

TASK 1 – PROJECT MANAGEMENT/COORDINATION

LHB will provide project management and coordination services which will include quality assurance/control of project deliverables and tracking project schedule. This task assumes the project will span from March 2024 to October 2025 (approx. 20 months).

Services

- Weekly meetings with City team during design (assume 22, 1-hour virtual meetings during design).
- Meetings with State Aid and SHPO (assume 2 each).
- Coordinate with AMI on coastal engineering.
- Coordinate with MnDOT London Road project.
- Coordinate with the City's wayfinding and interpretive signage consultant.
- Coordinate with North Shore Scenic Railroad.
- Prepare and distribute project correspondence including agendas, meeting minutes and weekly summaries.
- Monitor project budget.
- Manage Quality Control and Assurance process.

Deliverables

- Project correspondence.
- Meeting agendas and minutes.
- Weekly progress reports.
- Monthly project invoicing with progress report.

Provided by City

- Timely project coordination, comments, and review/feedback to questions during design.
- Participate in meetings and ensure key staff are in attendance.

TASK 2 – PUBLIC ENGAGEMENT

Based on conversations with City staff, it is understood that one additional public meeting will be required to present the final plan for the project. LHB has allotted 60 hours to update and reformat master plan graphics, based on final design, for presentation at the public meeting. LHB will attend and participate in the public meeting to present the design to stakeholders and the public.

Services

- Provide updated and reformatted master plan exhibits.
- Attend and participate in one (1) in-person public meeting.

Deliverables

- Updated master plan exhibits.
- Presentation graphics.

Provided by City

- Prepare and send out mailers and issue press release for public meeting.
- Provide or secure public meeting space.
- Coordinate meeting location and time with LHB.
- Participate in public meetings and ensure key staff are in attendance.

TASK 3 – GEOTECHNICAL EVALUATION

Geotechnical investigation was previously completed by EPC and AET for some areas along the Lakewalk. It is anticipated that additional geotechnical evaluation will be needed to inform the design of retaining walls and other areas of design included in the project.

It is understood that the City will contract directly with a geotechnical engineer and LHB will provide information about what geotechnical investigation is needed, along with a map of boring locations.

Services

- Provide scope of geotechnical investigation.
- Provide map showing locations of additional borings requested.

Deliverables

- Final design informed by geotechnical information.

Provided by City

- Provide geotechnical information available to date.
- Coordinate additional geotechnical investigation with City's geotechnical engineer.

TASK 4 – SURVEY AND RIGHT-OF-WAY MAPPING

It is expected that additional topographic and utility field (GSOC) survey will be required to supplement the original survey, previously completed by TKDA. Areas where additional survey is needed are:

1. At new community connection from Lakewalk to Superior Street near Essentia/Fitger's (Community Connector 04).
2. Where North Shore Scenic Railroad track survey is missing.
3. Top of slope at recently constructed shoreline areas and other missing areas.
4. At Water Street trail head (Pause Area 11).
5. Existing trail from 23rd Ave E to 28th Ave E.
6. Existing trail from Edgewater Hotel to 26th Ave E (Community Connection 09).

It is assumed that additional topographic survey will not be required at the seven (7) other community connection points, as the scope is understood to include only traffic signage, striping and coordination with interpretive and wayfinding sign design. Utility field survey (GSOC) at these locations is included to inform the locations for interpretive and wayfinding sign footings.

Federal Aid requires that the project be constructed on right-of-way owned by the City or property covered by temporary or permanent easements. To ensure this, LHB has also included right-of-way mapping services.

Services

- Utility field survey (GSOC) of markings (in areas of additional survey).
- Additional topographic survey.
- Property and survey monument research to establish property ownership and lot lines, locate right-of-way and provide control points for alignment and elevation.

Deliverables

- Updated AutoCAD files of existing conditions and right-of-way

Provided by City

- City GIS data (public utilities, property/parcel information, aerial imagery, LIDAR).

TASK 5 – ENVIRONMENTAL DOCUMENTATION AND AGENCY APPROVALS

The City has received a federal RAISE Grant for the Lakewalk project. Therefore, an environmental review under the National Environmental Policy Act (NEPA) is required. Project development and environmental documentation will follow the MnDOT State Aid and Federal Aid process. It is assumed that the project will be authorized as a Class II (Categorical Exclusion) action under NEPA in accordance with FHWA's implementing regulations at 23 CFR 771.117. LHB will prepare a non-programmatic Categorical Exclusion (non-PCE, formerly referred to as the Project Memorandum) for the project, documenting that the project does not involve significant environmental impacts. The Long Form Project Memorandum template, available on the MnDOT State Aid website, will be used to draft the non-PCE.

We understand that the Lakewalk project may have impacts on three previously inventoried archeological sites: 21SL0816 (Outer Harbor Breakwater Site), 21SL0818 (Probable Dock Site), and 21SL1278 (North Shore Scenic Railroad Dump Site). LHB will coordinate project design with MnDOT Cultural Resources Unit (CRU) in support of the Section 106 process.

LHB will work with MnDOT State Aid to identify the appropriate path for Section 4(f) involvement and incorporate the Section 4(f) findings into the non-PCE. It is assumed that a *de minimus* impact determination will be made for this project.

We will send the environmental review request letters to the appropriate agencies including MnDOT OES, MnDOT Cultural Resources, and MnDNR. Variance or design exceptions are not anticipated, however if there are any, LHB will prepare and submit variances for approval.

LHB's coastal engineering partner, AMI, will be responsible for DNR and Army Corps permitting for coastal work.

LHB has also included coordination with the Scenic Railroad for final approvals and required permits regarding relocation of the fence parallel to the railroad tracks and coordination of railroad crossing improvements.

Services

- Coordinate with MnDOT CRU, SHPO, and FHWA.
- Coordinate with Scenic Railroad.
- Prepare Draft and Final Project Memorandum.
- Prepare DNR and Army Corps Permits (AMI).

Deliverables

- Draft and Final Project Memorandum (Programmatic C-List).
- DNR and Army Corps Permits (AMI).

Provided by City

- Participate in meetings and coordination with environmental review and permitting agencies.
- Provide background information for environmental documentation.
- Review and provide input on the environmental documentation.

TASK 6 – PRELIMINARY ENGINEERING (30% DESIGN)

LHB and AMI previously partnered with the City to provide master planning documents for the Lakewalk. From there, the design team went on to advance some areas of the Lakewalk masterplan into preliminary design. Due to the additional scope added as a result of the federal funding, the design team will renew the preliminary design to include this new scope and provide an inclusive 30% plan for City review. This 30% plan will be a chance for all parties to confirm that necessary design scope is being included in the project and that the geometry and typical sections are meeting requirements. LHB will involve the City team at the earliest possible stage for consideration and will plan to make one round of revisions to provide a Final Preliminary Plan.

It is assumed that extensive new stormwater infrastructure will not be part of the project. Based on conversations with the City's stormwater engineer, and due to the constrained, linear nature of the project, the general stormwater approach will be to maintain sheet flow across the trail and towards the lake. The design will aim to reduce concentrated flows that cause erosion of the shoreline. There may be some opportunities along the project to provide small stormwater BMP's. LHB will assess the project site to identify possible locations for stormwater BMP's and investigate the feasibility of implementation.

In addition to the preliminary plans, project staging will be analyzed to lay out how Lakewalk users will be routed throughout construction. The preliminary engineering phase will also include an existing lighting analysis to determine lighting needs between Endion Station and the Veteran's Memorial. A preliminary cost estimate will be provided along with the preliminary plans.

Services

- Preliminary Design (30% Design).
- Project staging analysis.
- Existing lighting level analysis.

Deliverables

- Draft and Final Preliminary Design Plans.
- Phasing recommendations.
- Preliminary Cost Estimate.
- Lighting recommendations.

Provided by City

- Review and comment on preliminary designs and analysis. Provide one set of comprehensive City comments back to LHB for incorporation.

TASK 7 – ENGINEERING AND FINAL DESIGN PLANS

Final design will include preparation and submittal of 60% and 90% plans. Review and approval by City and MnDOT State Aid at these stages assures the end product is properly developed to serve the needs of the stakeholders, and will be in conformance with applicable standards, including the MnDOT Bicycle Facility Design Manual, AASHTO Pedestrian Facilities Guide, and relevant State Aid Standards. Variances from standards, if required, will be prepared, and submitted for approval.

LHB's design services will include replacement of the Lakewalk from Endion Station to Water Street and from 23rd Ave E to 26th Ave E, pause area design, community connector and plaza design and social trail restoration/stabilization. Retaining wall design is included at Leif Erickson bypass, east and west of Leif Erickson Park and at ADA reroute 3. The proposed lighting design is assumed to use the same lighting fixtures as the previous Lakewalk project near Fitger's. The lighting design will provide lighting through the Leif Erickson bypass.

The Lakewalk is a popular and well used trail along the Lake Superior shoreline, especially in the summer months. It will be important that the public is safely directed around the work areas. LHB will include staging plans in the construction documents that will guide the contractor on how to effectively stage the construction to reduce confusion and allow access to areas that are not under construction. It is assumed that sections of the Lakewalk will be closed during construction and that the public will be detoured around the work areas on city streets and sidewalks.

It is anticipated that the coastal engineering plans provided by AMI will be included with the trail and pause area design plans from LHB as one bid package. Based on conversations with the City, the park amenity and landscaping overlays will be bid as an alternate to the base bid.

During final design, LHB will also develop intermediate and final cost estimates at 60%, 90% and final design plan submittal stages so near real time budget checks can be made, reducing the risk of unanticipated costs and scope creep.

Along with the final design plans, LHB will develop and submit to the City for review all required special provisions for the project following State Aid Standards. Upon review and supplementation by the City as required, LHB will assemble the plans and special provisions into the actual proposal and bid document, prepared to be released for bidding by the City.

LHB will organize and make all submittal packets to the District State Aid Office. These packets will include final plans, required permits, cost estimates, checklists, special provisions, funding forms, and any other documents required by agency reviewers.

Services

- Intermediate and Final Design Plans.
- Intermediate and Final Cost Estimating.
- Development of Special Provisions in City of Duluth format.
- Organization and assembly of MnDOT State Aid submittals.

Deliverables

- 60%, 90% and final design plan submittals.
- 60%, 90% and final cost estimates.
- All necessary special provisions.
- Fully assembled project packets containing all required plans and forms for submittal to MnDOT State Aid.

Provided by City

- Circulate plan submittals for review by appropriate City departments and provide consolidated comments back to design team.
- Review and sign required LHB prepared forms and checklists in various agency submittal packages.
- Bid package assembly, advertisement, letting.

TASK 8 – BIDDING ASSISTANCE

LHB will assist the City during the bidding phase as needed in case of any required clarifications. LHB will also lead a pre-bid meeting and assist in preparation of addenda as necessary.

Services

- Lead pre-bid meeting.
- Bidding assistance services (assume 16 hours).
- Assist in preparing addenda (assume 3 addendums).

Deliverables

- Prompt responses to project related questions during the bidding phase.
- Pre-bid meeting agenda and minutes.
- Addenda documents (assume 3 addendums).

Provided by City

- Manage project advertisement and letting.
- Participate in pre-bid meeting.
- Transmit any project related inquiries during bidding as appropriate.

TASK 9 – CONSTRUCTION ADMINISTRATION

LHB will review contractor and fabricator developed designs and plans globally for conformance with the intent of the overall contract and at a detailed level for proper fit and integration with the proposed design elements and inplace conditions to remain.

An experienced and qualified construction inspector from LHB will be on site full time during the construction phase to observe the progress and quality of the executed work of the contractor and ensure that such work is proceeding in accordance with the contract documents. This lead inspector will have the required MnDOT training and certifications to assure the work is monitored properly and the funding requirements are met. LHB will keep the City informed of the progress of the work and shall endeavor to guard the City against defects and deficiencies in such work and may disapprove or reject work failing to conform to the contract documents. The LHB inspector will also coordinate with the material tester hired by the City.

Construction staking will be provided by an LHB surveyor to provide control points and grades to facilitate construction.

LHB will lead a preconstruction meeting, as well as weekly construction meetings on the project site during construction. Documentation and record keeping of construction conformance, construction progress and payment processing will be provided by the inspector. LHB will also provide final record drawings following the completion of construction.

Services

- Review contractor and fabricator generated calculations, designs, and shop drawings.
- Lead preconstruction meeting and weekly on-site meetings during construction (assume 17 meetings).
- Provide full time construction observation (assume 50 hours per week for 16 weeks).
- Provide construction staking.

Services (cont.)

- Document and record construction progress, conformance, and payment processing.
- Keep daily and weekly diaries.
- Quantity measurement and computations.
- Preparation of change orders, work orders, supplemental agreements and pay estimates.
- Final record drawings and completion of one-year warranty inspection.

