	8					\$ 1,122.00
3.04	Consulting parties/regulatory agencies miscellaneous coordination meeting	1	2	2					\$ 690.00
Task 4L - Prepare Final Construction Documents (Plans, Specifications + Estimate)		9	51	116	80	16	186	14	\$ 45,628.00
4.01	Title Sheet & Notes		1	1			3		\$ 549.00
4.02	Site Index Plan & Work Areas		1	1			3		\$ 549.00
4.03	P + RR: Existing Conditions/Survey Plans (6)			2			6		\$ 792.00
4.04	P + RR: Site Removals & Erosion Control (6)		1	2	10		20		\$ 3,737.00
4.05	P + RR: SWPPP Plans				8		16		\$ 2,704.00
4.06	P + RR: Stormwater & Grading Plans (6)						20		\$ 1,960.00
4.07	P + RR: Site Layout & Surfacing Plans (6)		8	24	12		12		\$ 6,552.00
4.08	P + RR: Site Landscape Plans (6)		8	24			12		\$ 4,848.00
4.09	P: Site Lighting Plans (2)					10	20		\$ 3,590.00
4.10	P: Enlarged Layout Plans (3)		8	24			16		\$ 5,240.00
4.11	R: Trail Plan & Profiles (4)				24		24		\$ 5,760.00
4.12	P + RR: Construction Details + Cross Sections		6	24	12		24		\$ 7,422.00
4.13	Technical Specifications	2	8	8	8	2		14	\$ 5,052.00
4.14	100% QA/QC Review (City & Internal LHB)	6	6			2			\$ 2,324.00
4.15	100% Revisions		2	2	2		10		\$ 1,774.00
4.16	CD Level Professional Opinion of Costs	1	2	4	4	2			\$ 1,788.00
Task 5L - Bidding Assistance & Construction Administration		1	33	64	23	5	56	6	\$ 21,836.00
5.01	Answer Questions & Issue Addenda		2	2	2	1	2	2	\$ 1,323.00
5.02	Prepare & facilitate prebid meeting		2	2	1				\$ 652.00
5.03	Review Bids & Provide Recommendations	1	1						\$ 333.00
5.04	Construction Project Management (1 hr per week/12 weeks)		6	6					\$ 1,530.00
5.05	Prepare & facilitate preconstruction meeting		2	2	1				\$ 652.00
5.06	Weekly on-site construction meetings (1.5 hrs for 12 weeks)		3	12	3				\$ 2,109.00
5.07	Additional on-site construction coordination (6 hours per week/12 weeks)		8	20	8		36		\$ 7,928.00
5.08	ASI, PR, Change Orders		4	6	2	2	6	4	\$ 2,762.00
5.09	Review & Approve pay applications		2	2					\$ 510.00
5.10	Execute final punchlist upon substantial completion		2	8	4	2			\$ 2,016.00
5.11	Prepare Record Documents for City		1	4	2		12		\$ 2,021.00
Task 6L - Design Project Management + Meetings		1	12	9	4	0	0	0	\$ 3,502.00
6.01	Correspondence, Billing & Team Management (assume 12 weeks)	1	4	2					\$ 996.00
6.02	Project Coordination Meetings (1 hr mtg every week)		6	6	4				\$ 2,098.00
6.03	Preparation + 1 meeting with City (Council &/or Parks Commission)		2	1					\$ 408.00
Total Hours		15	135	318	194	32	314	20	
Total LHB Lakewalk Fee									\$108,620.00

<div>LHB - HOURS BY TASK</div> <div>BRIGHTON BEACH LA DESIGN</div>								
Work Task	Description	Project Principal	LA Project Manager	Project LA	Civil Engineer	LA/C/E Technician	Admin Support	Total Labor Cost
		Brad Scott	Heidi Bringman	Rachel Johnson	Megan Goplin	JV, PB AL	Linda Nelson	
		\$ 180	\$ 153	\$ 102	\$ 142	\$ 98	\$ 85	
Task 1BB - Site Verification & Coordination with Consulting Partners		1	9	11	16	0	0	\$ 4,951.00
1.01	Site verification visits		2	4	8			\$ 1,850.00
1.02	Stormwater coordination with City engineering	1	1	1	2			\$ 719.00
1.03	Brighton Beach Drive coordination with City engineering		2	2	2			\$ 794.00