Deliverables

- Reviewed contractor and fabricator generated calculations, designs, and shop drawings.
- Meeting agendas and minutes.
- Staking files and data (as required).
- Project documentation.
- Project record drawings per City of Duluth Engineering Guidelines.

Provided by City

- Transmit any contractor submitted calculations and shop drawings that require LHB review.
- Convey LHB comments and corrections to the contractor/fabricator.
- Assist with communication between City staff and the public.
- Participation in pre-construction and weekly construction meetings.
- Provide input and feedback on construction issues.
- Review and approve contract changes, partial and final estimates.
- Participate in final inspection and walk-through.

ASSUMPTIONS

1. Geotechnical investigation to inform design is not included. This proposal includes coordination with the geotechnical engineer contracted by City.
2. Material testing during construction is not included. This proposal includes coordination with the material tester contracted by City.
3. No additional property acquisition is required to construct project.
4. Wayfinding and interpretive signage design by others. This proposal includes coordination with signage consultant and City staff.
5. Tribal monitoring during construction is not included. This proposal includes coordination with tribal monitors contracted by City.
6. Design and installation of railroad crossing surfacing and signal will be handled by Railroad.
7. No services have been included for preparation of any City Variance, Conditional Use or Special Use permits.
8. Construction documents will not be broken out into separate bid packages.
9. Sound barrier at Pause Area 09 not included.

PROPOSED FEE

LHB & AMI propose a total contract amount of One Million One Hundred Nineteen Thousand One Hundred Forty-Nine Dollars (\$1,119,149) including reimbursable expenses. The fee is divided as follows:

▪ LHB Task 1 – Project Management/Coordination.....	\$52,562
▪ LHB Task 2 – Public Engagement	\$8,936
▪ LHB Task 3 – Geotechnical Evaluation	\$1,431
▪ LHB Task 4 – Survey and Right-of-Way Mapping	\$27,267
▪ LHB Task 5 – Environmental Documentation and Agency Approvals	\$52,408
▪ LHB Task 6 – Preliminary Engineering (30% Design)	\$47,645
▪ LHB Task 7 – Engineering and Final Design Plans	\$223,815
▪ LHB Task 8 – Bidding Assistance.....	\$11,332
▪ LHB Task 9 – Construction Administration	\$202,880
▪ AMI Coastal Work	\$490,873.00

We appreciate the opportunity to continue to provide the City of Duluth with our services and be a partner in improving this treasured community asset. Please contact me at 218-249-7152 or megan.goplin@lhbcorp.com if you have any questions.

LHB, INC.



MEGAN GOPLIN, PROJECT MANAGER



MATT SETTERGREN, VICE PRESIDENT

Attachments: LHB Fee Estimate Worksheet- Rev 1 dated April 22, 2024
Scoping Exhibits (23 pages)
AMI Proposal #241048 - Lakewalk Phase 5 Shoreline Rehabilitation Rev 1 dated April 18, 2024

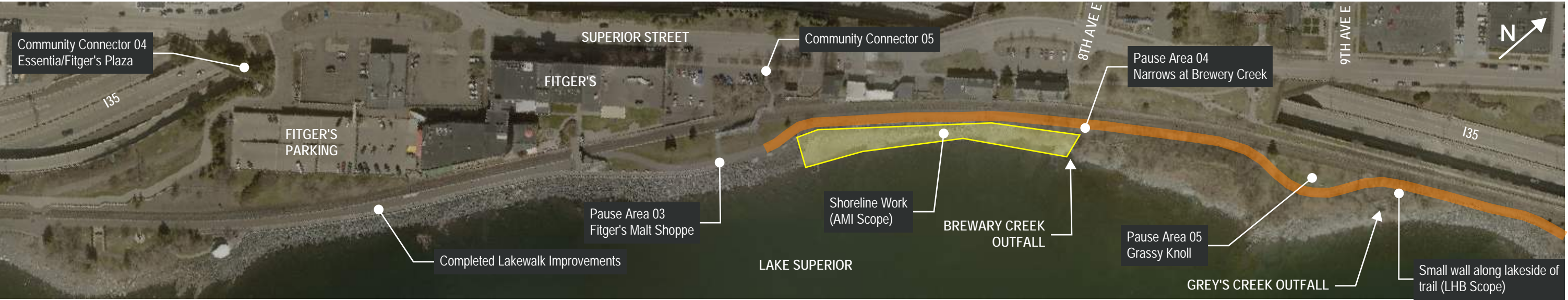
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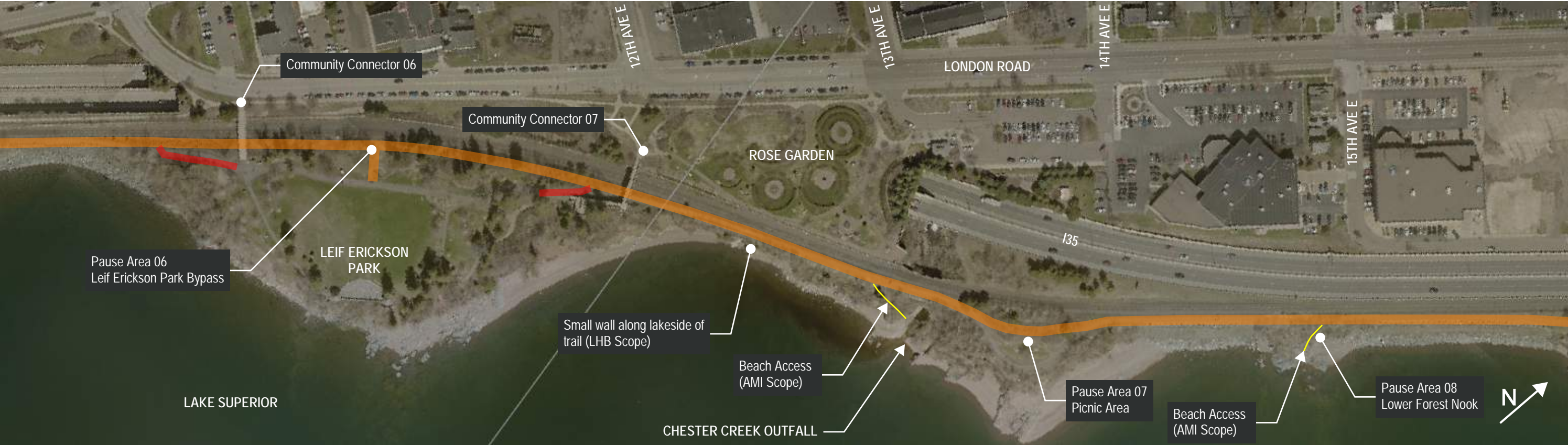
2024 FEE ESTIMATE WORKSHEET-REV 1

Project Breakdown Summary Description	P3	P6	T5	P7	P12	P9	T8	P5	T5	P5	T6	T11	T7	Total Labor Costs (\$)
	Project Principal	Project Manager	Senior Tech.	LA Lead	LA Designer	Struc. Lead	Struc. Tech.	Elec. Lead	Elec. Tech.	Survey Lead	Survey Tech.	Survey Tech.	Admin	
	\$ 210	\$ 167	\$ 108	\$ 160	\$ 115	\$ 155	\$ 105	\$ 185	\$ 111	\$ 180	\$ 103	\$ 80	\$ 99	
Task List														\$ -
Task 1 - Project Management/Coordination	14	184	-	60	24	-	-	-	-	-	-	-	66	\$ 52,562.00
Task 2 - Public Engagement	-	8	-	13	48	-	-	-	-	-	-	-	-	\$ 8,936.00
Task 3 - Geotechnical Evaluation	-	3	-	-	-	6	-	-	-	-	-	-	-	\$ 1,431.00
Task 4 - Survey and Right-of-Way Mapping	-	9	38	-	-	-	-	-	-	44	70	56	-	\$ 25,217.00
Task 5 - Environmental Documentation & Agency Approvals	5	162	80	88	-	-	-	-	-	-	-	-	16	\$ 52,408.00
Task 6 - Preliminary Engineering (30% Design)	6	40	150	24	61	21	56	7	20	-	-	-	-	\$ 47,645.00
Task 7 - Engineering & Final Design	19	172	465	170	316	182	353	30	48	-	-	-	12	\$ 223,815.00
Task 8 - Bidding Assistance	3	14	12	12	12	6	8	6	8	-	-	-	-	\$ 11,332.00
Task 9 - Construction Administration	4	96	1,006	35	8	10	-	10	-	16	200	200	40	\$ 178,880.00
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Total Hours	51	688	1,751	402	469	225	417	53	76	60	270	256	134	
Travel Expenses			Cost	Total Direct Expenses					Cost		Labor Cost			\$ 602,226.00
Task 4 - Survey and Right-of-Way Mapping			2,050.00						-		Travel Costs			\$ 26,050.00
Task 9 - Construction Administration			24,000.00						-		Direct Costs			\$ -
			-						-					
											Subconsultant - AMI			\$ 490,873.00
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Total Travel Costs			26,050.00	Total Direct Costs					-		Total Estimated Cost			\$ 1,119,149.00