1.04	Coordination with coastal engineer for shoreline stabilization		4	4	4			\$ 1,588.00
Task 2BB - Design Development Phase		1	14	24	34	38	0	\$ 13,322.00
2.01	LA Design/Grading for BB entire project site		10	20	30	30		\$ 10,770.00
2.02	DD Level Professional Opinion of Costs	1	4	4	4	8		\$ 2,552.00
Task 3BB - Permitting Assistance		1	9	14	5	2	0	\$ 3,891.00
3.01	Regulatory review and confirmation of permits/approvals required		4	2	1			\$ 958.00
3.02	Prepare site plan & stormwater review submittal package		1	2	4	2		\$ 1,121.00
3.03	Prepare shoreland permit submittal package		2	8				\$ 1,122.00
3.04	Consulting parties/regulatory agencies miscellaneous coordination meeting	1	2	2				\$ 690.00
Task 4BB - Prepare Final Construction Documents (Plans, Specifications + Estimate)		11	72	180	124	224	24	\$ 72,956.00
4.01	Title Sheet & Notes		2	2		3		\$ 804.00
4.02	Site Index Plan & Work Areas		2	2		6		\$ 1,098.00
4.03	BB: Existing Conditions/Survey Plans (8+)			4		12		\$ 1,584.00
4.04	BB: Site Removals & Erosion Control (8+)		1	4	16	24		\$ 5,185.00
4.05	BB: SWPPP Plans (8+)				16	24		\$ 4,624.00
4.06	BB: Stormwater & Grading Plans (8+)		2	8	30	30		\$ 8,322.00
4.07	BB: Enlarged Stormwater & Grading Plans (8)		1	4	20	20		\$ 5,361.00
4.08	BB: Site Layout & Surfacing Plans (8)		6	30	8	15		\$ 6,584.00
4.09	BB: Enlarged Layout Plans		8	20		20		\$ 5,224.00
4.10	BB: Site Landscape Plans (8)		8	24		8		\$ 4,456.00
4.11	BB: Enlarged Landscape Plans		8	24		12		\$ 4,848.00
4.12	BB: Sequencing & Phasing Plans		2	8	4	8		\$ 2,474.00
4.13	BB: Construction Details & Standard Notes		8	30	16	30		\$ 9,496.00
4.14	Technical Specifications & Schedule of Values for Invoicing/FEMA tracking	4	12	8	8		24	\$ 6,548.00
4.15	100% QA/QC Review (City & Internal LHB)	6	6					\$ 1,998.00
4.16	100% Revisions		2	4	2	12		\$ 2,174.00
4.17	CD Level Professional Opinion of Costs	1	4	8	4			\$ 2,176.00
Task 5BB- Bidding Assistance & Construction Administration		1	62	89	39	92	12	\$ 34,318.00
5.01	Answer Questions & Issue Addenda		3	3	3	4	4	\$ 1,923.00
5.02	Prepare & facilitate prebid meeting		2	2	1			\$ 652.00
5.03	Review Bids & Provide Recommendations	1	1					\$ 333.00
5.04	Construction Project Management & Subconsultant Coord (2 hrs per week/16 weeks)		16	16				\$ 4,080.00
5.05	Prepare & facilitate preconstruction meeting		2	2	1			\$ 652.00
5.06	Weekly on-site construction meetings (1.5 hrs for 16 weeks)		8	16	8			\$ 3,992.00
5.07	Additional on-site construction coordination (6 hours per week/16 weeks)		16	20	12	48		\$ 10,896.00
5.08	ASI, PR, Change Orders		6	12	2	20	8	\$ 5,066.00
5.09	Review & Approve pay applications		2	4				\$ 714.00
5.10	Execute final punchlist upon substantial completion		5	10	10			\$ 3,205.00
5.11	Prepare Record Documents for City		1	4	2	20		\$ 2,805.00
Task 6BB - Design Project Management + Meetings		3	16	15	4	0	0	\$ 5,086.00
6.01	Correspondence, Billing & Team Management (assume 12 weeks)	2	8	8				\$ 2,400.00
6.02	Project Coordination Meetings (1 hr mtg every week)	1	6	6	4			\$ 2,278.00
6.03	Preparation + 1 meeting with City (Council &/or Parks Commission)		2	1				\$ 408.00
Total Hours		18	182	333	222	356	36	
Total LHB Brighton Beach Fee								\$134,524.00