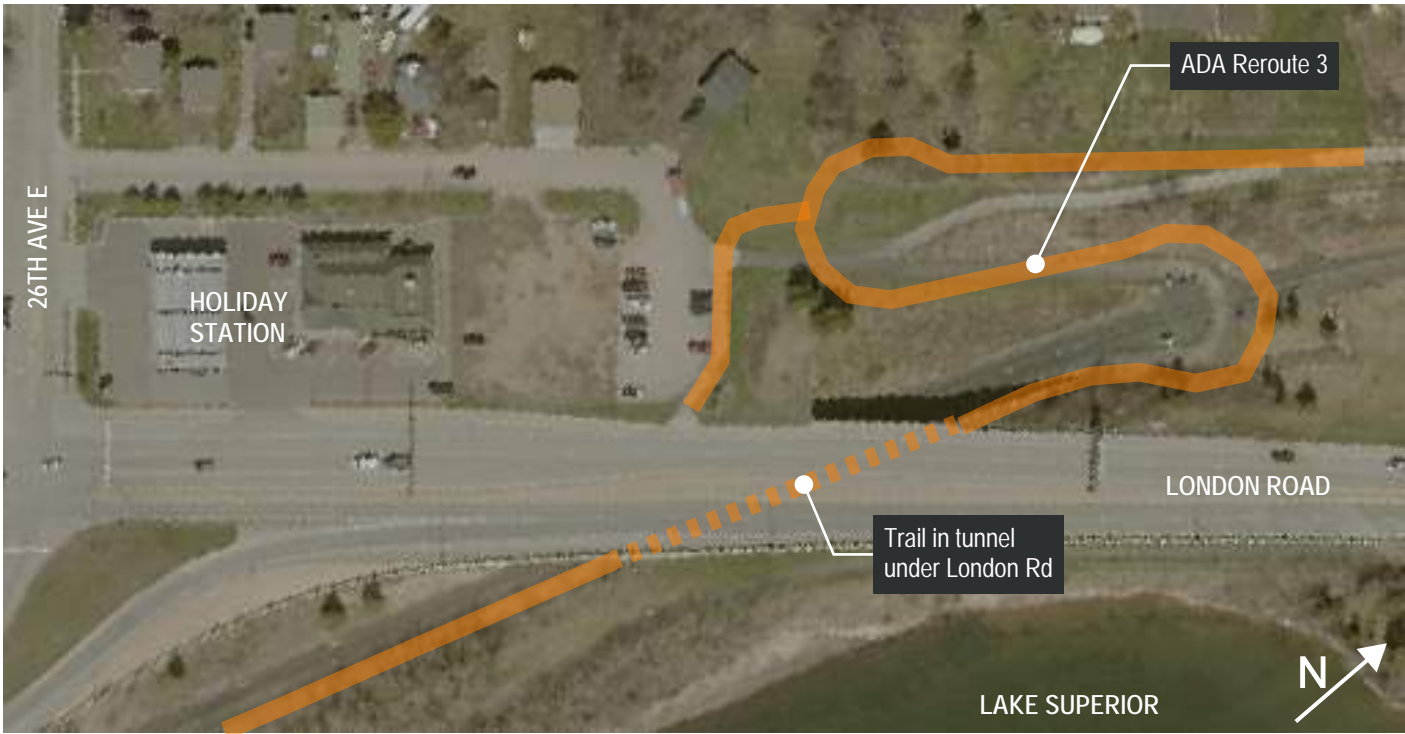
Overall Lakewalk Project

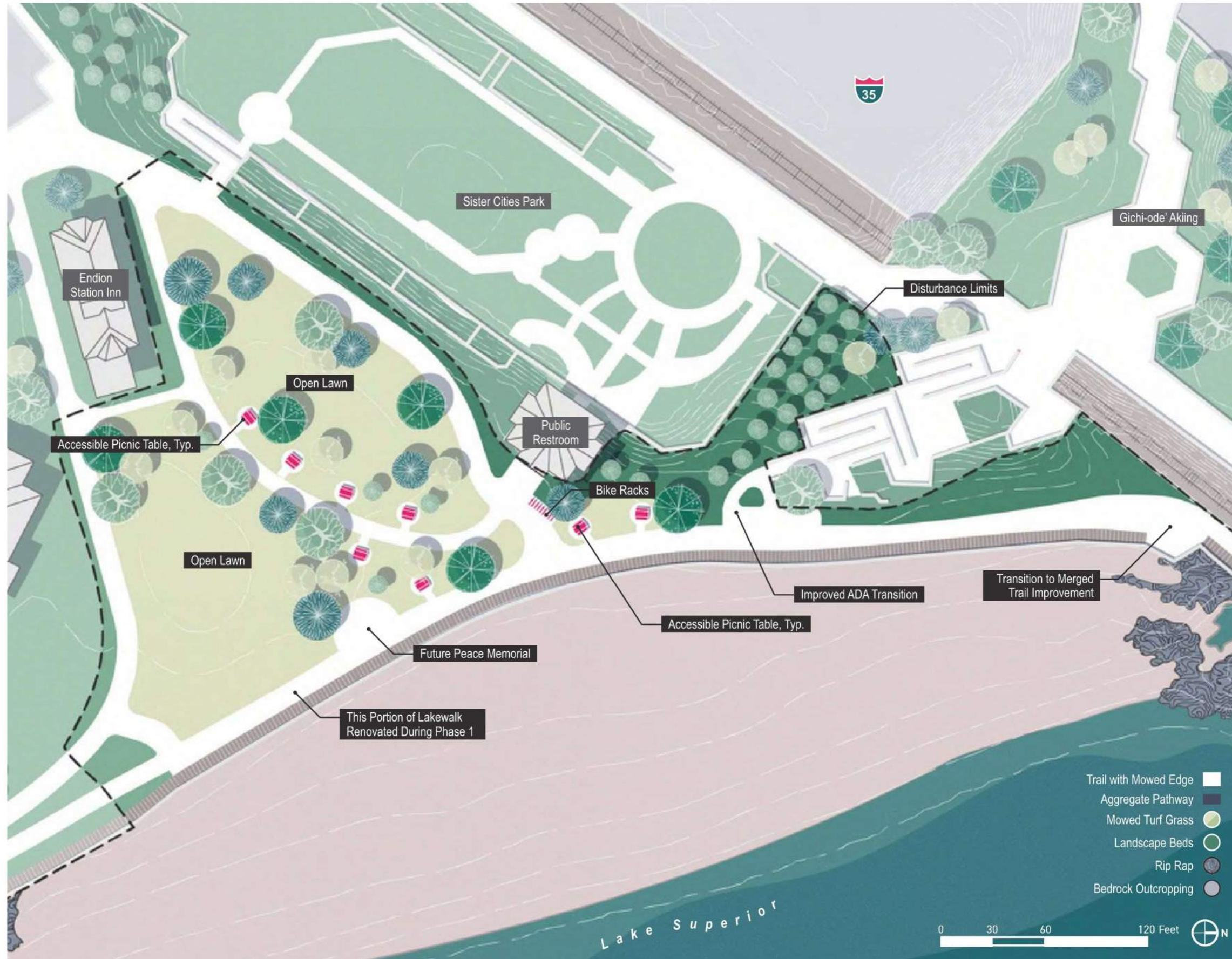


Overall Lakewalk Project



Overall Lakewalk Project





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





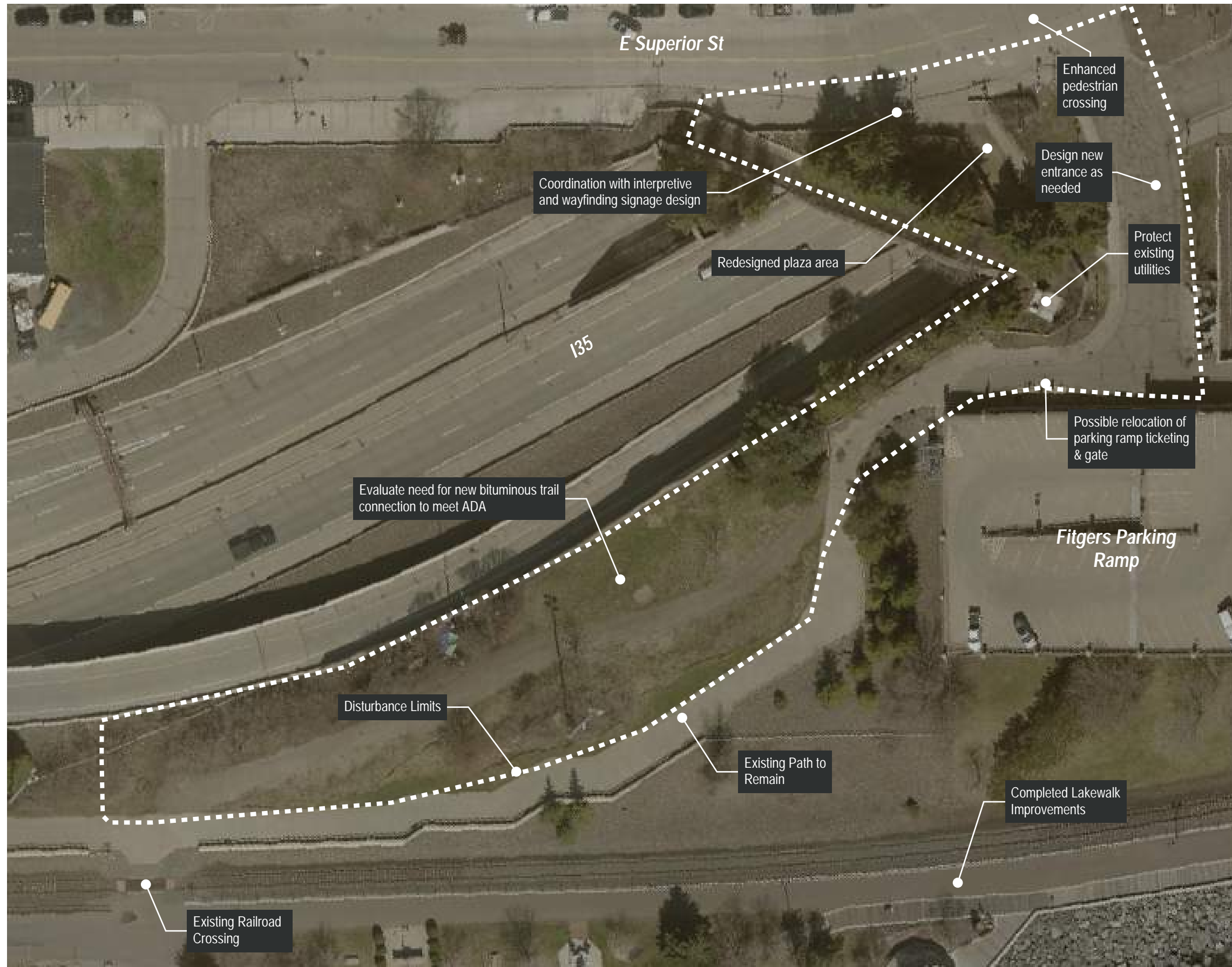
Pause Area 02: Veterans Memorial

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





Community Connector 04: Essentia/Fitgers Plaza

Improvements at the Plaza near Essentia Health and Fitgers will focus on utilizing the space to create a more open area for pedestrians. The new plaza will create easier access for pedestrians to travel to the main Lakewalk trail.

Key Design Features:

- Remove existing landscape walls to open up plaza area
- Reconstruct access road as needed to meet ADA grades
- Provide accessible trail to main Lakewalk trail
- Evaluate need to relocate parking ramp ticketing station and gate
- Coordination with interpretive and wayfinding signage design



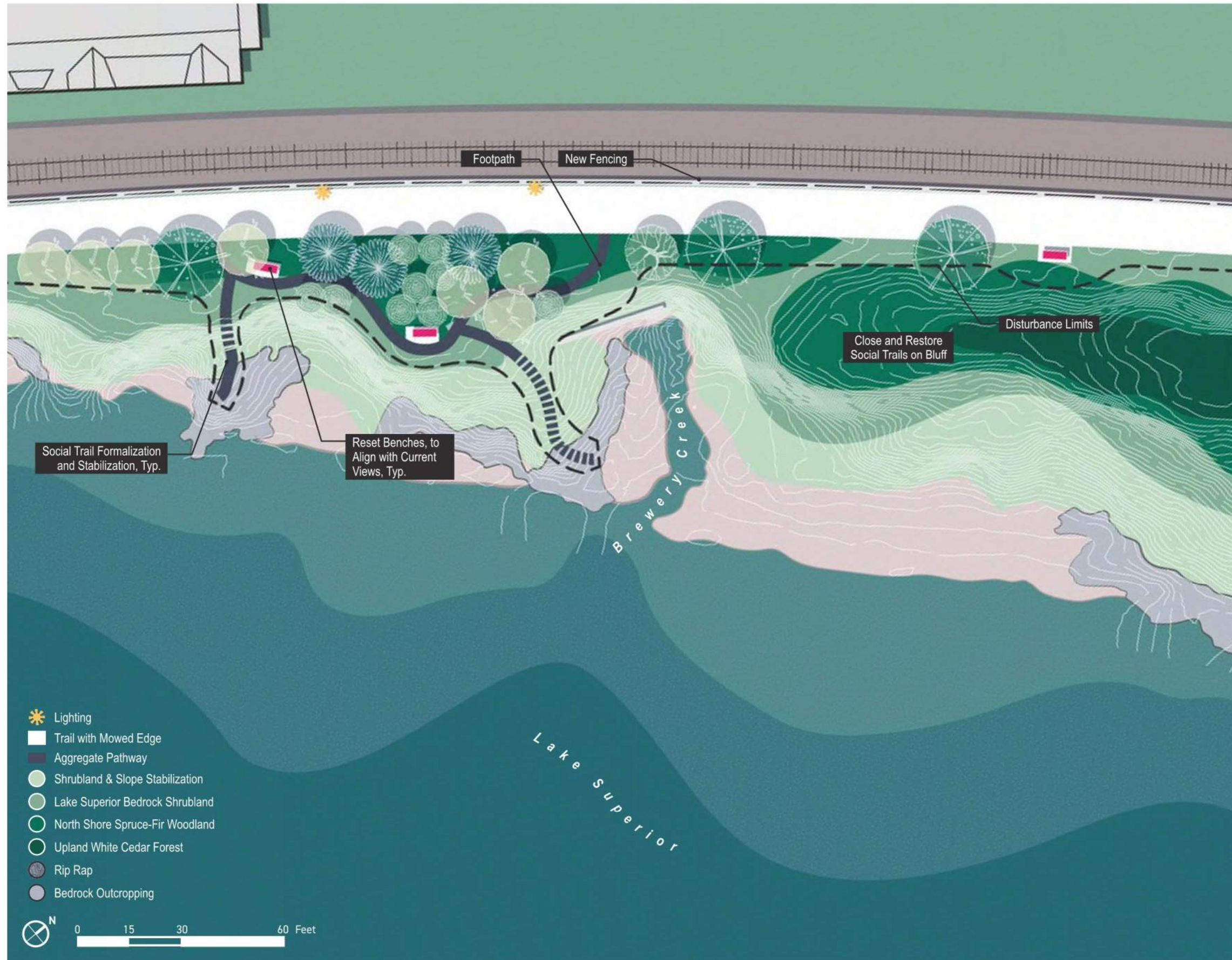
Pause Area 03: Fitgers-Malt Shoppe

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





Pause Area 04: Narrows at Brewery Creek

Landscape improvements at the Narrows at Brewery Creek will restore plantings, provide lookouts and a natural surface footpath. The footpath will allow trail users to get off the main trail and have a moment of respite with benches and views of the lake with a landscape buffer from the main trail. This side path will also formalize the social trails down to the waters edge, by directing users to specific locations which will also reduce erosion down the shoreline slope.

Key Design Features:

- Move trail inland toward railroad and widen to desired 15' width
- Relocate lights in line with new fence
- Relocate benches with accessible pads
- Provide spur footpath with natural surface aggregate
- Re-wild pocket between Lakewalk and footpath with native planting restoration
- Stabilize two social trails, and close off social trails on bluff

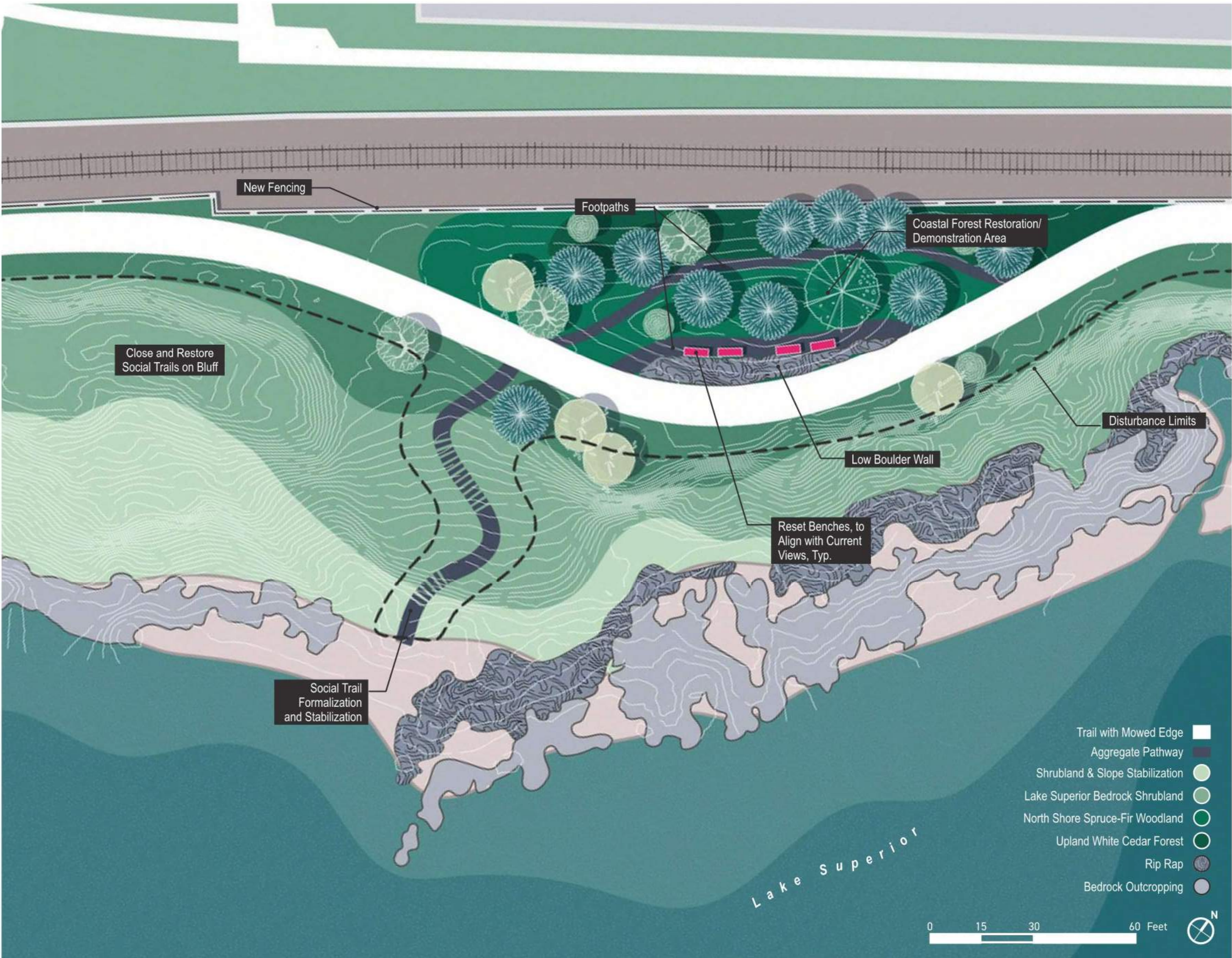


Pause Area 05: Grassy Knoll

Landscape improvements at the Grassy Knoll will showcase a native planting restoration with demonstration area and enhance an existing seating area. Incorporation of a spur footpath through the restoration area will provide opportunities for interpretation and education while also giving trail users an opportunity to explore. Realignment of the Lakewalk trail through this area will create the space needed to eliminate the existing safety railing. Benches in this area will be reset along the footpath for accessibility and will take advantage of the topography and perched view above the main trail.

Key Design Features:

- Eliminate turf and re-wild knoll with coastal forest (white cedar and pine) for interpretation/demonstration area
- Natural surface footpath through coniferous forest floor
- Pull trail inland away from bluff and re-grade for ADA
- Create 5' flat area for shrubland planting and/or bioswale, eliminates need for railing
- Design perched seating area with natural stone boulder wall
- Formalize social trail, provide mobility enhancements for this heavily used access point
- Work with established community partnership to incorporate or relocate existing orchard



Pause Area 06: Leif Erikson Bypass

There is a desire to create a bypass trail at Leif Erikson Park to improve safety and ADA accessibility throughout this area. The recommendation includes creating a new bypass lane along the railroad track with associated retaining wall to meet grading requirements. This bypass will provide a safer route for bikers and pedestrians who don't necessarily need to enter the larger parkland. This re-route includes a new pedestrian link that is centered on the existing bandshell. Future ADA trail improvements within Leif Erikson Park will occur at a later time.

Key Design Features:

- New bike/bypass trail at 12' width will parallel railroad tracks and will no longer require entry into main park area
- Approximately 400LF of retaining wall needed to support slope and new trail alignment
- Pedestrian links into park align with bandshell
- New pedestrian path along existing Lakewalk trail alignment to include new stairs
- Native planting restoration limited to areas only disturbed during construction
- Work with established community partnership to protect, incorporate, or relocate existing gardens



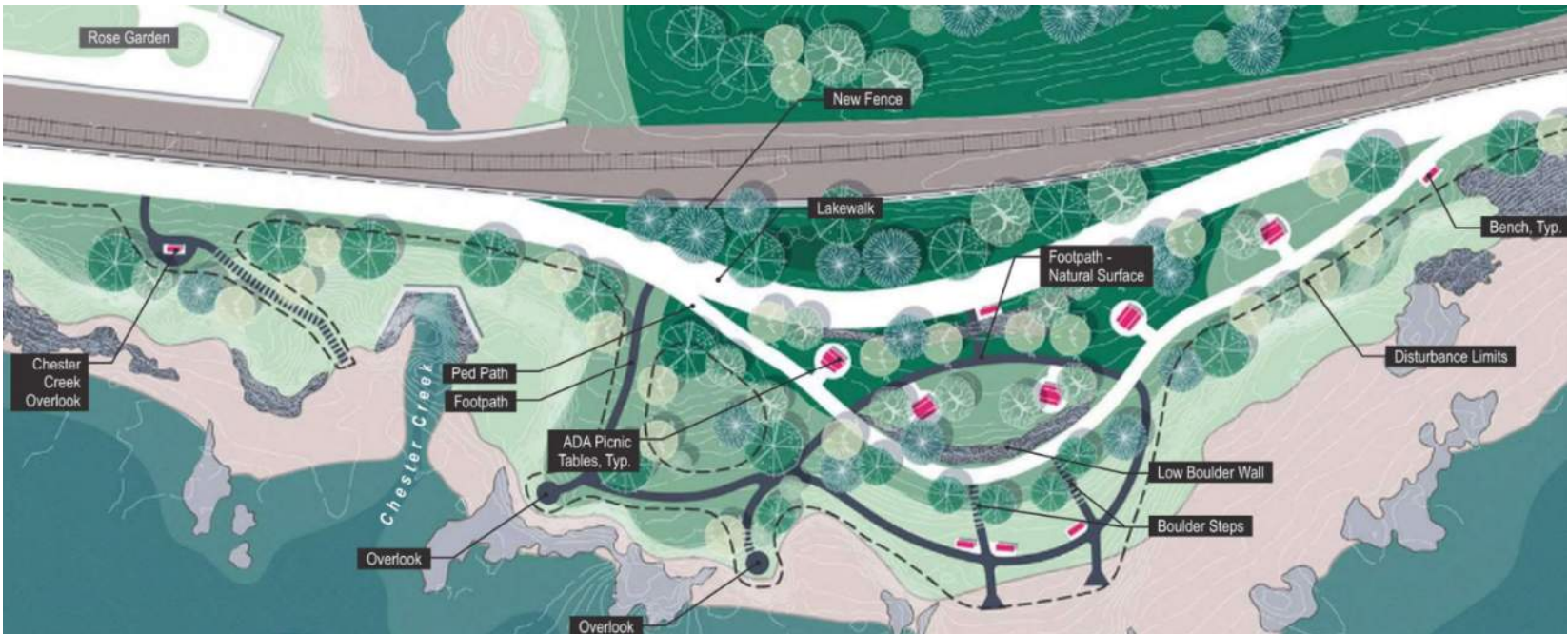
Pause Area 07: Picnic Area

Concept A

This picnic node near Chester Creek outlet is a popular pause area along the Lakewalk Trail and has two design alternatives. Concept A maintains the programmed space but enhances and better defines the existing features at this well-used location. The main Lakewalk trail will be re-routed inland, providing a more consistent grade and an opportunity for commuters to bypass the picnic area. A narrower pedestrian spur trail will follow the route of the existing Lakewalk, and will provide individual picnic nooks, along with natural surface footpaths linking to other key areas such as overlooks and the beach.

Key Design Features:

- Move Lakewalk trail inland for bypass traffic
- Create pedestrian spur path on old trail alignment
- Install accessible benches and picnic tables for flex use
- Formalize and stabilize social trails
- Re-wild pockets between uses with native planting restoration
- Engage community partners for future garden area

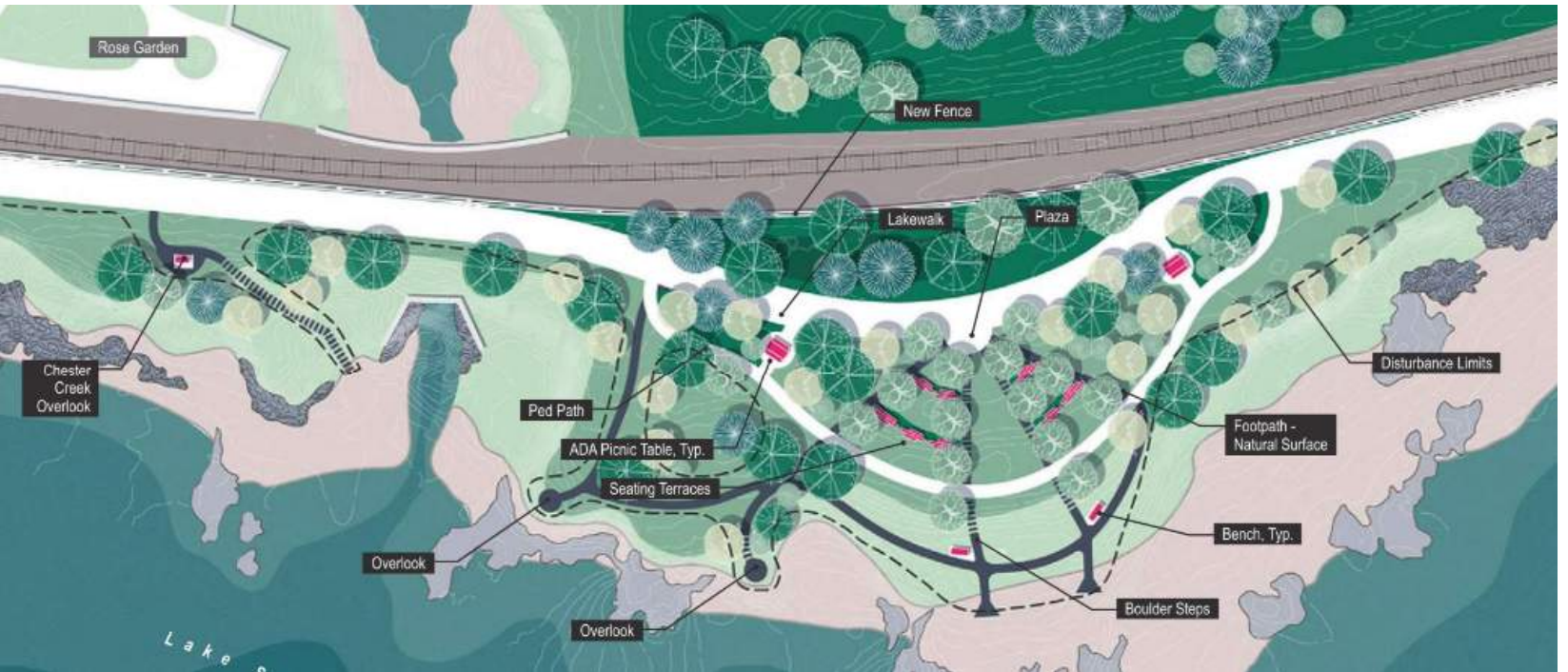


Concept B

Concept B proposes a new organization of space to increase seating and viewing opportunities toward the Lake. Similar to Concept A, the main Lakewalk trail will be re-routed inland, providing a more consistent grade and an opportunity for a bypass for commuters. A pedestrian spur trail will follow the route of the existing Lakewalk, with gravel footpaths formalized to link and access key features. Utilizing a centralized plaza, terraced seating and native plantings will frame and maximize views out to Lake Superior.