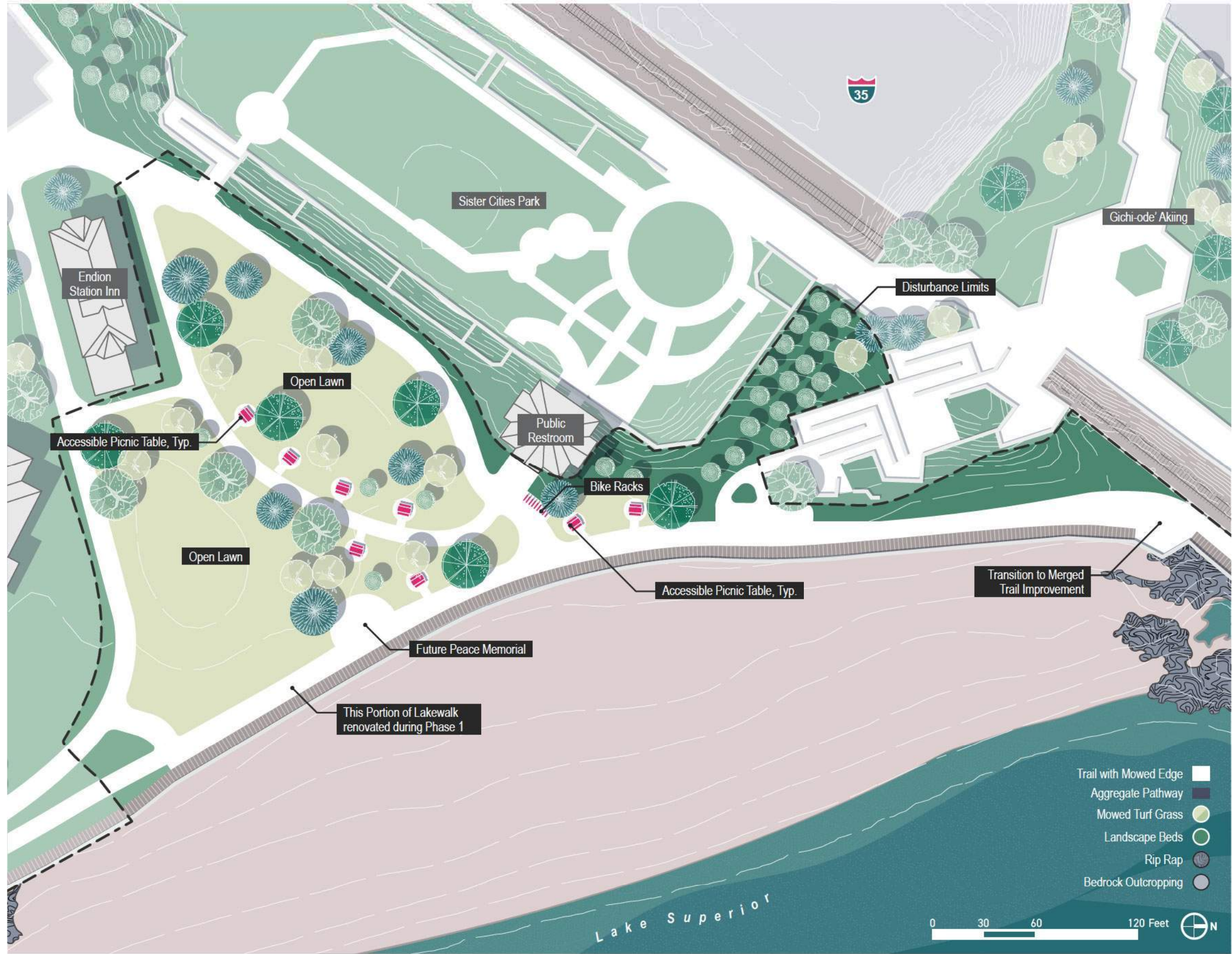
Total LHB Fee

\$243,144.00

AMI - HOURS BY TASK BB: SHORELINE STABILIZATION FOR COASTAL PROTECTION AREAS (3)							
Work Task	Description	Project Principal	FEMA & QC	Project Manager	Permitting & Drafting	Coastal Engineer I	Total Labor Cost
		Chad Scott	Zac Morris	Ryan Dagger	Afton Douville	Jared Munch	
		\$ 235	\$ 155	\$ 125	\$ 100	\$ 105	
Task 1C	Site Investigation & Survey	0	0	0	0	4	\$ 420.00
1.01	Coastal Protection Areas					4	\$ 420.00
Task 2C	Coastal Design Development	1	4	12	112	16	\$ 8,835.00
2.01	Coastal Protection Areas	1	4	12	48	16	\$ 8,835.00
Task 3C	Coastal Permitting Assistance	0	0	0	32	0	\$ 3,200.00
3.01	Coastal Protection Areas				32		\$ 3,200.00
Task 4C	Prepare Final Construction Documents (Plans, Specifications + Estimate)	1	2	8	60	0	\$ 7,545.00
4.01	Coastal Protection Areas CDs	1	2	8	60		\$ 7,545.00
	a. General Notes Sheet (1)						
	b. Plan View Sheets (3)						
	c. Cross Sections at 50 ft interval for entire site (16 sheets)						
	d. Coastal Protection Details (4 sheets)						
Task 5C	Bidding Services & Special Inspections	0	4	40	72	0	\$ 12,820.00
5.01	Coastal Protection Areas (96 hrs in field insp + follow up office time)		4	40	72		\$ 12,820.00
Task 6C	Design Project Management + Meetings	0	2	4	0	0	\$ 810.00
6.01	Coastal Protection Areas Design PM + Meetings		2	4			\$ 810.00
Total Hours		2	12	64	276	20	
Total AMI Coastal Subconsultant Fee							\$33,630.00

AMI - HOURS BY TASK BB: SHORELINE STABILIZATION FOR FEMA SECTION							
Work Task	Description	Principal	QC	Manager	& Drafting	Engineer I	Cost
		Chad Scott	Zac Morris	Ryan Dagger	Afton Douville	Jared Munch	
		\$ 235	\$ 155	\$ 125	\$ 100	\$ 105	
Task 1F	Site Investigation & Survey	0	0	0	0	4	\$ 420.00
1.01	FEMA Section					4	\$ 420.00
Task 2F	FEMA Design Development	1	4	12	118	8	\$ 8,595.00
2.01	FEMA Section	1	4	12	54	8	\$ 8,595.00
Task 3F	FEMA Permitting Assistance	0	0	0	32	0	\$ 3,200.00
3.01	FEMA Section				32		\$ 3,200.00
Task 4F	Prepare Final Construction Documents (Plans, Specifications + Estimate)	1	2	8	32	0	\$ 4,745.00
4.01	FEMA Section CDs	1	2	8	32		\$ 4,745.00
Task 5F	Bidding Services & Special Inspections	0	4	24	8	0	\$ 4,420.00
5.01	FEMA Section (16 hrs in field insp + follow up office time)		4	24	8		\$ 4,420.00
Task 6F	Design Project Management + Meetings	0	2	4	0	0	\$ 810.00
6.01	FEMA Design PM + Meetings		2	4			\$ 810.00
Total Hours		2	12	48	190	12	
Total AMI FEMA Subconsultant Fee							\$22,190.00

Total AMI Subconsultant Fee \$55,820.00



LHB

Pause Area 01: Endion Station

Landscape improvements at Endion Station Inn will complement the completed Lakewalk Phase 1 trail and seawall project, while maintaining the current use and primary circulation pattern as a key entry area to the Lakewalk. Additionally, these improvements will provide the space and flexibility to incorporate the City's future plans to place a Peace Memorial along the corridor, public art and/or play installation, as well as future interpretation nodes.