Key Design Features:

- Move Lakewalk trail inland for bypass traffic
- Create pedestrian spur path on old alignment with a clear stop/right turn into main trail
- Add lighting for evening use
- Provide natural surface path to frame views and organize connector space
- Formalize and stabilize social trails
- Create central framed view point with addition of plaza
- Terraces picnic areas, with non traditional seating/eating options (drifters or swings)



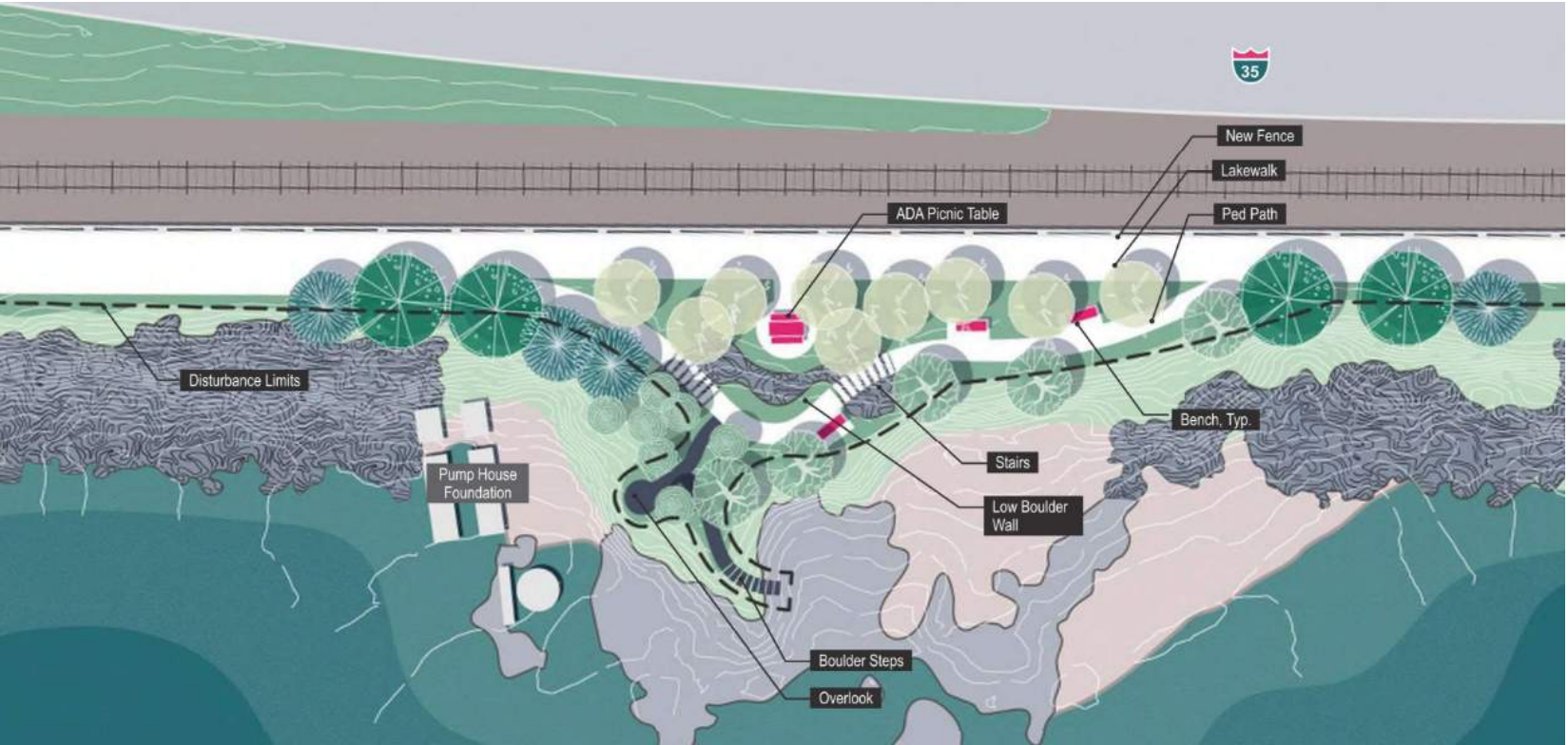
Pause Area 08: Lower Forest Nook

Concept A

This lower forest nook area near the old pump house is secluded, difficult to access, and hasn't been maintained in a while, though it provides a unique setting along the lake shore. Two design alternatives have been studied that strives to enhance the site. Concept A realigns the main trail and provides more accessible seating. Additionally it will take advantage of the topography and maintain the lower terrace, by providing a pedestrian spur path from the main trail and includes bench with views of the lake.

Key Design Features:

- Move trail inland toward railroad for bypass traffic
- Relocate benches for better viewing
- Re-wild pocket created between Lakewalk trail and spur path with native planting restoration
- Stabilize social trails, close off splits and eastern trail
- Create landing at top of bank for single picnic table
- Avoid/protect old pump house
- Provide areas for interpretation

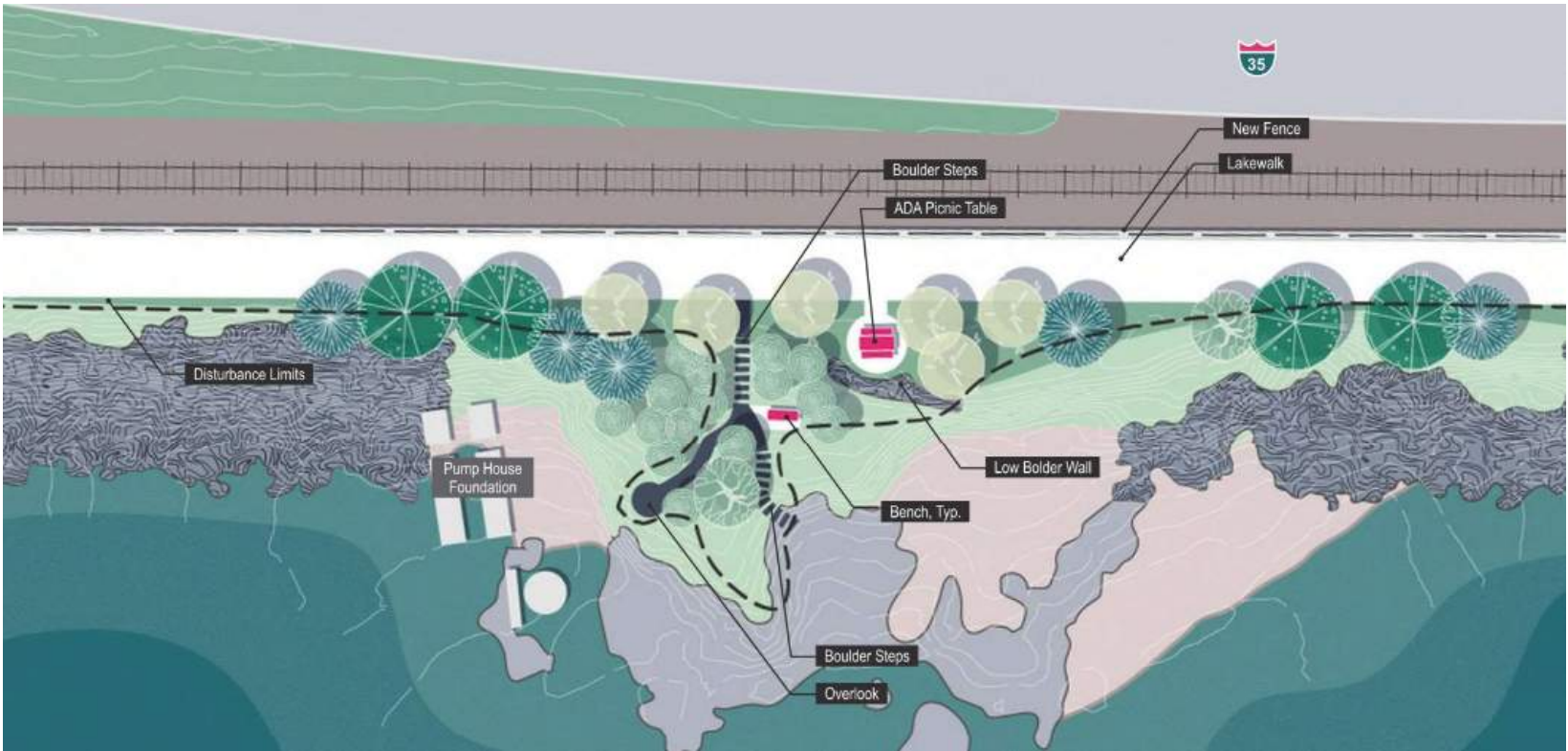


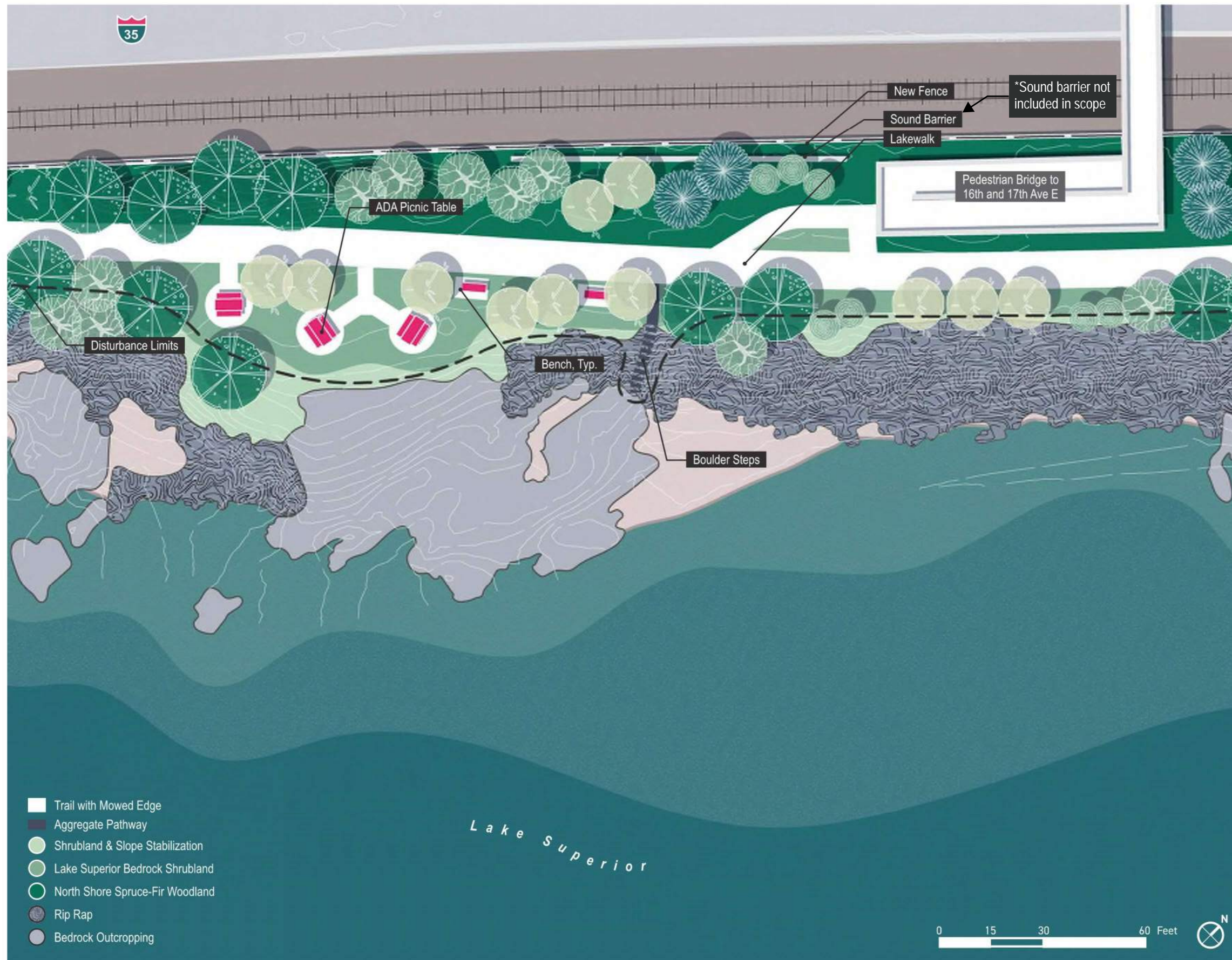
Concept B

Concept B improvements to the Lower Forest nook maintains a similar configuration as it now. This concept also realigns the main trail closer to the railroad corridor and also creates an upper ADA seating area. The lower terrace would larger remain the same. providing beach access and a singular overlook.

Key Design Features:

- Move trail inland toward railroad
- Relocate benches
- Stabilize social trails, close off splits and eastern trail
- Create landing at top for picnic table
- Avoid/protect old pump house
- Provide areas for interpretation





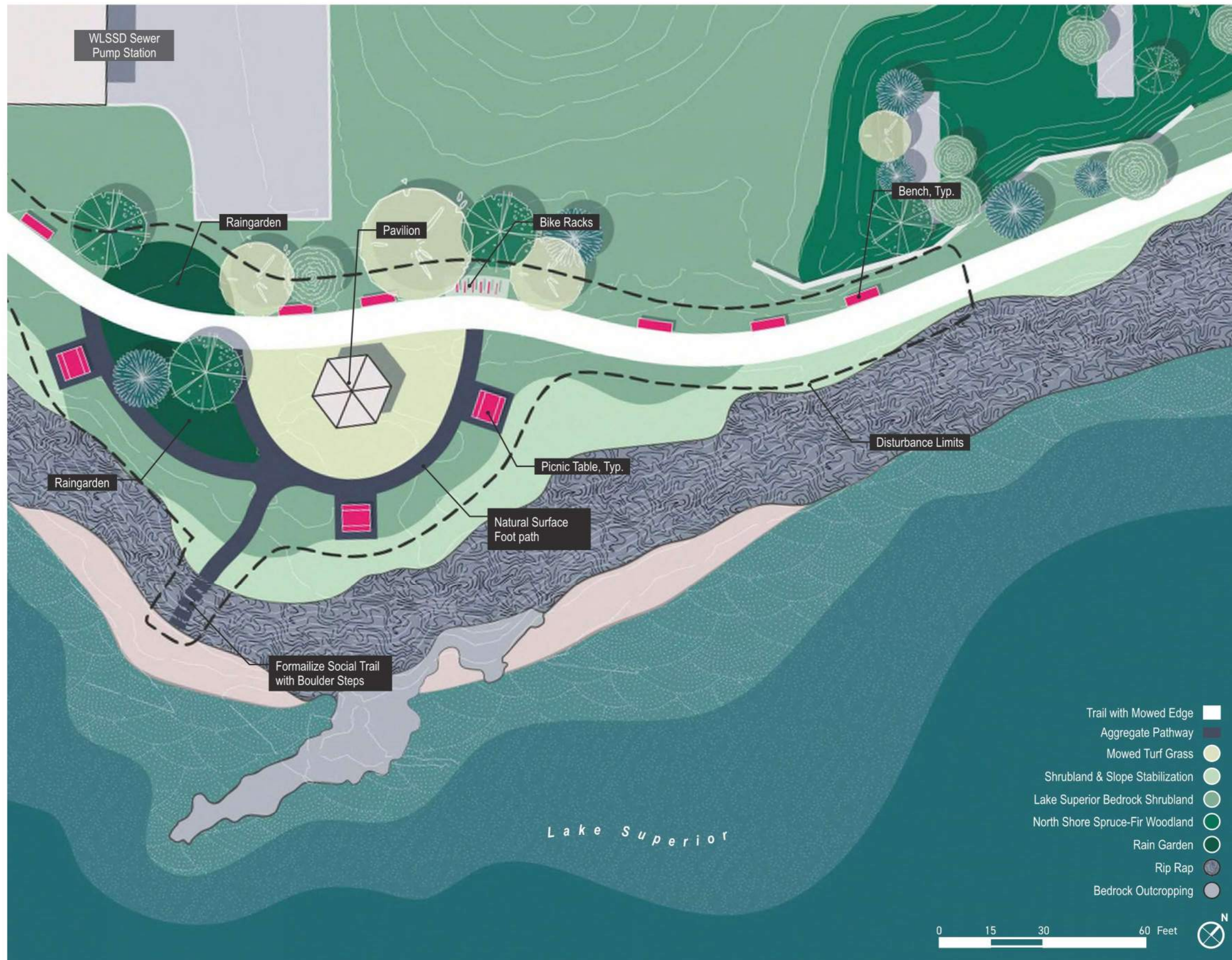
Pause Area 09: Access Bridge

Landscape improvements at the Interstate Access Bridge enhances the existing use by increasing seating options and preserving the beloved bedrock outcropping at the waters edge.

Key Design Features:

- Relocate benches and picnic tables to make more accessible
- Maintain mowed grass or no-mow mix - minimize disturbance on grass on top of exposed bedrock
- Expose and clean up existing boulder steps for water access
- Add sound barriers along I-35 edge (fencing or vegetation buffer)





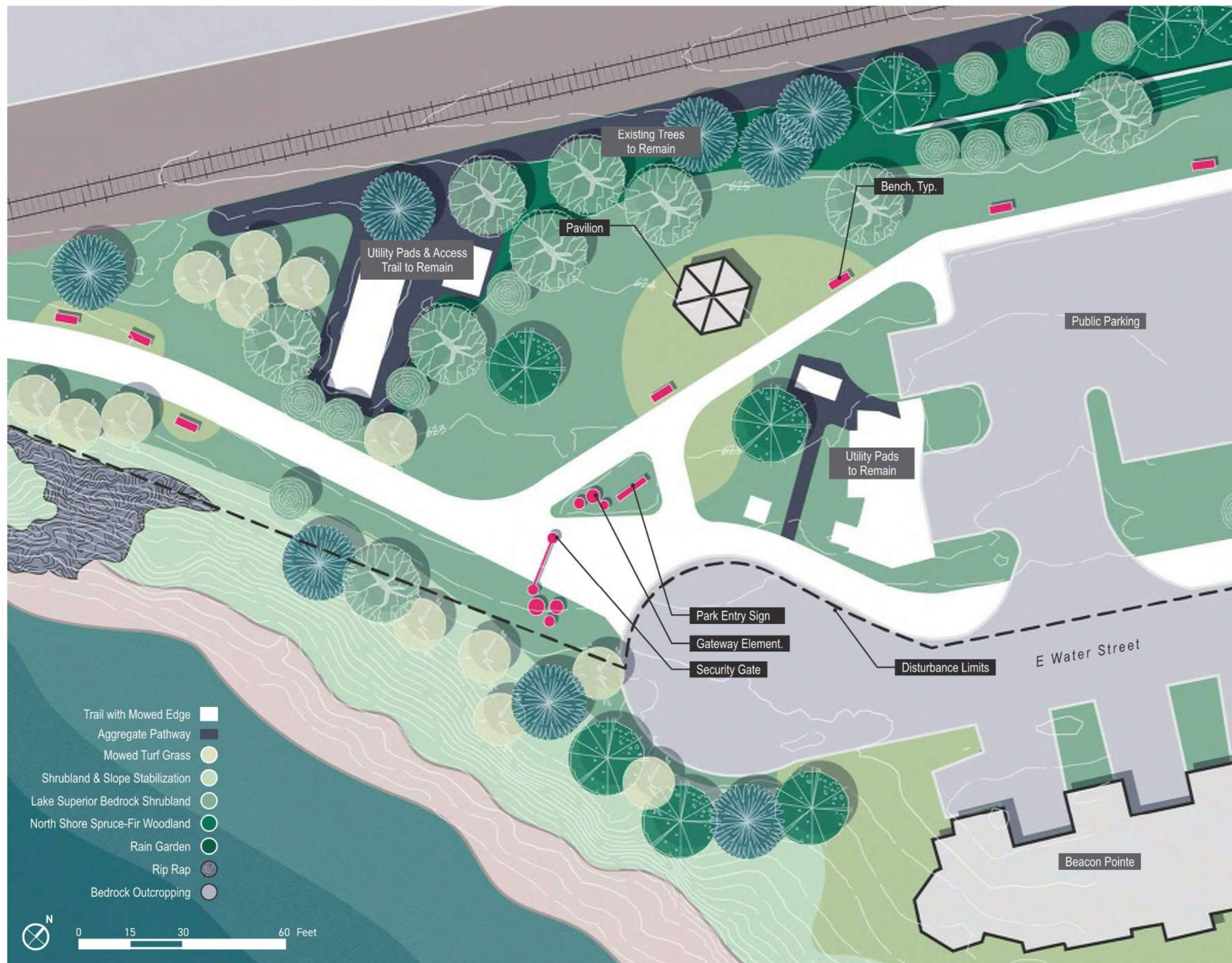
Pause Area 10: Lift Station

Landscape improvements at the Western Lake Superior Sanitary District Lift Station re-imagines the programming of this pause area with a neighborhood focus. This location is near the Water Street trailhead parking lot and with increased tourism and additional neighborhood connections, presents a unique opportunity to add a covered pavilion and create a mini-park like setting for larger groups to enjoy the Lake Superior shoreline.

Key Design Features::

- Removes wooden boardwalk/patio
- Provides raingarden solution for parking lot surface drainage
- Protects and preserves existing trees
- Widens main trail to desired 15' width with pedestrian spur paths for exploration
- Re-wild pocket areas and along trail corridor with native planting restoration
- Formalize and stabilize social trails/access to beach
- Pavilion could have solar component for electrical power





Pause Area 11: Water Street Entry

Landscape improvements to the Water Street Trailhead will enhance the Lakewalk's Eastern entrance. Re-wilding the landscape surrounding the parking lot and green space with a native planting restoration will provide for less mowing maintenance and more trees for shade along Water Street. Relocating the park entry sign to be more centrally located near the turn-around and trail crossroads will create a gateway element to the Lakewalk better marking the start to this segment.

Key Design Features:

- Reduce maintenance and mowing of large unused lawn space, implement native planting restoration
- Create a gateway entry area
- Install new trailhead sign
- Provide shade/boulevard trees along Water Street
- Include accessible seating area and covered pavilion for larger gatherings



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.



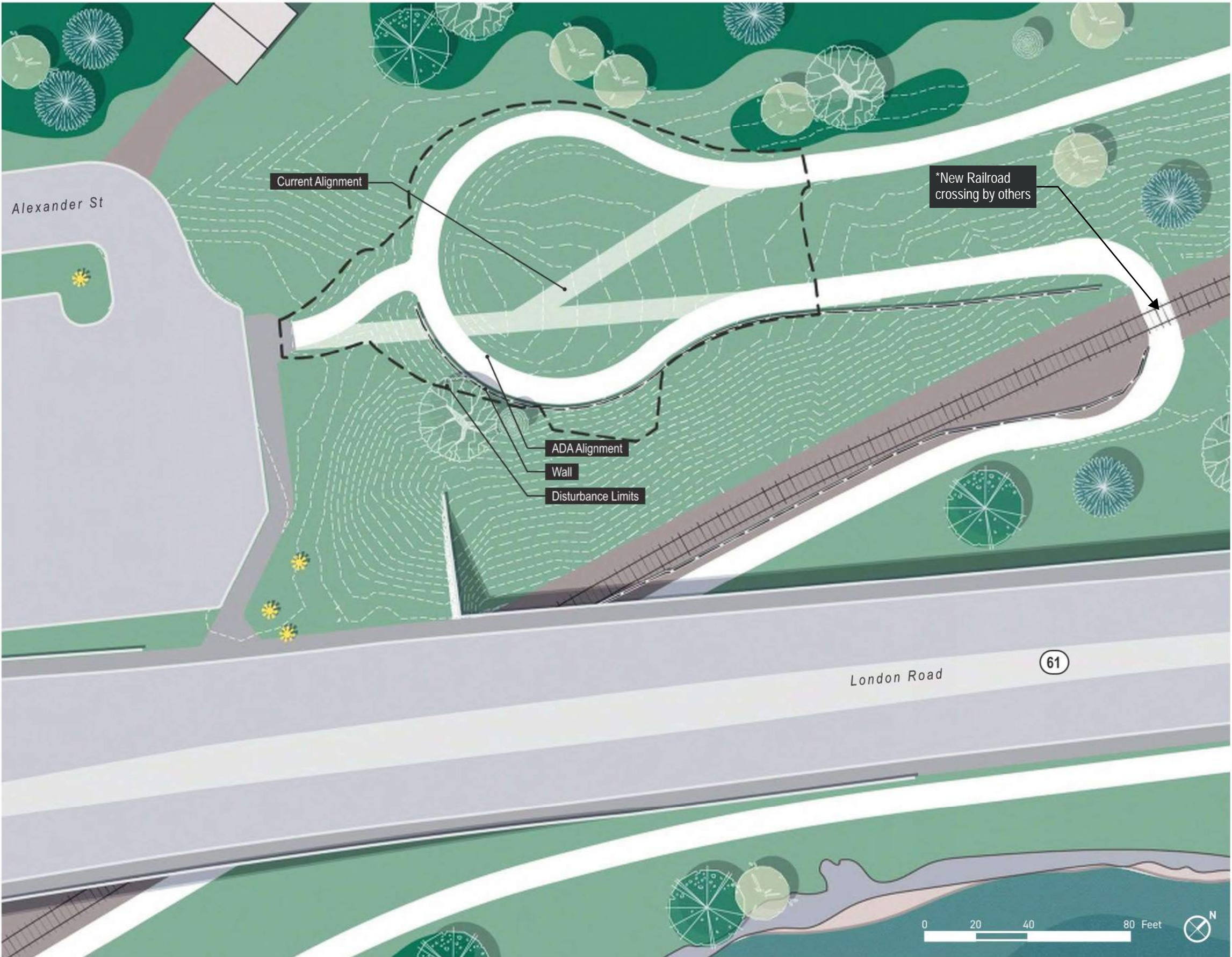
ADA Reroute 2:

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.