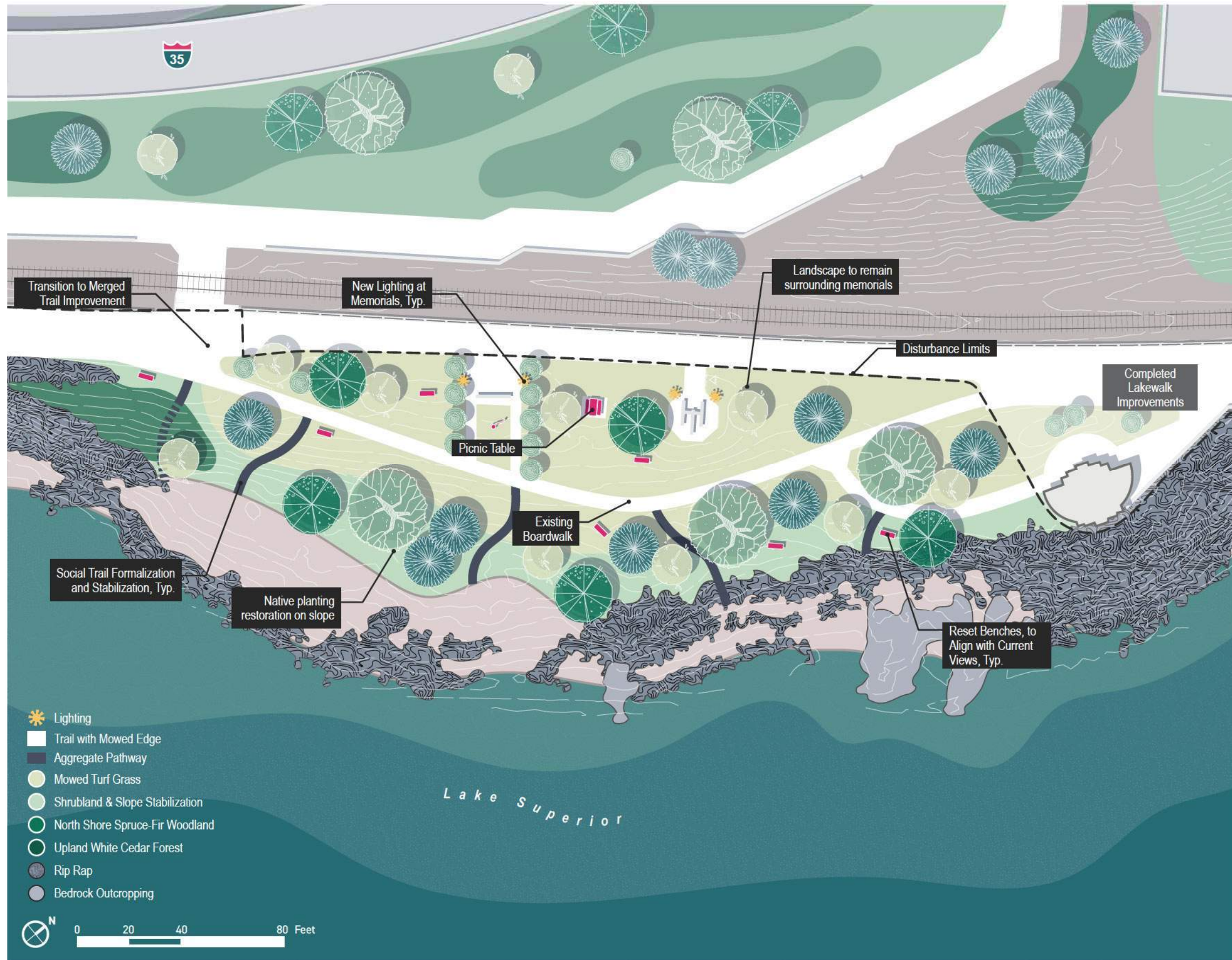
Key Design Features:

- Maintain open programmable lawn
- Refine redundant and intersecting paths
- Improve transitions between multi-use trails
- Improve transitions at connection points to the open lawn areas and Gichi-ode'Akiing
- Provide accessible picnic tables
- Enhance native planting restoration, and remove rock mulch in existing planting beds for easier maintenance
- Include shade trees to define lawn areas

Estimated Cost for Pause Area 01:
Endion Station

\$280,000





Pause Area 02: Veterans Memorial

Landscape improvements at the Veterans Memorial will focus on maintenance and enhancements of the existing site features. There is an emphasis on protecting the current memorials and remnants of past uses found along the shoreline, while balancing the heavy pedestrian use as well as preserving views to Canal Park and the iconic Aerial Lift Bridge in the background. This section of paved Lakewalk trail was re-paved as part of Phase 1.

Key Design Features:

- Provide maintenance and selected repair to existing boardwalk spur trail.
- Install new lighting at Memorials
- Formalize and stabilize social trails
- Restore vegetation at shore transition, and in areas of washout with native plant communities (shrubland & slope stabilization)
- Maintain mowed grass area
- Provide accessible benches and picnic tables

Estimated Cost for Pause Area 02:
Veterans Memorial

\$82,500



Coastal Design: Soldier Pile Wall and Revetment at MnDOT Outfalls

This new wall near the MnDOT Outfalls is recommended to be a soldier pile wall with armor stone revetment and colored concrete panels. The wall will blend in with the natural landscape features along the Lakewalk corridor. The new wall will shore up the eroding shoreline which is undermining the trail.

Key Design Features:

- Eliminates shoreline erosion
- Armor stone revetment mitigates wave overtopping
- Immediately provides a safe Lakewalk for public use
- Blends into existing Lakewalk infrastructure
- Maintains access for outfall maintenance
- Protects the 24" forcemain under the Lakewalk and the railroad behind it
- Preserves green space adjacent to Veterans Memorial