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



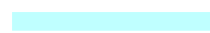
LEGEND



LOCATION OF COMMUNITY
CONNECTOR AND ITS
APPROXIMATE LIMITS



LAKEWALK TRAIL



EXISTING CONNECTION
PATH TO LAKEWALK

LHB & THE CITY OF DULUTH DULUTH LAKEWALK RENEWAL PROJECT

COMMUNITY CONNECTORS

S.P. 118-090-028
CITY PROJECT NO. 2193



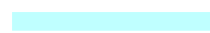
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LOCATION OF COMMUNITY
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APPROXIMATE LIMITS



LAKEWALK TRAIL



EXISTING CONNECTION
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LHB & THE CITY OF DULUTH DULUTH LAKEWALK RENEWAL PROJECT

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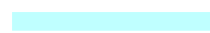
LEGEND



LOCATION OF COMMUNITY
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APPROXIMATE LIMITS



LAKEWALK TRAIL



EXISTING CONNECTION
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LHB & THE CITY OF DULUTH DULUTH LAKEWALK RENEWAL PROJECT

COMMUNITY CONNECTORS

S.P. 118-090-028
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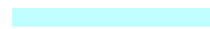
LEGEND



LOCATION OF COMMUNITY
CONNECTOR AND ITS
APPROXIMATE LIMITS



LAKEWALK TRAIL



EXISTING CONNECTION
PATH TO LAKEWALK

LHB & THE CITY OF DULUTH DULUTH LAKEWALK RENEWAL PROJECT

COMMUNITY CONNECTORS

S.P. 118-090-028
CITY PROJECT NO. 2193



LEGEND



LOCATION OF COMMUNITY
CONNECTOR AND ITS
APPROXIMATE LIMITS



LAKEWALK TRAIL



EXISTING CONNECTION
PATH TO LAKEWALK

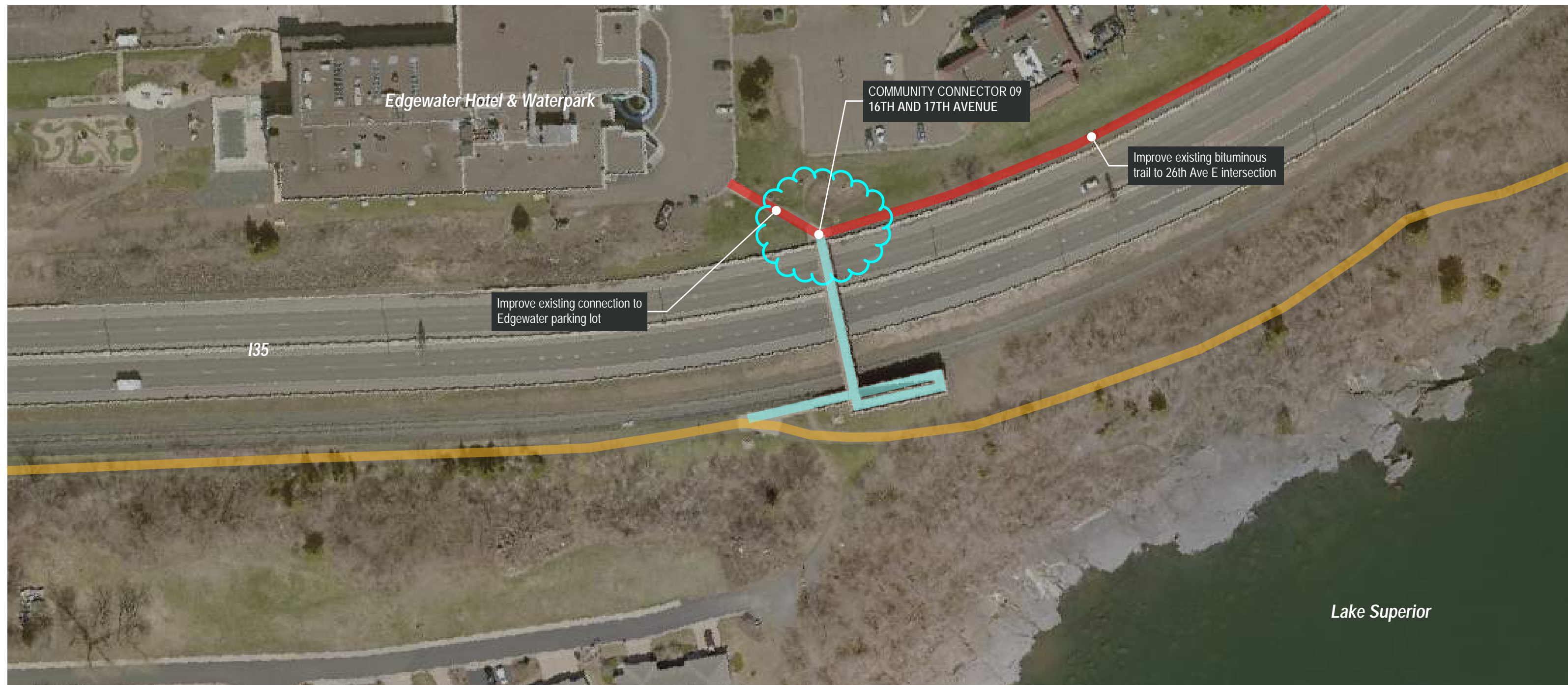


EXISTING CONNECTION/TRAIL THAT
NEEDS IMPROVEMENT

LHB & THE CITY OF DULUTH DULUTH LAKEWALK RENEWAL PROJECT

COMMUNITY CONNECTORS

S.P. 118-090-028
CITY PROJECT NO. 2193





April 18, 2024

LHB, Inc.
Attn. Megan Goplin
21 West Superior Street, Suite 500
Duluth, MN 55802

Re: Lakewalk Phase 5 Shoreline Rehabilitation_Rev 1

AMI Project # 241048

Mrs. Goplin,

AMI Consulting Engineers (AMI) would like to thank you for the opportunity to submit this proposal for engineering, permitting and construction administration services for additional shoreline repairs to the Lakewalk trail located in Duluth, Minnesota.

Project Background

AMI worked with the City of Duluth, in 2021, on conceptual designs for the MN Outfalls, below PortLand Malt Shoppe, and below the Rose Garden. AMI created conceptual design renderings for different options at each site along with cost estimates. When it was determined that the costs would be too high for the City to afford at the time, the remaining engineering work was paused and AMI submitted a document highlighting the high priority areas the City should focus on repairing in the near future.

Scope of Work

Expanding on the work AMI previously started back in 2021, AMI will perform *engineering, permitting* and *construction administration* services for the following project locations. The aforementioned services are described in detail below. Any special provisions related to each location are described under each project.

Engineering Services

Using the previously obtained site investigation and survey data, AMI will create design drawings for each location (assuming one plan set combining all locations). The following design documents will be produced: conceptual drawings (30% plan set and technical specifications table of contents), design development drawings (60% plan set and technical specifications), and final construction documents (90% & 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 a detailed construction estimate to accompany the final construction documents. Following final design, AMI will partner with LHB in assisting the City of Duluth throughout the bidding process and with awarding the contract. AMI will develop addendums pursuant to the questions asked by contractors. AMI will attend 1 pre-bid on-site walk through during the construction phase.

Permitting Services

AMI will complete and submit permit applications for the United States Army Corps of

Engineers (USACE), Department of Natural Resources (DNR), and County as required for shoreline related modifications. AMI will handle all permitting fees associated with this work. AMI understands that the USACE now requires a Clean Water Certification be issued by the Minnesota Pollution Control Agency (MPCA). AMI will coordinate with the MPCA and submit the Clean Water Certification form request to the MPCA for approval. Permits may take 3-9 months to have secured from the date of design drawings being submitted. AMI assumes LHB is responsible for any and all permitting coordination of historical structures. AMI has included permitting fees for the USACE, DNR, and County permits. AMI is not including City permitting or permitting fees as those items are traditionally contractor led.

Meetings & Coordination

Throughout each project location, AMI will coordinate with LHB on seamlessly merging the coastal repairs with the landscaping improvements and trail realignment. AMI will review LHB's landscaping plans to maximize public space on either the beaches or pause areas. The plans, specifications and construction estimates will comply with MNDOT standards, as required by the grant, which require construction documents to utilize specific verbiage and MNDOT technical specification documents to be modified to AMI coastal standards. AMI and LHB will coordinate regularly on proposed coastal designs to address how they will merge with LHB's civil designs at each location. AMI will attend coastal related meetings that LHB will set up with the City to discuss the designs throughout each phase. Ryan Dagger will be the project manager for AMI with Zac Morris performing the QA/QC reviews.

Construction Administration Services

During the construction phase of each project, a qualified coastal or marine civil engineer will perform 100% construction oversight services based on a 40-hour work week in the field. Services will include:

- Review of submittals, Engineering Proposal Requests (EPRs), Engineering Supplemental Information (ESIs), Change Orders, and Pay Apps
- Creation of daily inspection reports including validation of quantities and detailing the events occurring with photo documentation
- AMI will coordinate any field engineering changes with LHB for the Lakewalk Trail work
- AMI will update the City of any construction schedule changes that will affect the project completion date
- AMI will work with the City to set up any 3rd party material testing required
- AMI will use precision survey equipment to make construction checks when necessary
- AMI would document any discrepancies and inform the Contractor to make the required changes
- AMI will lead weekly meetings with the City and contractor for the coastal related work
- Weekly email updates will be sent out describing the summary of work completed
- Final punchlist will be generated and project close out forms submitted
- Permits will be closed out by providing the regulatory agencies with as-built photographs

Project Locations

1. Canal Beach Sheet Pile Wall Modification/Trail Realignment

- a. Using the previously obtained site investigation and survey data, AMI will create

design drawings for the seawall realignment in Canal Park (see Figure 1 for project area). Meetings and coordination will occur between AMI, LHB, and the City of Duluth as necessary to review the proposed designs.

- b. The proposed modifications will consist of a utility locate for the overflow pipes from WLSSD, tieback locates for the existing steel sheet pile wall using as-built drawings from the I-35 construction, custom concrete footings to avoid impacts to tierods and existing utilities, and a concrete cap to steel sheet pile connection and railing.
- c. AMI anticipates coordination with the City of Duluth, WLSSD, MNDOT, and LHB to successfully design this wall modification.
- d. AMI has budgeted 4 weeks of construction administration for the coastal components of this site.
 - i. ENGINEERING & DRAFTING: \$54,520.00
 - ii. PERMITTING: \$4,400.00
 - iii. MEETINGS/COORDINATION: \$5,040.00
 - iv. CONSTRUCTION ADMINISTRATION: \$34,187.00

TOTAL COST: \$98,147.00

2. Vietnam Veteran's Memorial Shoreline

- a. Continuing on the shoreline work complete near the Minnesota Outfalls last year, AMI will propose shoreline repairs that utilize the on-site salvaged riprap, provides beach encouragement, and cleans the shoreline of metal and miscellaneous debris (see Figure 2 for project area). The historical elements at this location are proposed to be removed above the waterline. LHB will lead permitting requirements from SHPO on replacement of historical structures. AMI will submit a separate proposal for any historical structure relocations or rebuild.
- b. The proposed shoreline rehabilitation will consist of salvaged riprap, new armor stone, toe stone anchoring on the north end of the site near the Veteran's memorial, 2 sets of rock steps, and returning revetments into the slope for resiliency.
- c. AMI anticipates coordination with the City of Duluth, MNDOT, and LHB to successfully design this site.
- d. AMI has budgeted 3 weeks of construction administration for the coastal components of this site.
 - i. ENGINEERING & DRAFTING: \$26,250.00
 - ii. PERMITTING: \$4,040.00
 - iii. MEETINGS/COORDINATION: \$4,080.00
 - iv. CONSTRUCTION ADMINISTRATION: \$25,640.00

TOTAL COST: \$60,010.00

3. Lakewalk Shoreline (between N 7th Ave E and N 8th Ave E)

- a. AMI will propose shoreline repairs that reduce the slope steepness along the proposed Lakewalk trail while maximizing the natural beach areas. The existing armor stone will be reused in the design(s). AMI will coordinate the shoreline repairs with the required Lakewalk trail width requirements from LHB. See Figure 3 for project area.
- b. The proposed shoreline rehabilitation will consist of concrete retaining walls, mass concrete footings, revetments, a set of rock steps, and combination of seawalls and revetments depending on the bedrock variability. AMI anticipates custom concrete footings due to the sloping bedrock and area between the Lakewalk trail.
- c. AMI anticipates coordination with the City of Duluth, MNDOT, WLSSD, and LHB

to successfully design this complex site with variable bedrock profiles.