Estimated Cost for Coastal Design: Veterans Memorial

Revetment: **\$1,380,000**

Soldier Pile: **\$1,300,000**



Pause Area 03: Fitgers-Malt Shoppe

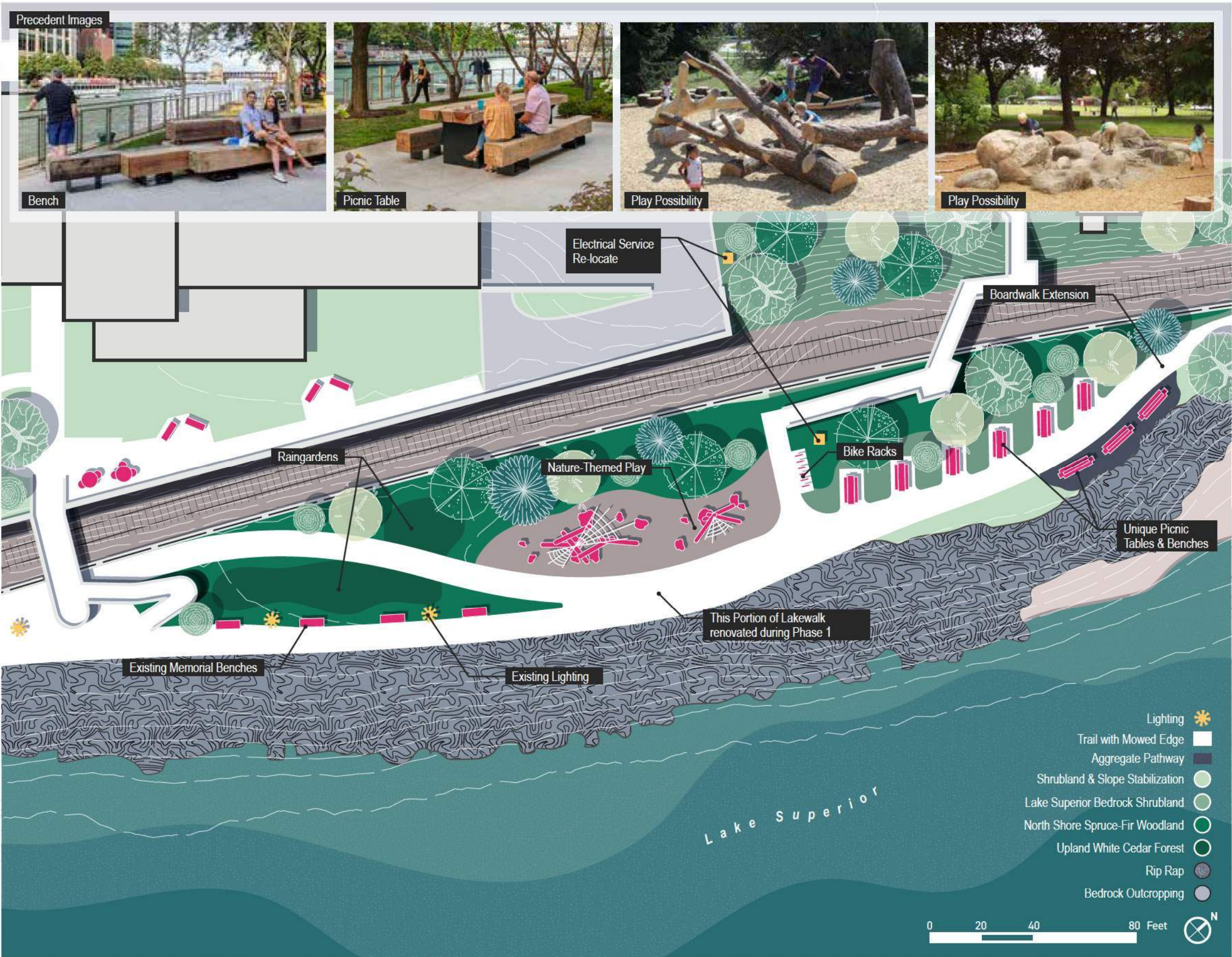
Landscape improvements at the Fitgers-Malt Shoppe area will strive to create a destination with flexible areas to rest, eat and connect with local businesses above the Lakewalk.

Key Design Features:

- Additional unique seating elements will maximize seating and add to the variety of ways to enjoy the Lake
- Incorporate a non-traditional play area with an adventure/nature element simulating Lake Superior's rocky shoreline
- Enhance pre-programmed spaces with native planting restoration to reduce maintenance and provide buffers between uses
- Repair drainage issues occurring across trail; move drainage to under trail and outlet into raingardens
- Increase amount of accessible picnic tables and eating areas
- Better define bike rack area near bottom of Malt Shoppe stairs
- Extend boardwalk to the north to create a purposeful termination and better transition into a single multi-use trail for next segment
- Relocate electrical service to north side of railroad tracks

Estimated Cost for Pause Area 03: Fitgers-Malt Shoppe

\$130,000



Coastal Design: Malt Shoppe Area

The area near the Malt Shoppe will feature a restored gravel beach and new armor stone revetment with stone steps for beach access. A new colored concrete retaining wall with native vegetation along the Lakewalk will help the new design blend in with existing features and provide long-term protection of this prominent trail.

Key Design Features:

- Enhances and preserves the existing gravel beach
- Provides public access down to the beach
- Armor stone revetment and wave return wall mitigates erosion
- Provides a buffer between Lakewalk and top of slope for public safety
- Blends into existing Lakewalk infrastructure
- Protects the 24" forcemain under the Lakewalk
- Protects the railroad behind the Lakewalk

Estimated Cost for Coastal Design Section 6:
Malt Shoppe
\$2,060,000



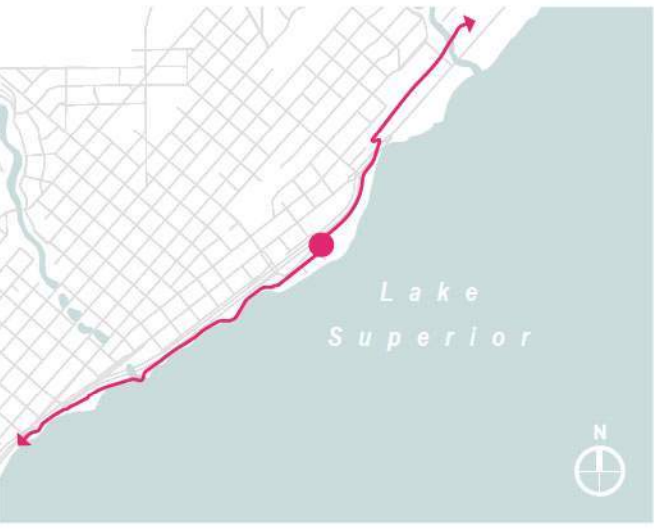
ADA Reroute 1:

The realignment of the Lakewalk near the intersection of E Water Street and S 23rd Ave E reduces the grade of the trail and increases the turn radius to provide a safe path of travel that is ADA compliant.

DESIGNS

DESIGNS

Estimated Cost for ADA Reroute 1
\$88,780



ADA Reroute 2:

The realignment of the Lakewalk near the intersection of Interstate 35 and Highway 61, and where the Lakewalk splits to cross the railroad tracks, reduces the grade of the trail and increases the turn radius to provide a safe path of travel that is ADA compliant.

Estimated Cost for ADA Reroute 2
\$27,760

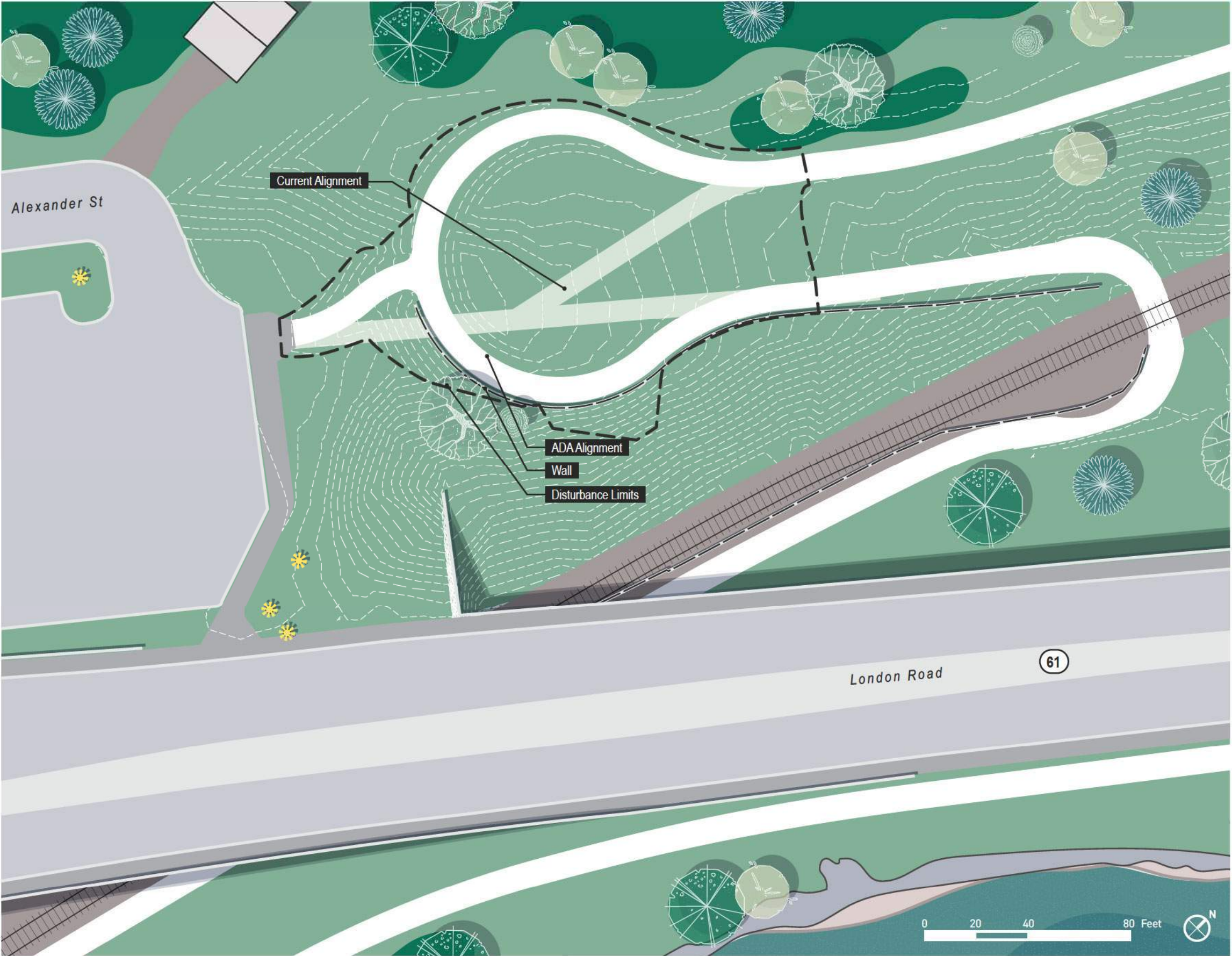


ADA Reroute 3:

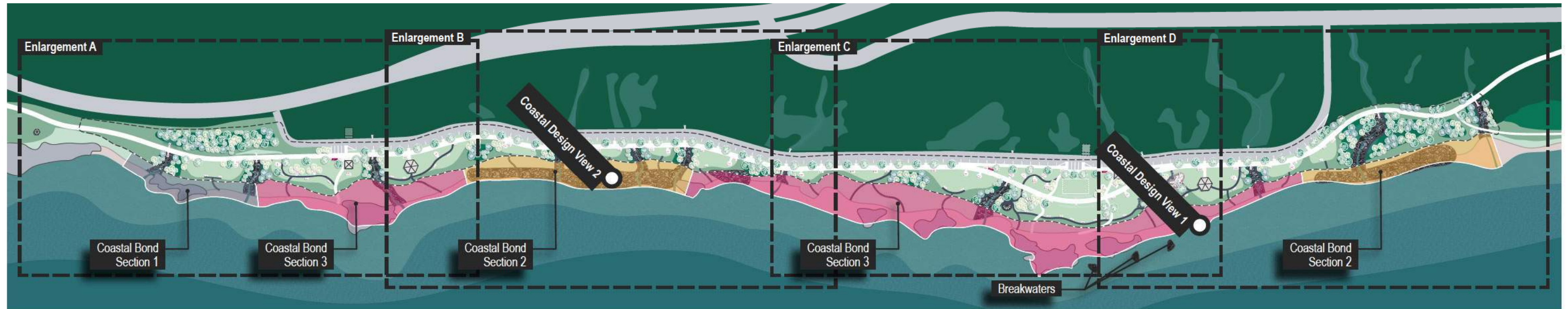
The realignment of the Lakewalk near the Lakewalk Parking Lot at Holiday Station reduces the grade of the trail and increases the turn radius to provide a safe path of travel that is ADA compliant. Additional study to improve grade and bring the trail up to ADA compliance at the railroad crossing is in progress

DESIGNS

Estimated Cost for ADA Reroute 1
\$178,320



DESIGNS



PROJECT EXTENTS: KITCHI-GAMMI PARK + BRIGHTON BEACH

The same storms that damaged the Lakewalk in 2017 & 2018, also did significant destruction to the roadway infrastructure in Kitchi Gammi Park and to the Brighton Beach shoreline. Immediately after the storms occurred, the park had to be temporarily closed so that the City could clean-up the damaged pavement and install safety barriers where the shoreline had been undermined and the roadway was in jeopardy of sloughing away.

Current Work:

Since then, the City's Engineering department has been designing a more resilient roadway that recedes further away from the Lake, to prevent any further infrastructure storm damage to occur. The new roadway will be constructed during the 2022 season.