- d. AMI has budgeted 12 weeks of construction administration for the coastal components of this site.

i. ENGINEERING & DRAFTING: \$115,383.00

ii. PERMITTING: \$7,800.00

iii. MEETINGS/COORDINATION: \$7,200.00

iv. CONSTRUCTION ADMINISTRATION: \$102,560.00

TOTAL COST: \$232,943.00

4. Shoreline Public Beach Access Areas

- a. AMI will design custom shoreline access options for up to 5 public beach access areas proposed by LHB and approved by the City (see Figures 4-7 for design locations). All permanent access points will need to be approved by the DNR.
- b. The proposed shoreline beach access areas will consist of stone steps with an elevation difference of no greater than 12 feet with a width no greater than 4 feet. AMI anticipates concrete leveling pads and bedrock anchoring due to the sloping bedrock along the shoreline. Access will be provided down to bedrock or cobble stone beach (whichever occurs first). *AMI assumes that the City of Duluth has approved the public being required to navigate down natural bedrock slopes to a cobble beach* with no additional man-made elements to assist the public in navigate down the natural bedrock.
- c. Any shoreline access areas proposed inside project locations 1-3 will be incidental to that work and are not duplicated inside this scope of work. These beach access areas are along sections of shoreline not a part of project locations 1-3 as stated above.
- d. AMI anticipates coordination with the City of Duluth, MNDOT, WLSSD, DNR, and LHB to successfully design these public access areas.
- e. AMI has budgeted 5 weeks of overall construction administration for the coastal components of the public access locations (1 week per site), as well as quarry visits for working with the contractor on selecting armor stone steps as required. Due to the large number of armor stone steps required AMI may need to coordinate some additional blasting or specialized cutting of the quarry stones to get the desired quantity.

i. ENGINEERING & DRAFTING: \$50,000.00

ii. PERMITTING: \$3,400.00

iii. MEETINGS/COORDINATION: \$3,600.00

iv. CONSTRUCTION ADMINISTRATION: \$42,773.00

TOTAL COST: \$99,773.00

AMI proposes to provide these services based on a fixed fee basis for **Four Hundred Ninety Thousand Eight Hundred Seventy-Three dollars (\$490,873.00)**. AMI will not exceed these fees without your written authorization. Additional services beyond those outlined above may be provided at your request and will be billed per written and agreed upon amounts. Our scope of work and price is valid for sixty days from date of this proposal.

Items Excluded from this Proposal (Can be included for an additional fee)

- The following services have been excluded from AMI's proposal: Environmental studies and wetland delineations
- Bathymetric and legal/boundary surveys

- 3D renderings
- Hydrologic and Hydraulic Analyses
- Wave Modeling, Shoreline Evolution, and Sediment transport studies
- Bedrock material testing (AMI will make conservative assumptions in lieu of rock testing)
- Survey control point staking
- Construction staking
- As-built drawings (AMI assumes this is covered under LHB's scope of work)
- All Services related to the SHPO historical structure removal near Vietnam Veteran's Memorial (AMI assumes this is covered under LHB's scope of work)
- Grant documentation, meetings and submissions
- Any services not explicitly described under this proposal shall be assumed out of scope

Assumptions

- AMI will rely on LHB for the proposed trail realignment location, required trail grades and elevations, recent survey data for each location, and all SHPO coordination
- AMI will not perform any coastal services, design review, or provide recommendations for sections of shoreline outside of the above scope of work
- **AMI assumes up to 10 project meetings between AMI, LHB and the City during the design phase**
- LHB is responsible for all engineering, permitting and construction administration from the proposed Lakewalk trail to the railroad
- AMI's construction documents will be added to the end of LHB's plan set. AMI will not be responsible for title sheets, erosion control and SWPPP, or general specifications unrelated to the coastal work
- AMI will perform construction administration duties for the coastal repairs only
- **AMI assumes 24 weeks of construction administration duties** (see *Construction Administration Services* above) for the coastal repairs based on previous shoreline repair schedules. AMI will designate up to two staff who will rotate through inspection duties
- **AMI assumes up to 10 trips** to two harbors for stone inspections and rock step selection
- AMI will not attend weekly meetings when no coastal repairs are being performed
- AMI will attend 1 pre-bid meeting, 1 bid opening meeting, and 1 preconstruction meeting
- The final construction documents will not be phased or broken up
- All shoreline repairs will occur concurrently and within one year from the start of construction to the end. Construction will not occur in phases.
- All project sites will be under one general permit with the DNR and USACE
- Final project close out and grant documentation will be submitted by LHB
- The attached engineer's estimate was derived from past Lakewalk projects as well as the 2021 Lakewalk High Priority Estimate Report provided to the City of Duluth

Acceptance

~~If the services outlined herein are acceptable, please provide formal authorization to proceed by completing, signing, and returning the enclosed *Acceptance of Proposal for Professional Services* sheet. This sheet provides important information regarding distribution and invoicing. Formal authorization is necessary prior to initiation of any of the activities outlined herein. AMI's services will be performed for the signatory of the enclosed form. Written consent must be provided by AMI should anyone other than the Client wish to excerpt, or rely on, the results of our activities.~~

If you have any questions or comments regarding this proposal or find any information listed above in error, please contact me at (715) 718-5722.

Respectfully Submitted,



Ryan Dagger, PE
Assistant Coastal Department Manager

Reviewed By,



Zac Morris, PE
Coastal Department Manager

Enc: Lakewalk Phase 5 Shoreline Project Locations
Engineers Estimate for Coastal Repairs



Figure 1: Canal Park Seawall Realignment Project Extents



Figure 2: Vietnam Veterans Memorial Shoreline Project Extents (includes 2 sets of rock steps along the shoreline).



Figure 3. Lakewalk Shoreline between (N 7th Ave E and N 6th Ave E) Project Extents (includes 1 grand entrance set of rock steps at the south end of the project extents).

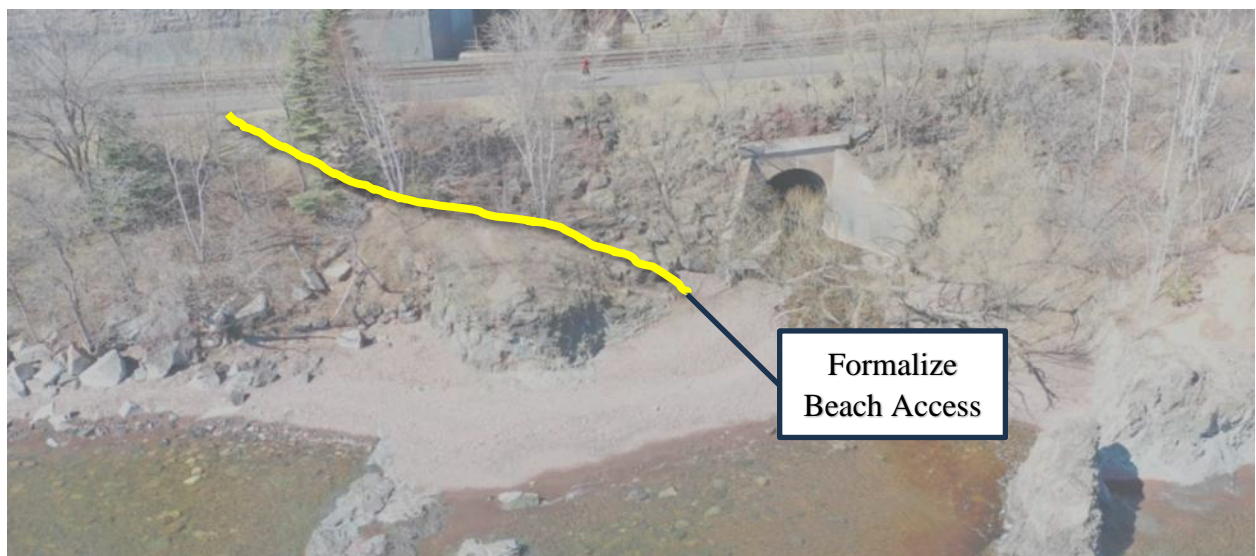


Figure 4: Chester Creek Shoreline Access



Figure 5: South 15th Ave. East Shoreline Access



Figure 6: South 16th Ave. East Shoreline Access A

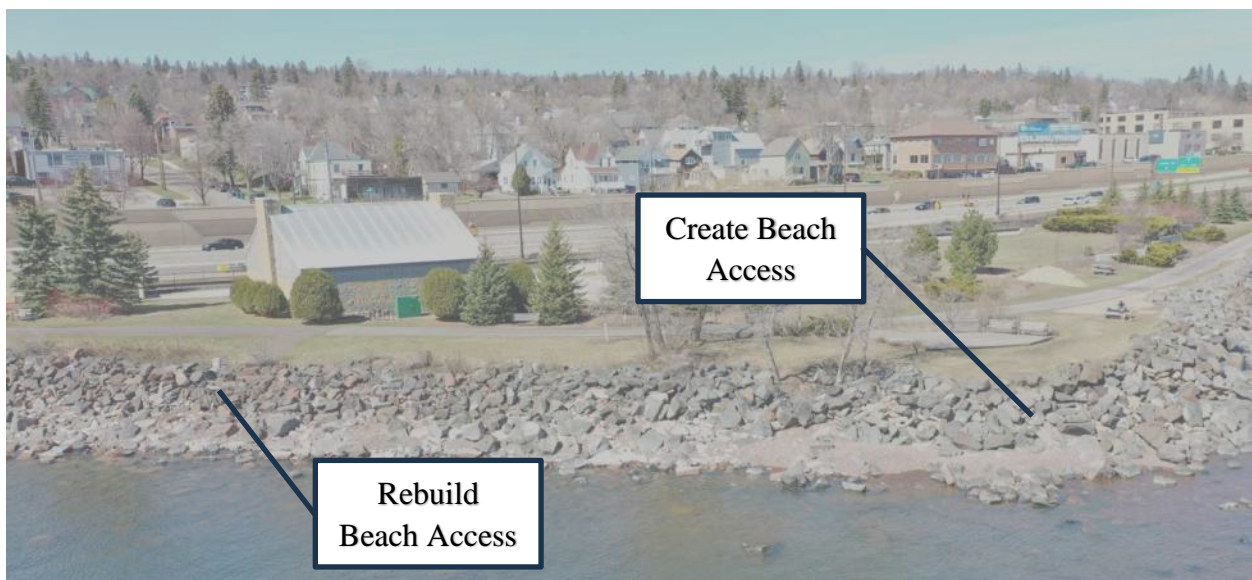


Figure 7: South 18th Ave. East Shoreline Access A&B

ACCEPTANCE OF PROPOSAL FOR PROFESSIONAL SERVICES

Accepted By:

Name: _____

Address: _____

Signature: _____

City, State, Zip: _____

Date: _____

Telephone: _____

Party responsible for payment: (if different than Accepted By)

Name: _____

Address: _____

Signature: _____

City, State, Zip: _____

Date: _____

Telephone: _____

Please provide formal authorization to proceed by completing, signing, and returning this form. The attached terms and conditions will apply to the services outlined in the accompanying proposal.

ENGINEERS ESTIMATE

NOTE: All costs are to be considered in-place costs. Include cost for all materials, hardware, shipping, fabrication, labor, equipment, insurance, bonds, permits state and local taxes, overhead and profit to properly install items listed under each system. Assumes shoreline repairs only.

System	Item	Unit	Qty	Cost per Unit	TOTAL COST	Construction Note
BASE BID ITEMS - LAKEWALK PHASE 5 SHORELINE REHABILITATION						
01	Canal Park Seawall Realignment	LF	75	\$ 4,000.00	\$ 300,000.00	Land Access
02	Vietnam Veterans Memorial	LF	350	\$ 1,500.00	\$ 525,000.00	Land Access
03	Lakewalk Shoreline between (N 7th Ave E and N 6th Ave E)	LF	520	\$ 3,500.00	\$ 1,820,000.00	Barge Access
04	Shoreline Access Sites	EA	6	\$ 50,000.00	\$ 300,000.00	Barge/Land Access
TOTAL					\$ 2,945,000.00	