In addition to the rehabilitated roadway, the last remaining segment of the Lakewalk Trail alignment is currently being constructed and will be complete this November (2021). The trail will parallel the new road on its south side for the most part, but will spur off to the east when the new road heads north to connect up with Old Scenic Highway 61.

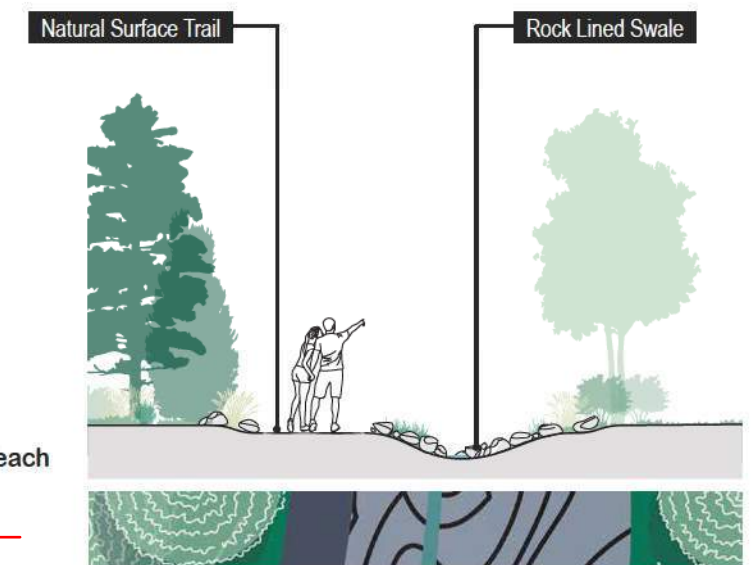
Future Work:

The following pages include preliminary designs for the remaining park landscape from the edge of trail all the way down to the shoreline and takes a fresh look at how to restore the parkland with a more sustainable and resilient approach. Again, the general themes focus on restoring the park back to a North Shore Coastal Forest, and daylighting the natural drainageways to be key site features, while still providing public access to the water's edge at designated areas.

Estimated Cost for Kitchi-Gammi Park & Brighton Beach

LHB
AMI

Kitchi-Gammi Park Landscape:	\$1,203,539
Coastal Bond Beach Section 1:	\$1,110,000
Coastal Bond Beach Section 2:	\$3,590,000
Coastal Bond Beach Section 2:	\$3,450,000
Coastal Bond Beach Breakwater:	\$500,000



Cross section of the daylight stormwater outlet swale with natural surface trail. The swale will be rock and beach cobble with vegetation growing in and at the edges to provide a naturalized creek-like outlet into the lake. A natural surface trail will be placed at one edge of each of these channels to allow users to access the beach and interact with the channel without causing additional erosion.

Kitchi Gammi Park + Brighton Beach

Enlargement A

The New Park Entry, consists of the conversion of the road to one-way traffic and so the western entrance will be the primary gateway to Kitchi Gammi Park and Brighton Beach. Focus is on native planting restoration of the landscape at the entry to signify to visitors that this is the entrance to a

premiere destination park. This treatment will signify to users of the Lakewalk trail that they are moving into or out of a unique section of the trail corridor.

Key Design Features:

- Kayak Launch staging area, with kayak racks
- Vault Toilets
- New Pavilion/shelter
- Daylit stormwater swales
- Natural surface paths



Kitchi Gammi Park + Brighton Beach

Enlargement B

The constricted section of the park is more of a through space and will contain similar elements as the rest of the park. Between the dayit sotrmwater swales and beach access paths, smaller areas for rest and picnicking will be located between the trails and the waters edge.



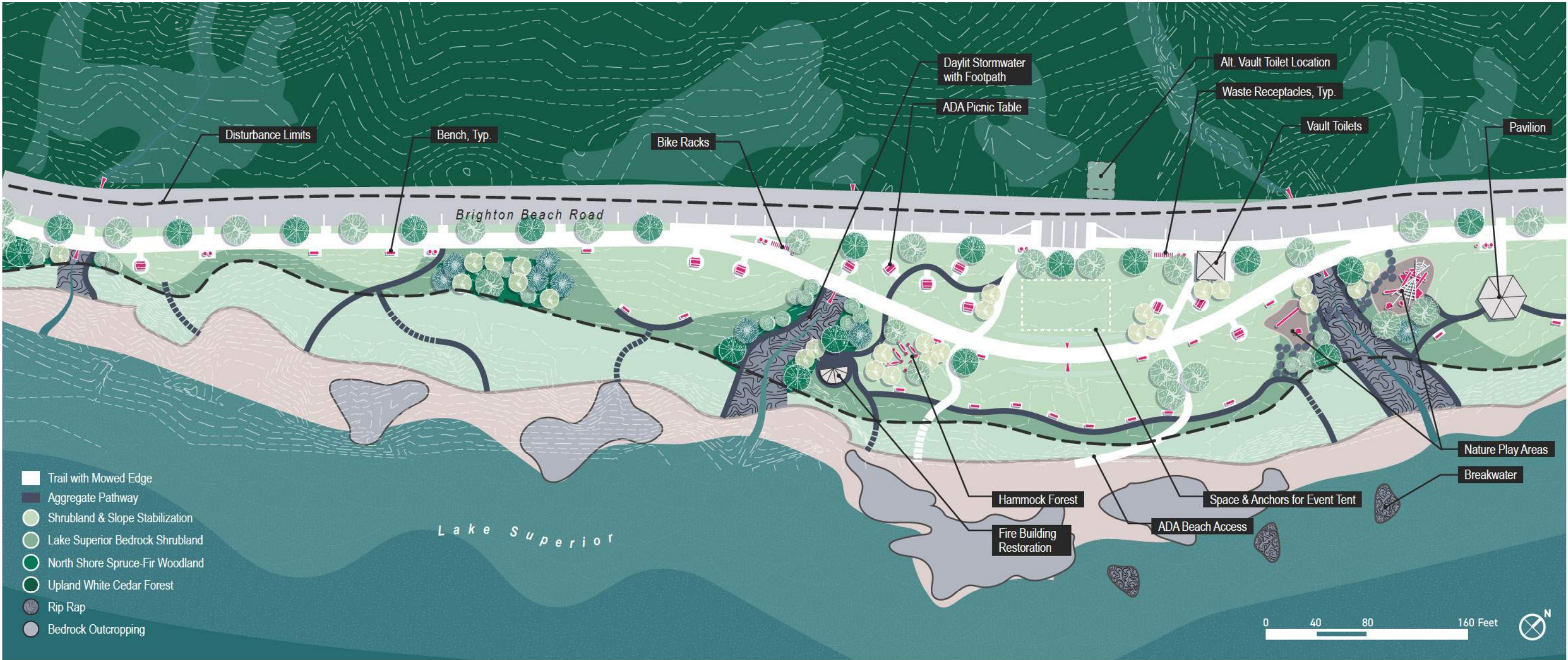
Kitchi Gammi Park + Brighton Beach

Enlargement C

This is the main gathering node of the park, with the most programmed upland space. This area will provide ADA access to the beach and a flexible grass area for a variety of activities.

Key Design Features:

- Vault toilets
- Hammock forest
- Repairs to the WPA fireplace building
- Space an event tent (with anchors)
- Picnic area
- Grills
- Nature play areas with swings
- Refurbished Pavilion
- Daylit stormwater swales
- Natural surface paths



Kitchi Gammi Park + Brighton Beach

Enlargement D

The northern end of the park pulls the Lakewalk trail away from the shore and connects up to existing trails near or on Old Scenic Highway 61. This area was severely damaged by the storms and will focus on vegetation restoration and shoreline re-establishment and revetment protection.



Coastal Design: Brighton Beach Pavillion

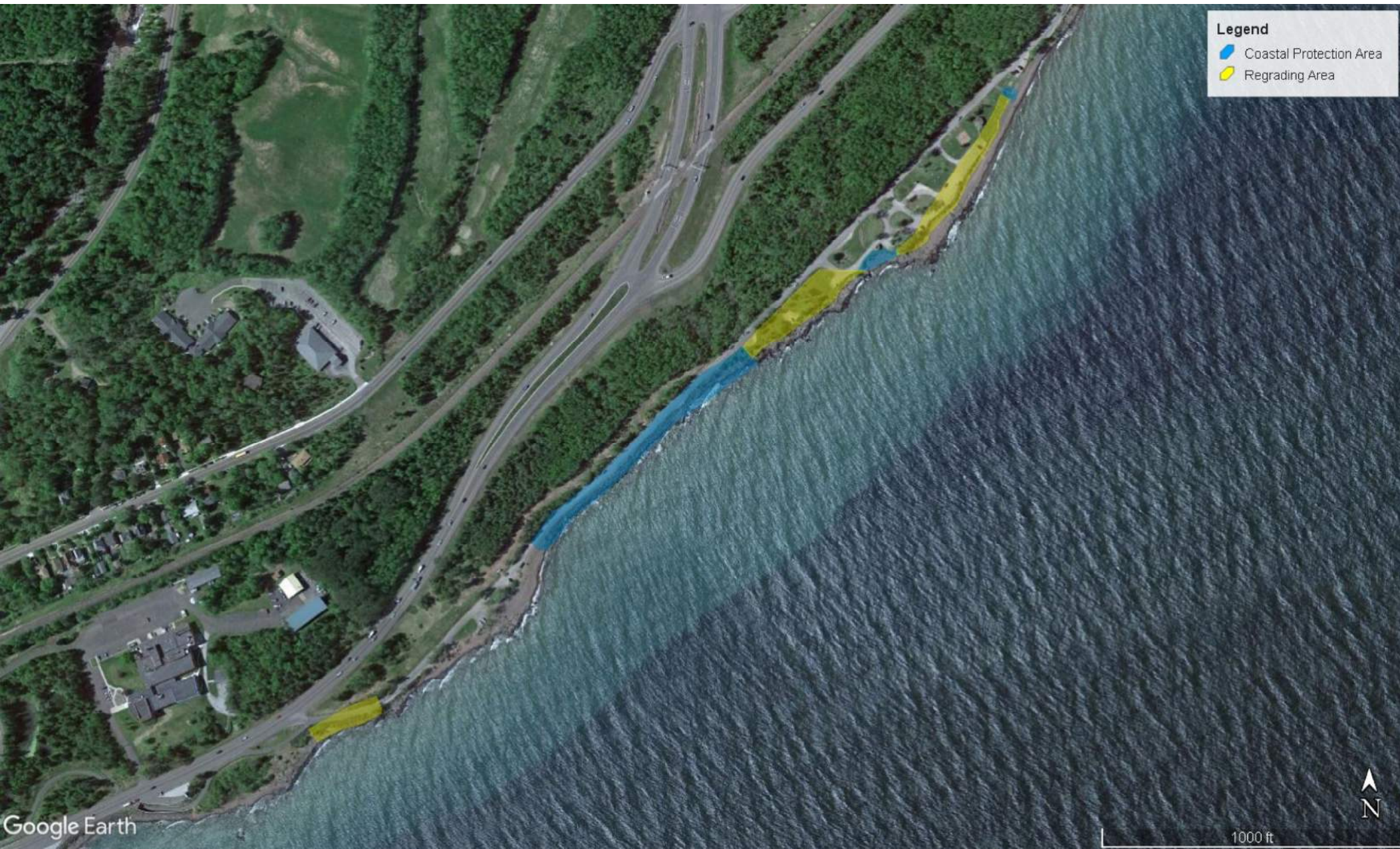
This portion of the project will feature an updated park space for family gatherings. New native planting restoration will provide a buffer while new rock steps and an ADA accessible path mean the space can be enjoyed by all.

Key Design Features:

- Protects existing infrastructure
- Provides public access down to the beach
- Vegetation and stone provides dynamic shoreline protection
- Creates a buffer between beach and grass areas
- Enhances beach using strategically placed rock outcroppings



Proposed Coastal Scope of Work for Brighton Beach



Proposed FEMA_R1 Section Scope of Work for Brighton Beach



Figure 1: Area of work associated with proposal.